



**Project Maverick – Internal
Works SSD 97688711
Base Model Development
Report**

225 – 245 Martin Road, Bradfield

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P2167C





Document control

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1 Executive Summary

This Base Model Development Report (BMDR) has been prepared by Ason Group to support the proposed State Significant Development at 225–245 Martin Road, Bradfield. The proposal includes 14 warehouses, active open space, amenities and associated internal infrastructure within the Western Sydney Aerotropolis.

The purpose of this report is to document the inputs, assumptions and methodology used to develop the existing (base year) SIDRA traffic model. The modelling approach is consistent with the Modelling Methodology Report endorsed by TfNSW and aligns with the Transport Modelling Guidelines – TS 05461 (October 2025).

Traffic surveys and site inspections were undertaken on 06 November 2025 to inform the model development. The model was calibrated and validated against observed traffic volumes and queue lengths and demonstrates good correlation with existing conditions.

The base model indicates that Elizabeth Drive / Martin Road operates at Level of Service A in both peak periods. The two priority-controlled intersections operate at Level of Service F in the AM peak due to right-turn gap-acceptance constraints. These movements are not impacted by the proposed development and are expected to operate acceptably following planned intersection upgrades.

The validated base model is considered suitable for assessing the traffic impacts of the proposed development.

2 Introduction

2.1 Background

This Base Model Development Report (BMDR) has been prepared by Ason Group to address the site-specific Secretary's Environmental Assessment Requirements (SEARs) received in respect of the proposed State Significant Development Application (SSDA) No. 97688711. The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (Owner). The development is located at 225 – 245 Martin Road, Bradfield, 2556 (the Site).

The SSDA seeks approval for the construction, fit-out (including office and warehouse racking) and operation of 14 warehouse buildings, Active Open Space & amenities precinct (including a café) and internal site infrastructure works. Specifically, this includes:

- **Warehouses and Distribution Buildings**
 - 24/7 use of the Warehouse and distribution use for all warehouse buildings.
 - A total developable site area of approximately 1,124,286 sqm (or 112.4 Ha), comprising construction, fit-out and operation of approximately 597,610 sqm of warehouse and office GLA space across 14 small, medium and large format warehouses, ancillary offices and onsite parking. Warehouses range between 10,000sqm to 100,000sqm with heights of either 14.6m or 16.8m (excluding rooftop plant and solar).
 - The above Warehouse and Distribution buildings will also include guardhouses, dock offices loading bays, landscaping, electric vehicle charging, solar panels and signage.
- **Active Open Space & Amenities Precinct**
 - Active open space & public amenities precinct (including a café) totalling approximately 708 sqm of GLA within the western Enterprise zone to align with Connecting with Country outcomes.
- **Internal Estate Infrastructure**
 - Construction of the following roads, and associated services infrastructure (being electricity, potable, recycled & wastewater and telecommunications network):
 - Internal estate council roads.
 - Internal estate collector roads as identified on the Precinct Plan.
 - Internal estate retaining walls (including importation of engineered fill for backfill of walls)
 - Corridor reservation, design and partial construction of the following primary arterial roads located within the site:
 - Corridor reservation for the Eastern Ring Road (ERR) between the northern site boundary and southern site boundary
 - Corridor reservation, design and construction (50%) of 'H-Road' being the east-west connection between the proposed ERR intersection and eastern collector road intersection within the site. Reservation of the remaining 'H-Road' corridor to the East of the proposed Eastern collector road.
 - Reservation of the remaining 'H-Road' arterial road corridor to the east of the proposed eastern collector road (N.B. this corridor will ultimately form part of a future arterial regional road connection between Devonshire Road and the ERR identified in Schedule 3 – List of Infrastructure in the Aerotropolis Special Infrastructure Contribution)
 - Regional stormwater and drainage infrastructure (on behalf of Sydney Water) identified within the ENZ land. This will include:

- Stormwater Basins per the Sydney Water Integrated Stormwater Management Scheme
- Sediment Basin
- Bio retention Basin
- Wetland Basin
- Pond
- Trunk Drainage channels as identified per the Integrated Stormwater Management Scheme

Other

- Landscaping across the Site in accordance with Precinct Plan, Connecting with Country and airport safeguarding requirements.
- Vegetation Management Plan (VMP).
- 3 x 12m Estate Identification Pylon Signs on Lots 6, 7 and 8 (excludes individual Warehouse wayfinding signage).
- Public art within the western active open space & amenity precinct.
- Subdivision of the estate.

2.2 Related Applications / Activities

2.2.1 External Lead-in Infrastructure

Part 5 Activity – External Works Lead in Roads and Services

The Applicant is proposing access to the Site via the following route which will be upgraded to be in accordance with the Precinct Plan.

- **Part 1 - Martin Road / Elizabeth Drive intersection upgrades**
 - It is expected that these works will be undertaken by Transport for New South Wales (TfNSW) via an amendment to the existing Part 5 Activity Approval issued by TfNSW for the Elizabeth Drive Upgrade.
 - It is understood that TfNSW will undertake these works with a target completion date of December 2029 (being prior to target date of operations for the first warehouse building at the site);
- **Part 2-4 - Martin Road / East West Collector Road / Lawson Road Upgrades**
 - Further to Part 1, access to the site is proposed to be constructed concurrently as follows:
 - Part 2 – access from the Martin Road / Elizabeth Drive intersection will continue down Martin Road and join the future east / west Collector road identified within the Precinct Plan through Lot 36 DP 3050.
 - The portion of road between the Elizabeth Drive intersection and future east / west collector road will be upgraded with a temporary access strategy to be agreed with Council consistent with Part 3.2, Requirement DS5 of the Precinct Plan.
 - Part 3 – The east / west collector road through Lot 36 DP 3050 will be delivered in ultimate form to connect Martin Road with Lawson Road consistent with its designation under the Precinct Plan and relevant cross section within the Aerotropolis DCP;
 - Part 4 – From the east / west collector road connection on Lawson Road, the portion of Lawson Road south through to the Site will be upgraded in ultimate form consistent with its designation under the Precinct Plan and relevant cross section within the Aerotropolis DCP.

- Goodman have discussed the approach outlined within Parts 2-4 with Liverpool City Council. The anticipated completion date for these upgrades is December 2029, based on a commencement date of June 2028. These works are expected to be completed by Council prior to operation of the first warehouse building at the site.

In assessment of the Proposed Development, a critical consideration will be to confirm consistency with what was assumed by Government for the Site.

Reference should be made to the Modelling Methodology Report (MMR) previously approved by TfNSW, which documents the modelling methodology and assumptions:

- Ason Group, Project Maverick – 225 – 245 Martin Road, Bradfield, Modelling Methodology Report (MMR), Ref: P2167Cr04v02, 14 October 2025.
- It is noted that the modelling methodology and assumptions adopted in this assessment are based on those endorsed by TfNSW as part of the MMR process.

2.3 Base Model Development Report (BMDR) objective

The purpose of this Base Model Development Report (BMDR) is to document the inputs, assumptions and methodology used to develop the base year model for the traffic assessment.

2.4 Scope of Work

- The scope of work for this BMDR study includes the following tasks:
- Collect, organise, and analyse survey data to thoroughly understand the current network congestion conditions, ensuring data is relevant and suitable for validating model accuracy and reliability within the project study area.
- Develop, calibrate, and validate a SIDRA model that accurately reflects existing conditions, including fine-tuning model parameters, validating the model against site observations, and ensuring alignment with the Transport Modelling Guidelines – TS 05461 (October 2025).

2.5 Study Area

The study area includes the following existing key intersections:

- Elizabeth Drive / Martin Road
- Elizabeth Drive / Cleanaway Site Access
- Elizabeth Drive / Lawson Road

The study area for the base model road network has been provided in **Figure 1**.

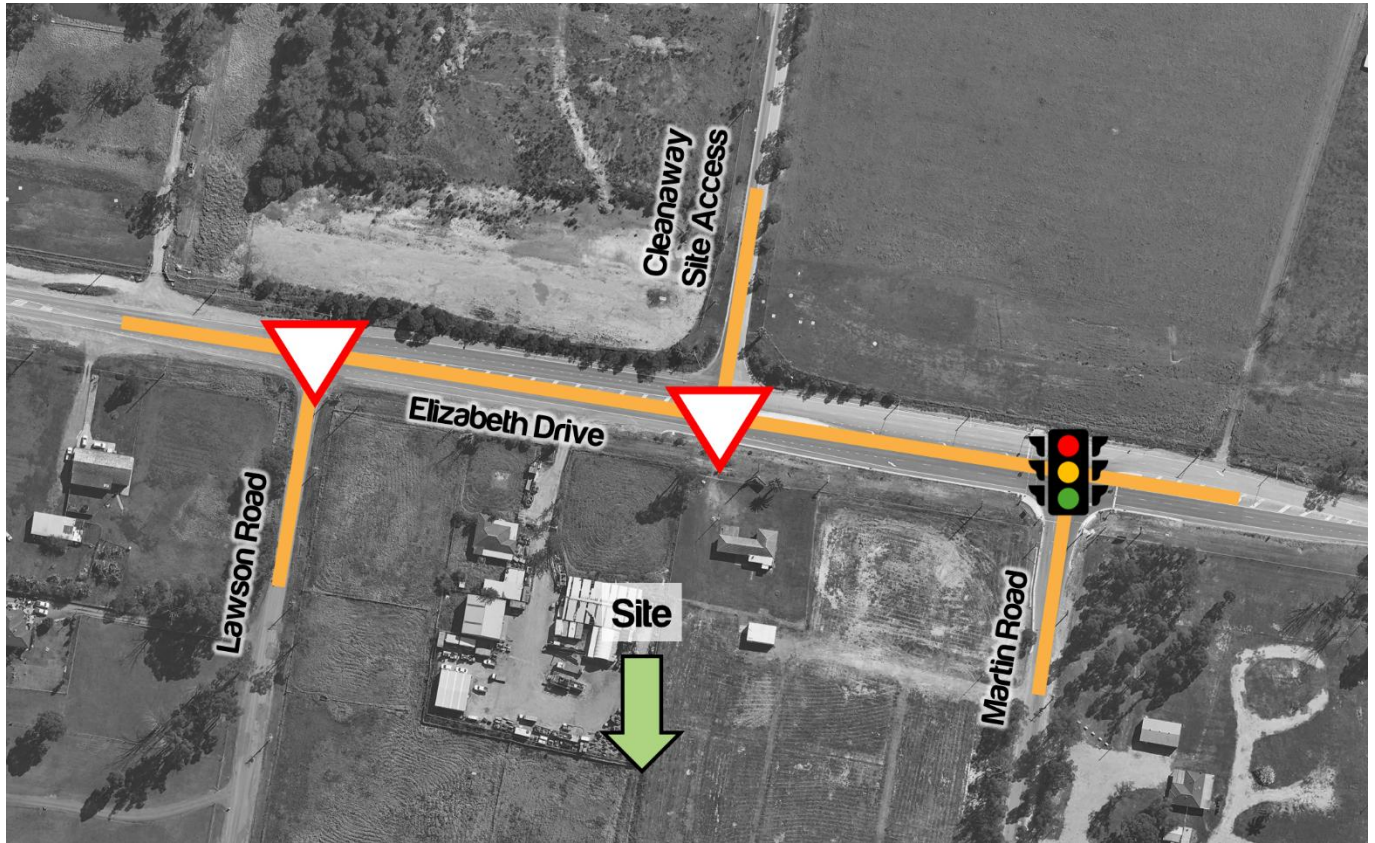


Figure 1: Base model networks

2.6 Report Outline

A summary of the report sections has been provided below.

- **Section 1 - Introduction (this section):** Provides an introductory overview of the project.
- **Section 2 - Existing Conditions:** Details existing traffic conditions observed on site.
- **Section 3 - Model Assumptions:** Summarises any assumptions made during the base model development.
- **Section 4 - Model Calibration and Validation:** Details the outcomes of the base model calibration and validation.
- **Section 5 - Modelling Outcomes:** Provides summary of base model performance.
- **Section 6 - Conclusions:** Provides the concluding statement.

3 Existing Conditions

This section provides an overview of the existing traffic conditions within the study area, based on comprehensive traffic surveys and Ason Group site inspections. It is noted that understanding the current conditions is essential for developing an accurate base model that can reliably predict future scenarios.

3.1 Traffic Surveys

The following traffic survey data has been collected for the base model development:

- Classified Intersection Counts (CIC), and
- Queue length.

Surveyed intersection locations are shown in **Figure 2**.



Figure 2: Survey Locations

Classified intersection count (CIC) survey specifications were as follows:

- Time Periods: Thursday, 06 November 2025
- AM: 05:00am – 09:00am
 - PM: 03:00pm – 06:00pm
- Aggregation: 15 minutes
- Vehicle classes:
 - Light Vehicles (Austroads Class 1-2)
 - Rigids (Austroads Class 3-5)
 - Articulated Vehicles (Austroads Class 6-9)
 - B-Double (Austroads Class 10-12)
 - Pedestrians
 - Cyclists

Surveyed intersections for both the CICs and queue length surveys are summarised in **Table 1**.

Table 1: Intersection Survey Locations

ID	Location	Control	Data Collected
1	Elizabeth Drive / Martin Road	Signal	CIC & Queue Length
2	Elizabeth Drive / Cleanaway Site Access	Priority	
3	Elizabeth Drive / Lawson Road	Priority	

3.2 Site Inspection

Ason Group undertook a site inspection on the same day as the traffic surveys (Thursday, 06 November 2025) during the AM and PM peak periods to observe existing traffic conditions within the surrounding road network. No crashes were observed during the site visits, and weather conditions were sunny.

The site inspection identified no material queuing or congestion at the key intersections. However, it was observed that right-turn movements from the north approach of the Elizabeth Drive / Cleanaway Site Access intersection experience noticeable delays due to the need to accept gaps in opposing traffic across four lanes.

Some delay was also observed for the right-turn movement from the south approach of the Elizabeth Drive / Lawson Road intersection; however, this is of lesser significance, as the movement requires gap acceptance across three lanes of traffic.

The following figures show the existing conditions on the road network.



Figure 3: Northbound Queues on Martin Road, on Approach to Elizabeth Drive (AM Peak)



Figure 4: Eastbound Queues on Elizabeth Drive, on Approach to Martin Road (AM Peak)

4 Model Assumptions

This section outlines the key assumptions and parameters used in developing the base traffic models. Assumptions cover the modelling platform, analysis time periods, signal operations, pedestrian modelling and parameter adjustments made during the calibration process.

4.1 Modelling Platform

SIDRA Intersection version 10.0.9.250 was used to develop the base model scenarios. Key outputs from SIDRA include:

- **Level of Service (LoS)** – The LoS is a qualitative measure used to relate the quality of motor vehicle traffic service. LoS is used to analyse roadways and intersections by categorising traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion.
- **Average Vehicle Delay (AVD)** – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service. For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- **Degree of Saturation (DoS)** – The DoS of an intersection (typically under traffic signal control) or a link measures the demand relative to the total capacity. A DoS value of 100% means that demand and capacity are equal and theoretically no further traffic is able to progress through the junction in that period.

Commonly used measures of intersection performance, as defined by the TfNSW, are vehicle delay and LoS. The table below shows the criteria that SIDRA adopts in assessing the LoS.

Table 2: SIDRA LoS criteria

LoS	Average delay per vehicle (seconds per vehicle)
A	Delay ≤ 14.5
B	14.5 < Delay ≤ 28.5
C	28.5 < Delay ≤ 42.5
D	42.5 < Delay ≤ 56.5
E	56.5 < Delay ≤ 70.5
F	70.5 < Delay

Source: TfNSW, Transport Modelling Guidelines – TS 05461 (October 2025).

4.2 Base Model Network

All intersections were modelled as part of a single network as shown in **Figure 5**.

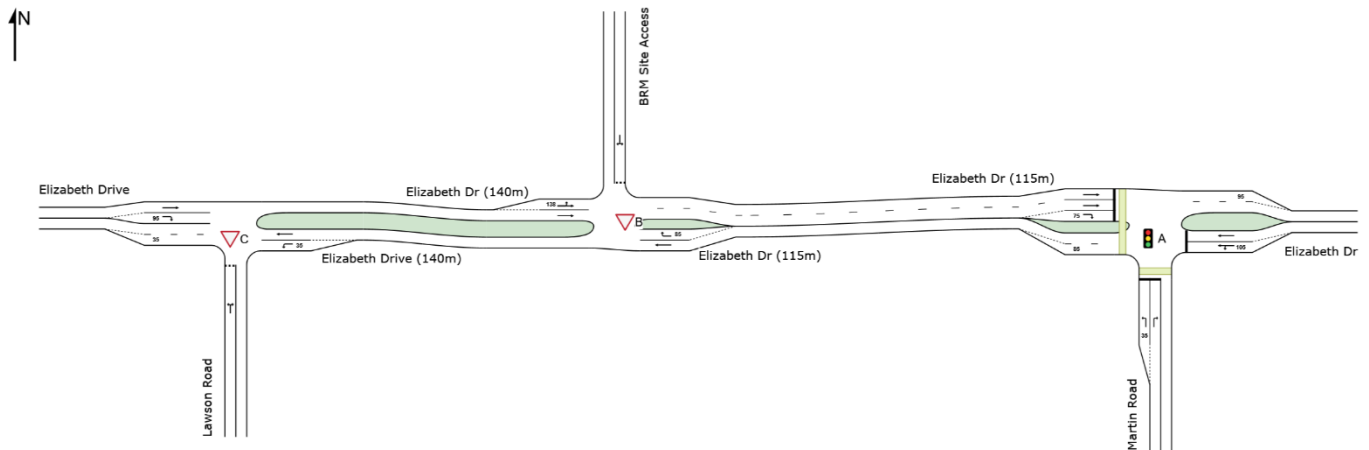


Figure 5: SIDRA network layout

4.3 Time Periods

The intersection turn count surveys were analysed to identify the AM and PM peak hours. The AM and PM peak hours are shown in **Figure 6** and **Figure 7**.

As such, the base model has been developed for the following peak periods:

- **AM Peak:** 06:00am – 07:00am
- **PM Peak:** 04:30pm – 05:30pm

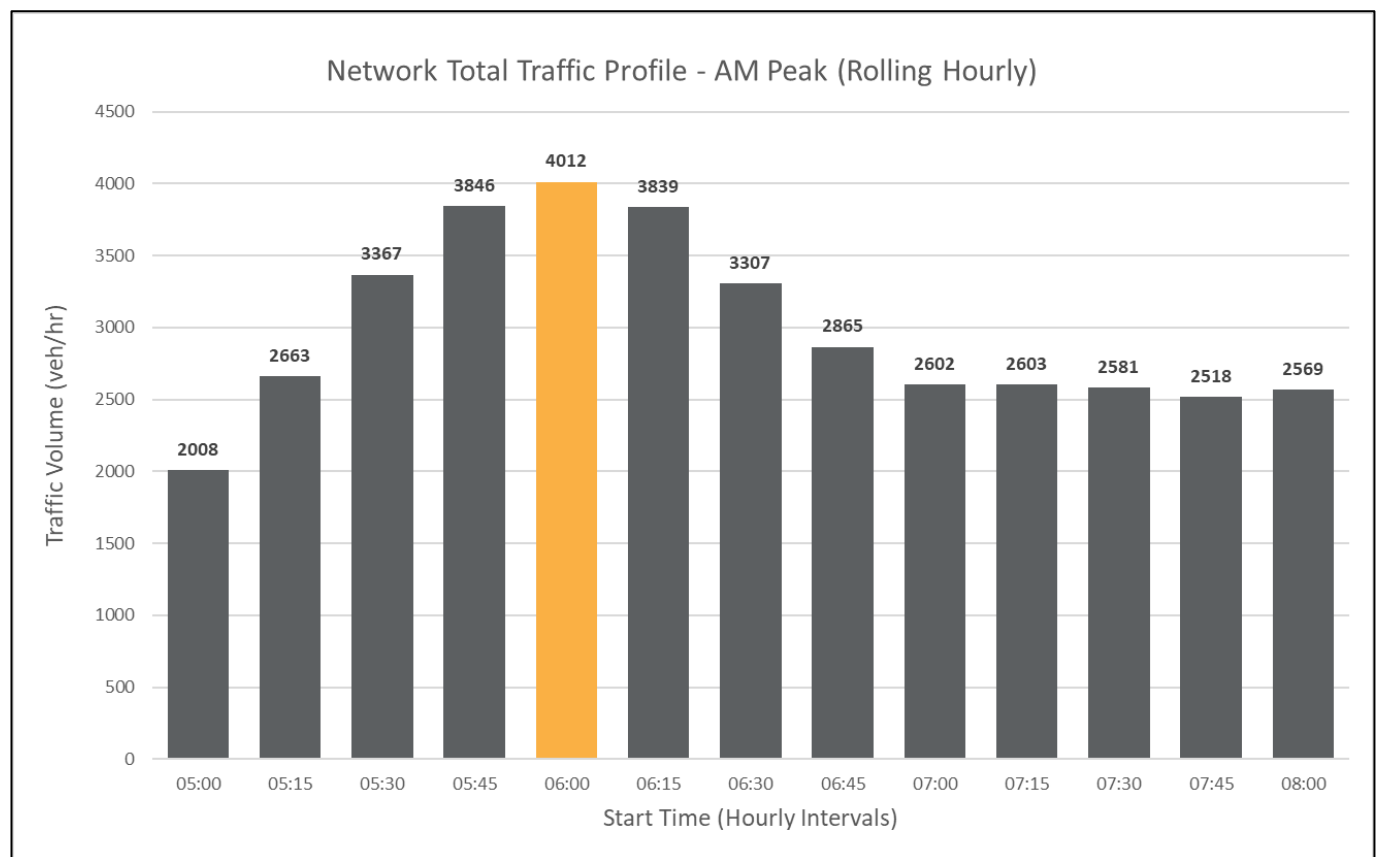


Figure 6: Total Intersection Turn Counts Per Hour, AM peak

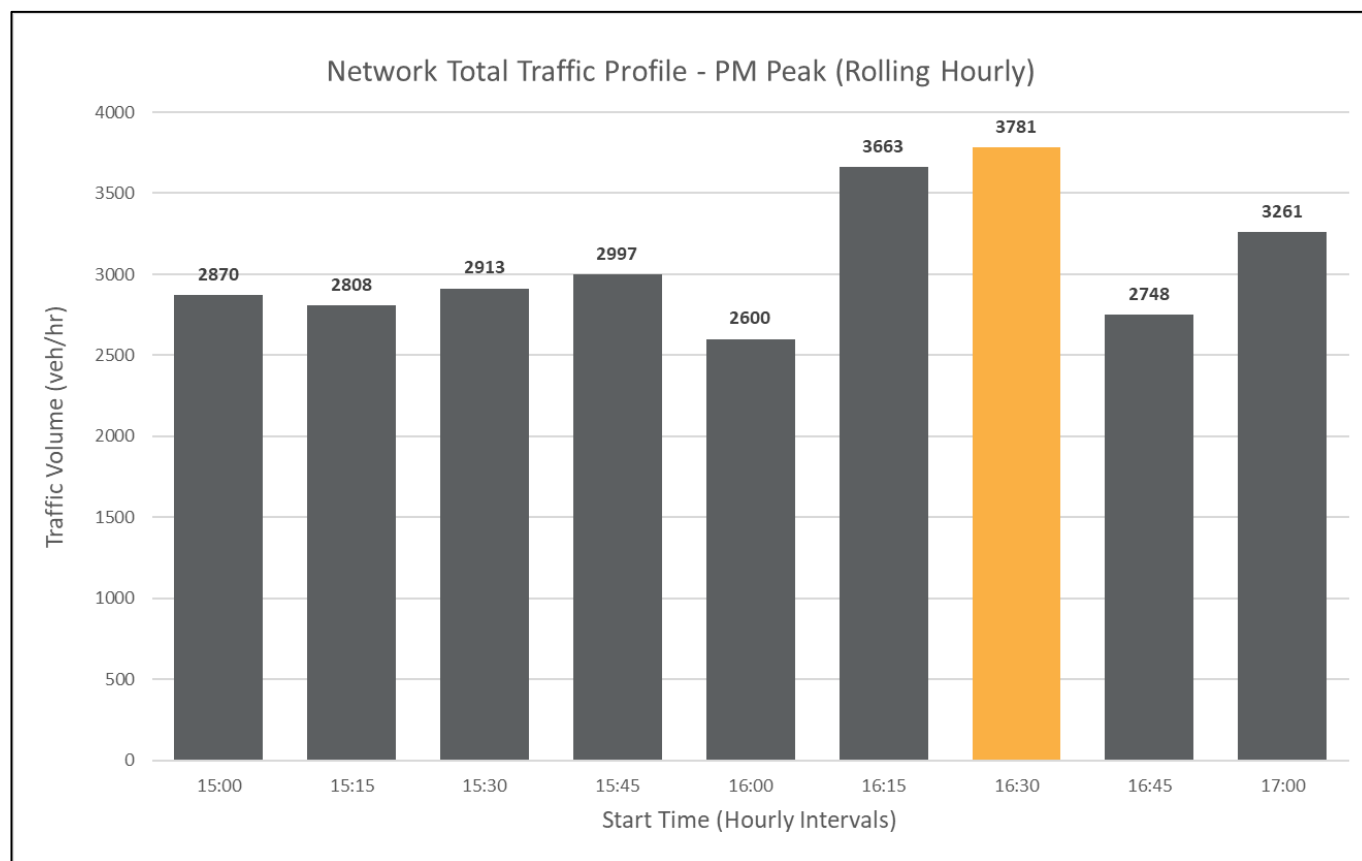


Figure 7: Total Intersection Turn Counts Per Hour, PM peak

4.4 Vehicle Classes

Vehicle classes and Passenger Car Unit (or PCU) considered in the model are as follows.

Table 3: Vehicle Movement Classes

Vehicle Class	PCU
Light Vehicles (Austroads Class 1-2)	• 1
Rigids (Austroads Class 3-5)	• 2
Articulated Vehicles (Austroads Class 6-9)	• 4
B-Doubles (Austroads Class 10-12)	• 4

4.5 Traffic Signals

The following traffic signal data was sourced from TfNSW for the base model development:

- SCATS historical data & phasing diagram
- TCS plans

Data was sourced for the survey date (06 November 2025) for the signalised intersection in the modelled network. The Elizabeth Drive / Martin Road signalised intersection was modelled based on the following observed SCATS data.

- AM Peak: Average reported cycle time 72 seconds, modelled as 70 seconds
- PM Peak: Average reported cycle time 67 seconds, modelled as 70 seconds

The signal was modelled using a user given cycle time and checked for consistency with the observed SCATS data.

4.6 Traffic Volumes

As turn flows are an input in SIDRA, these have been inputted to match the peak hour survey volumes for all movements, as shown in **Appendix A**.

4.7 Pedestrians

Pedestrian data was captured as part of the intersection surveys and inputted as per the network peak periods determined in **Section 4.3**. It is noted however that there was generally no pedestrian movements recorded in the area.

4.8 Public Transport

Buses were not captured separately in the traffic surveys and were included in the heavy vehicle class. As such, buses were not modelled as a unique vehicle class.

5 Model Calibration and Validation

5.1 Demand Inputs

Model demands were input based on the survey data collected. The model was developed with four vehicle classes (light vehicles, heavy vehicles [rigid], articulated and b-doubles). Turn flow diagrams for each peak hour have been provided in **Appendix A**.

5.2 Queue Length Validation

Queue length (QL) validation was undertaken for the following intersections on a per-approach basis:

- Elizabeth Drive / Martin Road
- Elizabeth Drive / Cleanaway Site Access
- Elizabeth Drive / Lawson Road

Modelled queue length validation was completed using the queue length survey data and has been shown in **Figure 8** and **Figure 9**. The 95th percentile of the queue observations was compared against the 95th percentile queue (veh) output provided by SIDRA.

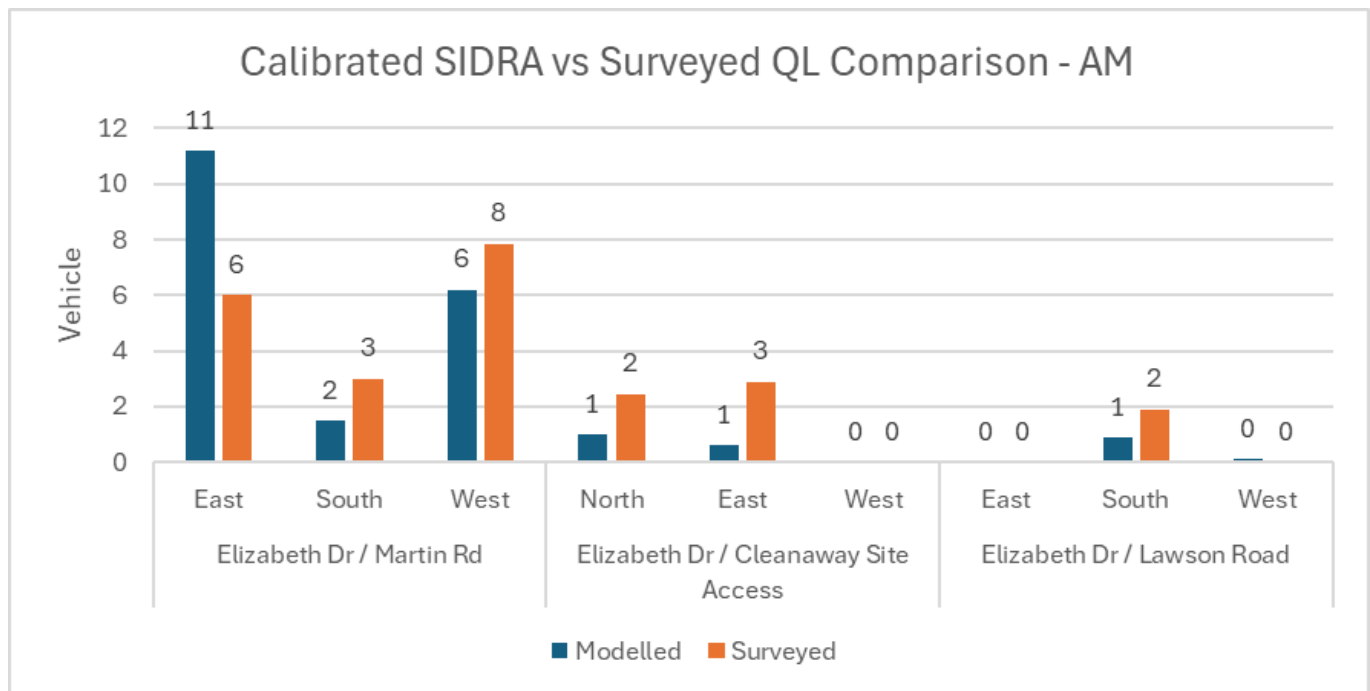


Figure 8: Queue Length Validation (AM peak)

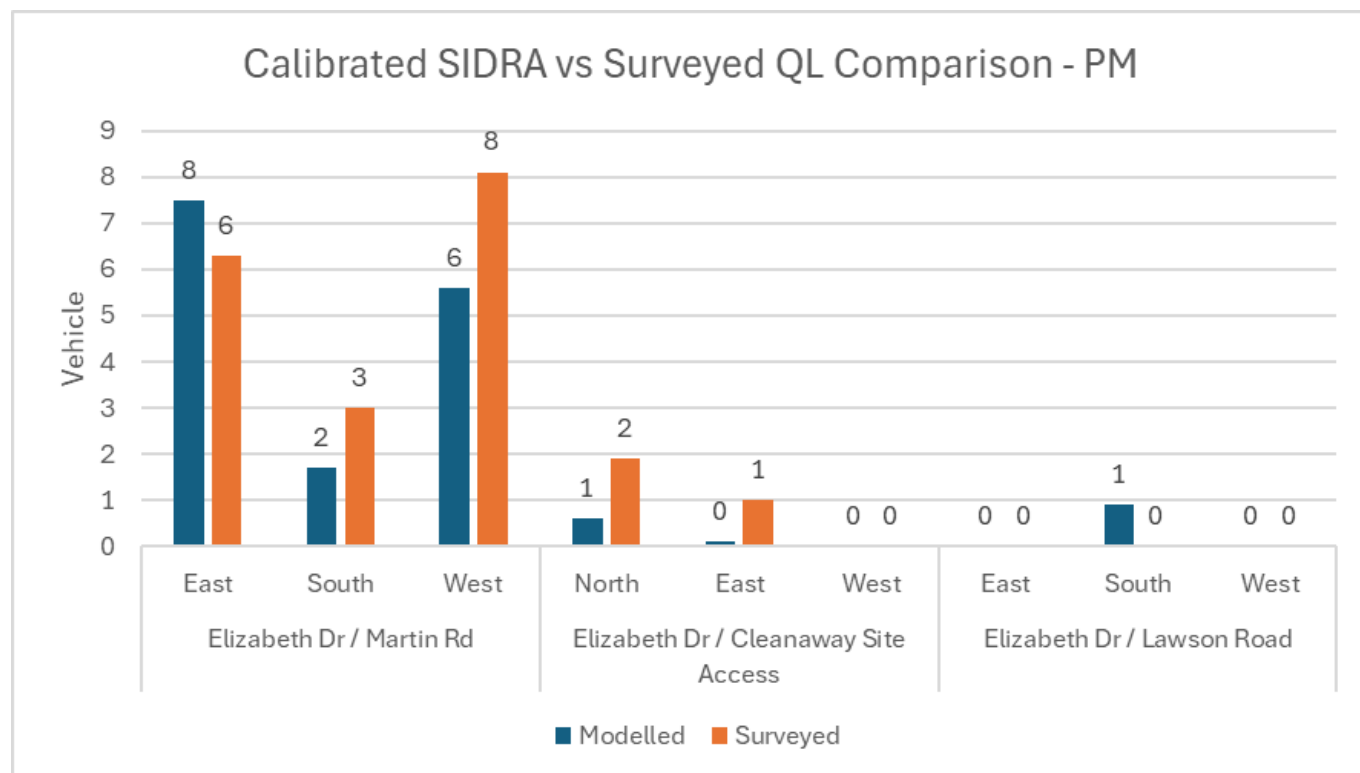


Figure 9: Queue Length Validation (PM peak)

Generally, the queue lengths have a strong correlation between the modelled outputs and observed conditions.

