

PTG/01516

Transport Impact Assessment 81 Quill Way, Henderson

16th December 2025 | Revision B
Prepared for Scope Property Group

CONTENTS

REPORT DETAILS	3
1 Introduction	5
1.1 Background	5
2 Existing Situation.....	6
2.1 Existing Site Use	6
2.2 Existing Parking and Demand	7
2.3 Existing Access Arrangements.....	7
2.4 Existing Site Traffic.....	9
2.5 Existing Road Network and Traffic Management.....	10
2.6 Traffic Flows on Surrounding Roads and Intersection.....	12
2.7 Operation of Surrounding Intersections	13
2.8 Existing Pedestrian / Cycle Networks	14
2.9 Existing Public Transport Services	14
2.10 Crash Data	16
3 Proposed development	17
3.1 Regional Context.....	17
3.2 Proposed Land Use	18
3.3 Access Arrangements.....	20
3.3.1 Access Routes – Servicing and Delivery.....	21
3.4 Parking Provision.....	25
3.5 End of Trip Facilities	27
3.6 Road Network.....	27
3.7 Intersection Layouts and Controls.....	27
3.8 Pedestrian / Cycle Networks and Crossing Facilities	27
3.9 Public Transport Services	27
4 Integration with Surrounding Area	28
4.1 Surrounding Major Attractors / Generators.....	28
4.2 Committed Development and Transport Proposals	29
4.3 Proposed Changes to External Road Network	30
4.4 Proposed Changes to Land Uses within 1200 metres	30
4.5 Deficiencies in Existing Transport Networks and Remedial Measures	30
4.6 Proposed Changes to Pedestrian / Cycle Network	31
5 Analysis of Transport Network.....	32
5.1 Assessment Years and Time Periods.....	32
5.2 Development Generated Traffic	32
5.3 Distribution of Generated Traffic	34
5.4 Existing Background Traffic Flows	35
5.5 Background and ‘With Development’ Traffic Flows	36
5.6 Analysis of Development Accesses.....	38

6 Road Safety and Accessibility Impact	45
6.1 Impact on Neighbouring Areas	45
6.2 Road Safety	45
6.3 Public Transport Access.....	45
6.4 Analysis of Pedestrian / Cycle Network	45
6.5 Safe Walk / Cycle to School (for residential and school site development only)	45
6.6 Traffic Management Plan (where appropriate).....	45
7 Summary and Conclusions.....	46
Appendix A – WAPC Checklist	48
Appendix B – Site Plans.....	51
Appendix C – SIDRA Movement Summary Tables.....	53

REPORT DETAILS

Unique Document Identification

	Information
Document Title	Transport Impact Assessment – 81 Quill Way, Henderson
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Revision Details

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Rev A	2/12/2025	For issue	CDR/LL	AW
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1 INTRODUCTION

1.1 Background

PTG Consulting Pty Ltd (PTG) has been commissioned by **Scope Property Group** to prepare a Transport Impact Assessment (TIA) for the proposed development of a Henderson Business Hub in 81 Quill Way, Henderson, within the City of Cockburn.

This report has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Assessment Guidelines for Developments: Volume 4- Individual Developments (2016) and the Transport Impact Assessment (TIA) Checklist is included at **Appendix A**.

Specifically, this report aims to assess the operations of the proposed development internally and its connections to the adjacent road network, with a focus on traffic volumes, access and accessibility.

This report also outlines the requirements and opportunities associated with traffic and transport within the development, referencing relevant Council and WAPC policies and guidelines as well as best-practice planning within Western Australia.

2 EXISTING SITUATION

2.1 Existing Site Use