6 Modelling Outcomes

6.1 Base Model Performance

The peak hour intersection performance is presented in **Table 4**. Detailed SIDRA results for each intersection have been provided in **Appendix B**.

Table 4: Base model intersection performance

ID	Intersection	Peak	DoS	Delay (s)	LoS
1	Elizabeth Drive / Martin Road	AM	0.58	11	A
		PM	0.41	9	A
2	Elizabeth Drive / Cleanaway Site Access	AM	0.55	83	F
		PM	0.36	43	D
3	Elizabeth Drive / Lawson Road	AM	0.78	78	F
		PM	0.52	47	D

The base model assessment outcomes show the following:

- Elizabeth Drive / Martin Road intersection operates satisfactorily at Level of Service A, with a degree of saturation less than or equal to 0.58 during both the morning and afternoon peak periods.
- Elizabeth Drive / Cleanaway Site Access intersection operates at Level of Service F in the morning peak and Level of Service D in the afternoon peak, based on the critical movement being the right turn from the north approach, which is required to cross and accept gaps in four lanes of traffic.
- Elizabeth Drive / Lawson Road intersection operates at the same Level of Service (F), with performance driven by the right-turn movement from the south approach, which is required to cross and accept gaps in three lanes of traffic.

It is important to note that the development would not generate any trips on the oversaturated movements and would not exacerbate the intersection performance.

7 Conclusions

Based on the information presented in this document, the SIDRA base model accurately reflects the existing conditions and is appropriate for assessing the potential impacts of the proposed development.

Appendix A Network Diagrams

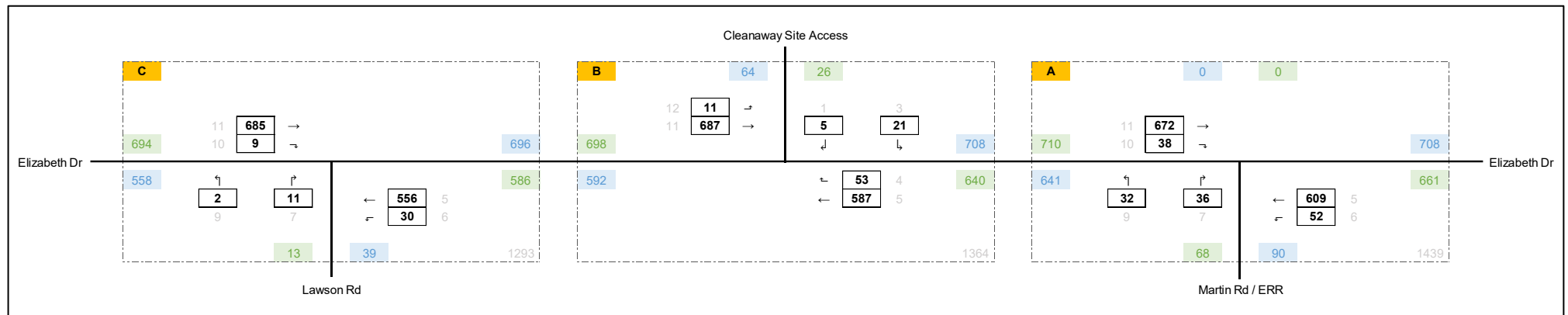


Figure 10: Existing Base Case Traffic Demands – 2025 (AM)

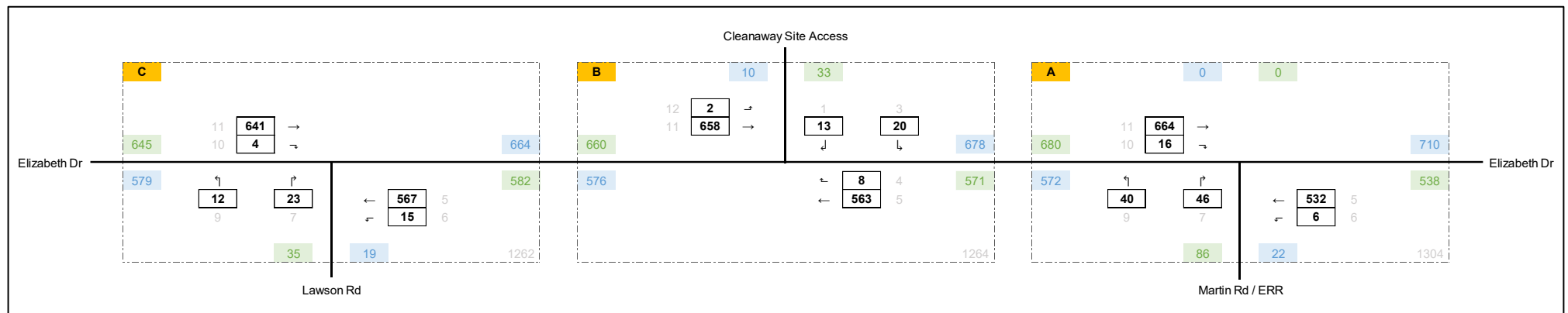


Figure 11: Existing Base Case Traffic Demands – 2025 (PM)

Appendix B SIDRA Results

MOVEMENT SUMMARY

 **Site: [A] A. Elizabeth Dr / Martin Rd - Existing** (Network Intersections)

Network: [1] Existing 2025 (AM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 1 | Existing 2025 (AM) **Site Scenario: 1 | Existing 2025 (AM)**

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Martin Road													
1	L2	All MCs	34 81.2	34 81.2	* 0.575	49.4	LOS D	1.3	22.3	1.00	0.82	1.19	15.6
3	R2	All MCs	38 80.6	38 80.6	* 0.579	45.5	LOS D	1.5	26.4	0.99	0.83	1.18	24.9
Approach			72 80.9	72 80.9	0.579	47.4	LOS D	1.5	26.4	1.00	0.83	1.19	21.8
East: Elizabeth Dr													
4	L2	All MCs	55 42.3	55 42.3	0.269	10.3	LOS A	2.8	27.5	0.54	1.06	0.54	34.9
5	T1	All MCs	641 14.9	641 14.9	* 0.576	11.3	LOS A	11.2	95.6	0.67	0.73	0.67	47.5
Approach			696 17.1	696 17.1	0.576	11.2	LOS A	11.2	95.6	0.66	0.75	0.66	45.7
West: Elizabeth Dr (115m)													
11	T1	All MCs	706 14.5	706 14.5	0.416	4.7	LOS A	6.2	53.6	0.40	0.36	0.40	69.5
12	R2	All MCs	40 34.2	40 34.2	0.522	44.5	LOS D	1.5	20.0	0.99	0.78	1.09	18.6
Approach			746 15.5	746 15.5	0.522	6.8	LOS A	6.2	53.6	0.43	0.38	0.43	63.7
All Vehicles			1514 19.3	1514 19.3	0.579	10.8	LOS A	11.2	95.6	0.56	0.57	0.57	50.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Martin Road											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: ASON GROUP PTY LTD | Licence: NETWORK / FLOATING | Processed: Thursday, 18 December 2025 11:26:41 PM
Project: C:\Users\Jayden Lam\Downloads\P2167Cm02v03.sipx

MOVEMENT SUMMARY

Site: [B] B. Elizabeth Dr / Cleanaway Site Access (Network Intersections)

Network: [1] Existing 2025 (AM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / BRM Site Access
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Existing 2025 (AM) Site Scenario: 1 | Existing 2025 (AM)

Vehicle Movement Performance												
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed km/h
East: Elizabeth Dr (115m)												
5	T1	All MCs	618 16.7	618 16.7	0.406	0.1	LOS A	0.0	0.0	0.00	0.02	78.1
6	R2	All MCs	56 34.0	56 34.0	0.311	28.6	LOS C	0.6	7.3	0.79	0.96	32.5
Approach			674 18.1	674 18.1	0.406	2.5	NA	0.6	7.3	0.07	0.09	54.3
North: BRM Site Access												
7	L2	All MCs	22 95.2	22 95.2	0.547	26.0	LOS B	1.0	20.2	0.90	1.02	27.9
9	R2	All MCs	5 40.0	5 40.0	0.547	82.9	LOS F	1.0	20.2	0.90	1.02	27.9
Approach			27 84.6	27 84.6	0.547	37.0	LOS C	1.0	20.2	0.90	1.02	27.9
West: Elizabeth Dr (140m)												
10	L2	All MCs	12 9.1	12 9.1	0.234	6.8	LOS A	0.0	0.0	0.00	0.04	63.5
11	T1	All MCs	723 13.2	723 13.2	0.234	0.1	LOS A	0.0	0.0	0.00	0.03	77.2
Approach			735 13.2	735 13.2	0.234	0.2	NA	0.0	0.0	0.00	0.03	76.1
All Vehicles			1436 16.9	1436 16.9	0.547	2.0	NA	1.0	20.2	0.05	0.08	59.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [C] C. Elizabeth Drive x Lawson Road - Existing
(Network Intersections)

Network: [1] Existing 2025 (AM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Existing 2025 (AM) Site Scenario: 1 | Existing 2025 (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Lawson Road															
1	L2	All MCs	2	0.0	2	0.0	0.778	29.3	LOS C	0.9	9.8	0.98	1.06	1.21	32.0
3	R2	All MCs	12	45.5	12	45.5	0.778	78.0	LOS F	0.9	9.8	0.98	1.06	1.21	11.1
Approach			14	38.5	14	38.5	0.778	70.5	LOS F	0.9	9.8	0.98	1.06	1.21	15.6
East: Elizabeth Drive (140m)															
4	L2	All MCs	32	6.7	32	6.7	0.018	6.7	LOS A	0.0	0.0	0.00	0.63	0.00	49.0
5	T1	All MCs	585	17.6	585	17.6	0.392	0.9	LOS A	0.0	0.0	0.00	0.02	0.00	77.8
Approach			617	17.1	617	17.1	0.392	1.2	NA	0.0	0.0	0.00	0.05	0.00	76.9
West: Elizabeth Drive															
11	T1	All MCs	723	12.5	723	12.5	0.454	0.4	LOS A	0.0	0.0	0.00	0.02	0.00	78.2
12	R2	All MCs	9	0.0	9	0.0	0.015	10.9	LOS A	0.1	0.4	0.57	0.74	0.57	58.1
Approach			733	12.4	733	12.4	0.454	0.5	NA	0.1	0.4	0.01	0.03	0.01	77.8
All Vehicles			1363	14.7	1363	14.7	0.778	1.5	NA	0.9	9.8	0.01	0.05	0.02	76.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [A] A. Elizabeth Dr / Martin Rd - Existing** (Network Intersections)

Network: [1 (2)] Existing 2025 (PM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 2 | Existing 2025 (PM) **Site Scenario: 2 | Existing 2025 (PM)**

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]		
			veh/h	%	veh/h	%	v/c	sec		veh	m		km/h
South: Martin Road													
1	L2	All MCs	42	12.5	42	12.5	*0.355	42.8	LOS D	1.5	13.4	0.98	16.7
3	R2	All MCs	48	8.7	48	8.7	*0.330	40.5	LOS C	1.7	13.1	0.97	32.3
Approach			91	10.5	91	10.5	0.355	41.6	LOS C	1.7	13.4	0.98	26.6
East: Elizabeth Dr													
4	L2	All MCs	6	16.7	6	16.7	0.193	9.9	LOS A	2.9	23.6	0.51	37.6
5	T1	All MCs	560	11.3	560	11.3	*0.413	9.3	LOS A	7.5	60.7	0.58	47.6
Approach			566	11.3	566	11.3	0.413	9.3	LOS A	7.5	60.7	0.58	47.4
West: Elizabeth Dr (115m)													
11	T1	All MCs	699	9.0	699	9.0	0.362	3.9	LOS A	5.6	43.5	0.36	71.3
12	R2	All MCs	17	75.0	17	75.0	0.274	43.6	LOS D	0.6	10.0	0.97	17.2
Approach			716	10.6	716	10.6	0.362	4.8	LOS A	5.6	43.5	0.38	68.2
All Vehicles			1373	10.9	1373	10.9	0.413	9.1	LOS A	7.5	60.7	0.50	54.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
					ped	m					
South: Martin Road											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [B] B. Elizabeth Dr / Cleanaway Site Access (Network Intersections)

Network: [1 (2)] Existing 2025 (PM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / BRM Site Access

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 2 | Existing 2025 (PM) Site Scenario: 2 | Existing 2025 (PM)

Vehicle Movement Performance												
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed km/h
East: Elizabeth Dr (115m)												
5	T1	All MCs	593 10.5	593 10.5	0.360	0.1	LOS A	0.0	0.0	0.00	0.01	78.7
6	R2	All MCs	8 75.0	8 75.0	0.027	15.5	LOS B	0.1	0.9	0.69	0.83	39.1
Approach			601 11.4	601 11.4	0.360	0.3	NA	0.1	0.9	0.01	0.02	73.7
North: BRM Site Access												
7	L2	All MCs	15 21.4	15 21.4	0.212	9.0	LOS A	0.6	4.9	0.79	0.93	31.3
9	R2	All MCs	20 10.5	20 10.5	0.212	43.0	LOS D	0.6	4.9	0.79	0.93	31.3
Approach			35 15.2	35 15.2	0.212	28.6	LOS C	0.6	4.9	0.79	0.93	31.3
West: Elizabeth Dr (140m)												
10	L2	All MCs	2 50.0	2 50.0	0.207	6.7	LOS A	0.0	0.0	0.00	0.01	47.7
11	T1	All MCs	692 10.4	692 10.4	0.207	0.1	LOS A	0.0	0.0	0.00	0.01	79.0
Approach			694 10.5	694 10.5	0.207	0.1	NA	0.0	0.0	0.00	0.01	78.3
All Vehicles			1329 11.0	1329 11.0	0.360	0.9	NA	0.6	4.9	0.03	0.04	67.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [C] C. Elizabeth Drive x Lawson Road - Existing
(Network Intersections)

Network: [1 (2)] Existing 2025 (PM) (Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 2 | Existing 2025 (PM) Site Scenario: 2 | Existing 2025 (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Lawson Road															
1	L2	All MCs	13	0.0	13	0.0	0.519	14.8	LOS B	0.9	7.0	0.97	0.65	1.25	43.4
3	R2	All MCs	24	8.7	24	8.7	0.519	46.6	LOS D	0.9	7.0	0.97	0.65	1.25	18.4
Approach			37	5.7	37	5.7	0.519	35.7	LOS C	0.9	7.0	0.97	0.65	1.25	30.7
East: Elizabeth Drive (140m)															
4	L2	All MCs	16	46.7	16	46.7	0.016	6.7	LOS A	0.0	0.0	0.00	0.61	0.00	39.0
5	T1	All MCs	597	9.3	597	9.3	0.353	0.3	LOS A	0.0	0.0	0.00	0.01	0.00	78.9
Approach			613	10.3	613	10.3	0.353	0.5	NA	0.0	0.0	0.00	0.02	0.00	78.1
West: Elizabeth Drive															
11	T1	All MCs	675	10.8	675	10.8	0.404	0.3	LOS A	0.0	0.0	0.00	0.01	0.00	78.8
12	R2	All MCs	4	0.0	4	0.0	0.006	10.4	LOS A	0.0	0.2	0.56	0.69	0.56	58.5
Approach			679	10.7	679	10.7	0.404	0.3	NA	0.0	0.2	0.00	0.02	0.00	78.6
All Vehicles			1328	10.4	1328	10.4	0.519	1.4	NA	0.9	7.0	0.03	0.04	0.04	76.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.



**Project Maverick – Internal
Works SSD 97688711
Options Testing Report**

225 – 245 Martin Road, Bradfield

—
P2167C





Document control

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04	01 May 2026	Issue IV	M. Khodadadifard	M. Khodadadifard	M. Khodadadifard

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Executive Summary

This Options Testing Report (OTR) has been prepared to support the State Significant Development Application (SSDA) for the proposed industrial development at 225–245 Martin Road, Bradfield. The assessment has been undertaken using the TfNSW-approved modelling methodology and SIDRA network models to evaluate existing, interim and ultimate scenarios.

The key project details and findings are summarised below:

- Goodman is proposing the delivery of 14 warehouse buildings with a total Gross Lettable Area (GLA) of 597,610m², together with an active open space and amenities precinct (including a café).
- The development is proposed to be operational from December 2029.
- The development is not a staged DA. Full development traffic has been assessed for the relevant project scenarios.
- Subject to separate approvals, the anticipated timing for key off-site infrastructure is as follows:
 - Martin Road / Elizabeth Drive intersection – to be delivered by TfNSW by December 2029.
 - Upgrades to Martin Road, East West Road and Lawson Road – delivered by Liverpool City Council (subject to on-going discussions with Liverpool City Council).
 - Commencement anticipated by June 2028 with completion in December 2029.
- As a result of the above, the external road infrastructure is expected to be in place by December 2029 and is capable of supporting the full masterplanned development in its operational phase.
- Traffic modelling confirms that, subject to delivery of the interim and ultimate road network upgrades envisaged by the Aerotropolis Precinct Plan, the surrounding network can accommodate the development traffic without material impacts.

Overall, the proposed development is considered supportable from a traffic modelling perspective, with the identified road upgrades providing sufficient capacity for both operational and construction scenarios.

1 Introduction

1.1 Background

This Options Testing Report (OTR) has been prepared by Ason Group (Ason) to address the site-specific Secretary's Environmental Assessment Requirements (SEARs) received in respect of the proposed State Significant Development Application (SSDA) No. 97688711. The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (Owner). The development is located at 225 – 245 Martin Road, Bradfield, 2556 (the Site).

The SSDA seeks approval for the construction, fit-out (including office and warehouse racking) and operation of 14 warehouse buildings, Active Open Space & amenities precinct (including a café) and internal site infrastructure works. Specifically, this includes:

- **Warehouses and Distribution Buildings**
 - 24/7 use of the Warehouse and distribution use for all warehouse buildings.
 - A total developable site area of approximately 1,124,286 sqm (or 112.4 Ha), comprising construction, fit-out and operation of approximately 597,610 sqm of warehouse and office GLA space across 14 small, medium and large format warehouses, ancillary offices and onsite parking. Warehouses range between 10,000sqm to 100,000sqm with heights of either 14.6m or 16.8m (excluding rooftop plant and solar).
 - The above Warehouse and Distribution buildings will also include guardhouses, dock offices loading bays, landscaping, electric vehicle charging, solar panels and signage.
- **Active Open Space & Amenities Precinct**
 - Active open space & public amenities precinct (including a café) totalling approximately 708 sqm of GLA within the western Enterprise zone to align with Connecting with Country outcomes.
- **Internal Estate Infrastructure**
 - Construction of the following roads, and associated services infrastructure (being electricity, potable, recycled & wastewater and telecommunications network):
 - Internal estate council roads.
 - Internal estate collector roads as identified on the Precinct Plan.
 - Internal estate retaining walls (including importation of engineered fill for backfill of walls)
 - Corridor reservation, design and partial construction of the following primary arterial roads located within the site:
 - Corridor reservation for the Eastern Ring Road (ERR) between the northern site boundary and southern site boundary
 - Corridor reservation, design and construction (50%) of 'H-Road' being the east-west connection between the proposed ERR intersection and eastern collector road intersection within the site. Reservation of the remaining 'H-Road' corridor to the East of the proposed Eastern collector road.
 - Reservation of the remaining 'H-Road' arterial road corridor to the east of the proposed eastern collector road (N.B. this corridor will ultimately form part of a future arterial regional road connection between Devonshire Road and the ERR identified in Schedule 3 – List of Infrastructure in the Aerotropolis Special Infrastructure Contribution)
 - Regional stormwater and drainage infrastructure (on behalf of Sydney Water) identified within the ENZ land. This will include:

- Stormwater Basins per the Sydney Water Integrated Stormwater Management Scheme
- Sediment Basin
- Bio retention Basin
- Wetland Basin
- Pond
- Trunk Drainage channels as identified per the Integrated Stormwater Management Scheme

Other

- Landscaping across the Site in accordance with Precinct Plan, Connecting with Country and airport safeguarding requirements.
- Vegetation Management Plan (VMP).
- 3 x 12m Estate Identification Pylon Signs on Lots 6, 7 and 8 (excludes individual Warehouse wayfinding signage).
- Public art within the western active open space & amenity precinct.
- Subdivision of the estate.

1.2 Related Applications / Activities

1.2.1 External Lead-in Infrastructure

Part 5 Activity – External Works Lead in Roads and Services

The Applicant is proposing access to the Site via the following route which will be upgraded to be in accordance with the Precinct Plan.

- **Part 1 - Martin Road / Elizabeth Drive intersection upgrades**
 - It is expected that these works will be undertaken by Transport for New South Wales (TfNSW) via an amendment to the existing Part 5 Activity Approval issued by TfNSW for the Elizabeth Drive Upgrade.
 - It is understood that TfNSW will undertake these works with a target completion date of December 2029 (being prior to target date of operations for the first warehouse building at the site);
- **Part 2-4 - Martin Road / East West Collector Road / Lawson Road Upgrades**
 - Further to Part 1, access to the site is proposed to be constructed concurrently as follows:
 - Part 2 – access from the Martin Road / Elizabeth Drive intersection will continue down Martin Road and join the future east / west Collector road identified within the Precinct Plan through Lot 36 DP 3050.
 - The portion of road between the Elizabeth Drive intersection and future east / west collector road will be upgraded with a temporary access strategy to be agreed with Council consistent with Part 3.2, Requirement DS5 of the Precinct Plan.
 - Part 3 – The east / west collector road through Lot 36 DP 3050 will be delivered in ultimate form to connect Martin Road with Lawson Road consistent with its designation under the Precinct Plan and relevant cross section within the Aerotropolis DCP;
 - Part 4 – From the east / west collector road connection on Lawson Road, the portion of Lawson Road south through to the Site will be upgraded in ultimate form consistent with its designation under the Precinct Plan and relevant cross section within the Aerotropolis DCP.

- Goodman have discussed the approach outlined within Parts 2-4 with Liverpool City Council. The anticipated completion date for these upgrades is December 2029, based on a commencement date of June 2028. These works are expected to be completed by Council prior to operation of the first warehouse building at the site.

In assessment of the Proposed Development, a critical consideration will be to confirm consistency with what was assumed by Government for the Site.

Reference should be made to the Modelling Methodology Report (MMR) previously approved by TfNSW, which documents the modelling methodology and assumptions, and the Base Model Development Report (BMDR), which documents the base model results together with the calibration and validation process:

- Ason Group, Project Maverick – 225 – 245 Martin Road, Bradfield, Modelling Methodology Report (MMR), Ref: P2167Cr04v02, 14 October 2025.
- Ason Group, Project Maverick – 225 – 245 Martin Road, Bradfield, Base Model Development Report (BMDR), Ref: P2167Cr09v03, 01 May 2026.

It is noted that the modelling methodology and assumptions adopted in this assessment are based on those approved by TfNSW in the MMR.

1.3 Options Testing Report Objective

The purpose of this OTR is to document the inputs, assumptions and methodology used to develop the future and project case models for the traffic assessment.

The key objective of the modelling study is to assess the traffic impacts on local area network of the Site under future base and project conditions.

1.4 Scope of Work

The scope of the option testing studies is to Develop SIDRA network models, based on the calibrated and validated base model, to assess different scenarios for the future base and project cases.

1.5 Study Area

The figure below shows the Study Area within the context of the future road network envisaged by the Precinct Plan.

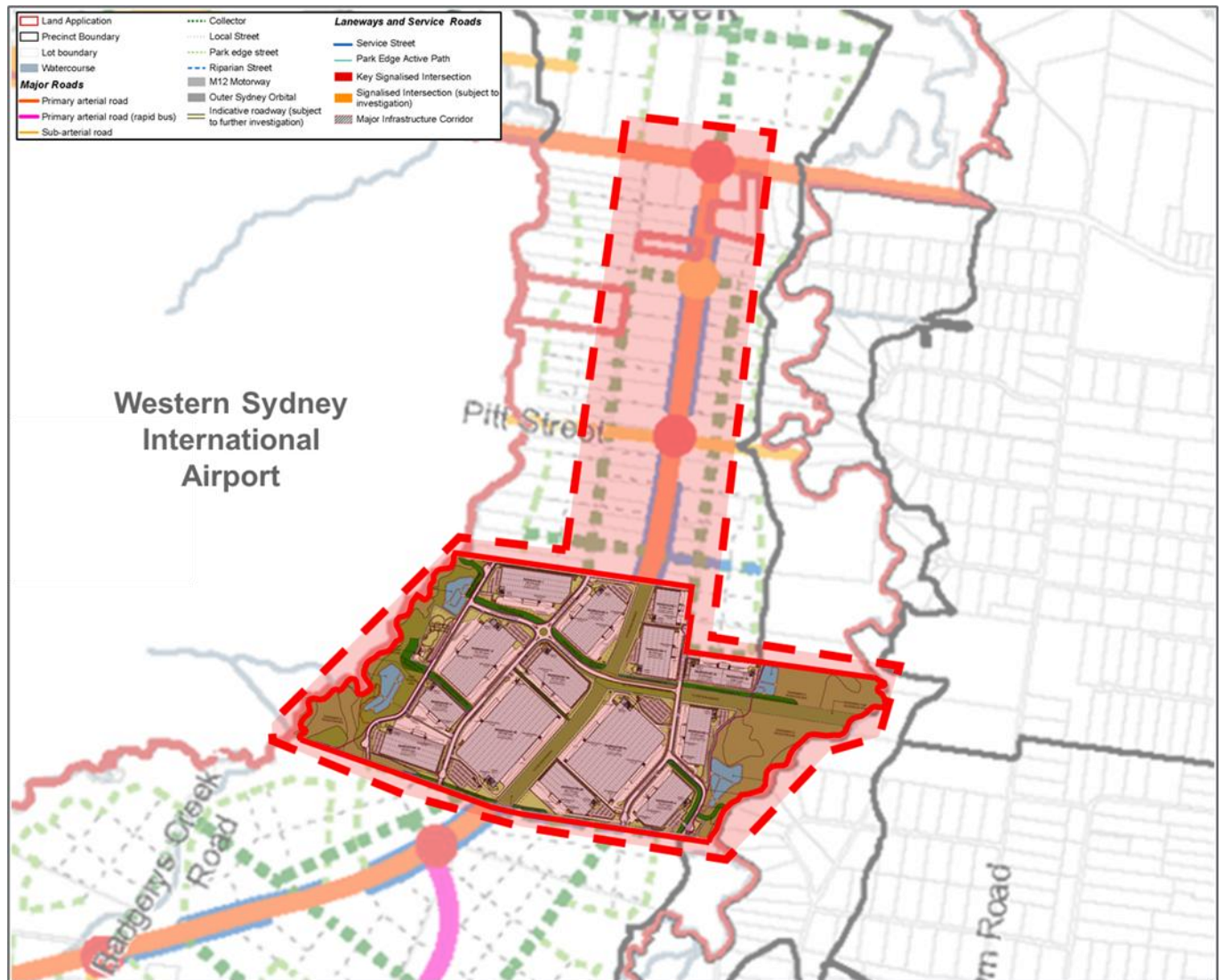


Figure 1: Study Area in Context of Aerotropolis Precinct

1.6 Report Outline

A summary of the report sections has been provided below.

- **Section 1. Introduction:** Brief summary and background of the project.
- **Section 2. Model assumptions:** Modelling methodology and assumptions.
- **Section 3. Demand analysis:** Development yields and staging, trip generation rates, trip distribution assumptions, and development trip generation.
- **Section 4 - Model Scenarios:** Upgrade options and the modelled scenarios.
- **Section 5. Modelling outcomes:** Summary of modelling outputs and results.
- **Section 6. Operational assessment comparison:** Comparison between the future base case and ultimate project case modelling outputs.
- **Section 7. Conclusion and recommendation:** Summary of key findings and recommendations for the proposed development.

2 Assumptions List

2.1 Modelling Platform

SIDRA Intersection version 10.0.9.250 was used to develop the base model scenarios. Key outputs from SIDRA include:

- **Level of Service (LoS)** – The LoS is a qualitative measure used to relate the quality of motor vehicle traffic service. LoS is used to analyse roadways and intersections by categorising traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion.
- **Average Vehicle Delay (AVD)** – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service. For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- **Degree of Saturation (DoS)** – The DoS of an intersection (typically under traffic signal control) or a link measures the demand relative to the total capacity. A DoS value of 100% means that demand and capacity are equal and no further traffic is able to progress through the junction.

Commonly used measures of intersection performance, as defined by the TfNSW, are vehicle delay and LoS. The table below shows the criteria that SIDRA adopts in assessing the LoS.

It is common practice to adopt LoS D as the acceptable threshold. When intersection performance declines to LoS E or lower, investigations should be undertaken to determine whether appropriate mitigation is feasible.

Table 1: SIDRA LoS Criteria

LoS	Average delay per vehicle (seconds per vehicle)
A	Delay ≤ 14.5
B	14.5 < Delay ≤ 28.5
C	28.5 < Delay ≤ 42.5
D	42.5 < Delay ≤ 56.5
E	56.5 < Delay ≤ 70.5
F	70.5 < Delay

Source: TfNSW, Transport Modelling Guidelines – TS 05461 (October 2025).

2.2 Time Periods

SIDRA models have been developed for weekday AM and PM peak traffic conditions, same as the base model:

- **AM Peak:** 06:00am – 07:00am
- **PM Peak:** 4:30pm – 5:30pm

2.3 Traffic Signals

To assess the project case scenarios, the cycle time option is set to the Network User-Given Cycle Time (UGCT). This enables the optimisation of phasing within each cycle as well as the timing allocated for each phase. For the new and upgraded signals in future base, interim, and project case scenarios, a cycle time of 140 seconds has been adopted.

This is different from the base case; however, it is noted that future reference and project case scenarios contemplate an upgraded 4-leg intersection which is different from the existing T-junction configuration.

2.4 Demand Analysis

2.4.1 Development Yields

The proposed development is planned to be operational from December 2029, at which time all external lead-in roads will be completed. The adopted development yields are summarised in **Table 2**.

Table 2: Proposal Yields

Lot	Land Use	Gross Floor Area (m ²)
Lot 1	Warehouse	15,562
	Office / Dock Office / Gatehouse	900
	<i>Total</i>	16,462
Lot 2	Warehouse	30,379
	Office / Dock Office / Gatehouse	1,600
	<i>Total</i>	31,979
Lot 3	Warehouse	20,012
	Office / Dock Office / Gatehouse	1,286
	<i>Total</i>	21,298
Lot 4	Warehouse	25,922
	Office / Dock Office / Gatehouse	1,424
	<i>Total</i>	27,346
Lot 5	Warehouse	30,873
	Office / Dock Office / Gatehouse	1,517
	<i>Total</i>	32,390
Lot 6A	Warehouse	99,453
	Office / Dock Office / Gatehouse/ Skybridge	3,596
	<i>Total</i>	103,049
Lot 6B	Warehouse	28,723
	Office / Dock Office / Gatehouse	1,600
	<i>Total</i>	30,323
Lot 7	Warehouse	38,076
	Office / Dock Office / Gatehouse	1,881
	<i>Total</i>	39,957
Lot 8	Warehouse	41,476
	Office / Dock Office / Gatehouse	2,212
	<i>Total</i>	43,688
Lot 9A	Warehouse	34,793
	Office / Dock Office / Gatehouse/ Skybridge	1,963
	<i>Total</i>	36,756
Lot 9B	Warehouse	100,556
	Office / Dock Office / Gatehouse	3,607
	<i>Total</i>	104,163
Lot 10	Warehouse	52,187
	Office / Dock Office / Gatehouse	2,987
	<i>Total</i>	55,174
Lot 11	Warehouse	19,658
	Office / Dock Office / Gatehouse	1,115
	<i>Total</i>	20,773
Lot 12	Warehouse	32,670
	Office / Dock Office / Gatehouse	1,587
	<i>Total</i>	34,257
Site Wide TOTAL:	Warehouse	570,340
	Office / Dock Office / Gatehouse	27,270
	<i>Total</i>	597,610

In addition to the above, an active open space and public amenities precinct (including a café) totalling approximately 708m² of GLA is proposed. The facility will be located within the Western Enterprise Zone and will primarily be used by site staff therefore; it is not expected to generate any material trips from outside the site.

2.4.2 Trip Generation Rates

The trip profile for development traffic has been informed by surveys undertaken at a number of comparable industrial developments across Sydney. This is consistent with the TfNSW GTIA, which recommends the use of benchmark analysis for large estates, and is consistent with the Transport & Accessibility Impact Assessment (TAIA), as outlined below:

- AM Network Peak: 0.153 vehicle trips per 100m²
- PM Network Peak: 0.130 vehicle trips per 100m²

With consideration for the above, the trip generation for the proposed development has been summarised in **Table 3**.

Table 3: Network Peak Trip Generation

GLA (m ²)	AM Network Peak	PM Network Peak
597,610 + 708	916	777

2.4.3 Vehicle Class Split

Reference has also been made to Table 5.22 in the GTIA for the relevant vehicle class assumptions, as summarised in **Table 4**.

Table 4: Vehicle Class Splits (GTIA)

Period	Light Vehicles	Heavy Vehicles			
		Total	Rigid	Articulated	B-double
AM	68%	32%	21%	10%	2%
PM	70%	30%	21%	7%	2%

2.4.4 IN/OUT Split

Reference has also been made to the GTIA for the relevant in/out split assumptions, as summarised in **Table 5**.

Table 5: IN/OUT Splits (GTIA)

Period	In	Out
AM	70%	30%
PM	34%	66%

2.4.5 Trip Distribution

Directional split of development vehicle trips has been derived from the 2036 SDTA Cordon Matrix data. The trip distribution that has been adopted for the development trips is presented in **Figure 2**.



Figure 2: Development Trip Distribution

3 Future Year Demand

3.1 Modelling Framework

The modelling framework and assumptions adopted for the calculation of future year demand are illustrated in the figure below. The following subsections further describe the methodology and assumptions.

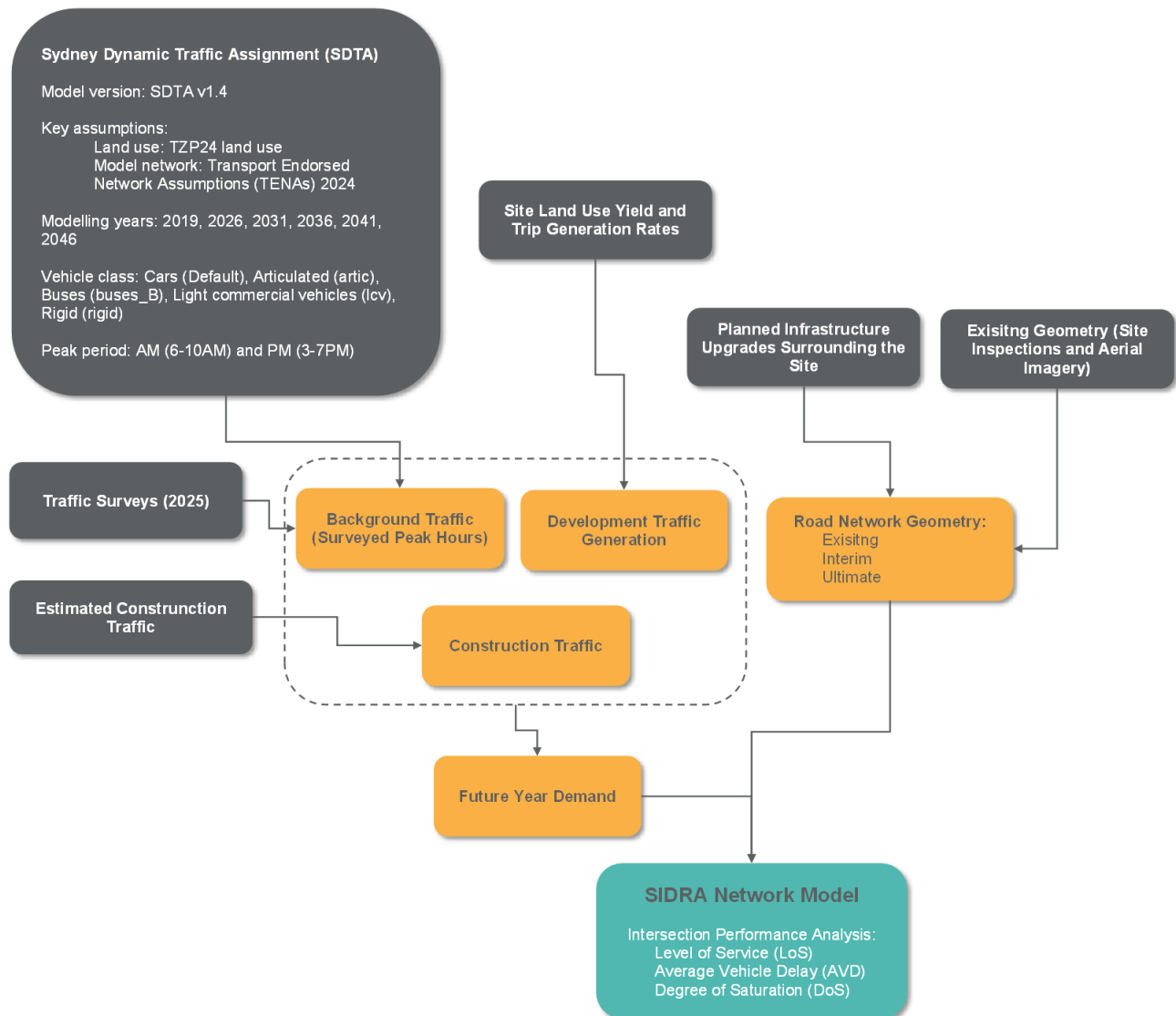


Figure 3: Modelling Framework

3.2 Future Year Background Traffic

Future year background growth has been estimated with reference to TfNSW's Sydney Dynamic Traffic Assignment (SDTA) model. SDTA data was received for the years 2019, 2026, 2031, 2036, 2041 and 2046.

A review of the SDTA suggested that the 2031 projected traffic volumes are lower than the traffic volumes recorded in the 2025 survey. This is likely due to the delivery of the M12 motorway in 2026 which is expected to provide an alternative east-west road link and reducing demands on Elizabeth Drive.

As such, by way of a more conservative assessment, the traffic volumes in the 2025 surveys have been adopted for both the 2029 and 2031 horizon years. This approach would provide a stronger traffic modelling framework, with outcomes that are considered more reliable.

Additionally, the outputs of the SDTA have been used to calculate the quantum growth between 2026 to 2036. This calculated growth has been applied to the existing surveyed traffic volumes on a “by approach” basis to estimate the background traffic volumes for the future 2036 scenarios.

It is noted that the 2036 SDTA model already includes development-related trips. However, the traffic generation assumed for the Site within the 2036 SDTA is lower than the development traffic generation derived from the benchmarking method. The benchmarking method is more site-specific and therefore considered more preferable for the assessment of development trips. The following zone IDs are assumed to represent development trips in the received 2036 SDTA Cordon Matrix:

- 361200002
- 361200003
- 361200014
- 361200016
- 361200020
- 360800001
- 360800007
- 360800017

Accordingly, to minimise additional assumptions and to assess the network based on an approved baseline, the demand from the 2036 SDTA model has been adopted for the 2036 future base case scenario. For the 2036 project case scenario, the difference between the benchmarking method development trip generation and the trips already included in the 2036 SDTA has been added to the SDTA demand to represent the full project impact.

The table below summarises the development trips adopted for each 2036 scenario.

Table 6: Development trips in 2036 scenarios

Period	2036 Future baseline (SDTA-2036)	2036 Future project (GTIA)
AM	442	915
PM	523	777

3.3 Construction Traffic Generation

Construction activities shall occur alongside operational movements after first opening. Construction activity is expected to increase over time and then recede towards the end of construction. Peak construction traffic is expected to occur in 2029 with the following forecast flows (Peak Construction Volumes):

- AM peak: 470 vehicle trips/hour
- PM peak: 366 vehicle trips/hour

It is noted that these peak construction traffic volumes are below the proposed peak operational traffic volumes.

For sensitivity testing, the maximum construction traffic volumes, which can be accommodated by the existing road network, have also been assessed. **Section 6** shows that the following volumes can be managed by the existing network in the absence of operational traffic.

- AM peak: 558 vehicle trips/hour
- PM peak: 443 vehicle trips/hour

It should be noted that this is based on conservative baseline flows and that short-term volumes after opening of the M12 are projected to be lower.

3.4 Scenario Traffic Demands

The traffic demands for each scenario are shown graphically as network diagrams in **Appendix A**.

4 Option Testing

Various scenarios have been modelled for the relevant horizon years. A summary of the modelled scenarios has been provided in **Table 7**.

Table 7: Modelling Scenarios

#	Scenario	Year	Traffic Inputs		Road Network Geometry
			Background	Development	
01	Existing Base Case	2025	Survey 2025	-	Existing (refer Figure 7)
02	Initial Construction Thresholds ³ (Pre-Upgrade)	2029	Survey 2025	Sensitivity - Max Construction Volumes ³	Existing (refer Figure 7)
03	Interim Project Case (Post-Upgrade)	2029	Survey 2025	202 vehicle trips + Peak Construction Volumes	Interim (refer Figure 8)
04	Interim Project Case	2031	Survey 2025	Full Development (no construction)	Interim (refer Figure 8)
05	Future Base Case ²	2036	Survey 2025 + SDTA Quantum Growth	-	Ultimate (refer Figure 9)
06	Future Project Case	2036	Survey 2025 + SDTA Quantum Growth	Full Development (no construction)	Ultimate (refer Figure 9 & Figure 10)

Note: 1) Growth from the SDTA is assumed to incorporate anticipated demand from cumulative developments as appropriate.

2) Includes the development-related trips in 2036 SDTA.

3) Sensitivity analysis to CTMP thresholds by determining maximum site traffic whilst maintaining
 - LoS D or better intersection performance (average intersection), and
 - 95th Percentile queues contained within storage bays.

The existing base case scenario includes the following intersections which have also been presented in **Figure 4**:

1. Elizabeth Drive / Martin Road
2. Elizabeth Drive / Cleanaway Site Access
3. Elizabeth Drive / Lawson Road

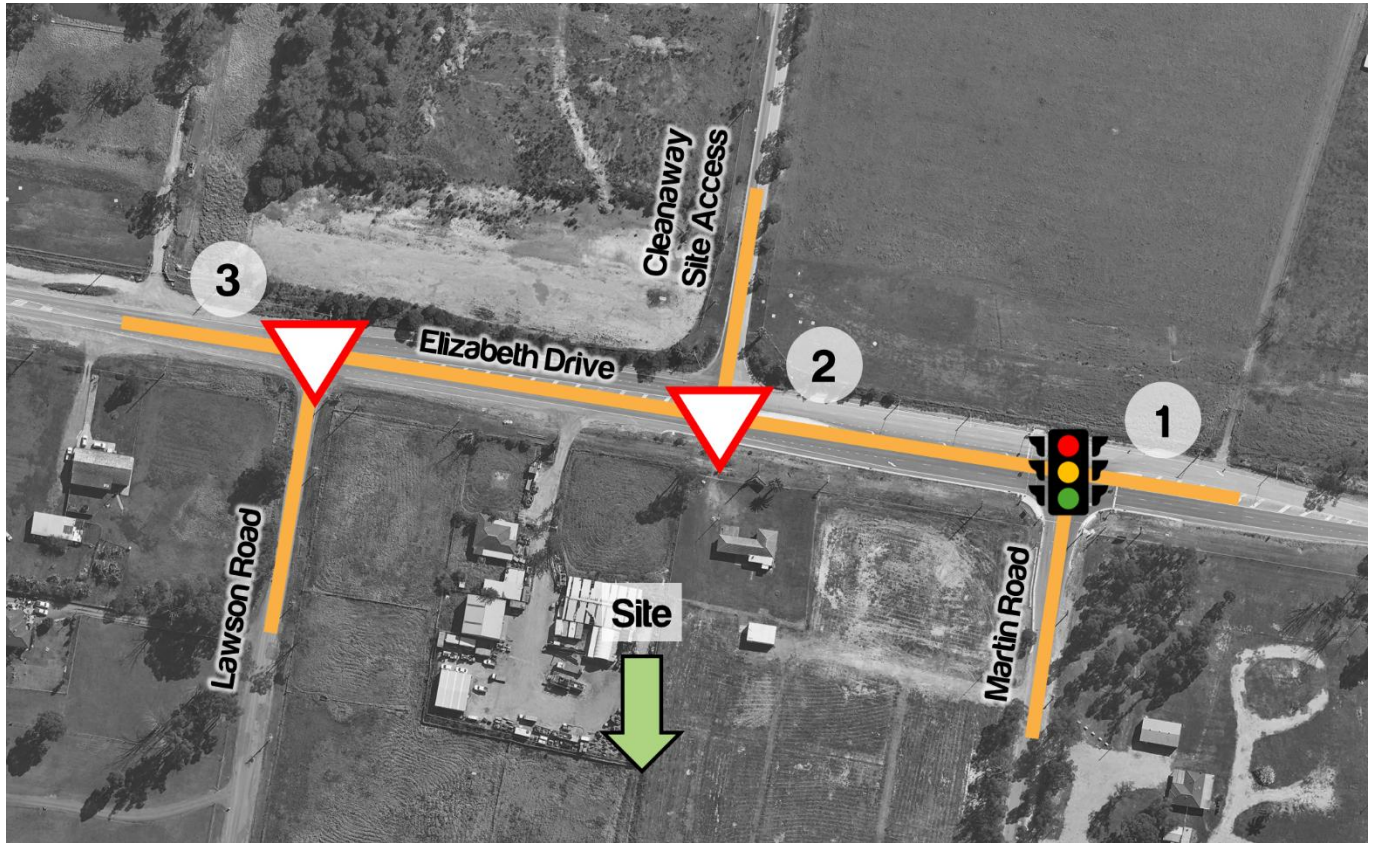


Figure 4: Existing Road Network

Additionally, the following intersections are only included in the future interim and ultimate scenario:

4. Eastern Ring Road / East-west Collector Road (through Lot 36 of DP3050)
5. Lawson Road / East-west Collector Road
6. Eastern Ring Road / Pitt Street
7. Lawson Road / Pitt Street
8. Primary Arterial Road / Collector Road (eastern left-in left-out intersection)
9. Eastern Ring Road / Primary Arterial Road (centre signalised intersection)
10. Collector Road / Collector Road (western roundabout)

The interim and project case networks are shown graphically in **Figure 5** and **Figure 6**. The base map in these figures is sourced from the proposed street hierarchy plan in the Western Sydney Aerotropolis Precinct Plan.

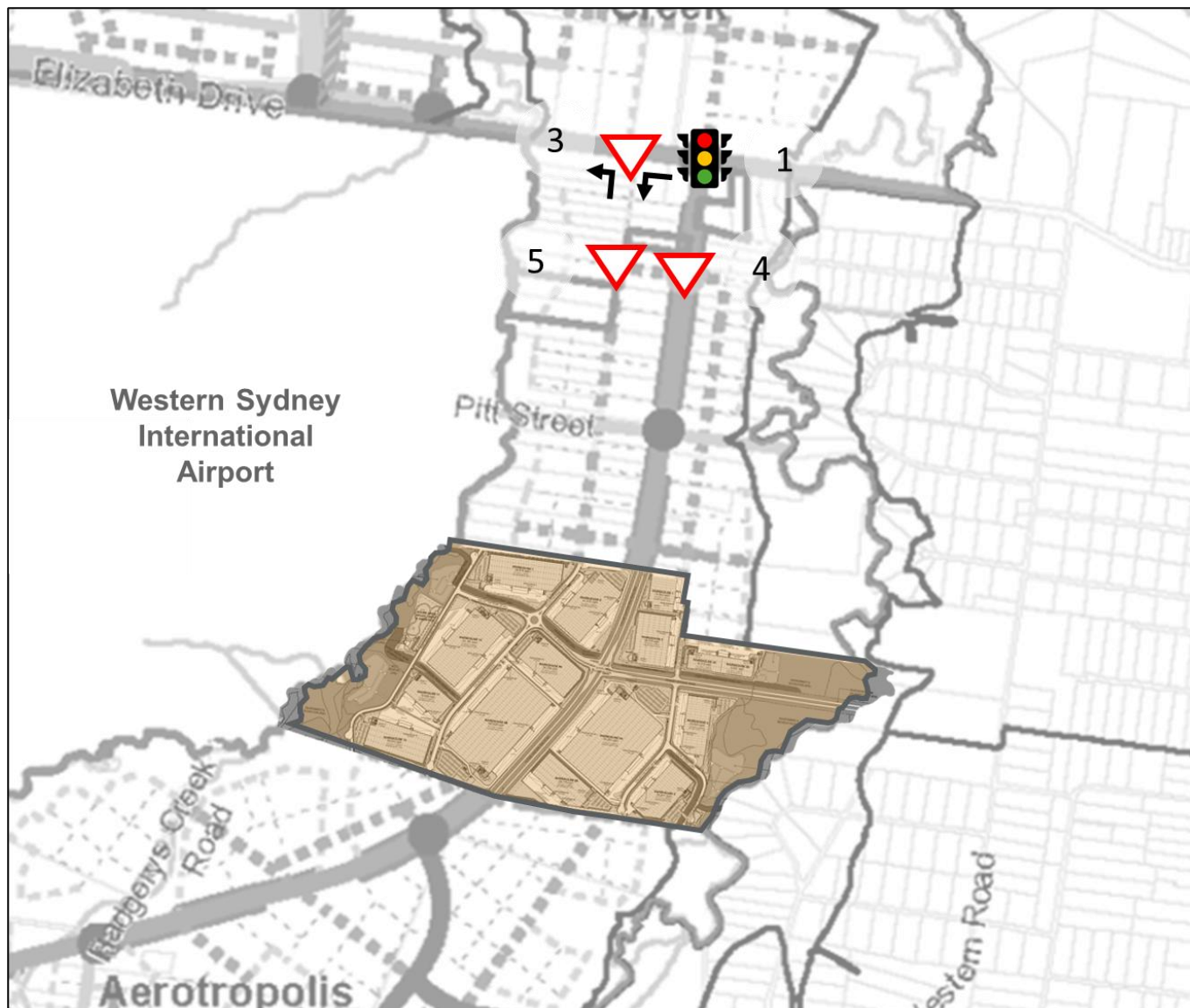


Figure 5: Interim Road Network

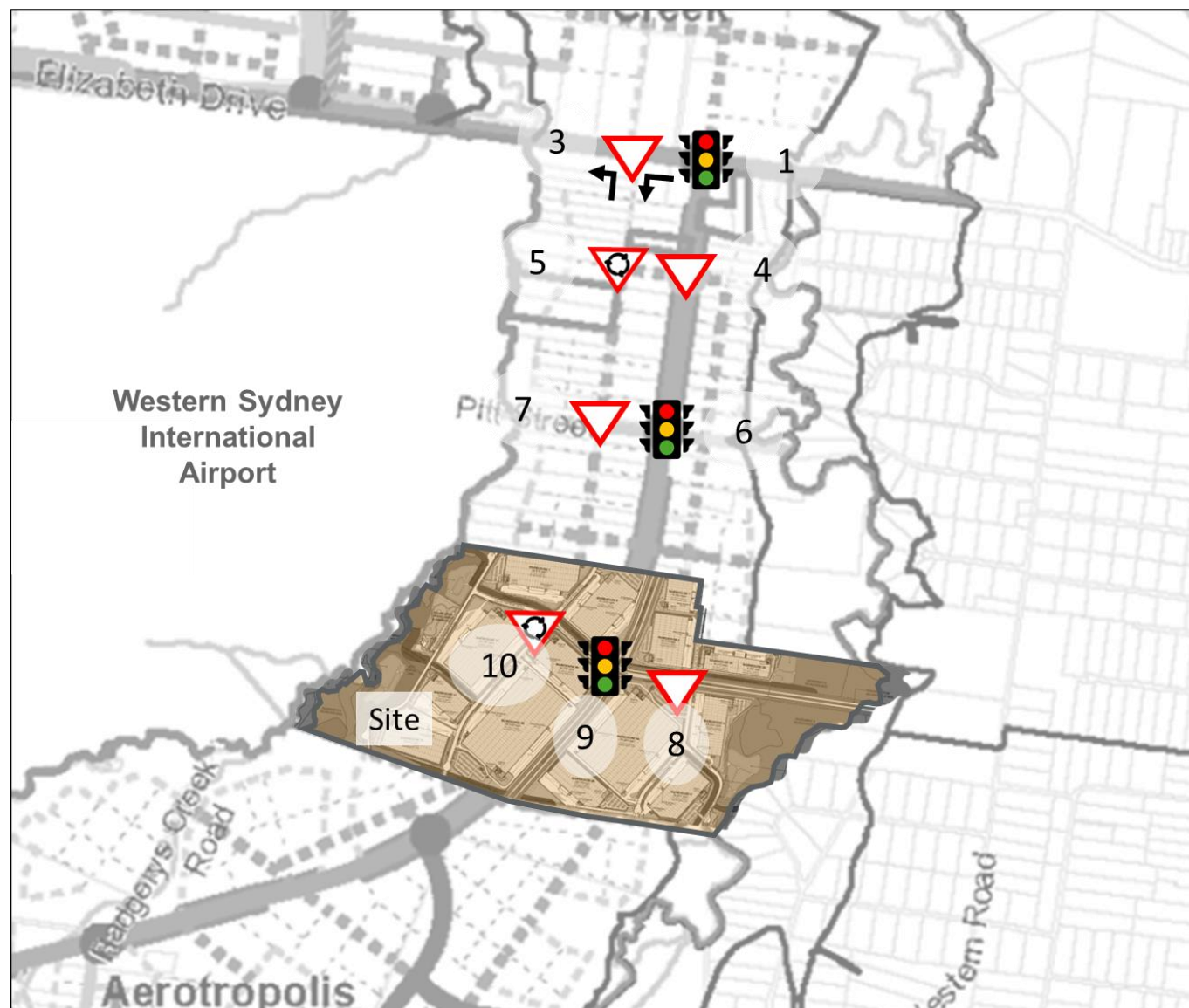


Figure 6: Ultimate Road Network

The relevant SIDRA intersection layouts for each scenario are shown in **Figure 7** to **Figure 10**.

Additionally, graphical representations of the traffic demand inputs have been provided in **Section 3.4**.

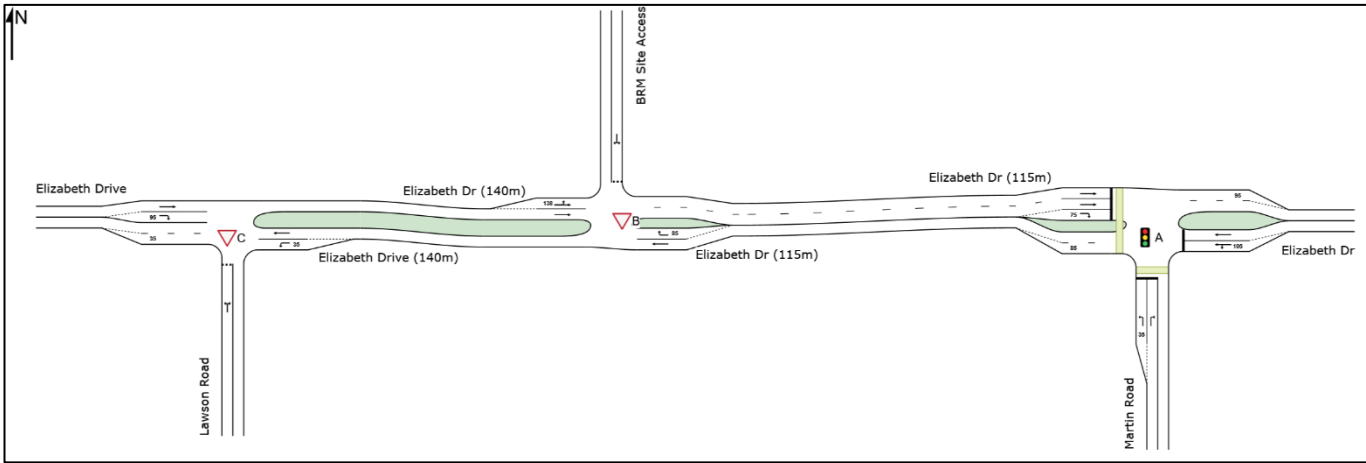


Figure 7: Existing Network Layout

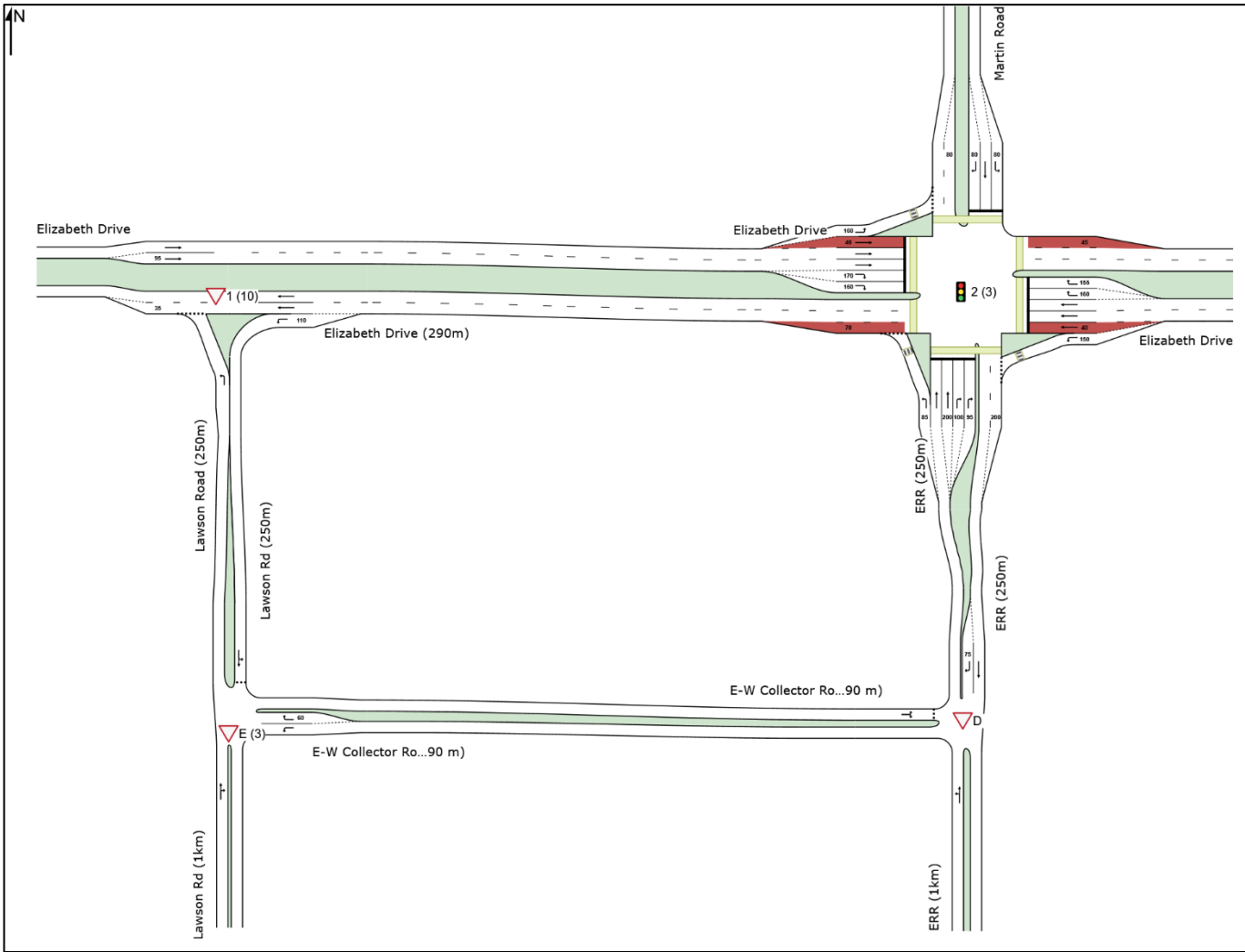


Figure 8: Interim Scenarios Network Layout

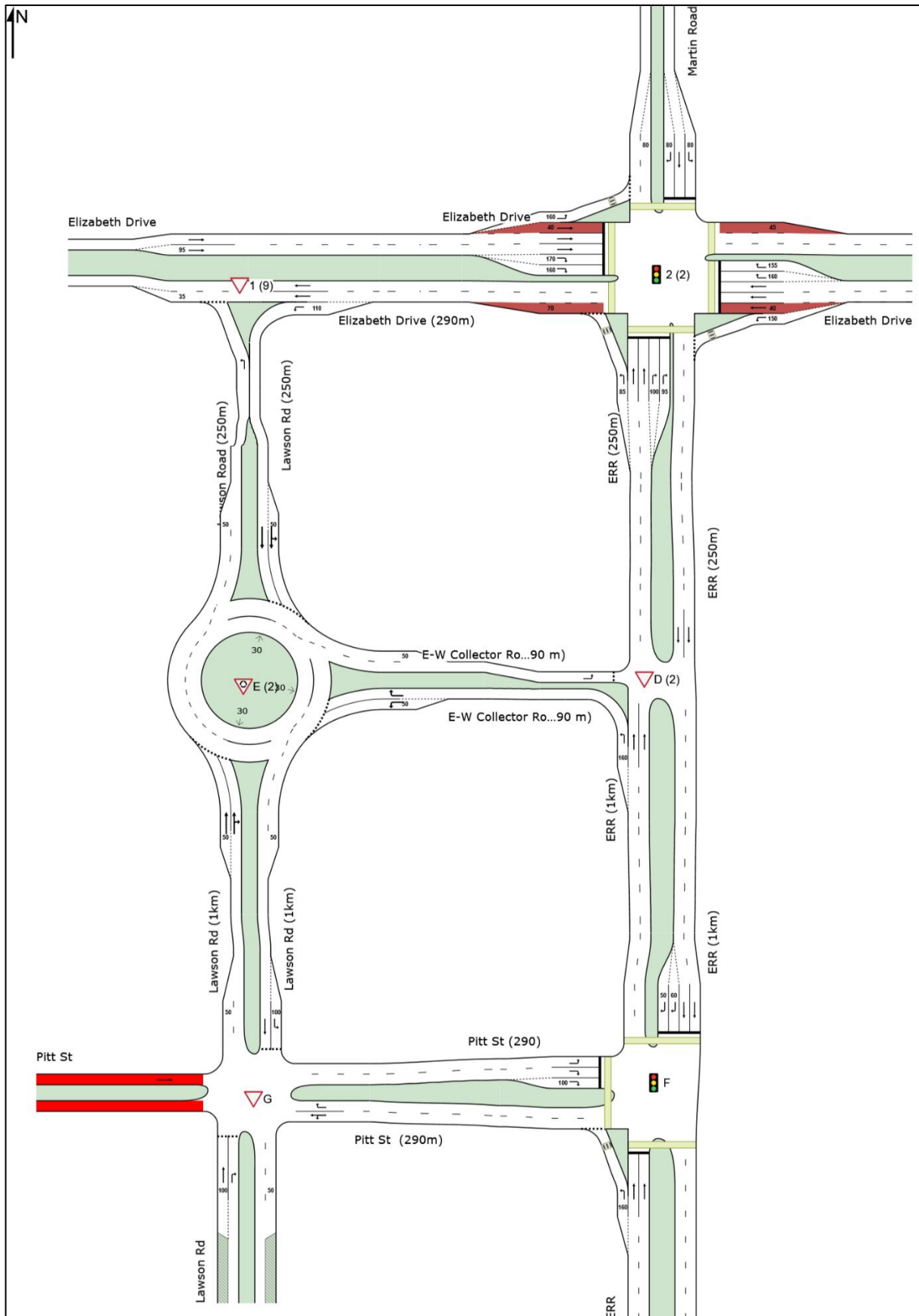


Figure 9: Ultimate Scenarios Network Layout

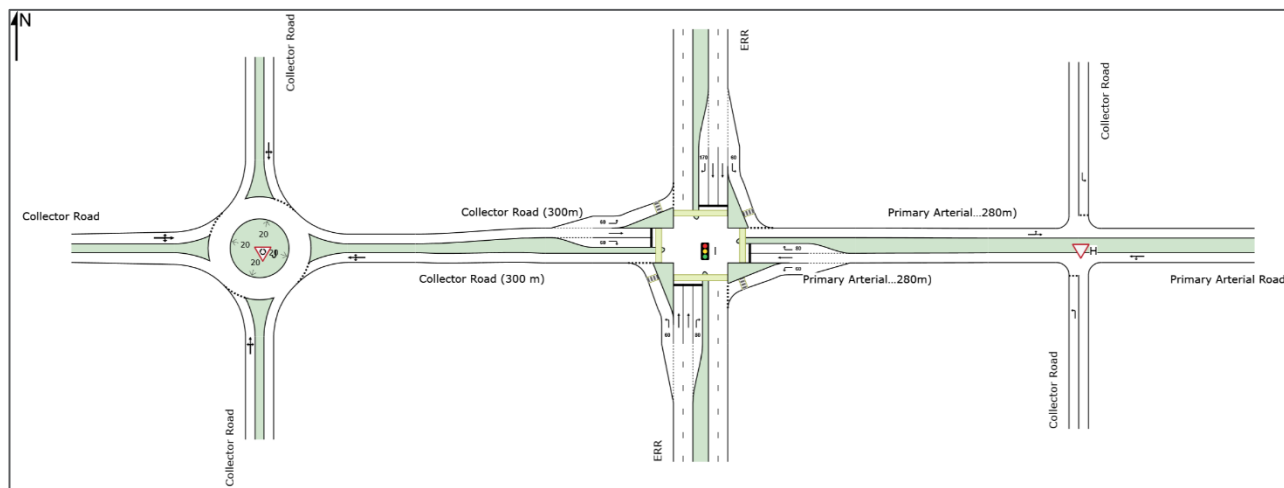


Figure 10: Ultimate Scenarios Internal Road Network Layout

Above three internal intersections are designed based on the ultimate forecast traffic volumes and intersection performance, in accordance with the following criteria:

- LoS D or better for overall intersection performance (average intersection delay);
- LoS E or better for each approach; and
- 95th percentile queues contained within the available storage bays.

5 Calibrated Existing Base Model Results

The existing peak hour intersection performance is presented in the table below. Background traffic inputs were based on the existing survey data, and the network layout has been based on existing conditions. Detailed SIDRA results for each intersection have been provided in **Appendix B**.

Table 8: Existing Base Case - 2025 Intersection Performance

ID	Intersection	Peak	DoS	Delay (s)	LoS
1	Elizabeth Drive / Martin Road	AM	0.58	11	A
		PM	0.41	9	A
2	Elizabeth Drive / Cleanaway Site Access	AM	0.55	83	F
		PM	0.36	43	D
3	Elizabeth Drive / Lawson Road	AM	0.78	78	F
		PM	0.52	47	D

The intersection of Elizabeth Drive and Martin Road would operate at an acceptable Level of Service A with a Degree of Saturation of less than 0.9.

The priority-controlled minor roads at the Cleanaway Site Access and Lawson Road intersection with Elizabeth Drive would operate at an unacceptable Level of Service F during the AM network peak period. This is due to the priority-controlled right-turn movements to Elizabeth Drive westbound and from Lawson Road to Elizabeth Drive eastbound. The development does not contribute any traffic to these movements.

6 Modelling Outcomes

The following sections provide an outline of the modelling outcomes and any comparisons against the reference base case. A summary of the outputs for all the modelled scenarios has been provided in **Table 10**.

6.1 Future Base and Project Case – 2036

The future reference case for the horizon year 2036 has been based on the ultimate road network geometry with background traffic demands being based on the 2025 survey data and 2036 quantum growth derived from the SDTA data. It is noted that all intersections achieve a level of service of C or better with generally minimal delays.

The project case assumes full operation of the development and the completion of the ultimate road network upgrades.

Development traffic demands have been previously outlined in **Section 2.4.2**.

It is noted that the proposed development traffic demands do not result in any material impacts on the surrounding road network when compared against the 2036 future reference case. Notwithstanding it is noted that the average delays on the Elizabeth Drive / Martin Road intersection increase by approximately 9 seconds and changes from a level of service (LoS) of C to D during the PM network peak; however, the intersection continues to perform satisfactorily.

6.2 Interim Project Case – 2031

A sensitivity test was conducted for the horizon year 2031. Under this scenario, it has been assumed that the proposed development is fully operational with only the interim road network upgrades delivered, as presented in **Figure 8**.

As previously mentioned, the SDTA projections suggest that the background traffic demands would decrease for the horizon year 2031. Hence by way of a more conservative assessment, the existing 2025 traffic survey data has been adopted as the background traffic for the purposes of this assessment.

It is evident that the interim road network upgrades are sufficient to accommodate the development traffic demands as all intersections are able to achieve a LoS of C or better.

6.3 Interim Construction Case (Post-Upgrades) – 2029

Sensitivity analysis was also conducted for the horizon year 2029, representing the peak combined operational and construction traffic period. Under this scenario, it has been assumed that the interim road upgrades have been delivered and the proposed development is partially operational alongside the peak construction traffic activities.

Similar to the 2031 interim case, the existing 2025 traffic survey demands have been adopted as the background traffic.

The development traffic demands for this scenario comprise of:

- Warehouse 6A/6B operational traffic:
 - AM peak: 204 vehicle trips / hour
 - PM peak: 173 vehicle trips / hour
- Maximum Construction traffic:
 - AM peak: 558 vehicle trips / hour
 - PM peak: 443 vehicle trips / hour

It should be noted that this scenario has previously been modelled to consider a higher construction traffic demand of 740 vehicle trips / hour during the AM peak and 554 vehicle trips / hour during the PM peak, and the results presented in **Table 10** relate to these higher volumes.

The modelled scenario is able to achieve a LoS C or better for all intersections. As such, it is evident that the above cumulative development traffic demands can be accommodated by the interim road network upgrades.

6.4 Interim Construction Case (Pre-Upgrades) – 2029

Capacity analysis has also been undertaken for the existing Elizabeth Drive / Martin Road signalised intersection layout to determine the maximum construction traffic demands that can be accommodated, prior to the delivery of the road network upgrades and prior to any of the developments becoming operational.

Similar to the 2031 interim case, the existing 2025 traffic survey demands have been adopted as the background traffic.

Maximum construction traffic demands that have been assessed are summarised in **Table 9**.

Table 9: Interim Construction Case (Pre-Upgrades) – 2029 Traffic Demands

Period	Total
AM	558
PM	443

The isolated assessment results in a LoS C for both the AM and PM peak periods, however it is noted that the DoS for both the AM and PM periods are at 0.90, suggesting that the intersection is nearing capacity. As such, the above traffic volumes are deemed acceptable and can be considered the threshold for construction traffic demands prior to the delivery of the interim road network upgrades shown in Figure 8.

Table 10: Intersection Performance Comparison

ID	Intersection	Period	1 – Existing 2025			2 – Pre-upgrade Construction 2029			3 – Post-upgrade Construction 2029			4 – Interim 2031			5 – Future Base 2036			6 – Project 2036		
			DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS
1	Elizabeth Drive / Martin Road	AM	0.58	11	A	0.90	24	C	0.57	32	C	0.54	33	C	0.66	29	C	0.84	31	C
		PM	0.41	9	A	0.90	30	C	0.58	41	C	0.55	38	C	0.77	35	C	0.88	44	D
2	Elizabeth Drive / Cleanaway Site Access	AM	0.55	83	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PM	0.36	43	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Elizabeth Drive / Lawson Road	AM	0.78	78	F	-	-	-	0.33	8	A	0.33	8	A	0.29	8	A	0.31	8	A
		PM	0.52	47	D	-	-	-	0.39	9	A	0.33	8	A	0.28	8	A	0.28	8	A
4	ERR / East-west Collector Road	AM	-	-	-	-	-	-	0.58	25	B	0.58	27	B	0.35	7	A	0.47	8	A
		PM	-	-	-	-	-	-	0.53	12	A	0.48	11	A	0.32	9	A	0.39	10	A
5	Lawson Road / East-west Collector Road	AM	-	-	-	-	-	-	0.55	33	C	0.58	38	C	0.04	10	A	0.04	10	A
		PM	-	-	-	-	-	-	0.53	39	C	0.46	30	C	0.06	9	A	0.06	9	A
6	ERR / Pitt Street	AM	-	-	-	-	-	-	-	-	-	-	-	-	0.48	7	A	0.64	8	A
		PM	-	-	-	-	-	-	-	-	-	-	-	-	0.58	9	A	0.69	9	A
7	Lawson Road / Pitt Street	AM	-	-	-	-	-	-	-	-	-	-	-	-	0.08	7	A	0.08	7	A
		PM	-	-	-	-	-	-	-	-	-	-	-	-	0.14	7	A	0.14	7	A
8	Primary Arterial Road / Collector Road (left-in left-out)	AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	6	A
		PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	6	A
9	Eastern Ring Road / Primary Arterial Road (signal)	AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	41	C
		PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.79	43	D
10	Collector Road / Collector Road (roundabout)	AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21	12	A
		PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	12	A

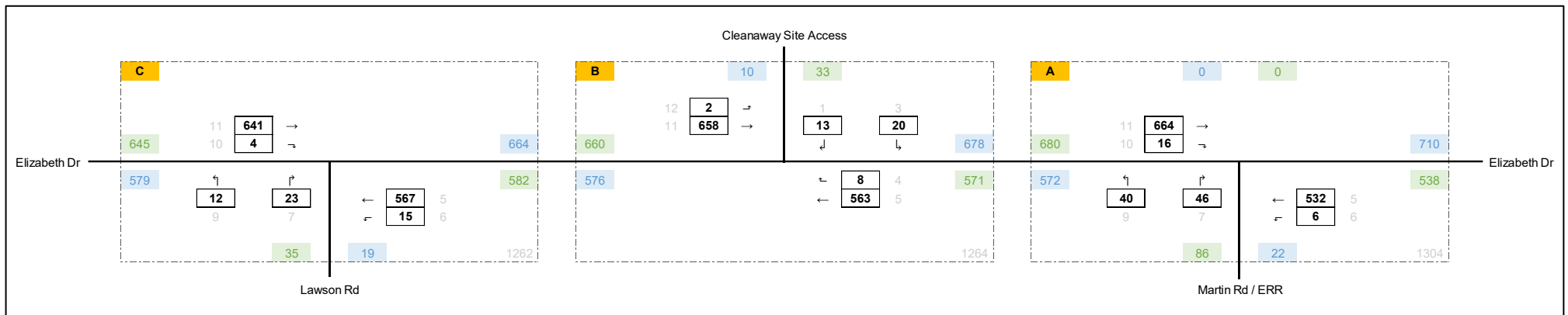
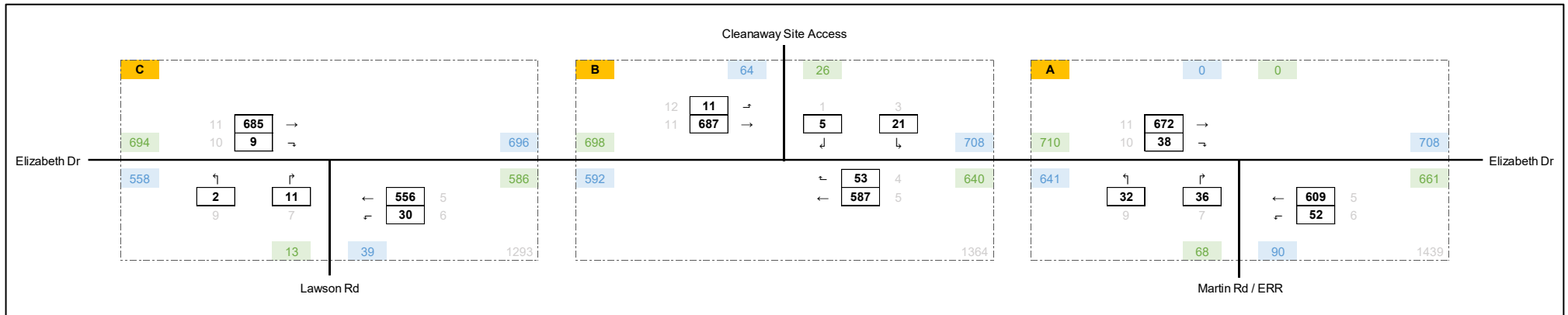
7 Conclusion and Recommendation

A comprehensive options assessment was undertaken using SIDRA network with consideration for various scenarios. Key findings include:

- The interim road network layout is able to satisfactorily accommodate traffic demands for both the 2031 Interim Project Case and 2029 Interim Construction Case (Post-Upgrade).
- Based on an isolated test for the existing Elizabeth Drive / Martin Road intersection, the current layout is able to accommodate the following maximum construction traffic volumes:
 - AM network peak: 558 vehicle trips / hour
 - PM network peak: 443 vehicle trips / hour
- The proposed development (2036 project case) does not result in any unacceptable impacts on the surrounding road network, when compared against the future 2036 base case conditions. All intersections will be Level of Service D or better during peak periods.

As such, it is concluded that the proposed development is supportable from a traffic modelling perspective.

Appendix A Network Diagrams



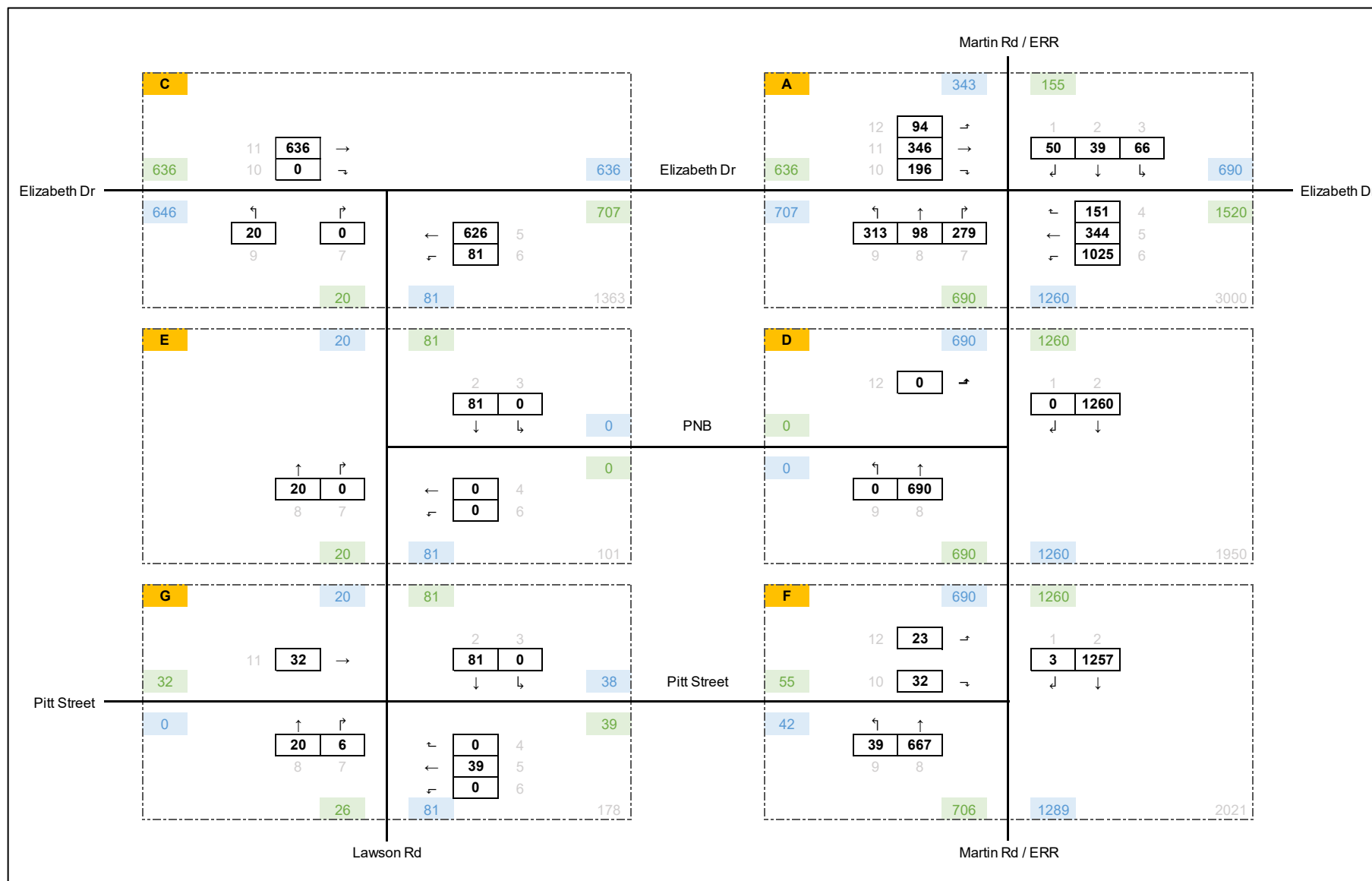


Figure 13: Future Base Case Traffic Demands – 2036 (AM)

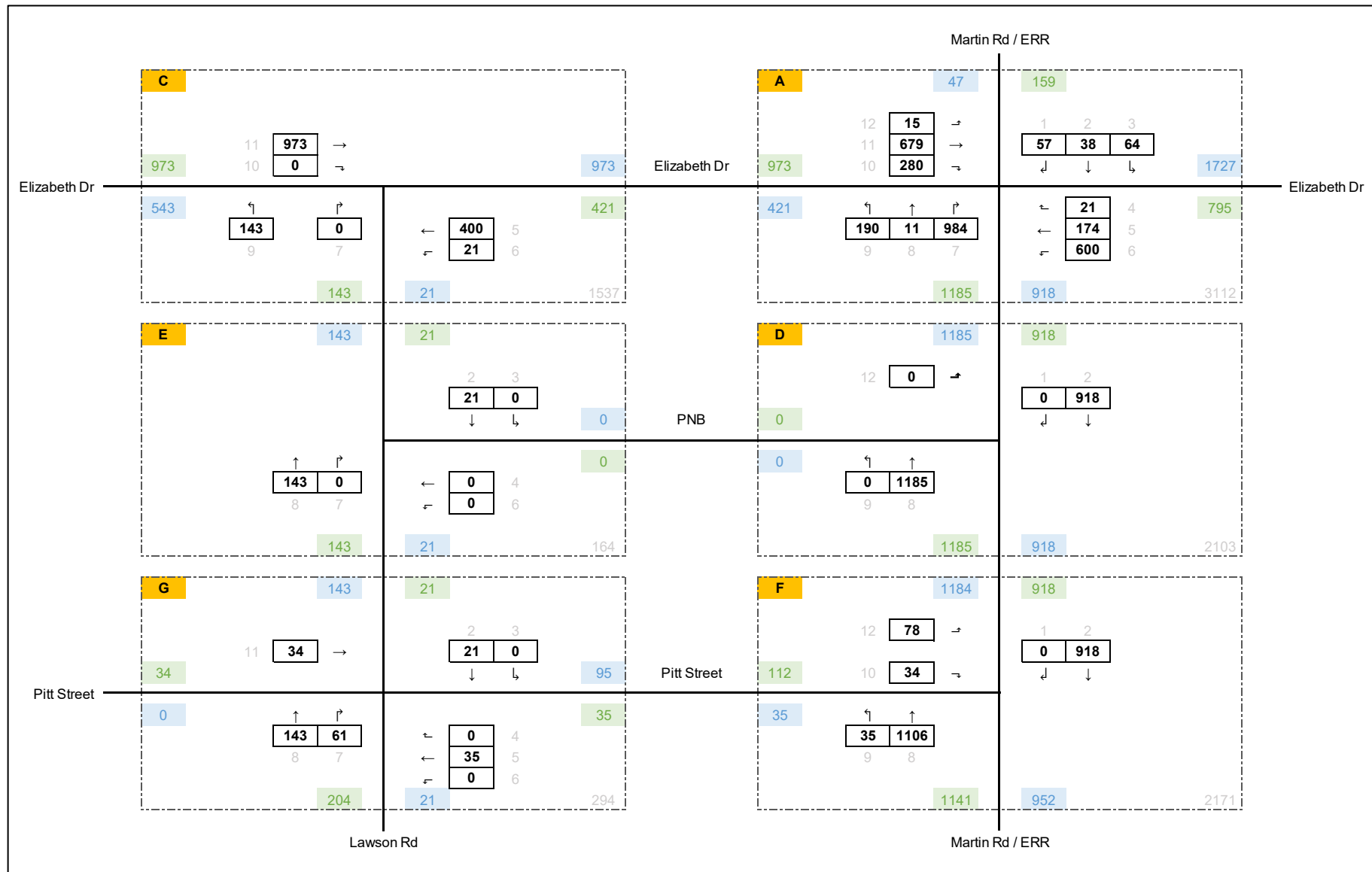


Figure 14: Future Base Case Traffic Demands – 2036 (PM)

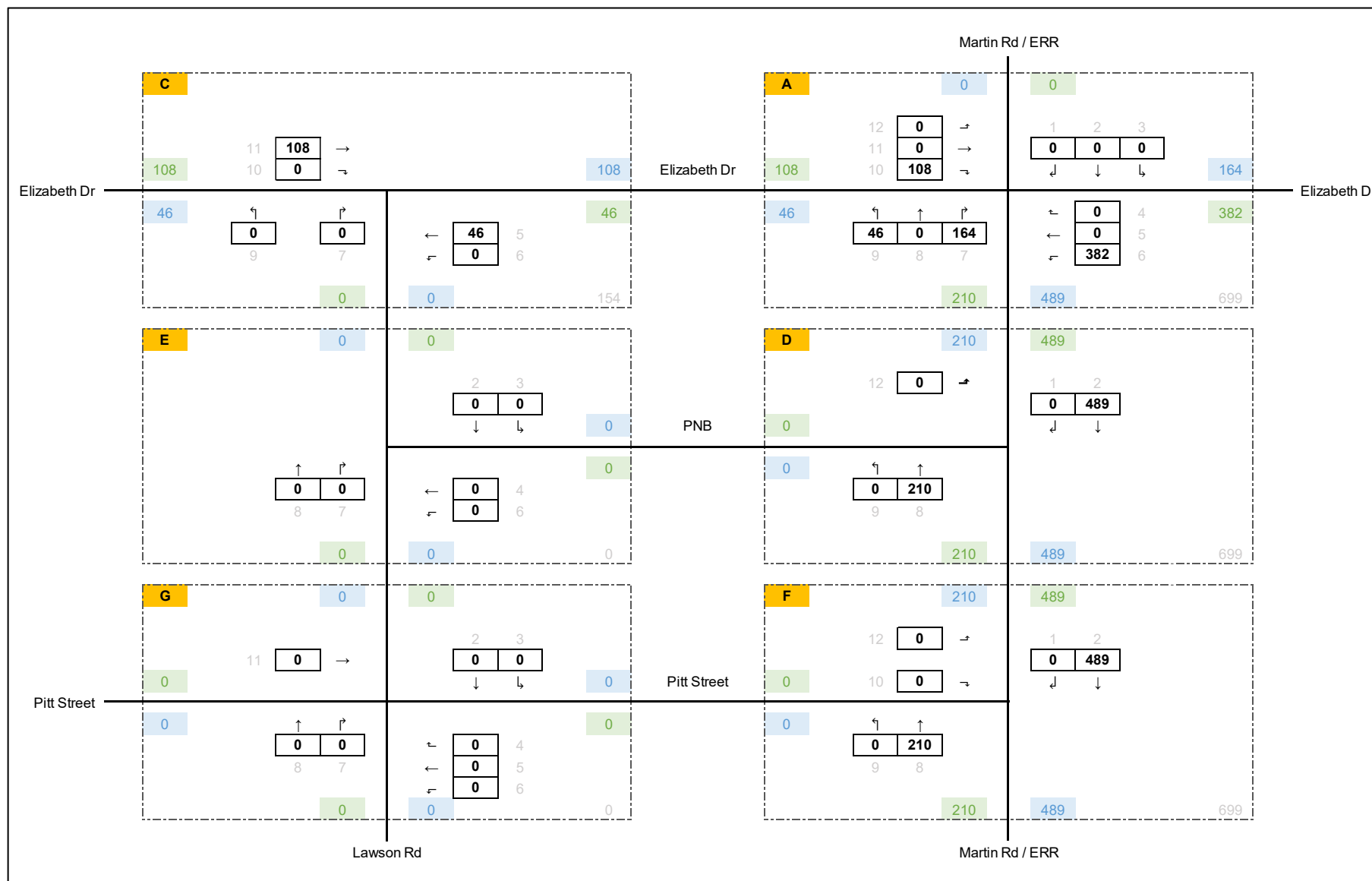


Figure 15: Ultimate Development Traffic Demands – 2036 (AM)

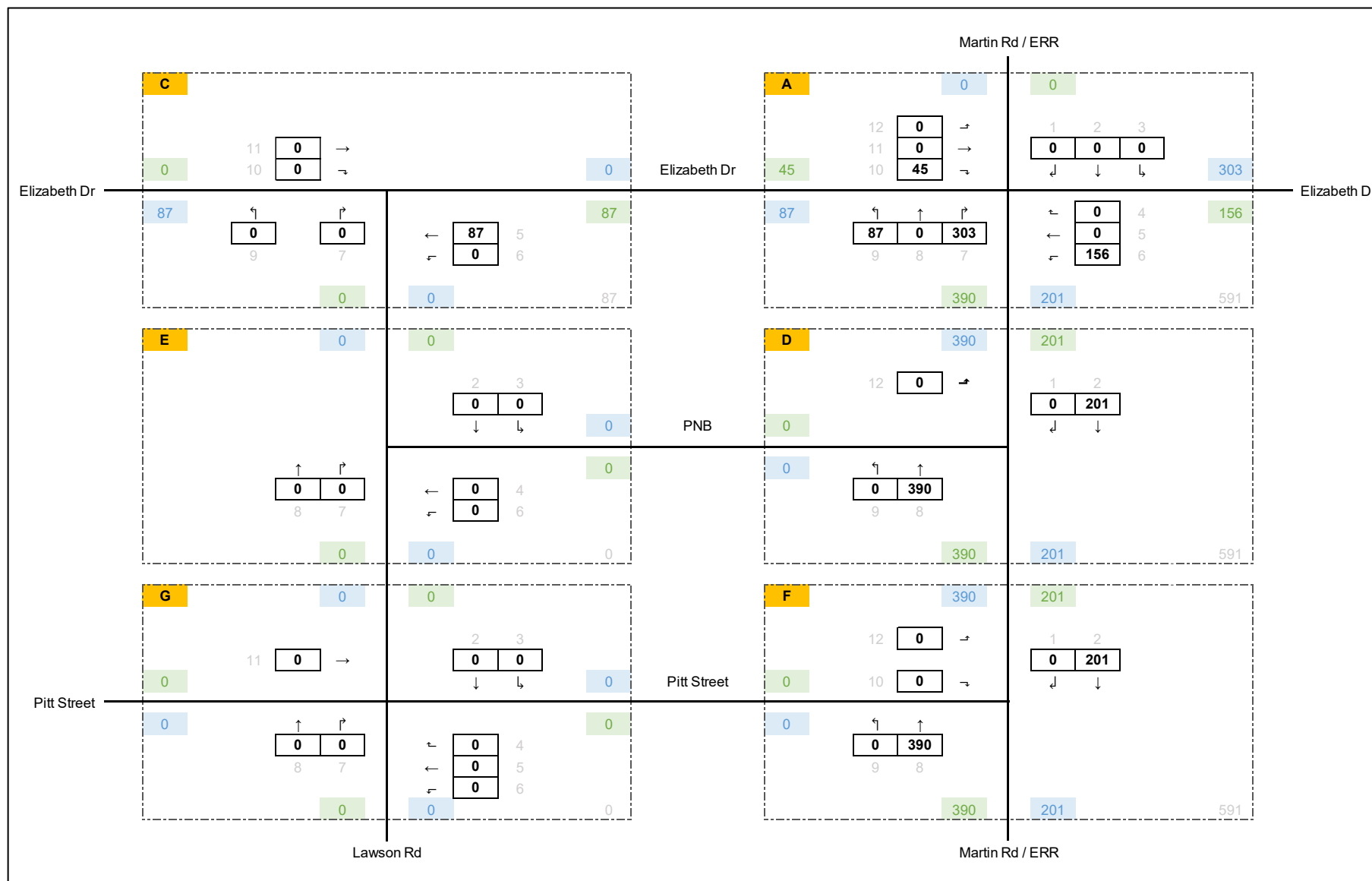


Figure 16: Ultimate Development Traffic Demands – 2036 (PM)

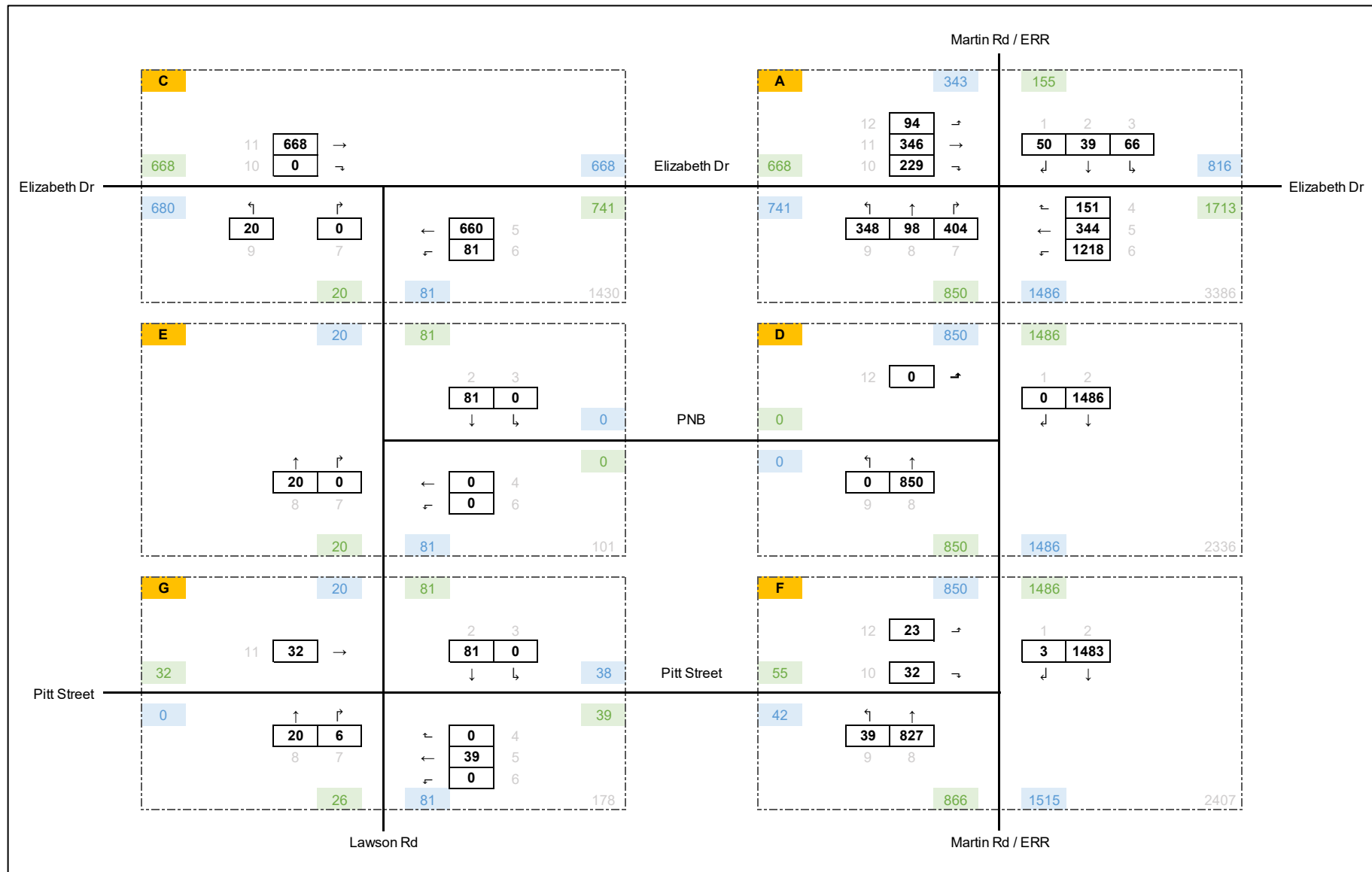


Figure 17: Project Case Traffic Demands – 2036 (AM)

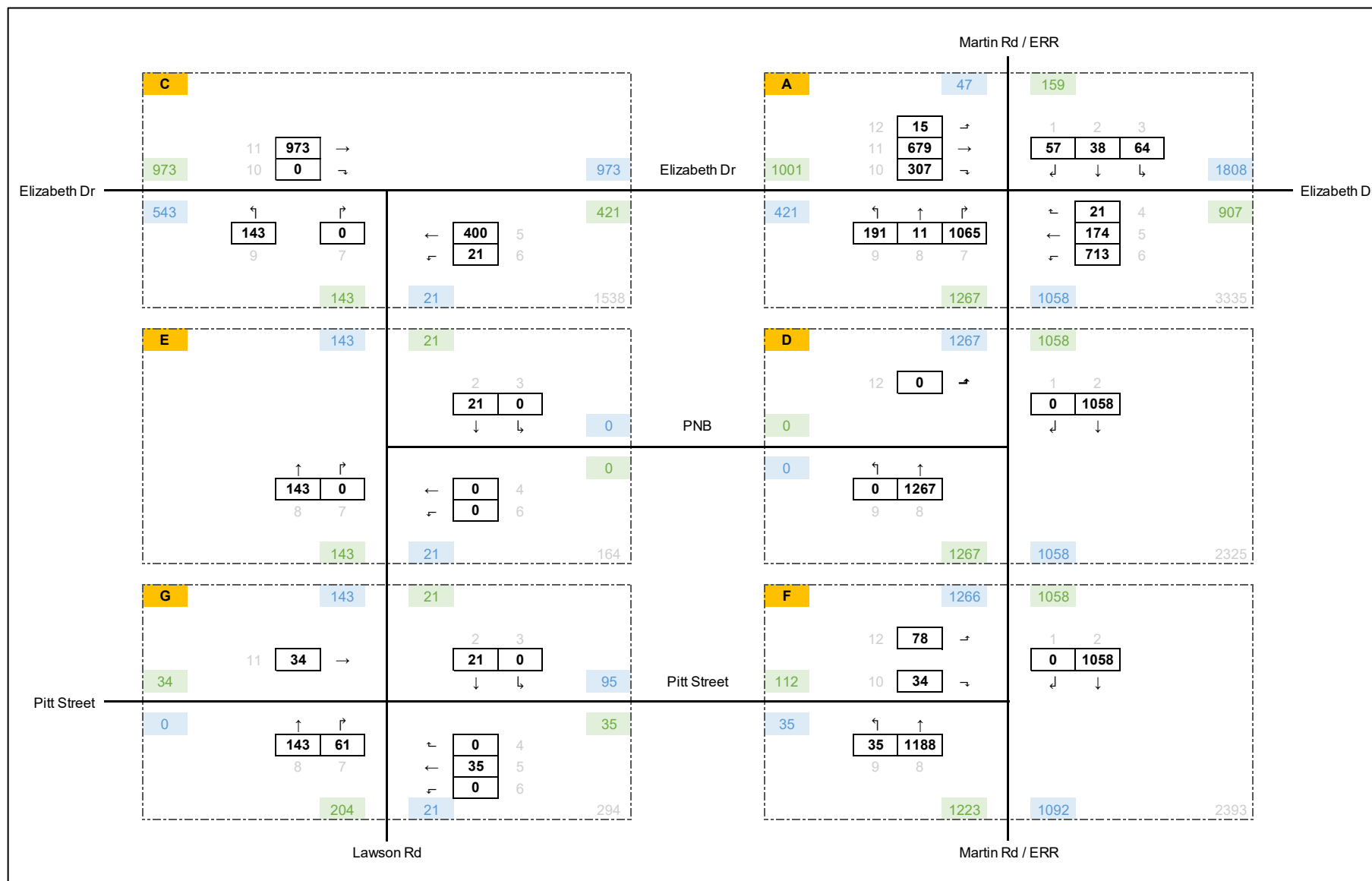


Figure 18: Project Case Traffic Demands – 2036 (PM)

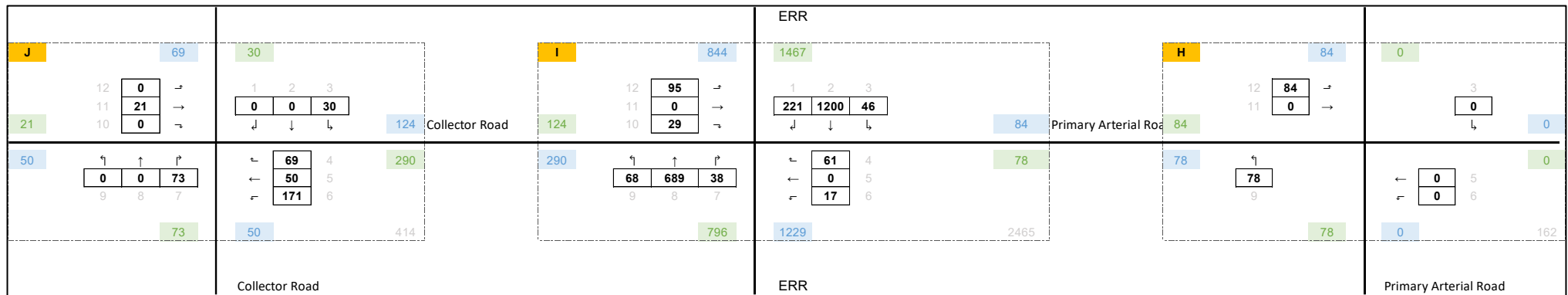


Figure 19: Project Case Internal Road Traffic Demands – 2036 (AM)

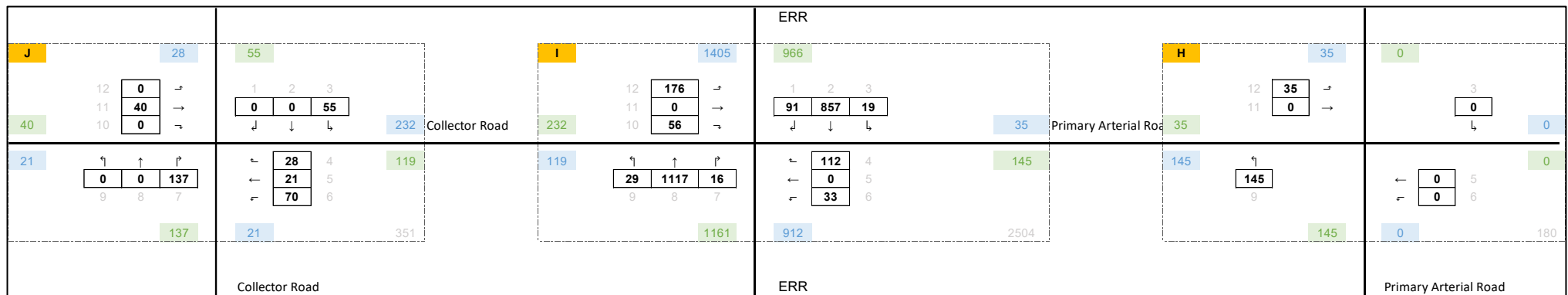


Figure 20: Project Case Internal Road Traffic Demands – 2036 (PM)

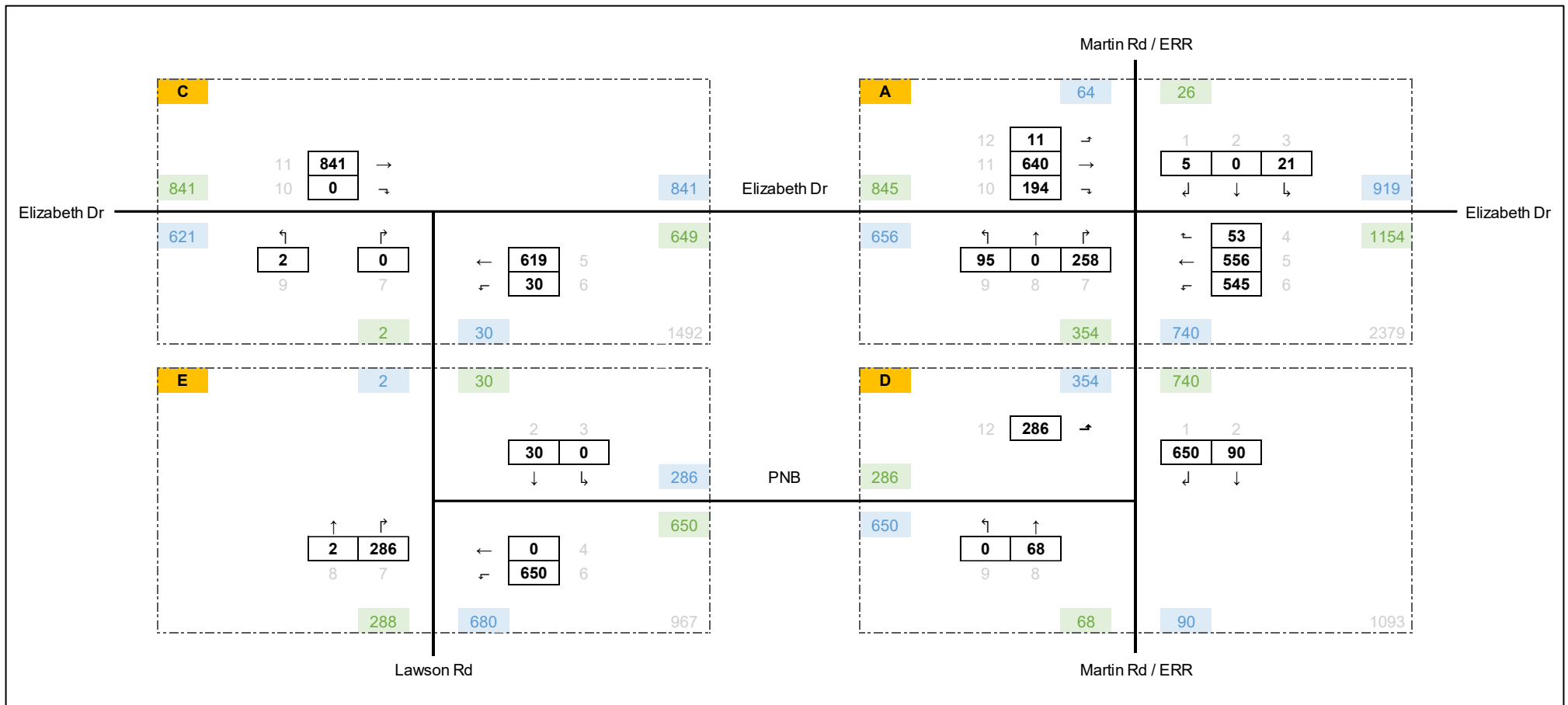
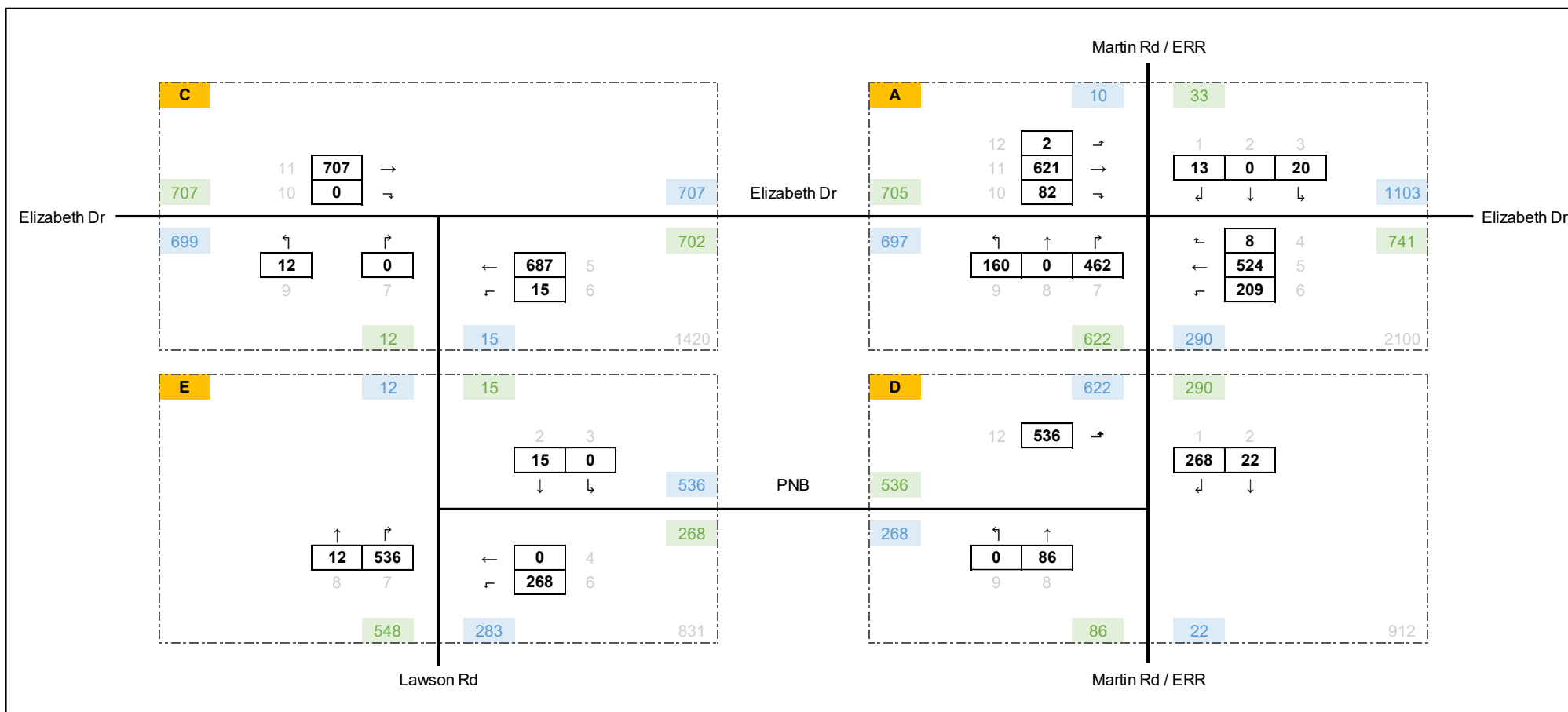


Figure 21: Interim Case Traffic Demands – 2031 (AM)



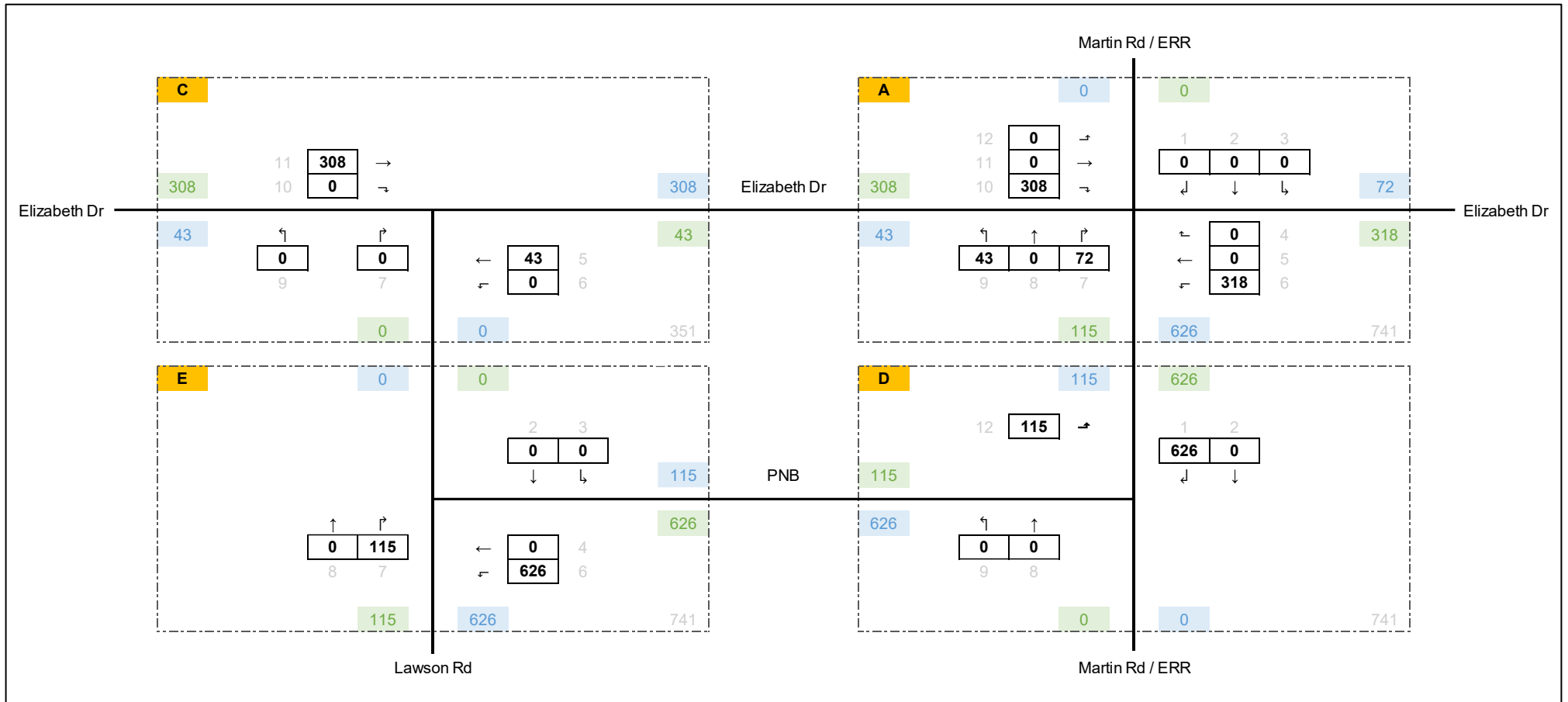


Figure 23: Interim Construction Case, Post-Upgrade Traffic Demands – 2029 (AM)

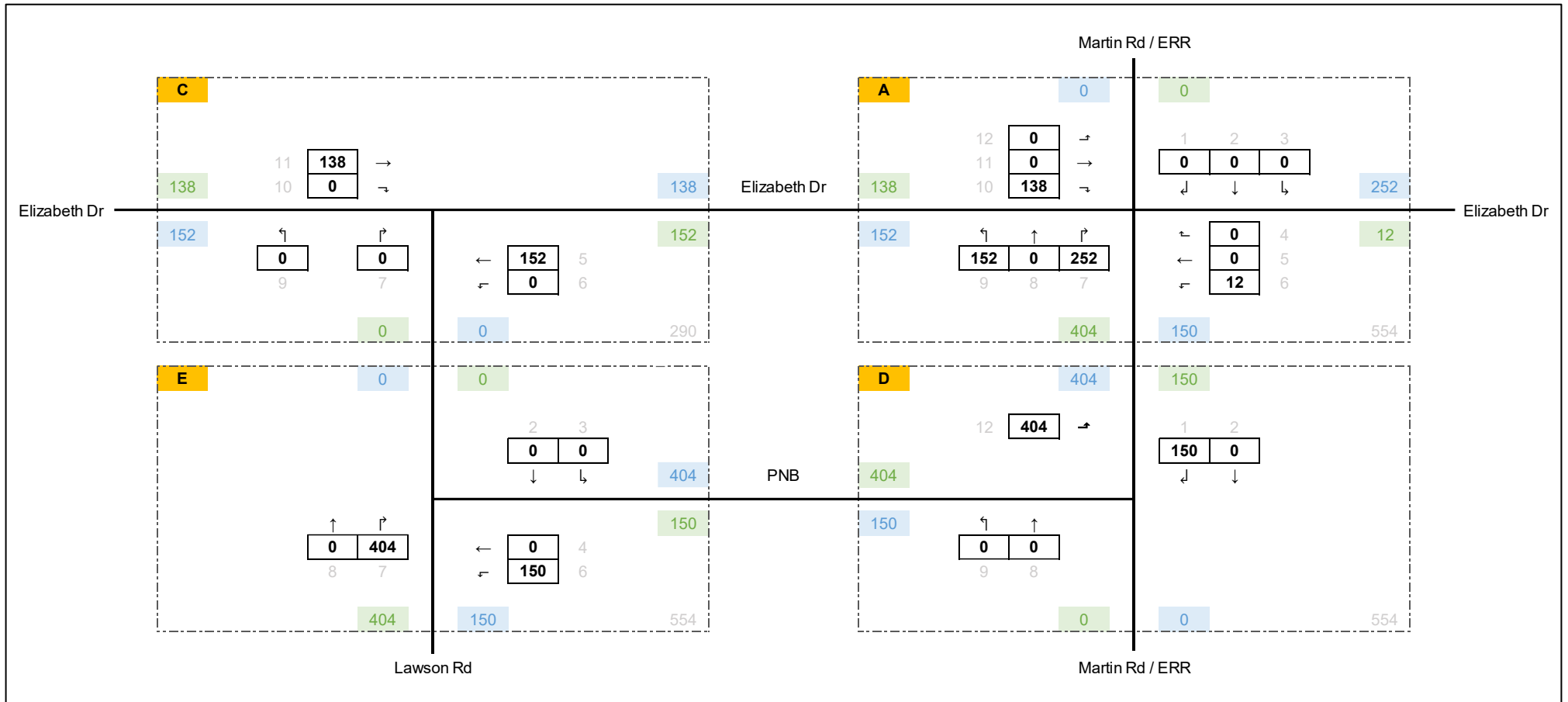


Figure 24: Interim Construction Case, Post-Upgrade Traffic Demands – 2029 (PM)

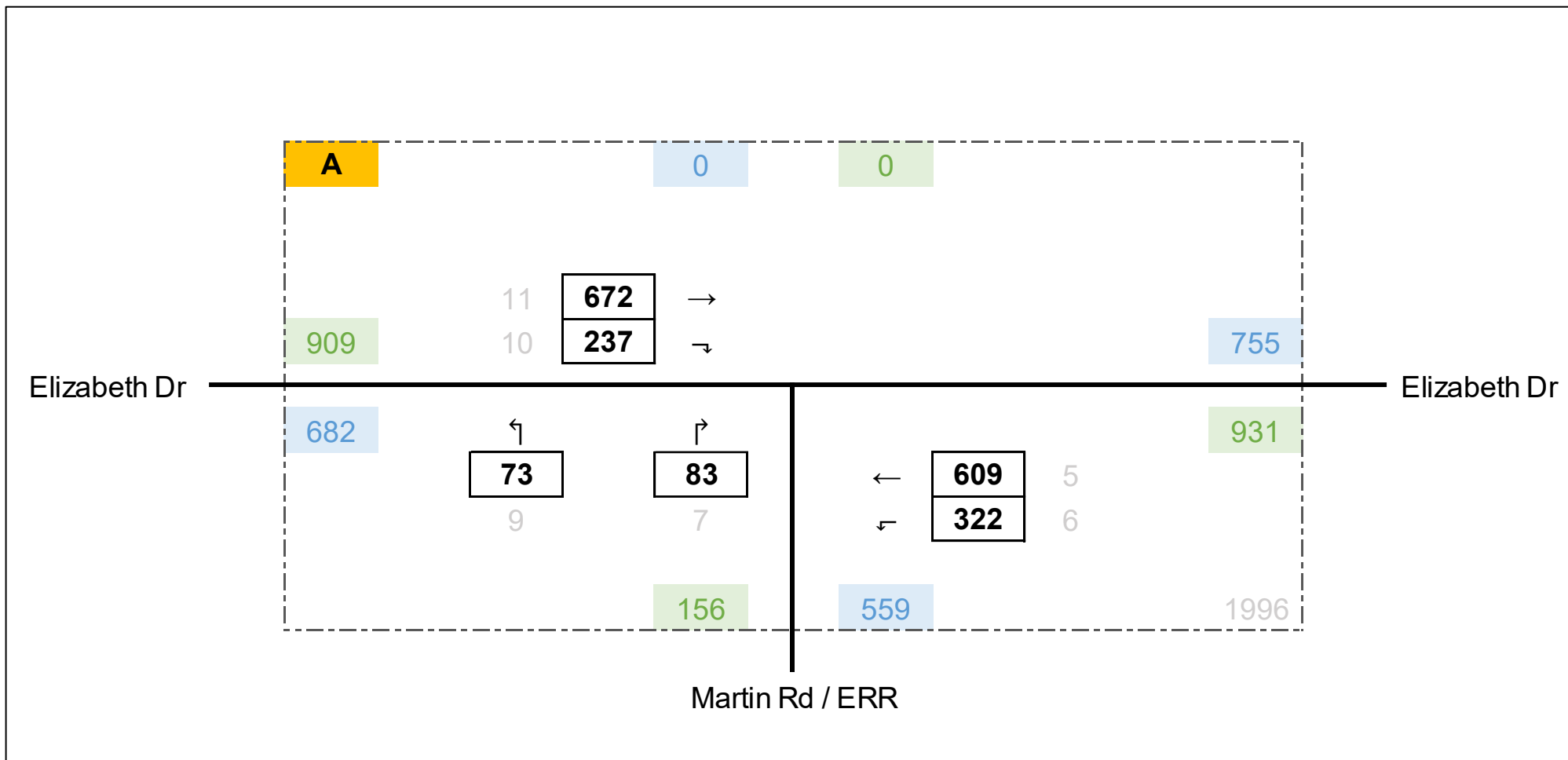


Figure 25: Interim Construction Case, Pre-Upgrade Traffic Demands – 2029 (AM)

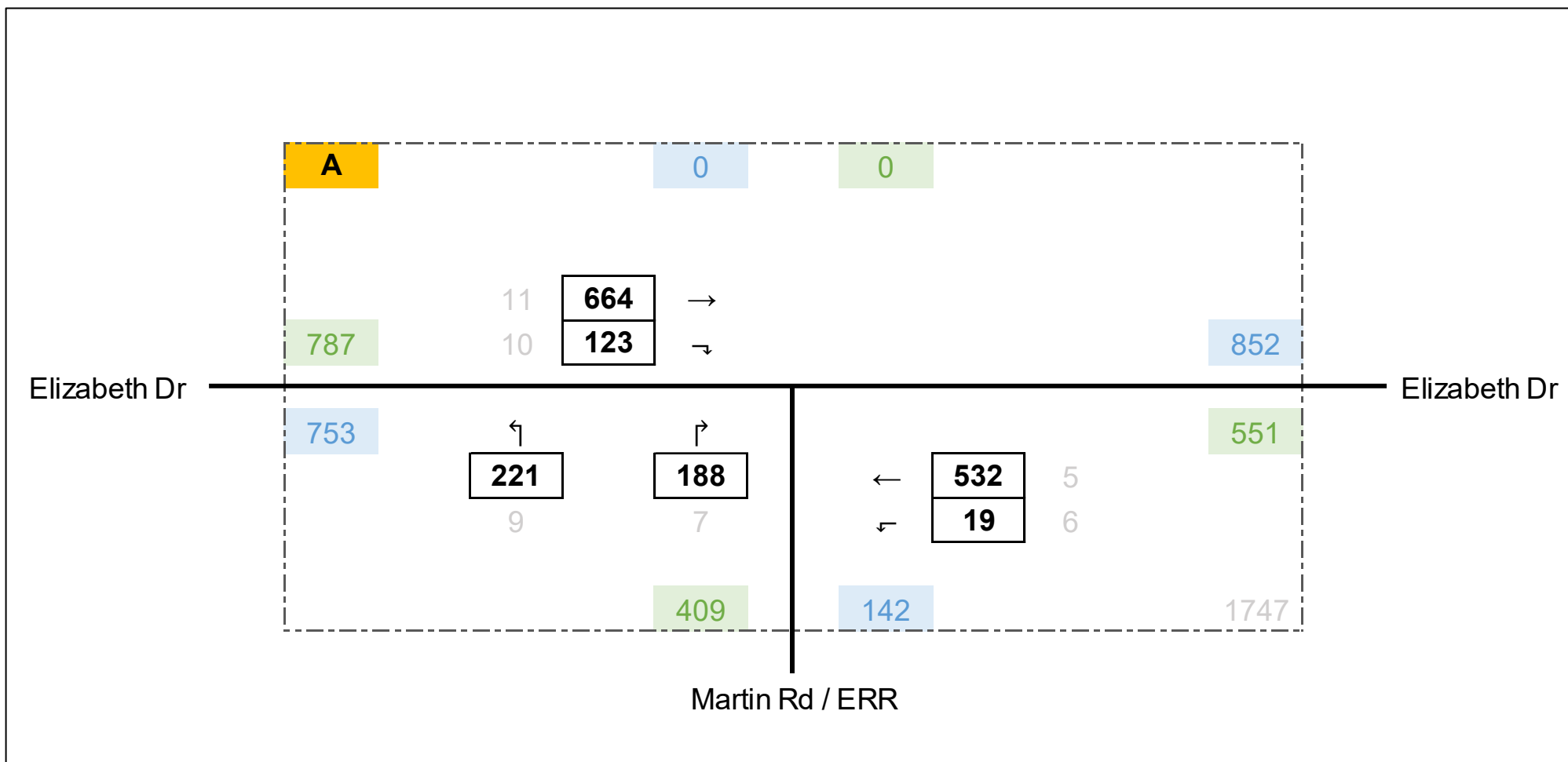


Figure 26: Interim Construction Case, Pre-Upgrade Traffic Demands – 2029 (PM)

Appendix B Detailed SIDRA Results

MOVEMENT SUMMARY

 **Site: [A] A. Elizabeth Dr / Martin Rd - Existing** (Network Intersections)

Network: [1] 1 - Existing 2025 (AM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 1 | Existing 2025 (AM) **Site Scenario: 1 | Existing 2025 (AM)**

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Martin Road													
1	L2	All MCs	34 81.2	34 81.2	* 0.575	49.4	LOS D	1.3	22.3	1.00	0.82	1.19	15.6
3	R2	All MCs	38 80.6	38 80.6	* 0.579	45.5	LOS D	1.5	26.4	0.99	0.83	1.18	24.9
Approach			72 80.9	72 80.9	0.579	47.4	LOS D	1.5	26.4	1.00	0.83	1.19	21.8
East: Elizabeth Dr													
4	L2	All MCs	55 42.3	55 42.3	0.269	10.3	LOS A	2.8	27.5	0.54	1.06	0.54	34.9
5	T1	All MCs	641 14.9	641 14.9	* 0.576	11.3	LOS A	11.2	95.6	0.67	0.73	0.67	47.5
Approach			696 17.1	696 17.1	0.576	11.2	LOS A	11.2	95.6	0.66	0.75	0.66	45.7
West: Elizabeth Dr (115m)													
11	T1	All MCs	706 14.5	706 14.5	0.416	4.7	LOS A	6.2	53.6	0.40	0.36	0.40	69.5
12	R2	All MCs	40 34.2	40 34.2	0.522	44.5	LOS D	1.5	20.0	0.99	0.78	1.09	18.6
Approach			746 15.5	746 15.5	0.522	6.8	LOS A	6.2	53.6	0.43	0.38	0.43	63.7
All Vehicles			1514 19.3	1514 19.3	0.579	10.8	LOS A	11.2	95.6	0.56	0.57	0.57	50.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Martin Road											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [B] B. Elizabeth Dr / Cleanaway Site Access (Network Intersections)

Network: [1] 1 - Existing 2025 (AM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / BRM Site Access
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Existing 2025 (AM) Site Scenario: 1 | Existing 2025 (AM)

Vehicle Movement Performance												
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed km/h
East: Elizabeth Dr (115m)												
5	T1	All MCs	618 16.7	618 16.7	0.406	0.1	LOS A	0.0	0.0	0.00	0.02	78.1
6	R2	All MCs	56 34.0	56 34.0	0.311	28.6	LOS C	0.6	7.3	0.79	0.96	32.5
Approach			674 18.1	674 18.1	0.406	2.5	NA	0.6	7.3	0.07	0.09	54.3
North: BRM Site Access												
7	L2	All MCs	22 95.2	22 95.2	0.547	26.0	LOS B	1.0	20.2	0.90	1.02	27.9
9	R2	All MCs	5 40.0	5 40.0	0.547	82.9	LOS F	1.0	20.2	0.90	1.02	27.9
Approach			27 84.6	27 84.6	0.547	37.0	LOS C	1.0	20.2	0.90	1.02	27.9
West: Elizabeth Dr (140m)												
10	L2	All MCs	12 9.1	12 9.1	0.234	6.8	LOS A	0.0	0.0	0.00	0.04	63.5
11	T1	All MCs	723 13.2	723 13.2	0.234	0.1	LOS A	0.0	0.0	0.00	0.03	77.2
Approach			735 13.2	735 13.2	0.234	0.2	NA	0.0	0.0	0.00	0.03	76.1
All Vehicles			1436 16.9	1436 16.9	0.547	2.0	NA	1.0	20.2	0.05	0.08	59.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [C] C. Elizabeth Drive / Lawson Road - Existing

(Network Intersections)

Network: [1] 1 - Existing 2025 (AM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Existing 2025 (AM)

Site Scenario: 1 | Existing 2025 (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Lawson Road															
1	L2	All MCs	2	0.0	2	0.0	0.778	29.3	LOS C	0.9	9.8	0.98	1.06	1.21	32.0
3	R2	All MCs	12	45.5	12	45.5	0.778	78.0	LOS F	0.9	9.8	0.98	1.06	1.21	11.1
Approach			14	38.5	14	38.5	0.778	70.5	LOS F	0.9	9.8	0.98	1.06	1.21	15.6
East: Elizabeth Drive (140m)															
4	L2	All MCs	32	6.7	32	6.7	0.018	6.7	LOS A	0.0	0.0	0.00	0.63	0.00	49.0
5	T1	All MCs	585	17.6	585	17.6	0.392	0.9	LOS A	0.0	0.0	0.00	0.02	0.00	77.8
Approach			617	17.1	617	17.1	0.392	1.2	NA	0.0	0.0	0.00	0.05	0.00	76.9
West: Elizabeth Drive															
11	T1	All MCs	723	12.5	723	12.5	0.454	0.4	LOS A	0.0	0.0	0.00	0.02	0.00	78.2
12	R2	All MCs	9	0.0	9	0.0	0.015	10.9	LOS A	0.1	0.4	0.57	0.74	0.57	58.1
Approach			733	12.4	733	12.4	0.454	0.5	NA	0.1	0.4	0.01	0.03	0.01	77.8
All Vehicles			1363	14.7	1363	14.7	0.778	1.5	NA	0.9	9.8	0.01	0.05	0.02	76.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY



Site: [A] A. Elizabeth Dr / Martin Rd - Existing (Network Intersections)

Network: [1 (2)] 1 - Existing 2025 (PM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 2 | Existing 2025 (PM) Site Scenario: 2 | Existing 2025 (PM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]		
			veh/h	%	veh/h	%	v/c	sec		veh	m		km/h
South: Martin Road													
1	L2	All MCs	42	12.5	42	12.5	*0.355	42.8	LOS D	1.5	13.4	0.98	16.7
3	R2	All MCs	48	8.7	48	8.7	*0.330	40.5	LOS C	1.7	13.1	0.97	32.3
Approach			91	10.5	91	10.5	0.355	41.6	LOS C	1.7	13.4	0.98	26.6
East: Elizabeth Dr													
4	L2	All MCs	6	16.7	6	16.7	0.193	9.9	LOS A	2.9	23.6	0.51	37.6
5	T1	All MCs	560	11.3	560	11.3	*0.413	9.3	LOS A	7.5	60.7	0.58	47.6
Approach			566	11.3	566	11.3	0.413	9.3	LOS A	7.5	60.7	0.58	47.4
West: Elizabeth Dr (115m)													
11	T1	All MCs	699	9.0	699	9.0	0.362	3.9	LOS A	5.6	43.5	0.36	71.3
12	R2	All MCs	17	75.0	17	75.0	0.274	43.6	LOS D	0.6	10.0	0.97	17.2
Approach			716	10.6	716	10.6	0.362	4.8	LOS A	5.6	43.5	0.38	68.2
All Vehicles			1373	10.9	1373	10.9	0.413	9.1	LOS A	7.5	60.7	0.50	54.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
					ped	m					
South: Martin Road											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [B] B. Elizabeth Dr / Cleanaway Site Access (Network Intersections)

Network: [1 (2)] 1 - Existing 2025 (PM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / BRM Site Access
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 2 | Existing 2025 (PM) Site Scenario: 2 | Existing 2025 (PM)

Vehicle Movement Performance												
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] veh m	Prop. Qued	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed km/h
East: Elizabeth Dr (115m)												
5	T1	All MCs	593 10.5	593 10.5	0.360	0.1	LOS A	0.0	0.0	0.00	0.01	78.7
6	R2	All MCs	8 75.0	8 75.0	0.027	15.5	LOS B	0.1	0.9	0.69	0.83	39.1
Approach			601 11.4	601 11.4	0.360	0.3	NA	0.1	0.9	0.01	0.02	73.7
North: BRM Site Access												
7	L2	All MCs	15 21.4	15 21.4	0.212	9.0	LOS A	0.6	4.9	0.79	0.93	31.3
9	R2	All MCs	20 10.5	20 10.5	0.212	43.0	LOS D	0.6	4.9	0.79	0.93	31.3
Approach			35 15.2	35 15.2	0.212	28.6	LOS C	0.6	4.9	0.79	0.93	31.3
West: Elizabeth Dr (140m)												
10	L2	All MCs	2 50.0	2 50.0	0.207	6.7	LOS A	0.0	0.0	0.00	0.01	47.7
11	T1	All MCs	692 10.4	692 10.4	0.207	0.1	LOS A	0.0	0.0	0.00	0.01	79.0
Approach			694 10.5	694 10.5	0.207	0.1	NA	0.0	0.0	0.00	0.01	78.3
All Vehicles			1329 11.0	1329 11.0	0.360	0.9	NA	0.6	4.9	0.03	0.04	67.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [C] C. Elizabeth Drive / Lawson Road - Existing

(Network Intersections)

Network: [1 (2)] 1 - Existing 2025 (PM) (1 - Existing 2025)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 2 | Existing 2025 (PM) Site Scenario: 2 | Existing 2025 (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		Rate to Depart		km/h
South: Lawson Road															
1	L2	All MCs	13	0.0	13	0.0	0.519	14.8	LOS B	0.9	7.0	0.97	0.65	1.25	43.4
3	R2	All MCs	24	8.7	24	8.7	0.519	46.6	LOS D	0.9	7.0	0.97	0.65	1.25	18.4
Approach			37	5.7	37	5.7	0.519	35.7	LOS C	0.9	7.0	0.97	0.65	1.25	30.7
East: Elizabeth Drive (140m)															
4	L2	All MCs	16	46.7	16	46.7	0.016	6.7	LOS A	0.0	0.0	0.00	0.61	0.00	39.0
5	T1	All MCs	597	9.3	597	9.3	0.353	0.3	LOS A	0.0	0.0	0.00	0.01	0.00	78.9
Approach			613	10.3	613	10.3	0.353	0.5	NA	0.0	0.0	0.00	0.02	0.00	78.1
West: Elizabeth Drive															
11	T1	All MCs	675	10.8	675	10.8	0.404	0.3	LOS A	0.0	0.0	0.00	0.01	0.00	78.8
12	R2	All MCs	4	0.0	4	0.0	0.006	10.4	LOS A	0.0	0.2	0.56	0.69	0.56	58.5
Approach			679	10.7	679	10.7	0.404	0.3	NA	0.0	0.2	0.00	0.02	0.00	78.6
All Vehicles			1328	10.4	1328	10.4	0.519	1.4	NA	0.9	7.0	0.03	0.04	0.04	76.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site: [A (2)] A. Elizabeth Dr / Martin Rd Existing (AM) (2 - Pre-upgrade Construction 2029)**

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Site Scenario: 1 | Interim Construction 2029 (AM)

Vehicle Movement Performance												
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Martin Road												
1	L2	All MCs	77 67.1	77 67.1	0.469	40.7	LOS D	2.5 34.8	0.93	0.78	0.93	21.4
3	R2	All MCs	87 67.5	87 67.5	* 0.895	56.9	LOS E	4.0 60.5	1.00	1.16	1.80	23.2
Approach			164 67.3	164 67.3	0.895	49.3	LOS D	4.0 60.5	0.97	0.98	1.40	22.6
East: Elizabeth Dr												
4	L2	All MCs	339 19.6	339 19.6	0.419	12.8	LOS B	6.4 57.1	0.51	1.04	0.51	40.5
5	T1	All MCs	641 14.9	641 14.9	* 0.896	33.3	LOS C	24.8 211.4	0.96	1.08	1.26	36.3
Approach			980 16.5	980 16.5	0.896	26.2	LOS C	24.8 211.4	0.81	1.06	1.00	37.8
West: Elizabeth Dr (115m)												
11	T1	All MCs	707 14.4	707 14.4	0.431	5.7	LOS A	6.8 58.7	0.43	0.39	0.43	68.0
12	R2	All MCs	249 8.9	249 8.9	* 0.895	49.5	LOS D	10.7 91.9	1.00	1.04	1.51	18.5
Approach			957 13.0	957 13.0	0.895	17.1	LOS B	10.7 91.9	0.58	0.56	0.71	46.1
All Vehicles			2101 18.9	2101 18.9	0.896	23.9	LOS C	24.8 211.4	0.72	0.83	0.90	38.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Martin Road												
P1	Full	1	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)												
P4	Full	1	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: [A (3)] A. Elizabeth Dr / Martin Rd - Existing (PM) (2 - Pre-upgrade Construction 2029)**

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Elizabeth Dr / Martin Rd

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Site Scenario: 2 | Interim Construction 2029 (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Martin Road															
1	L2	All MCs	233	37.6	233	37.6	* 0.893	62.4	LOS E	10.9	145.6	1.00	1.10	1.57	17.7
3	R2	All MCs	198	11.7	198	11.7	* 0.898	58.1	LOS E	8.4	65.0	1.00	1.09	1.56	28.8
Approach			431	25.7	431	25.7	0.898	60.4	LOS E	10.9	145.6	1.00	1.09	1.57	21.5
East: Elizabeth Dr															
4	L2	All MCs	20	5.3	20	5.3	0.418	18.8	LOS B	5.2	41.7	0.87	1.05	0.87	32.5
5	T1	All MCs	560	11.3	560	11.3	* 0.895	36.3	LOS D	16.6	134.4	0.96	1.07	1.24	32.7
Approach			580	11.1	580	11.1	0.895	35.7	LOS D	16.6	134.4	0.96	1.07	1.23	32.7
West: Elizabeth Dr (115m)															
11	T1	All MCs	699	9.0	699	9.0	0.385	5.4	LOS A	6.6	51.0	0.42	0.38	0.42	68.6
12	R2	All MCs	129	87.8	129	87.8	0.666	32.0	LOS C	4.4	87.6	0.90	0.88	1.06	19.4
Approach			828	21.3	828	21.3	0.666	9.6	LOS A	6.6	87.6	0.50	0.45	0.52	54.5
All Vehicles			1839	19.1	1839	19.1	0.898	29.7	LOS C	16.6	145.6	0.76	0.80	0.99	34.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped]	Dist]			sec	m	m/sec
						ped	m					
South: Martin Road												
P1	Full	1	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Elizabeth Dr (115m)												
P4	Full	1	1	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians		2	2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: [2 (3)] A. Elizabeth Drive / Martin Road - Interim (Network Intersections)**

Network: [1 (9)] 3 - Post Upgrade Construction 2029 (AM) (3 - Post Upgrade Construction 2029)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 5 | Post Upgrade 2029 (AM) Site Scenario: 8 | Post Upgrade 2029 (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed km/h	
South: ERR (250m)															
1	L2	All MCs	94	61.8	94	61.8	0.089	9.4	LOS A	1.2	16.3	0.21	0.94	0.21	31.5
2	T1	All MCs	1	0.0	1	0.0	*0.005	71.3	LOS F	0.0	0.2	0.96	0.56	0.96	23.2
3	R2	All MCs	174	53.9	174	53.9	0.557	70.1	LOS E	5.8	75.6	0.98	0.80	0.98	22.3
Approach			268	56.5	268	56.5	0.557	48.9	LOS D	5.8	75.6	0.71	0.84	0.71	23.4
East: Elizabeth Drive															
4	L2	All MCs	505	24.6	505	24.6	0.383	9.8	LOS A	2.3	21.9	0.15	0.85	0.15	43.0
5	T1	All MCs	586	13.3	586	13.3	*0.565	43.9	LOS D	16.7	138.4	0.89	0.77	0.89	28.0
6	R2	All MCs	56	34.0	56	34.0	0.376	81.4	LOS F	2.0	22.4	1.00	0.73	1.00	25.7
Approach			1147	19.3	1147	19.3	0.565	30.7	LOS C	16.7	138.4	0.57	0.80	0.57	32.5
North: Martin Road															
7	L2	All MCs	22	95.2	22	95.2	0.264	64.8	LOS E	1.4	30.4	0.95	1.03	0.95	23.0
8	T1	All MCs	1	0.0	1	0.0	0.011	70.7	LOS F	0.1	0.5	0.97	0.57	0.97	17.9
9	R2	All MCs	5	40.0	5	40.0	*0.051	51.1	LOS D	0.3	3.3	0.94	1.03	0.94	15.3
Approach			28	81.5	28	81.5	0.264	62.5	LOS E	1.4	30.4	0.95	1.01	0.95	21.7
West: Elizabeth Drive															
10	L2	All MCs	12	9.1	12	9.1	0.007	7.5	LOS A	0.0	0.1	0.02	0.62	0.02	49.4
11	T1	All MCs	675	11.4	675	11.4	0.376	21.4	LOS B	13.5	109.3	0.64	0.57	0.64	50.4
12	R2	All MCs	406	7.0	406	7.0	*0.565	36.0	LOS C	6.7	54.7	0.95	1.03	0.95	16.5
Approach			1093	9.7	1093	9.7	0.565	26.6	LOS B	13.5	109.3	0.75	0.74	0.75	36.4
All Vehicles			2537	19.8	2537	19.8	0.565	31.2	LOS C	16.7	138.4	0.67	0.78	0.67	32.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Qued	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
South: ERR (250m)											
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
East: Elizabeth Drive											
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
North: Martin Road											
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
West: Elizabeth Drive											
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P42 Stage 2	1	29.4	LOS C	0.0	0.0	0.91	0.91	196.0	200.0	1.02	
All Pedestrians	6	58.3	LOS E	0.0	0.0	0.95	0.95	225.0	200.0	0.89	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY


Site: [1 (10)] C. Elizabeth Drive / Lawson Road - Interim
 (Network Intersections)
Network: [1 (9)] 3 - Post Upgrade Construction 2029 (AM) (3 - Post Upgrade Construction 2029)
 Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
 Site Category: (None)
 Give-Way (Two-Way)
Network Scenario: 5 | Post Upgrade 2029 (AM) Site Scenario: 4 | Post Upgrade 2029 (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Lawson Road (250m)															
1	L2	All MCs	2	0.0	2	0.0	0.002	7.4	LOS A	0.0	0.0	0.23	0.46	0.23	60.8
Approach			2	0.0	2	0.0	0.002	7.4	LOS A	0.0	0.0	0.23	0.46	0.23	60.8
East: Elizabeth Drive (290m)															
4	L2	All MCs	32	6.7	32	6.7	0.018	7.7	LOS A	0.0	0.0	0.00	0.60	0.00	52.5
5	T1	All MCs	646	20.8	646	20.8	0.331	0.6	LOS A	0.0	0.0	0.00	0.02	0.00	77.9
Approach			678	20.2	678	20.2	0.331	1.0	NA	0.0	0.0	0.00	0.05	0.00	77.4
West: Elizabeth Drive															
11	T1	All MCs	1088	9.8	1088	9.8	0.312	0.2	LOS A	0.0	0.0	0.00	0.02	0.00	78.6
Approach			1088	9.8	1088	9.8	0.312	0.2	NA	0.0	0.0	0.00	0.02	0.00	78.6
All Vehicles			1768	13.8	1768	13.8	0.331	0.5	NA	0.0	0.0	0.00	0.03	0.00	78.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
 Two-Way Sign Control Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D] D. ERR/ PNB - Interim (Network Intersections)
Network: [1 (9)] 3 - Post Upgrade Construction 2029 (AM) (3 -
Post Upgrade Construction 2029)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 5 | Post Upgrade 2029 (AM) Site Scenario: 4 | Post Upgrade 2029 (AM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart	km/h
South: ERR (1km)													
1	L2	All MCs	1	0.0	1	0.0	0.075	6.1	LOS A	0.0	0.0	0.00	64.6
2	T1	All MCs	72	80.9	72	80.9	0.075	0.1	LOS A	0.0	0.0	0.00	64.6
Approach			73	79.7	73	79.7	0.075	0.2	NA	0.0	0.0	0.00	64.6
North: ERR (250m)													
8	T1	All MCs	95	38.9	95	38.9	0.075	0.3	LOS A	0.0	0.0	0.00	66.4
9	R2	All MCs	817	14.2	817	14.2	0.584	7.8	LOS A	5.0	41.9	0.39	44.0
Approach			912	16.7	912	16.7	0.584	7.0	NA	5.0	41.9	0.35	50.1
West: PNB (290 m)													
10	L2	All MCs	196	47.8	196	47.8	0.202	7.2	LOS A	0.9	10.4	0.31	43.7
12	R2	All MCs	1	0.0	1	0.0	0.202	24.8	LOS B	0.9	10.4	0.31	58.7
Approach			197	47.6	197	47.6	0.202	7.3	LOS A	0.9	10.4	0.31	44.0
All Vehicles			1181	25.8	1181	25.8	0.584	6.7	NA	5.0	41.9	0.32	50.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [E (3)] E. Lawson Rd / PNB - Interim (Network Intersections)
Network: [1 (9)] 3 - Post Upgrade Construction 2029 (AM) (3 - Post Upgrade Construction 2029)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 5 | Post Upgrade 2029 (AM) Site Scenario: 3 | Post Upgrade 2029 (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
South: Lawson Rd (1km)															
2	T1	All MCs	2	0.0	2	0.0	0.191	0.2	LOS A	0.0	0.0	0.00	0.53	0.00	48.0
3	R2	All MCs	196	47.8	196	47.8	0.191	5.4	LOS A	0.0	0.0	0.00	0.53	0.00	48.0
Approach			198	47.3	198	47.3	0.191	5.3	NA	0.0	0.0	0.00	0.53	0.00	48.0
East: PNB (290 m)															
4	L2	All MCs	817	14.2	817	14.2	0.546	7.3	LOS A	0.0	0.0	0.00	0.63	0.00	64.4
6	R2	All MCs	1	0.0	1	0.0	0.001	6.3	LOS A	0.0	0.0	0.35	0.51	0.35	43.5
Approach			818	14.2	818	14.2	0.546	7.3	NA	0.0	0.0	0.00	0.63	0.00	64.4
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.224	8.0	LOS A	0.7	5.1	0.89	0.96	0.96	19.9
8	T1	All MCs	32	6.7	32	6.7	0.224	32.9	LOS C	0.7	5.1	0.89	0.96	0.96	41.3
Approach			33	6.5	33	6.5	0.224	32.1	LOS C	0.7	5.1	0.89	0.96	0.96	41.0
All Vehicles			1048	20.2	1048	20.2	0.546	7.7	NA	0.7	5.1	0.03	0.62	0.03	60.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (3)] A. Elizabeth Drive / Martin Road - Interim (Network Intersections)**

Network: [1 (10)] 3 - Post Upgrade Construction 2029 (PM) (3 - Post Upgrade Construction 2029)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 6 | Post Upgrade 2029 (PM) Site Scenario: 9 | Post Upgrade 2029 (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed km/h	
South: ERR (250m)															
1	L2	All MCs	231	27.4	231	27.4	0.255	9.8	LOS A	4.5	51.7	0.31	1.23	0.31	25.2
2	T1	All MCs	1	0.0	1	0.0	0.005	71.3	LOS F	0.0	0.2	0.96	0.56	0.96	23.2
3	R2	All MCs	429	25.7	429	25.7	* 0.580	55.1	LOS D	12.8	130.8	0.92	0.83	0.92	27.3
Approach			661	26.3	661	26.3	0.580	39.3	LOS C	12.8	130.8	0.71	0.97	0.71	26.9
East: Elizabeth Drive															
4	L2	All MCs	66	27.0	66	27.0	0.049	9.0	LOS A	0.4	3.8	0.09	0.65	0.09	57.3
5	T1	All MCs	553	10.5	553	10.5	* 0.580	47.4	LOS D	16.3	130.7	0.92	0.79	0.92	26.7
6	R2	All MCs	8	75.0	8	75.0	0.087	83.1	LOS F	0.3	3.4	0.98	0.65	0.98	25.6
Approach			627	13.1	627	13.1	0.580	43.8	LOS D	16.3	130.7	0.83	0.77	0.83	28.2
North: Martin Road															
7	L2	All MCs	21	15.0	21	15.0	* 0.135	60.9	LOS E	1.3	10.0	0.95	1.03	0.95	23.3
8	T1	All MCs	1	0.0	1	0.0	0.011	69.9	LOS E	0.1	0.5	0.97	0.57	0.97	17.9
9	R2	All MCs	14	15.4	14	15.4	0.041	35.8	LOS C	0.6	4.6	0.82	1.08	0.82	17.4
Approach			36	14.7	36	14.7	0.135	51.6	LOS D	1.3	10.0	0.90	1.03	0.90	21.4
West: Elizabeth Drive															
10	L2	All MCs	2	50.0	2	50.0	0.002	8.1	LOS A	0.0	0.0	0.00	0.60	0.00	48.9
11	T1	All MCs	655	9.0	655	9.0	0.455	32.4	LOS C	16.1	125.1	0.78	0.68	0.78	42.4
12	R2	All MCs	180	77.8	180	77.8	* 0.580	68.2	LOS E	5.9	109.0	0.97	0.81	0.97	13.8
Approach			837	23.9	837	23.9	0.580	40.1	LOS C	16.1	125.1	0.82	0.71	0.82	35.4
All Vehicles			2161	21.3	2161	21.3	0.580	41.1	LOS C	16.3	130.8	0.79	0.81	0.79	30.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Qued	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
South: ERR (250m)											
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
East: Elizabeth Drive											
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
North: Martin Road											
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
West: Elizabeth Drive											
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P42 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
All Pedestrians	6	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\Users\Jayden Lam\Desktop\Projects\2167C - Maverick\Modelling\P2167Cm02v04 - 10.0.8 results.sipx

MOVEMENT SUMMARY

Site: [1 (10)] C. Elizabeth Drive / Lawson Road - Interim
(Network Intersections)

Network: [1 (10)] 3 - Post Upgrade Construction 2029 (PM) (3
- Post Upgrade Construction 2029)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 6 | Post Upgrade 2029 (PM) Site Scenario: 5 | Post Upgrade 2029 (PM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Lawson Road (250m)														
1	L2	All MCs	13	0.0	13	0.0	0.011	8.7	LOS A	0.0	0.3	0.26	0.48	60.6
Approach			13	0.0	13	0.0	0.011	8.7	LOS A	0.0	0.3	0.26	0.48	60.6
East: Elizabeth Drive (290m)														
4	L2	All MCs	16	46.7	16	46.7	0.013	7.9	LOS A	0.0	0.0	0.00	0.56	51.3
5	T1	All MCs	786	14.6	786	14.6	0.385	0.9	LOS A	0.0	0.0	0.00	0.03	77.3
Approach			802	15.2	802	15.2	0.385	1.1	NA	0.0	0.0	0.00	0.04	77.1
West: Elizabeth Drive														
11	T1	All MCs	839	24.0	839	24.0	0.281	0.4	LOS A	0.0	0.0	0.00	0.04	76.2
Approach			839	24.0	839	24.0	0.281	0.4	NA	0.0	0.0	0.00	0.04	76.2
All Vehicles			1654	19.5	1654	19.5	0.385	0.8	NA	0.0	0.3	0.00	0.05	76.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D] D. ERR/ PNB - Interim (Network Intersections)
Network: [1 (10)] 3 - Post Upgrade Construction 2029 (PM) (3
- Post Upgrade Construction 2029)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 6 | Post Upgrade 2029 (PM) Site Scenario: 5 | Post Upgrade 2029 (PM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: ERR (1km)													
1	L2	All MCs	1	0.0	1	0.0	0.053	6.3	LOS A	0.0	0.0	0.00	69.2
2	T1	All MCs	91	10.5	91	10.5	0.053	0.1	LOS A	0.0	0.0	0.00	69.2
Approach			92	10.3	92	10.3	0.053	0.2	NA	0.0	0.0	0.00	69.2
North: ERR (250m)													
8	T1	All MCs	23	59.1	23	59.1	0.021	0.1	LOS A	0.0	0.0	0.00	66.4
9	R2	All MCs	223	64.6	223	64.6	0.263	8.5	LOS A	1.2	19.6	0.28	43.3
Approach			246	64.1	246	64.1	0.263	7.7	NA	1.2	19.6	0.25	49.0
West: PNB (290 m)													
10	L2	All MCs	568	28.9	568	28.9	0.532	7.2	LOS A	3.6	39.6	0.38	43.2
12	R2	All MCs	1	0.0	1	0.0	0.532	12.2	LOS A	3.6	39.6	0.38	58.4
Approach			569	28.8	569	28.8	0.532	7.2	LOS A	3.6	39.6	0.38	43.3
All Vehicles			907	36.5	907	36.5	0.532	6.6	NA	3.6	39.6	0.31	49.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [E (3)] E. Lawson Rd / PNB - Interim (Network Intersections)

Network: [1 (10)] 3 - Post Upgrade Construction 2029 (PM) (3 - Post Upgrade Construction 2029)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 6 | Post Upgrade 2029 (PM) Site Scenario: 4 | Post Upgrade 2029 (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Lawson Rd (1km)															
2	T1	All MCs	13	0.0	13	0.0	0.527	0.9	LOS A	0.0	0.0	0.00	0.52	0.00	48.1
3	R2	All MCs	568	28.9	568	28.9	0.527	5.9	LOS A	0.0	0.0	0.00	0.52	0.00	48.1
Approach			581	28.3	581	28.3	0.527	5.8	NA	0.0	0.0	0.00	0.52	0.00	48.1
East: PNB (290 m)															
4	L2	All MCs	223	64.6	223	64.6	0.316	7.6	LOS A	0.0	0.0	0.00	0.60	0.00	54.9
6	R2	All MCs	1	0.0	1	0.0	0.001	9.1	LOS A	0.0	0.0	0.60	0.61	0.60	40.0
Approach			224	64.3	224	64.3	0.316	7.6	NA	0.0	0.0	0.00	0.60	0.00	54.9
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.148	9.5	LOS A	0.4	3.3	0.89	0.95	0.90	18.0
8	T1	All MCs	16	46.7	16	46.7	0.148	39.4	LOS C	0.4	3.3	0.89	0.95	0.90	38.7
Approach			17	43.8	17	43.8	0.148	37.5	LOS C	0.4	3.3	0.89	0.95	0.90	38.1
All Vehicles			822	38.4	822	38.4	0.527	6.9	NA	0.4	3.3	0.02	0.55	0.02	49.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (3)] A. Elizabeth Drive / Martin Road - Interim (Network Intersections)**

Network: [1 (5)] 4 - Interim 2031 (AM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 3 | 2036 Interim (AM) Site Scenario: 6 | 2036 Interim (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued Dist] m	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed km/h	
South: ERR (250m)															
1	L2	All MCs	100	37.9	100	37.9	0.120	9.0	LOS A	1.3	14.4	0.20	0.91	0.20	32.6
2	T1	All MCs	1	0.0	1	0.0	0.005	69.8	LOS E	0.0	0.2	0.96	0.56	0.96	23.5
3	R2	All MCs	272	43.4	272	43.4	* 0.543	61.4	LOS E	8.5	100.3	0.94	0.81	0.94	24.6
Approach			373	41.8	373	41.8	0.543	47.4	LOS D	8.5	100.3	0.74	0.84	0.74	25.3
East: Elizabeth Drive															
4	L2	All MCs	574	37.4	574	37.4	0.458	10.0	LOS A	1.8	19.9	0.09	0.72	0.09	49.1
5	T1	All MCs	586	13.3	586	13.3	* 0.543	42.3	LOS C	16.4	135.8	0.88	0.76	0.88	28.7
6	R2	All MCs	56	34.0	56	34.0	0.432	83.3	LOS F	2.0	22.8	1.00	0.73	1.00	25.4
Approach			1216	25.6	1216	25.6	0.543	28.9	LOS C	16.4	135.8	0.51	0.74	0.51	34.8
North: Martin Road															
7	L2	All MCs	22	95.2	22	95.2	0.173	63.0	LOS E	1.4	29.6	0.89	0.73	0.89	27.3
8	T1	All MCs	1	0.0	1	0.0	* 0.009	69.7	LOS E	0.1	0.5	0.96	0.57	0.96	18.1
9	R2	All MCs	5	40.0	5	40.0	0.021	52.1	LOS D	0.3	3.4	0.82	0.64	0.82	21.6
Approach			28	81.5	28	81.5	0.173	61.3	LOS E	1.4	29.6	0.88	0.71	0.88	26.3
West: Elizabeth Drive															
10	L2	All MCs	12	9.1	12	9.1	0.007	7.5	LOS A	0.0	0.1	0.02	0.61	0.02	49.4
11	T1	All MCs	675	11.4	675	11.4	0.432	27.9	LOS B	15.5	125.1	0.73	0.64	0.73	45.4
12	R2	All MCs	204	18.6	204	18.6	* 0.543	41.6	LOS C	3.4	32.1	0.98	1.01	0.98	15.2
Approach			891	13.0	891	13.0	0.543	30.7	LOS C	15.5	125.1	0.78	0.72	0.78	37.6
All Vehicles			2507	24.2	2507	24.2	0.543	32.7	LOS C	16.4	135.8	0.64	0.75	0.64	33.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: ERR (250m)										
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
East: Elizabeth Drive										
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Martin Road										
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
West: Elizabeth Drive										
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P42 Stage 2	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
All Pedestrians	6	58.3	LOS E	0.0	0.0	0.95	0.95	225.0	200.0	0.89

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (10)] C. Elizabeth Drive / Lawson Road - Interim
(Network Intersections)

Network: [1 (5)] 4 - Interim 2031 (AM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Interim (AM) Site Scenario: 2 | 2036 Base (AM) - Interim

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: Lawson Road (250m)														
1	L2	All MCs	2	0.0	2	0.0	0.002	7.3	LOS A	0.0	0.0	0.23	0.46	60.8
Approach			2	0.0	2	0.0	0.002	7.3	LOS A	0.0	0.0	0.23	0.46	60.8
East: Elizabeth Drive (290m)														
4	L2	All MCs	32	6.7	32	6.7	0.018	7.7	LOS A	0.0	0.0	0.00	0.60	52.5
5	T1	All MCs	653	17.6	653	17.6	0.325	0.6	LOS A	0.0	0.0	0.00	0.02	78.0
Approach			684	17.1	684	17.1	0.325	0.9	NA	0.0	0.0	0.00	0.05	77.5
West: Elizabeth Drive														
11	T1	All MCs	886	13.1	886	13.1	0.263	0.2	LOS A	0.0	0.0	0.00	0.02	78.5
Approach			886	13.1	886	13.1	0.263	0.2	NA	0.0	0.0	0.00	0.02	78.5
All Vehicles			1573	14.8	1573	14.8	0.325	0.5	NA	0.0	0.0	0.00	0.03	77.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D] D. ERR/ PNB - Interim (Network Intersections)
Network: [1 (5)] 4 - Interim 2031 (AM) (4 - Interim 2031)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Interim (AM) Site Scenario: 2 | 2036 Base (AM) - Interim

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: ERR (1km)													
1	L2	All MCs	1	0.0	1	0.0	0.075	6.1	LOS A	0.0	0.0	0.00	64.6
2	T1	All MCs	72	80.9	72	80.9	0.075	0.1	LOS A	0.0	0.0	0.00	64.6
Approach			73	79.7	73	79.7	0.075	0.2	NA	0.0	0.0	0.00	64.6
North: ERR (250m)													
8	T1	All MCs	95	38.9	95	38.9	0.075	0.3	LOS A	0.0	0.0	0.00	66.4
9	R2	All MCs	684	31.5	684	31.5	0.576	8.8	LOS A	5.6	57.1	0.45	42.7
Approach			779	32.4	779	32.4	0.576	7.7	NA	5.6	57.1	0.40	49.8
West: PNB (290 m)													
10	L2	All MCs	300	32.3	300	32.3	0.282	7.0	LOS A	1.4	14.1	0.32	43.7
12	R2	All MCs	1	0.0	1	0.0	0.282	26.9	LOS B	1.4	14.1	0.32	58.6
Approach			301	32.2	301	32.2	0.282	7.1	LOS A	1.4	14.1	0.32	43.8
All Vehicles			1153	35.3	1153	35.3	0.576	7.1	NA	5.6	57.1	0.35	50.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [E (3)] E. Lawson Rd / PNB - Interim (Network Intersections)

Network: [1 (5)] 4 - Interim 2031 (AM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Interim (AM) Site Scenario: 1 | 2036 Base (AM) - Interim

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Lawson Rd (1km)															
2	T1	All MCs	2	0.0	2	0.0	0.258	0.3	LOS A	0.0	0.0	0.00	0.53	0.00	47.8
3	R2	All MCs	300	32.3	300	32.3	0.258	5.3	LOS A	0.0	0.0	0.00	0.53	0.00	47.8
Approach			302	32.1	302	32.1	0.258	5.2	NA	0.0	0.0	0.00	0.53	0.00	47.8
East: PNB (290 m)															
4	L2	All MCs	684	31.5	684	31.5	0.581	7.5	LOS A	0.0	0.0	0.00	0.62	0.00	61.1
6	R2	All MCs	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.42	0.53	0.42	43.1
Approach			685	31.5	685	31.5	0.581	7.5	NA	0.0	0.0	0.00	0.62	0.00	61.0
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.256	9.6	LOS A	0.8	5.8	0.91	0.98	1.01	18.0
8	T1	All MCs	32	6.7	32	6.7	0.256	37.9	LOS C	0.8	5.8	0.91	0.98	1.01	39.5
Approach			33	6.5	33	6.5	0.256	37.0	LOS C	0.8	5.8	0.91	0.98	1.01	39.2
All Vehicles			1020	30.9	1020	30.9	0.581	7.8	NA	0.8	5.8	0.03	0.61	0.03	56.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (3)] A. Elizabeth Drive / Martin Road - Interim (Network Intersections)**

Network: [1 (8)] 4 - Interim 2031 (PM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 4 | 2036 Interim (PM) Site Scenario: 7 | 2036 Interim (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh.	Dist]		Rate to Depart		km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: ERR (250m)															
1	L2	All MCs	168	13.7	168	13.7	0.164	8.4	LOS A	2.0	17.0	0.19	0.90	0.19	33.7
2	T1	All MCs	1	0.0	1	0.0	0.005	71.3	LOS F	0.0	0.2	0.96	0.56	0.96	23.2
3	R2	All MCs	486	31.0	486	31.0	* 0.542	48.0	LOS D	13.6	135.3	0.87	0.82	0.87	28.9
Approach			656	26.5	656	26.5	0.542	37.9	LOS C	13.6	135.3	0.69	0.84	0.69	29.4
East: Elizabeth Drive															
4	L2	All MCs	219	34.1	219	34.1	0.167	8.1	LOS A	0.4	4.6	0.03	0.61	0.03	59.3
5	T1	All MCs	553	10.5	553	10.5	0.490	40.8	LOS C	15.1	121.0	0.86	0.74	0.86	29.3
6	R2	All MCs	8	75.0	8	75.0	* 0.087	83.1	LOS F	0.3	3.4	0.98	0.65	0.98	25.6
Approach			780	17.8	780	17.8	0.490	32.1	LOS C	15.1	121.0	0.63	0.70	0.63	34.0
North: Martin Road															
7	L2	All MCs	21	15.0	21	15.0	* 0.135	60.9	LOS E	1.3	10.0	0.95	1.03	0.95	23.3
8	T1	All MCs	1	0.0	1	0.0	0.011	69.4	LOS E	0.1	0.5	0.97	0.57	0.97	17.9
9	R2	All MCs	14	15.4	14	15.4	0.031	29.9	LOS C	0.5	4.1	0.76	1.11	0.76	18.5
Approach			36	14.7	36	14.7	0.135	49.3	LOS D	1.3	10.0	0.87	1.05	0.87	21.8
West: Elizabeth Drive															
10	L2	All MCs	2	50.0	2	50.0	0.002	8.1	LOS A	0.0	0.0	0.00	0.60	0.00	48.9
11	T1	All MCs	655	9.0	655	9.0	* 0.542	40.1	LOS C	18.0	139.5	0.86	0.75	0.86	38.2
12	R2	All MCs	86	25.6	86	25.6	0.490	81.2	LOS F	3.1	30.1	1.00	0.75	1.00	12.1
Approach			743	11.0	743	11.0	0.542	44.8	LOS D	18.0	139.5	0.88	0.75	0.88	34.6
All Vehicles			2215	18.1	2215	18.1	0.542	38.3	LOS C	18.0	139.5	0.73	0.76	0.73	32.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: ERR (250m)										
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
East: Elizabeth Drive										
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Martin Road										
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
West: Elizabeth Drive										
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P42 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
All Pedestrians	6	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (10)] C. Elizabeth Drive / Lawson Road - Interim
(Network Intersections)

Network: [1 (8)] 4 - Interim 2031 (PM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Interim (PM) Site Scenario: 3 | 2036 Base (PM) - Interim

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]						[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Lawson Road (250m)															
1	L2	All MCs	13	0.0	13	0.0	0.011	7.0	LOS A	0.0	0.3	0.24	0.47	0.24	60.7
Approach			13	0.0	13	0.0	0.011	7.0	LOS A	0.0	0.3	0.24	0.47	0.24	60.7
East: Elizabeth Drive (290m)															
4	L2	All MCs	16	46.7	16	46.7	0.013	7.9	LOS A	0.0	0.0	0.00	0.56	0.00	51.3
5	T1	All MCs	724	10.3	724	10.3	0.334	0.5	LOS A	0.0	0.0	0.00	0.01	0.00	78.9
Approach			740	11.1	740	11.1	0.334	0.7	NA	0.0	0.0	0.00	0.02	0.00	78.6
West: Elizabeth Drive															
11	T1	All MCs	745	11.2	745	11.2	0.215	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.0
Approach			745	11.2	745	11.2	0.215	0.1	NA	0.0	0.0	0.00	0.01	0.00	79.0
All Vehicles			1498	11.0	1498	11.0	0.334	0.5	NA	0.0	0.3	0.00	0.02	0.00	78.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D] D. ERR/ PNB - Interim (Network Intersections)
Network: [1 (8)] 4 - Interim 2031 (PM) (4 - Interim 2031)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Interim (PM) Site Scenario: 3 | 2036 Base (PM) - Interim

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: ERR (1km)													
1	L2	All MCs	1	0.0	1	0.0	0.053	6.3	LOS A	0.0	0.0	0.00	69.2
2	T1	All MCs	91	10.5	91	10.5	0.053	0.1	LOS A	0.0	0.0	0.00	69.2
Approach			92	10.3	92	10.3	0.053	0.2	NA	0.0	0.0	0.00	69.2
North: ERR (250m)													
8	T1	All MCs	23	59.1	23	59.1	0.021	0.1	LOS A	0.0	0.0	0.00	66.4
9	R2	All MCs	281	29.2	281	29.2	0.218	7.3	LOS A	1.1	10.7	0.26	45.4
Approach			304	31.5	304	31.5	0.218	6.7	NA	1.1	10.7	0.24	49.9
West: PNB (290 m)													
10	L2	All MCs	564	29.1	564	29.1	0.480	6.8	LOS A	3.0	29.8	0.34	43.5
12	R2	All MCs	1	0.0	1	0.0	0.480	11.4	LOS A	3.0	29.8	0.34	58.6
Approach			565	29.1	565	29.1	0.480	6.9	LOS A	3.0	29.8	0.34	43.6
All Vehicles			961	28.0	961	28.0	0.480	6.2	NA	3.0	29.8	0.27	50.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [E (3)] E. Lawson Rd / PNB - Interim (Network Intersections)

Network: [1 (8)] 4 - Interim 2031 (PM) (4 - Interim 2031)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Interim (PM) Site Scenario: 2 | 2036 Base (PM) - Interim

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Lawson Rd (1km)															
2	T1	All MCs	13	0.0	13	0.0	0.461	0.6	LOS A	0.0	0.0	0.00	0.52	0.00	47.5
3	R2	All MCs	564	29.1	564	29.1	0.461	5.5	LOS A	0.0	0.0	0.00	0.52	0.00	47.5
Approach			577	28.5	577	28.5	0.461	5.4	NA	0.0	0.0	0.00	0.52	0.00	47.5
East: PNB (290 m)															
4	L2	All MCs	281	29.2	281	29.2	0.226	7.4	LOS A	0.0	0.0	0.00	0.62	0.00	62.2
6	R2	All MCs	1	0.0	1	0.0	0.001	8.6	LOS A	0.0	0.0	0.58	0.60	0.58	40.8
Approach			282	29.1	282	29.1	0.226	7.4	NA	0.0	0.0	0.00	0.62	0.00	62.1
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.109	8.7	LOS A	0.3	2.6	0.85	0.93	0.85	21.6
8	T1	All MCs	16	46.7	16	46.7	0.109	30.1	LOS C	0.3	2.6	0.85	0.93	0.85	41.8
Approach			17	43.8	17	43.8	0.109	28.7	LOS C	0.3	2.6	0.85	0.93	0.85	41.3
All Vehicles			876	29.0	876	29.0	0.461	6.5	NA	0.3	2.6	0.02	0.56	0.02	52.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (2)] A. Elizabeth Drive / Martin Road - 2036** (Network Intersections)

Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 3 | 2036 Base (AM) Site Scenario: 2 | 2036 Base (AM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		Rate to Depart	km/h
South: ERR (250m)														
1	L2	All MCs	329	8.3	329	8.3	0.394	7.3	LOS A	2.5	20.3	0.16	1.02	26.2
2	T1	All MCs	103	0.0	103	0.0	0.194	60.9	LOS E	3.2	22.1	0.93	0.73	25.3
3	R2	All MCs	294	10.4	294	10.4	*0.387	55.6	LOS D	8.5	71.3	0.89	0.79	28.4
Approach			726	8.0	726	8.0	0.394	34.5	LOS C	8.5	71.3	0.56	0.89	27.2
East: Elizabeth Drive														
4	L2	All MCs	1079	2.1	1079	2.1	0.650	7.5	LOS A	3.8	27.5	0.13	0.97	36.6
5	T1	All MCs	363	4.1	363	4.1	*0.387	46.8	LOS D	10.2	75.5	0.88	0.73	26.9
6	R2	All MCs	159	11.9	159	11.9	*0.387	69.3	LOS E	5.1	43.5	0.96	0.78	28.2
Approach			1601	3.6	1601	3.6	0.650	22.5	LOS B	10.2	75.5	0.38	0.90	32.5
North: Martin Road														
7	L2	All MCs	52	6.1	52	6.1	0.123	49.2	LOS D	2.7	20.2	0.82	0.73	31.9
8	T1	All MCs	41	0.0	41	0.0	*0.387	72.5	LOS F	2.9	20.0	1.00	0.74	17.3
9	R2	All MCs	53	4.0	53	4.0	0.194	60.8	LOS E	3.2	23.0	0.91	0.74	19.3
Approach			145	3.6	145	3.6	0.387	60.0	LOS E	3.2	23.0	0.90	0.73	23.5
West: Elizabeth Drive														
10	L2	All MCs	99	1.1	99	1.1	0.065	7.5	LOS A	0.2	1.7	0.06	0.71	46.7
11	T1	All MCs	365	7.5	365	7.5	0.285	34.5	LOS C	8.8	67.8	0.76	0.64	41.2
12	R2	All MCs	206	6.6	206	6.6	*0.350	35.5	LOS C	3.5	28.6	0.92	1.05	16.2
Approach			671	6.3	671	6.3	0.350	30.8	LOS C	8.8	67.8	0.71	0.77	34.2
All Vehicles			3143	5.2	3143	5.2	0.650	28.8	LOS C	10.2	75.5	0.52	0.86	30.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
South: ERR (250m)											
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
East: Elizabeth Drive											
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
North: Martin Road											
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
West: Elizabeth Drive											
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P42 Stage 2	1	30.3	LOS D	0.0	0.0	0.91	0.91	197.0	200.0	1.02	
All Pedestrians	6	58.5	LOS E	0.0	0.0	0.95	0.95	225.2	200.0	0.89	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (9)] C. Elizabeth Drive / Lawson Road - 2036 (Network Intersections)

Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Base (AM) Site Scenario: 2 | 2036 Base (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Lawson Road (250m)															
1	L2	All MCs	21	15.0	21	15.0	0.023	7.4	LOS A	0.1	0.8	0.25	0.49	0.25	58.6
Approach			21	15.0	21	15.0	0.023	7.4	LOS A	0.1	0.8	0.25	0.49	0.25	58.6
East: Elizabeth Drive (290m)															
4	L2	All MCs	85	2.5	85	2.5	0.045	7.6	LOS A	0.0	0.0	0.00	0.60	0.00	52.5
5	T1	All MCs	659	6.2	659	6.2	0.292	0.4	LOS A	0.0	0.0	0.00	0.01	0.00	79.1
Approach			744	5.8	744	5.8	0.292	1.2	NA	0.0	0.0	0.00	0.08	0.00	77.7
West: Elizabeth Drive															
11	T1	All MCs	669	6.1	669	6.1	0.185	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.1
Approach			669	6.1	669	6.1	0.185	0.1	NA	0.0	0.0	0.00	0.01	0.00	79.1
All Vehicles			1435	6.1	1435	6.1	0.292	0.8	NA	0.1	0.8	0.00	0.06	0.00	77.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D (2)] D. ERR/ Collector Rd- 2036 (Network Intersections)
Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Base (AM) Site Scenario: 2 | 2036 Base (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: ERR (1km)															
1	L2	All MCs	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	62.2
2	T1	All MCs	726	8.0	726	8.0	0.205	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	69.3
Approach			727	8.0	727	8.0	0.205	0.2	NA	0.0	0.0	0.00	0.01	0.00	69.3
North: ERR (250m)															
8	T1	All MCs	1326	2.8	1326	2.8	0.353	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	69.5
Approach			1326	2.8	1326	2.8	0.353	0.1	NA	0.0	0.0	0.00	0.01	0.00	69.5
West: PNB (290 m)															
10	L2	All MCs	1	0.0	1	0.0	0.001	7.2	LOS A	0.0	0.0	0.41	0.55	0.41	43.1
Approach			1	0.0	1	0.0	0.001	7.2	LOS A	0.0	0.0	0.41	0.55	0.41	43.1
All Vehicles			2055	4.6	2055	4.6	0.353	0.1	NA	0.0	0.0	0.00	0.01	0.00	69.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 Site: [E (2)] E. Lawson Rd / PNB - 2036 (Network Intersections)

Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Roundabout

Network Scenario: 3 | 2036 Base (AM)

Site Scenario: 1 | 2036 Base (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
South: Lawson Rd (1km)															
2	T1	All MCs	21	15.0	21	15.0	0.010	3.7	LOS A	0.0	0.3	0.02	0.36	0.02	56.0
3	R2	All MCs	1	0.0	1	0.0	0.010	7.5	LOS A	0.0	0.3	0.01	0.37	0.01	55.7
Approach			22	14.3	22	14.3	0.010	3.8	LOS A	0.0	0.3	0.02	0.36	0.02	55.9
East: PNB (290 m)															
4	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.19	0.48	0.19	55.0
6	R2	All MCs	1	0.0	1	0.0	0.001	9.5	LOS A	0.0	0.0	0.19	0.58	0.19	41.0
Approach			2	0.0	2	0.0	0.001	7.6	LOS A	0.0	0.0	0.19	0.53	0.19	46.4
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.017	3.6	LOS A	0.1	0.5	0.02	0.35	0.02	49.8
8	T1	All MCs	85	2.5	85	2.5	0.037	3.6	LOS A	0.2	1.2	0.01	0.34	0.01	49.9
Approach			86	2.4	86	2.4	0.037	3.6	LOS A	0.2	1.2	0.01	0.34	0.01	49.9
All Vehicles			111	4.8	111	4.8	0.037	3.7	LOS A	0.2	1.2	0.02	0.35	0.02	52.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site:** [F] F. ERR/ Pitt St- 2036 (Network Intersections)
Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 3 | 2036 Base (AM) Site Scenario: 2 | 2036 Base (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: ERR															
1	L2	All MCs	41	92.3	41	92.3	0.033	7.8	LOS A	0.1	1.1	0.00	0.56	0.00	56.3
2	T1	All MCs	702	7.8	702	7.8	0.352	9.1	LOS A	6.6	52.3	0.58	0.51	0.58	52.2
Approach			743	12.5	743	12.5	0.352	9.0	LOS A	6.6	52.3	0.55	0.51	0.55	52.5
North: ERR (1km)															
8	T1	All MCs	1323	2.8	1323	2.8	* 0.481	4.2	LOS A	9.3	68.8	0.44	0.40	0.44	66.3
9	R2	All MCs	3	0.0	3	0.0	0.010	39.2	LOS C	0.1	0.4	0.93	0.60	0.93	40.2
Approach			1326	2.8	1326	2.8	0.481	4.2	LOS A	9.3	68.8	0.45	0.41	0.45	66.2
West: Pitt St (290)															
10	L2	All MCs	24	13.0	24	13.0	0.059	26.6	LOS B	0.6	5.8	0.77	0.70	0.77	24.6
12	R2	All MCs	34	100.0	34	100.0	* 0.197	41.9	LOS C	0.6	7.7	0.95	0.71	0.95	29.8
Approach			58	63.6	58	63.6	0.197	35.5	LOS C	0.6	7.7	0.88	0.70	0.88	28.5
All Vehicles			2127	7.8	2127	7.8	0.481	6.8	LOS A	9.3	68.8	0.49	0.45	0.49	62.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: ERR											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
North: ERR (1km)											
P3	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
West: Pitt St (290)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02

All Pedestrians	3	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [G] G. Lawson Rd / Pitt St - 2036 (Network Intersections)
Network: [1 (4)] 5 - Future Base 2036 (AM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | 2036 Base (AM) Site Scenario: 2 | 2036 Base (AM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart	km/h
South: Lawson Rd													
2	T1	All MCs	21	15.0	21	15.0	0.019	5.9	LOS A	0.1	0.6	0.24	50.0
3	R2	All MCs	6	33.3	6	33.3	0.009	6.7	LOS A	0.0	0.3	0.36	42.8
Approach			27	19.2	27	19.2	0.019	6.1	LOS A	0.1	0.6	0.27	48.1
East: Pitt St (290m)													
4	L2	All MCs	1	0.0	1	0.0	0.041	7.0	LOS A	0.0	0.0	0.00	69.2
5	T1	All MCs	41	92.3	41	92.3	0.041	0.0	LOS A	0.0	0.0	0.00	76.3
6	R2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.13	45.1
Approach			43	87.8	43	87.8	0.041	0.3	NA	0.0	0.0	0.00	75.6
North: Lawson Rd (1km)													
7	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.12	54.6
8	T1	All MCs	85	2.5	85	2.5	0.079	5.8	LOS A	0.3	2.5	0.26	54.9
Approach			86	2.4	86	2.4	0.079	5.8	LOS A	0.3	2.5	0.26	54.9
West: Pitt St													
11	T1	All MCs	34	100.0	34	100.0	0.035	0.0	LOS A	0.0	0.0	0.00	80.0
Approach			34	100.0	34	100.0	0.035	0.0	NA	0.0	0.0	0.00	80.0
All Vehicles			191	41.4	191	41.4	0.079	3.6	NA	0.3	2.5	0.16	58.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (2)] A. Elizabeth Drive / Martin Road - 2036** (Network Intersections)

Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 3 | Base 2036 (PM) **Site Scenario: 3 | 2036 Base (PM)**

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		Rate to Depart	km/h
South: ERR (250m)														
1	L2	All MCs	200	2.6	200	2.6	0.140	6.9	LOS A	0.9	6.4	0.09	0.86	31.2
2	T1	All MCs	12	0.0	12	0.0	0.016	52.4	LOS D	0.3	2.2	0.84	0.61	27.4
3	R2	All MCs	1036	0.4	1036	0.4	*0.768	32.5	LOS C	22.9	161.2	0.95	1.03	31.3
Approach			1247	0.8	1247	0.8	0.768	28.5	LOS C	22.9	161.2	0.81	1.00	31.3
East: Elizabeth Drive														
4	L2	All MCs	632	0.2	632	0.2	0.424	7.6	LOS A	3.2	22.4	0.12	0.91	39.9
5	T1	All MCs	184	13.1	184	13.1	0.570	68.0	LOS E	6.2	50.5	1.00	0.78	20.7
6	R2	All MCs	22	28.6	22	28.6	*0.149	80.4	LOS F	0.8	6.7	0.98	0.69	26.1
Approach			838	3.8	838	3.8	0.570	22.8	LOS B	6.2	50.5	0.33	0.88	32.5
North: Martin Road														
7	L2	All MCs	67	4.7	67	4.7	0.371	40.8	LOS C	3.0	21.5	0.97	1.01	25.2
8	T1	All MCs	40	0.0	40	0.0	*0.401	73.2	LOS F	2.8	19.6	1.00	0.74	17.2
9	R2	All MCs	60	3.5	60	3.5	0.115	43.1	LOS D	3.0	21.4	0.77	0.71	23.5
Approach			167	3.1	167	3.1	0.401	49.4	LOS D	3.0	21.5	0.91	0.84	22.9
West: Elizabeth Drive														
10	L2	All MCs	16	6.7	16	6.7	0.009	7.4	LOS A	0.0	0.2	0.00	0.61	49.6
11	T1	All MCs	716	4.7	716	4.7	*0.768	54.1	LOS D	23.2	172.3	0.99	0.88	32.3
12	R2	All MCs	295	4.3	295	4.3	0.570	46.1	LOS D	7.2	54.3	0.98	1.01	14.4
Approach			1026	4.6	1026	4.6	0.768	51.1	LOS D	23.2	172.3	0.97	0.91	27.8
All Vehicles			3279	2.9	3279	2.9	0.768	35.2	LOS C	23.2	172.3	0.74	0.93	29.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Qued	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
South: ERR (250m)											
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
East: Elizabeth Drive											
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
North: Martin Road											
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
West: Elizabeth Drive											
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87	
P42 Stage 2	1	35.9	LOS D	0.0	0.0	0.91	0.91	202.6	200.0	0.99	
All Pedestrians	6	59.4	LOS E	0.0	0.0	0.95	0.95	226.1	200.0	0.88	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (9)] C. Elizabeth Drive / Lawson Road - 2036 (Network Intersections)

Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | Base 2036 (PM) Site Scenario: 3 | 2036 Base (PM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Lawson Road (250m)														
1	L2	All MCs	151	0.0	151	0.0	0.122	5.6	LOS A	0.5	3.5	0.19	0.48	60.9
Approach			151	0.0	151	0.0	0.122	5.6	LOS A	0.5	3.5	0.19	0.48	60.9
East: Elizabeth Drive (290m)														
4	L2	All MCs	22	9.5	22	9.5	0.013	7.7	LOS A	0.0	0.0	0.00	0.60	52.5
5	T1	All MCs	420	6.5	420	6.5	0.186	0.2	LOS A	0.0	0.0	0.00	0.01	79.2
Approach			442	6.7	442	6.7	0.186	0.6	NA	0.0	0.0	0.00	0.04	78.6
West: Elizabeth Drive														
11	T1	All MCs	1025	4.5	1025	4.5	0.277	0.1	LOS A	0.0	0.0	0.00	0.01	79.4
Approach			1025	4.5	1025	4.5	0.277	0.1	NA	0.0	0.0	0.00	0.01	79.4
All Vehicles			1618	4.7	1618	4.7	0.277	0.8	NA	0.5	3.5	0.02	0.06	76.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D (2)] D. ERR/ Collector Rd- 2036 (Network Intersections)
Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Give-Way (Two-Way)
Network Scenario: 3 | Base 2036 (PM) Site Scenario: 3 | 2036 Base (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: ERR (1km)															
1	L2	All MCs	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	62.2
2	T1	All MCs	1247	0.8	1247	0.8	0.323	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1248	0.8	1248	0.8	0.323	0.2	NA	0.0	0.0	0.00	0.00	0.00	69.7
North: ERR (250m)															
8	T1	All MCs	966	1.4	966	1.4	0.252	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach			966	1.4	966	1.4	0.252	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.8
West: PNB (290 m)															
10	L2	All MCs	1	0.0	1	0.0	0.002	8.8	LOS A	0.0	0.0	0.52	0.61	0.52	40.5
Approach			1	0.0	1	0.0	0.002	8.8	LOS A	0.0	0.0	0.52	0.61	0.52	40.5
All Vehicles			2216	1.0	2216	1.0	0.323	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site:** [E (2)] E. Lawson Rd / PNB - 2036 (Network Intersections)
Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Roundabout
Network Scenario: 3 | Base 2036 (PM) **Site Scenario: 2 | 2036 Base (PM)**

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]		Rate to Depart	km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m			
South: Lawson Rd (1km)														
2	T1	All MCs	151	0.0	151	0.0	0.063	3.5	LOS A	0.3	2.1	0.01	0.35	0.01
3	R2	All MCs	1	0.0	1	0.0	0.063	7.4	LOS A	0.3	2.1	0.01	0.35	0.01
Approach			152	0.0	152	0.0	0.063	3.6	LOS A	0.3	2.1	0.01	0.35	0.01
East: PNB (290 m)														
4	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.09	0.50	0.09
6	R2	All MCs	1	0.0	1	0.0	0.001	9.3	LOS A	0.0	0.0	0.09	0.61	0.09
Approach			2	0.0	2	0.0	0.001	7.4	LOS A	0.0	0.0	0.09	0.55	0.09
North: Lawson Rd (250m)														
7	L2	All MCs	1	0.0	1	0.0	0.005	3.6	LOS A	0.0	0.2	0.02	0.36	0.02
8	T1	All MCs	22	9.5	22	9.5	0.011	3.6	LOS A	0.0	0.3	0.01	0.35	0.01
Approach			23	9.1	23	9.1	0.011	3.6	LOS A	0.0	0.3	0.01	0.35	0.01
All Vehicles			177	1.2	177	1.2	0.063	3.6	LOS A	0.3	2.1	0.02	0.35	0.02

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)

Network Scenario: 3 | Base 2036 (PM) Site Scenario: 3 | 2036 Base (PM)

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: ERR											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
North: ERR (1km)											
P3	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
West: Pitt St (290)											

P4 Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
All Pedestrians	3	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\Users\Jayden Lam\Desktop\Projects\2167C - Maverick\Modelling\P2167Cm02v04 - 10.0.8 results.sipx

MOVEMENT SUMMARY

Site: [G] G. Lawson Rd / Pitt St - 2036 (Network Intersections)
Network: [1 (3)] 5 - Future Base 2036 (PM) (5 - Future Base 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 3 | Base 2036 (PM) Site Scenario: 3 | 2036 Base (PM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		Rate to Depart	km/h
South: Lawson Rd														
2	T1	All MCs	151	0.0	151	0.0	0.138	5.8	LOS A	0.6	4.5	0.27	0.51	49.8
3	R2	All MCs	64	13.1	64	13.1	0.083	6.0	LOS A	0.3	2.7	0.30	0.52	43.6
Approach			215	3.9	215	3.9	0.138	5.8	LOS A	0.6	4.5	0.28	0.51	47.8
East: Pitt St (290m)														
4	L2	All MCs	1	0.0	1	0.0	0.038	7.0	LOS A	0.0	0.0	0.00	0.02	71.8
5	T1	All MCs	37	100.0	37	100.0	0.038	0.0	LOS A	0.0	0.0	0.00	0.02	79.5
6	R2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.14	0.50	45.1
Approach			39	94.6	39	94.6	0.038	0.3	NA	0.0	0.0	0.00	0.03	78.7
North: Lawson Rd (1km)														
7	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.13	0.53	54.6
8	T1	All MCs	22	9.5	22	9.5	0.021	5.9	LOS A	0.1	0.7	0.25	0.49	54.7
Approach			23	9.1	23	9.1	0.021	5.8	LOS A	0.1	0.7	0.24	0.49	54.7
West: Pitt St														
11	T1	All MCs	36	100.0	36	100.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.00	80.0
Approach			36	100.0	36	100.0	0.037	0.0	NA	0.0	0.0	0.00	0.00	80.0
All Vehicles			313	26.6	313	26.6	0.138	4.5	NA	0.6	4.5	0.21	0.39	54.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [2 (2)] A. Elizabeth Drive / Martin Road - 2036** (Network Intersections)

Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 4 | 2036 Project (AM) **Site Scenario: 4 | 2036 Project (AM)**

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: ERR (250m)															
1	L2	All MCs	366	9.8	366	9.8	0.327	7.6	LOS A	3.7	30.1	0.17	1.05	0.17	25.9
2	T1	All MCs	103	0.0	103	0.0	0.189	60.3	LOS E	3.1	22.0	0.92	0.72	0.92	25.5
3	R2	All MCs	425	21.3	425	21.3	* 0.484	50.0	LOS D	11.9	112.0	0.87	0.81	0.87	29.1
Approach			895	14.1	895	14.1	0.484	33.8	LOS C	11.9	112.0	0.59	0.90	0.59	27.8
East: Elizabeth Drive															
4	L2	All MCs	1282	15.1	1282	15.1	0.840	10.4	LOS A	27.5	237.8	0.60	1.27	0.60	14.8
5	T1	All MCs	363	4.1	363	4.1	* 0.484	53.7	LOS D	11.0	81.2	0.94	0.77	0.94	24.5
6	R2	All MCs	159	11.9	159	11.9	0.361	67.8	LOS E	5.0	42.9	0.95	0.78	0.95	28.6
Approach			1804	12.6	1804	12.6	0.840	24.2	LOS B	27.5	237.8	0.70	1.12	0.70	17.5
North: Martin Road															
7	L2	All MCs	69	30.3	69	30.3	0.288	51.6	LOS D	3.9	45.2	0.90	1.05	0.90	26.9
8	T1	All MCs	41	0.0	41	0.0	* 0.412	73.3	LOS F	2.9	20.1	1.00	0.74	1.00	17.2
9	R2	All MCs	53	4.0	53	4.0	0.191	36.7	LOS C	2.2	16.5	0.91	1.04	0.91	16.9
Approach			163	14.2	163	14.2	0.412	52.3	LOS D	3.9	45.2	0.93	0.97	0.93	21.7
West: Elizabeth Drive															
10	L2	All MCs	99	1.1	99	1.1	0.066	7.5	LOS A	0.3	2.1	0.07	0.76	0.07	45.2
11	T1	All MCs	365	7.5	365	7.5	0.361	43.3	LOS D	9.9	76.2	0.85	0.71	0.85	36.7
12	R2	All MCs	240	14.5	240	14.5	* 0.484	38.9	LOS C	4.8	42.5	0.96	1.02	0.96	15.5
Approach			704	9.0	704	9.0	0.484	36.8	LOS C	9.9	76.2	0.78	0.82	0.78	30.7
All Vehicles			3566	12.3	3566	12.3	0.840	30.4	LOS C	27.5	237.8	0.70	1.00	0.70	21.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

	ped/h	sec		ped	m			sec	m	m/sec
South: ERR (250m)										
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
East: Elizabeth Drive										
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Martin Road										
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
West: Elizabeth Drive										
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P42 Stage 2	1	30.8	LOS D	0.0	0.0	0.91	0.91	197.5	200.0	1.01
All Pedestrians	6	58.6	LOS E	0.0	0.0	0.95	0.95	225.2	200.0	0.89

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\Users\Jayden Lam\Desktop\Projects\2167C - Maverick\Modelling\P2167Cm02v04 - 10.0.8 results.sipx

MOVEMENT SUMMARY

Site: [1 (9)] C. Elizabeth Drive / Lawson Road - 2036 (Network Intersections)
Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Project (AM) Site Scenario: 4 | 2036 Project (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Lawson Road (250m)															
1	L2	All MCs	21	15.0	21	15.0	0.023	7.7	LOS A	0.1	0.8	0.26	0.49	0.26	58.6
Approach			21	15.0	21	15.0	0.023	7.7	LOS A	0.1	0.8	0.26	0.49	0.26	58.6
East: Elizabeth Drive (290m)															
4	L2	All MCs	85	2.5	85	2.5	0.045	7.6	LOS A	0.0	0.0	0.00	0.60	0.00	52.5
5	T1	All MCs	696	7.1	696	7.1	0.312	0.5	LOS A	0.0	0.0	0.00	0.01	0.00	78.9
Approach			781	6.6	781	6.6	0.312	1.3	NA	0.0	0.0	0.00	0.08	0.00	77.6
West: Elizabeth Drive															
11	T1	All MCs	704	9.0	704	9.0	0.200	0.2	LOS A	0.0	0.0	0.00	0.02	0.00	78.8
Approach			704	9.0	704	9.0	0.200	0.2	NA	0.0	0.0	0.00	0.02	0.00	78.8
All Vehicles			1506	7.8	1506	7.8	0.312	0.8	NA	0.1	0.8	0.00	0.06	0.00	77.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D (2)] D. ERR/ Collector Rd- 2036 (Network Intersections)

Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Give-Way (Two-Way)

Network Scenario: 4 | 2036 Project (AM)

Site Scenario: 4 | 2036 Project (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: ERR (1km)															
1	L2	All MCs	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	62.2
2	T1	All MCs	895	14.1	895	14.1	0.269	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	69.1
Approach			896	14.1	896	14.1	0.269	0.2	NA	0.0	0.0	0.00	0.01	0.00	69.1
North: ERR (250m)															
8	T1	All MCs	1564	14.7	1564	14.7	0.473	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	68.8
Approach			1564	14.7	1564	14.7	0.473	0.2	NA	0.0	0.0	0.00	0.01	0.00	68.8
West: PNB (290 m)															
10	L2	All MCs	1	0.0	1	0.0	0.001	7.9	LOS A	0.0	0.0	0.47	0.58	0.47	42.0
Approach			1	0.0	1	0.0	0.001	7.9	LOS A	0.0	0.0	0.47	0.58	0.47	42.0
All Vehicles			2461	14.5	2461	14.5	0.473	0.2	NA	0.0	0.0	0.00	0.01	0.00	69.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site: [E (2)] E. Lawson Rd / PNB - 2036** (Network Intersections)

Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Roundabout

Network Scenario: 4 | 2036 Project (AM)

Site Scenario: 3 | 2036 Project (AM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]		
			veh/h	%	veh/h	%	v/c	sec		veh	m		km/h
South: Lawson Rd (1km)													
2	T1	All MCs	21 15.0	21 15.0	0.010	3.7	LOS A	0.0	0.3	0.02	0.36	0.02	56.0
3	R2	All MCs	1 0.0	1 0.0	0.010	7.5	LOS A	0.0	0.3	0.01	0.37	0.01	55.7
Approach			22 14.3	22 14.3	0.010	3.8	LOS A	0.0	0.3	0.02	0.36	0.02	55.9
East: PNB (290 m)													
4	L2	All MCs	1 0.0	1 0.0	0.001	5.7	LOS A	0.0	0.0	0.19	0.48	0.19	55.0
6	R2	All MCs	1 0.0	1 0.0	0.001	9.5	LOS A	0.0	0.0	0.19	0.58	0.19	41.0
Approach			2 0.0	2 0.0	0.001	7.6	LOS A	0.0	0.0	0.19	0.53	0.19	46.4
North: Lawson Rd (250m)													
7	L2	All MCs	1 0.0	1 0.0	0.017	3.6	LOS A	0.1	0.5	0.02	0.35	0.02	49.8
8	T1	All MCs	85 2.5	85 2.5	0.037	3.6	LOS A	0.2	1.2	0.01	0.34	0.01	49.9
Approach			86 2.4	86 2.4	0.037	3.6	LOS A	0.2	1.2	0.01	0.34	0.01	49.9
All Vehicles			111 4.8	111 4.8	0.037	3.7	LOS A	0.2	1.2	0.02	0.35	0.02	52.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site:** [F] F. ERR/ Pitt St- 2036 (Network Intersections)
Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 4 | 2036 Project (AM) Site Scenario: 4 | 2036 Project (AM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed
			[Total HV]	[Total HV]						[Veh.	Dist]		Rate to Depart		km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: ERR															
1	L2	All MCs	41	92.3	41	92.3	0.033	7.8	LOS A	0.1	1.1	0.00	0.56	0.00	56.3
2	T1	All MCs	871	14.1	871	14.1	0.466	9.9	LOS A	8.9	76.2	0.64	0.56	0.64	51.0
Approach			912	17.7	912	17.7	0.466	9.8	LOS A	8.9	76.2	0.61	0.56	0.61	51.2
North: ERR (1km)															
8	T1	All MCs	1561	14.7	1561	14.7	* 0.644	5.4	LOS A	13.5	116.6	0.55	0.51	0.55	65.2
9	R2	All MCs	3	0.0	3	0.0	0.010	39.4	LOS C	0.1	0.4	0.93	0.60	0.93	40.2
Approach			1564	14.7	1564	14.7	0.644	5.5	LOS A	13.5	116.6	0.55	0.51	0.55	64.9
West: Pitt St (290)															
10	L2	All MCs	24	13.0	24	13.0	0.059	26.6	LOS B	0.6	5.8	0.77	0.70	0.77	24.6
12	R2	All MCs	34	100.0	34	100.0	* 0.197	41.9	LOS C	0.6	7.7	0.95	0.71	0.95	29.8
Approach			58	63.6	58	63.6	0.197	35.5	LOS C	0.6	7.7	0.88	0.70	0.88	28.5
All Vehicles			2534	16.9	2534	16.9	0.644	7.7	LOS A	13.5	116.6	0.58	0.53	0.58	61.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: ERR											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
North: ERR (1km)											
P3	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
West: Pitt St (290)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02

All Pedestrians	3	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [G] G. Lawson Rd / Pitt St - 2036 (Network Intersections)

Network: [1 (6)] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Project (AM) Site Scenario: 4 | 2036 Project (AM)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart	km/h
South: Lawson Rd													
2	T1	All MCs	21	15.0	21	15.0	0.019	5.9	LOS A	0.1	0.6	0.24	50.0
3	R2	All MCs	6	33.3	6	33.3	0.009	6.7	LOS A	0.0	0.3	0.36	42.8
Approach			27	19.2	27	19.2	0.019	6.1	LOS A	0.1	0.6	0.27	48.1
East: Pitt St (290m)													
4	L2	All MCs	1	0.0	1	0.0	0.041	7.0	LOS A	0.0	0.0	0.00	69.2
5	T1	All MCs	41	92.3	41	92.3	0.041	0.0	LOS A	0.0	0.0	0.00	76.3
6	R2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.13	45.1
Approach			43	87.8	43	87.8	0.041	0.3	NA	0.0	0.0	0.00	75.6
North: Lawson Rd (1km)													
7	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.12	54.6
8	T1	All MCs	85	2.5	85	2.5	0.079	5.8	LOS A	0.3	2.5	0.26	54.9
Approach			86	2.4	86	2.4	0.079	5.8	LOS A	0.3	2.5	0.26	54.9
West: Pitt St													
11	T1	All MCs	34	100.0	34	100.0	0.035	0.0	LOS A	0.0	0.0	0.00	80.0
Approach			34	100.0	34	100.0	0.035	0.0	NA	0.0	0.0	0.00	80.0
All Vehicles			191	41.4	191	41.4	0.079	3.6	NA	0.3	2.5	0.16	58.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [H] H. Primary Arterial Road / Collector Road - LILO - 2036 (Network Intersections)

Network: [2] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 2 | Project 2036 (AM) Site Scenario: 2 | H. Internal Road - 2036 - AM

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back [Veh. veh]	Of Queue [Dist] m	Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Collector Road													
1	L2	All MCs	83 39.2	83 39.2	0.068	6.1	LOS A	0.3	3.1	0.02	0.56	0.02	50.8
Approach			83 39.2	83 39.2	0.068	6.1	LOS A	0.3	3.1	0.02	0.56	0.02	50.8
East: Primary Arterial Road													
4	L2	All MCs	1 0.0	1 0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.30	0.00	55.1
5	T1	All MCs	1 0.0	1 0.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	55.0
Approach			2 0.0	2 0.0	0.001	2.8	NA	0.0	0.0	0.00	0.30	0.00	55.1
North: Collector Road													
7	L2	All MCs	1 0.0	1 0.0	0.001	5.5	LOS A	0.0	0.0	0.01	0.57	0.01	52.9
Approach			1 0.0	1 0.0	0.001	5.5	LOS A	0.0	0.0	0.01	0.57	0.01	52.9
West: Primary Arterial Road (280m)													
10	L2	All MCs	88 26.2	88 26.2	0.071	5.9	LOS A	0.0	0.0	0.00	0.57	0.00	49.7
11	T1	All MCs	1 0.0	1 0.0	0.071	0.0	LOS A	0.0	0.0	0.00	0.57	0.00	53.8
Approach			89 25.9	89 25.9	0.071	5.8	NA	0.0	0.0	0.00	0.57	0.00	49.8
All Vehicles			176 31.7	176 31.7	0.071	5.9	NA	0.3	3.1	0.01	0.56	0.01	50.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 Site: [I] I. ERR / Primary Arterial Road - 2036 (Network Intersections)

Network: [2] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 2 | Project 2036 (AM) Site Scenario: 2 | I. Internal Road - 2036 - AM

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: ERR															
1	L2	All MCs	73	14.5	73	14.5	0.056	26.2	LOS B	1.0	8.2	0.21	0.75	0.21	50.4
2	T1	All MCs	725	10.7	725	10.7	* 0.735	59.3	LOS E	22.9	184.5	0.95	0.84	0.96	39.7
3	R2	All MCs	40	13.2	40	13.2	0.629	95.5	LOS F	3.0	24.9	1.00	0.79	1.12	17.2
Approach			838	11.2	838	11.2	0.735	58.1	LOS E	22.9	184.5	0.89	0.83	0.90	33.8
East: Primary Arterial Road (280m)															
4	L2	All MCs	18	17.6	18	17.6	0.030	10.7	LOS A	0.3	2.7	0.28	1.00	0.28	39.1
5	T1	All MCs	1	0.0	1	0.0	0.003	49.0	LOS D	0.1	0.4	0.83	0.50	0.83	16.3
6	R2	All MCs	64	45.9	64	45.9	* 0.736	61.5	LOS E	3.8	44.7	1.00	1.11	1.20	20.5
Approach			83	39.2	83	39.2	0.736	50.4	LOS D	3.8	44.7	0.84	1.08	1.00	22.8
North: ERR															
7	L2	All MCs	47	37.8	47	37.8	0.041	19.2	LOS B	0.1	1.0	0.02	0.61	0.02	59.9
8	T1	All MCs	1348	1.3	1348	1.3	0.671	28.4	LOS B	33.3	240.9	0.76	0.70	0.76	53.2
9	R2	All MCs	233	37.6	233	37.6	* 0.736	59.8	LOS E	15.1	164.6	0.96	0.87	1.02	22.7
Approach			1628	7.6	1628	7.6	0.736	32.6	LOS C	33.3	240.9	0.77	0.72	0.78	45.1
West: Collector Road (300m)															
10	L2	All MCs	100	37.9	100	37.9	0.129	11.1	LOS A	1.7	18.0	0.35	1.37	0.35	30.9
11	T1	All MCs	1	0.0	1	0.0	0.006	61.0	LOS E	0.1	0.5	0.92	0.55	0.92	14.5
12	R2	All MCs	31	13.8	31	13.8	0.465	82.3	LOS F	2.2	18.2	1.00	0.73	1.00	22.5
Approach			132	32.0	132	32.0	0.465	28.0	LOS B	2.2	18.2	0.50	1.22	0.50	28.3
All Vehicles			2681	10.9	2681	10.9	0.736	40.9	LOS C	33.3	240.9	0.80	0.79	0.81	38.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

		ped/h	sec		ped	m		sec	m	m/sec
South: ERR										
P1	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0 0.92
East: Primary Arterial Road (280m)										
P2	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0 0.92
North: ERR										
P3	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0 0.92
West: Collector Road (300m)										
P4	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0 0.92
All Pedestrians		42	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0 0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY



Site: [J] J. Primary Arterial Road / Collector Road - 2036

(Network Intersections)

Network: [2] 6 - Project 2036 (AM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Roundabout

Network Scenario: 2 | Project 2036 (AM)

Site Scenario: 1 | J. Internal Road - 2036 - AM

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: Collector Road													
1	L2	All MCs	1	0.0	1	0.0	0.079	4.6	LOS A	0.5	5.1	0.35	55.0
2	T1	All MCs	1	0.0	1	0.0	0.079	4.9	LOS A	0.5	5.1	0.35	55.3
3	R2	All MCs	77	31.5	77	31.5	0.079	12.4	LOS A	0.5	5.1	0.35	53.4
Approach			79	30.7	79	30.7	0.079	12.1	LOS A	0.5	5.1	0.35	53.5
East: Collector Road (300 m)													
4	L2	All MCs	179	31.8	179	31.8	0.213	4.2	LOS A	1.2	11.6	0.03	51.3
5	T1	All MCs	53	32.0	53	32.0	0.213	4.4	LOS A	1.2	11.6	0.03	52.1
6	R2	All MCs	73	31.9	73	31.9	0.213	9.1	LOS A	1.2	11.6	0.03	50.3
Approach			304	31.8	304	31.8	0.213	5.4	LOS A	1.2	11.6	0.03	51.2
North: Collector Road													
7	L2	All MCs	32	33.3	32	33.3	0.031	5.0	LOS A	0.2	1.4	0.33	51.1
8	T1	All MCs	1	0.0	1	0.0	0.031	4.7	LOS A	0.2	1.4	0.33	54.1
9	R2	All MCs	1	0.0	1	0.0	0.031	9.3	LOS A	0.2	1.4	0.33	53.2
Approach			34	31.2	34	31.2	0.031	5.1	LOS A	0.2	1.4	0.33	51.4
West: Collector Road													
10	L2	All MCs	1	0.0	1	0.0	0.022	4.6	LOS A	0.1	0.9	0.34	53.2
11	T1	All MCs	22	28.6	22	28.6	0.022	5.2	LOS A	0.1	0.9	0.34	50.3
12	R2	All MCs	1	0.0	1	0.0	0.022	9.4	LOS A	0.1	0.9	0.34	52.7
Approach			24	26.1	24	26.1	0.022	5.4	LOS A	0.1	0.9	0.34	50.7
All Vehicles			441	31.3	441	31.3	0.213	6.6	LOS A	1.2	11.6	0.13	51.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site: [2 (2)] A. Elizabeth Drive / Martin Road - 2036** (Network Intersections)

Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 4 | 2036 Project (PM) **Site Scenario: 5 | 2036 Project (PM)**

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: ERR (250m)													
1	L2	All MCs	200	10.0	200	10.0	0.151	7.0	LOS A	0.9	7.4	0.10	28.8
2	T1	All MCs	12	0.0	12	0.0	0.015	52.6	LOS D	0.3	2.2	0.83	28.0
3	R2	All MCs	1121	11.2	1121	11.2	*0.880	50.9	LOS D	28.5	230.0	1.00	26.3
Approach			1333	10.9	1333	10.9	0.880	44.3	LOS D	28.5	230.0	0.86	25.1
East: Elizabeth Drive													
4	L2	All MCs	751	9.0	751	9.0	0.542	8.1	LOS A	5.9	46.2	0.20	32.3
5	T1	All MCs	184	13.1	184	13.1	0.708	73.1	LOS F	6.5	53.0	1.00	19.6
6	R2	All MCs	22	28.6	22	28.6	*0.165	81.6	LOS F	0.8	6.8	0.99	25.9
Approach			957	10.2	957	10.2	0.708	22.3	LOS B	6.5	53.0	0.37	28.5
North: Martin Road													
7	L2	All MCs	67	4.7	67	4.7	0.390	40.6	LOS C	2.9	21.2	0.98	25.1
8	T1	All MCs	40	0.0	40	0.0	*0.401	73.2	LOS F	2.8	19.6	1.00	17.2
9	R2	All MCs	60	3.5	60	3.5	0.109	41.4	LOS C	2.9	20.9	0.75	24.0
Approach			167	3.1	167	3.1	0.401	48.7	LOS D	2.9	21.2	0.90	23.0
West: Elizabeth Drive													
10	L2	All MCs	16	6.7	16	6.7	0.009	7.4	LOS A	0.0	0.2	0.00	49.4
11	T1	All MCs	716	4.7	716	4.7	*0.879	67.1	LOS E	26.4	195.5	1.00	28.3
12	R2	All MCs	324	6.5	324	6.5	0.708	52.2	LOS D	8.6	66.8	1.00	13.4
Approach			1056	5.3	1056	5.3	0.879	61.7	LOS E	26.4	195.5	0.98	24.5
All Vehicles			3513	8.7	3513	8.7	0.880	43.7	LOS D	28.5	230.0	0.77	25.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Aver. Speed
					[Ped	Dist]				

	ped/h	sec		ped	m			sec	m	m/sec
South: ERR (250m)										
P1 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
East: Elizabeth Drive										
P21 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P22 Stage 2	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Martin Road										
P3 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
West: Elizabeth Drive										
P41 Stage 1	1	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
P42 Stage 2	1	37.5	LOS D	0.0	0.0	0.91	0.91	204.2	200.0	0.98
All Pedestrians	6	59.7	LOS E	0.0	0.0	0.95	0.95	226.4	200.0	0.88

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (9)] C. Elizabeth Drive / Lawson Road - 2036 (Network Intersections)
Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 4 | 2036 Project (PM) Site Scenario: 5 | 2036 Project (PM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	Dist] m			km/h
South: Lawson Road (250m)														
1	L2	All MCs	151	0.0	151	0.0	0.122	5.7	LOS A	0.5	3.6	0.19	0.48	60.9
Approach			151	0.0	151	0.0	0.122	5.7	LOS A	0.5	3.6	0.19	0.48	60.9
East: Elizabeth Drive (290m)														
4	L2	All MCs	22	9.5	22	9.5	0.013	7.7	LOS A	0.0	0.0	0.00	0.60	52.5
5	T1	All MCs	422	10.5	422	10.5	0.195	0.3	LOS A	0.0	0.0	0.00	0.01	78.9
Approach			444	10.4	444	10.4	0.195	0.6	NA	0.0	0.0	0.00	0.04	78.4
West: Elizabeth Drive														
11	T1	All MCs	1026	4.6	1026	4.6	0.277	0.1	LOS A	0.0	0.0	0.00	0.01	79.4
Approach			1026	4.6	1026	4.6	0.277	0.1	NA	0.0	0.0	0.00	0.01	79.4
All Vehicles			1621	5.8	1621	5.8	0.277	0.8	NA	0.5	3.6	0.02	0.06	76.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [D (2)] D. ERR/ Collector Rd- 2036 (Network Intersections)

Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA

Site Category: NA

Give-Way (Two-Way)

Network Scenario: 4 | 2036 Project (PM)

Site Scenario: 5 | 2036 Project (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: ERR (1km)															
1	L2	All MCs	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	62.2
2	T1	All MCs	1335	11.0	1335	11.0	0.386	0.3	LOS A	0.0	0.0	0.00	0.01	0.00	69.3
Approach			1336	11.0	1336	11.0	0.386	0.3	NA	0.0	0.0	0.00	0.01	0.00	69.3
North: ERR (250m)															
8	T1	All MCs	1115	7.9	1115	7.9	0.312	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	69.5
Approach			1115	7.9	1115	7.9	0.312	0.1	NA	0.0	0.0	0.00	0.01	0.00	69.5
West: PNB (290 m)															
10	L2	All MCs	1	0.0	1	0.0	0.002	9.8	LOS A	0.0	0.0	0.58	0.63	0.58	39.2
Approach			1	0.0	1	0.0	0.002	9.8	LOS A	0.0	0.0	0.58	0.63	0.58	39.2
All Vehicles			2452	9.6	2452	9.6	0.386	0.2	NA	0.0	0.0	0.00	0.01	0.00	69.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site: [E (2)] E. Lawson Rd / PNB - 2036** (Network Intersections)

Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Roundabout

Network Scenario: 4 | 2036 Project (PM)

Site Scenario: 4 | 2036 Project (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Lawson Rd (1km)															
2	T1	All MCs	151	0.0	151	0.0	0.063	3.5	LOS A	0.3	2.1	0.01	0.35	0.01	56.6
3	R2	All MCs	1	0.0	1	0.0	0.063	7.4	LOS A	0.3	2.1	0.01	0.35	0.01	56.6
Approach			152	0.0	152	0.0	0.063	3.6	LOS A	0.3	2.1	0.01	0.35	0.01	56.6
East: PNB (290 m)															
4	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.09	0.50	0.09	56.3
6	R2	All MCs	1	0.0	1	0.0	0.001	9.3	LOS A	0.0	0.0	0.09	0.61	0.09	41.6
Approach			2	0.0	2	0.0	0.001	7.4	LOS A	0.0	0.0	0.09	0.55	0.09	47.3
North: Lawson Rd (250m)															
7	L2	All MCs	1	0.0	1	0.0	0.005	3.6	LOS A	0.0	0.2	0.02	0.36	0.02	49.7
8	T1	All MCs	22	9.5	22	9.5	0.011	3.6	LOS A	0.0	0.3	0.01	0.35	0.01	49.8
Approach			23	9.1	23	9.1	0.011	3.6	LOS A	0.0	0.3	0.01	0.35	0.01	49.8
All Vehicles			177	1.2	177	1.2	0.063	3.6	LOS A	0.3	2.1	0.02	0.35	0.02	56.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site:** [F] F. ERR/ Pitt St- 2036 (Network Intersections)
Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70.0 seconds (Network User-Given Cycle Time)
Network Scenario: 4 | 2036 Project (PM) Site Scenario: 5 | 2036 Project (PM)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: ERR															
1	L2	All MCs	37	100.0	37	100.0	0.030	7.9	LOS A	0.1	1.0	0.00	0.56	0.00	54.1
2	T1	All MCs	1252	18.2	1252	18.2	* 0.689	12.0	LOS A	15.4	134.1	0.77	0.70	0.77	48.3
Approach			1288	20.5	1288	20.5	0.689	11.9	LOS A	15.4	134.1	0.75	0.69	0.75	48.5
North: ERR (1km)															
8	T1	All MCs	1115	7.9	1115	7.9	0.426	3.9	LOS A	7.4	57.4	0.42	0.38	0.42	66.4
9	R2	All MCs	1	0.0	1	0.0	* 0.003	38.8	LOS C	0.0	0.1	0.93	0.57	0.93	40.3
Approach			1116	7.9	1116	7.9	0.426	3.9	LOS A	7.4	57.4	0.42	0.38	0.42	66.4
West: Pitt St (290)															
10	L2	All MCs	82	3.8	82	3.8	0.176	27.3	LOS B	2.2	16.9	0.81	0.74	0.81	24.2
12	R2	All MCs	36	100.0	36	100.0	* 0.209	42.0	LOS C	0.6	8.2	0.95	0.71	0.95	29.8
Approach			118	33.0	118	33.0	0.209	31.7	LOS C	2.2	16.9	0.85	0.73	0.85	26.9
All Vehicles			2522	15.5	2522	15.5	0.689	9.3	LOS A	15.4	134.1	0.61	0.55	0.61	58.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: ERR											
P1	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
North: ERR (1km)											
P3	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
West: Pitt St (290)											
P4	Full	1	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02

All Pedestrians	3	29.3	LOS C	0.0	0.0	0.91	0.91	195.9	200.0	1.02
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: [G] G. Lawson Rd / Pitt St - 2036 (Network Intersections)

Network: [1 (7)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 4 | 2036 Project (PM)

Site Scenario: 5 | 2036 Project (PM)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		Rate to Depart	km/h
South: Lawson Rd														
2	T1	All MCs	151	0.0	151	0.0	0.138	5.8	LOS A	0.6	4.5	0.27	0.51	49.8
3	R2	All MCs	64	13.1	64	13.1	0.083	6.0	LOS A	0.3	2.7	0.30	0.52	43.6
Approach			215	3.9	215	3.9	0.138	5.8	LOS A	0.6	4.5	0.28	0.51	47.8
East: Pitt St (290m)														
4	L2	All MCs	1	0.0	1	0.0	0.038	7.0	LOS A	0.0	0.0	0.00	0.02	71.8
5	T1	All MCs	37	100.0	37	100.0	0.038	0.0	LOS A	0.0	0.0	0.00	0.02	79.5
6	R2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.14	0.50	45.1
Approach			39	94.6	39	94.6	0.038	0.3	NA	0.0	0.0	0.00	0.03	78.7
North: Lawson Rd (1km)														
7	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.13	0.53	54.6
8	T1	All MCs	22	9.5	22	9.5	0.021	5.9	LOS A	0.1	0.7	0.25	0.49	54.7
Approach			23	9.1	23	9.1	0.021	5.8	LOS A	0.1	0.7	0.24	0.49	54.7
West: Pitt St														
11	T1	All MCs	36	100.0	36	100.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.00	80.0
Approach			36	100.0	36	100.0	0.037	0.0	NA	0.0	0.0	0.00	0.00	80.0
All Vehicles			313	26.6	313	26.6	0.138	4.5	NA	0.6	4.5	0.21	0.39	54.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [H] H. Primary Arterial Road / Collector Road - LILO - 2036 (Network Intersections)

Network: [2 (2)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 2 | Project 2036 (PM) Site Scenario: 3 | H. Internal Road - 2036 - PM

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: Collector Road													
1	L2	All MCs	152	36.8	152	36.8	0.120	6.0	LOS A	0.5	5.6	0.02	50.8
Approach			152	36.8	152	36.8	0.120	6.0	LOS A	0.5	5.6	0.02	50.8
East: Primary Arterial Road													
4	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	55.1
5	T1	All MCs	1	0.0	1	0.0	0.001	0.0	LOS A	0.0	0.0	0.00	55.0
Approach			2	0.0	2	0.0	0.001	2.8	NA	0.0	0.0	0.00	55.1
North: Collector Road													
7	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.01	52.9
Approach			1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.01	52.9
West: Primary Arterial Road (280m)													
10	L2	All MCs	37	25.7	37	25.7	0.029	5.9	LOS A	0.0	0.0	0.00	49.9
11	T1	All MCs	1	0.0	1	0.0	0.029	0.0	LOS A	0.0	0.0	0.00	54.0
Approach			38	25.0	38	25.0	0.029	5.7	NA	0.0	0.0	0.00	50.0
All Vehicles			193	33.9	193	33.9	0.120	5.9	NA	0.5	5.6	0.01	50.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: [I] I. ERR / Primary Arterial Road - 2036** (Network Intersections)

Network: [2 (2)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)

Network Scenario: 2 | Project 2036 (PM) **Site Scenario: 3 | I. Internal Road - 2036 - PM**

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m		km/h
South: ERR													
1	L2	All MCs	31	13.8	31	13.8	0.021	27.7	LOS B	0.1	1.1	0.07	58.0
2	T1	All MCs	1176	10.3	1176	10.3	*0.793	54.1	LOS D	34.9	272.7	0.93	44.7
3	R2	All MCs	16	6.7	16	6.7	0.213	97.7	LOS F	1.1	8.2	1.00	17.9
Approach			1222	10.3	1222	10.3	0.793	54.0	LOS D	34.9	272.7	0.91	36.4
East: Primary Arterial Road (280m)													
4	L2	All MCs	34	15.6	34	15.6	0.044	7.5	LOS A	0.3	2.9	0.19	40.3
5	T1	All MCs	1	0.0	1	0.0	0.003	45.8	LOS D	0.1	0.4	0.81	17.1
6	R2	All MCs	118	42.9	118	42.9	*0.793	59.5	LOS E	6.8	75.5	1.00	21.0
Approach			153	36.6	153	36.6	0.793	48.0	LOS D	6.8	75.5	0.82	23.5
North: ERR													
7	L2	All MCs	20	36.8	20	36.8	0.024	14.1	LOS A	0.0	0.4	0.03	48.9
8	T1	All MCs	931	0.2	931	0.2	0.478	26.6	LOS B	20.4	144.0	0.70	52.7
9	R2	All MCs	97	35.9	97	35.9	*0.793	82.7	LOS F	7.2	75.3	1.00	17.8
Approach			1047	4.2	1047	4.2	0.793	31.6	LOS C	20.4	144.0	0.71	46.2
West: Collector Road (300m)													
10	L2	All MCs	186	35.6	186	35.6	0.288	15.6	LOS B	4.3	44.9	0.58	28.4
11	T1	All MCs	1	0.0	1	0.0	0.006	61.0	LOS E	0.1	0.5	0.92	14.5
12	R2	All MCs	59	12.5	59	12.5	0.557	78.0	LOS F	4.1	33.9	1.00	23.3
Approach			246	29.9	246	29.9	0.557	30.7	LOS C	4.3	44.9	0.68	26.9
All Vehicles			2668	11.2	2668	11.2	0.793	42.7	LOS D	34.9	272.7	0.81	37.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

		ped/h	sec		ped	m			sec	m	m/sec
South: ERR											
P1	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
East: Primary Arterial Road (280m)											
P2	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
North: ERR											
P3	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
West: Collector Road (300m)											
P4	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
All Pedestrians		42	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY



Site: [J] J. Primary Arterial Road / Collector Road - 2036

(Network Intersections)

Network: [2 (2)] 6 - Project 2036 (PM) (6 - Project 2036)

Output produced by SIDRA INTERSECTION Version: 10.0.8.241

New Site

Site Category: (None)

Roundabout

Network Scenario: 2 | Project 2036 (PM)

Site Scenario: 2 | J. Internal Road - 2036 - PM

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Collector Road															
1	L2	All MCs	1	0.0	1	0.0	0.129	4.1	LOS A	0.8	8.3	0.22	0.61	0.22	55.5
2	T1	All MCs	1	0.0	1	0.0	0.129	4.4	LOS A	0.8	8.3	0.22	0.61	0.22	55.8
3	R2	All MCs	145	30.4	145	30.4	0.129	11.7	LOS A	0.8	8.3	0.22	0.61	0.22	54.3
Approach			147	30.0	147	30.0	0.129	11.6	LOS A	0.8	8.3	0.22	0.61	0.22	54.3
East: Collector Road (300 m)															
4	L2	All MCs	74	30.0	74	30.0	0.088	4.1	LOS A	0.4	4.1	0.03	0.51	0.03	51.5
5	T1	All MCs	20	26.3	20	26.3	0.088	4.3	LOS A	0.4	4.1	0.03	0.51	0.03	52.3
6	R2	All MCs	31	31.0	31	31.0	0.088	9.1	LOS A	0.4	4.1	0.03	0.51	0.03	50.4
Approach			124	29.7	124	29.7	0.088	5.4	LOS A	0.4	4.1	0.03	0.51	0.03	51.3
North: Collector Road															
7	L2	All MCs	49	36.2	49	36.2	0.055	5.9	LOS A	0.3	2.5	0.44	0.54	0.44	50.5
8	T1	All MCs	1	0.0	1	0.0	0.055	5.3	LOS A	0.3	2.5	0.44	0.54	0.44	53.8
9	R2	All MCs	1	0.0	1	0.0	0.055	10.0	LOS A	0.3	2.5	0.44	0.54	0.44	52.9
Approach			52	34.7	52	34.7	0.055	6.0	LOS A	0.3	2.5	0.44	0.54	0.44	50.7
West: Collector Road															
10	L2	All MCs	1	0.0	1	0.0	0.044	4.8	LOS A	0.2	1.8	0.38	0.47	0.38	53.1
11	T1	All MCs	42	30.0	42	30.0	0.044	5.5	LOS A	0.2	1.8	0.38	0.47	0.38	50.0
12	R2	All MCs	1	0.0	1	0.0	0.044	9.6	LOS A	0.2	1.8	0.38	0.47	0.38	52.6
Approach			44	28.6	44	28.6	0.044	5.6	LOS A	0.2	1.8	0.38	0.47	0.38	50.3
All Vehicles			367	30.4	367	30.4	0.129	8.0	LOS A	0.8	8.3	0.21	0.55	0.21	52.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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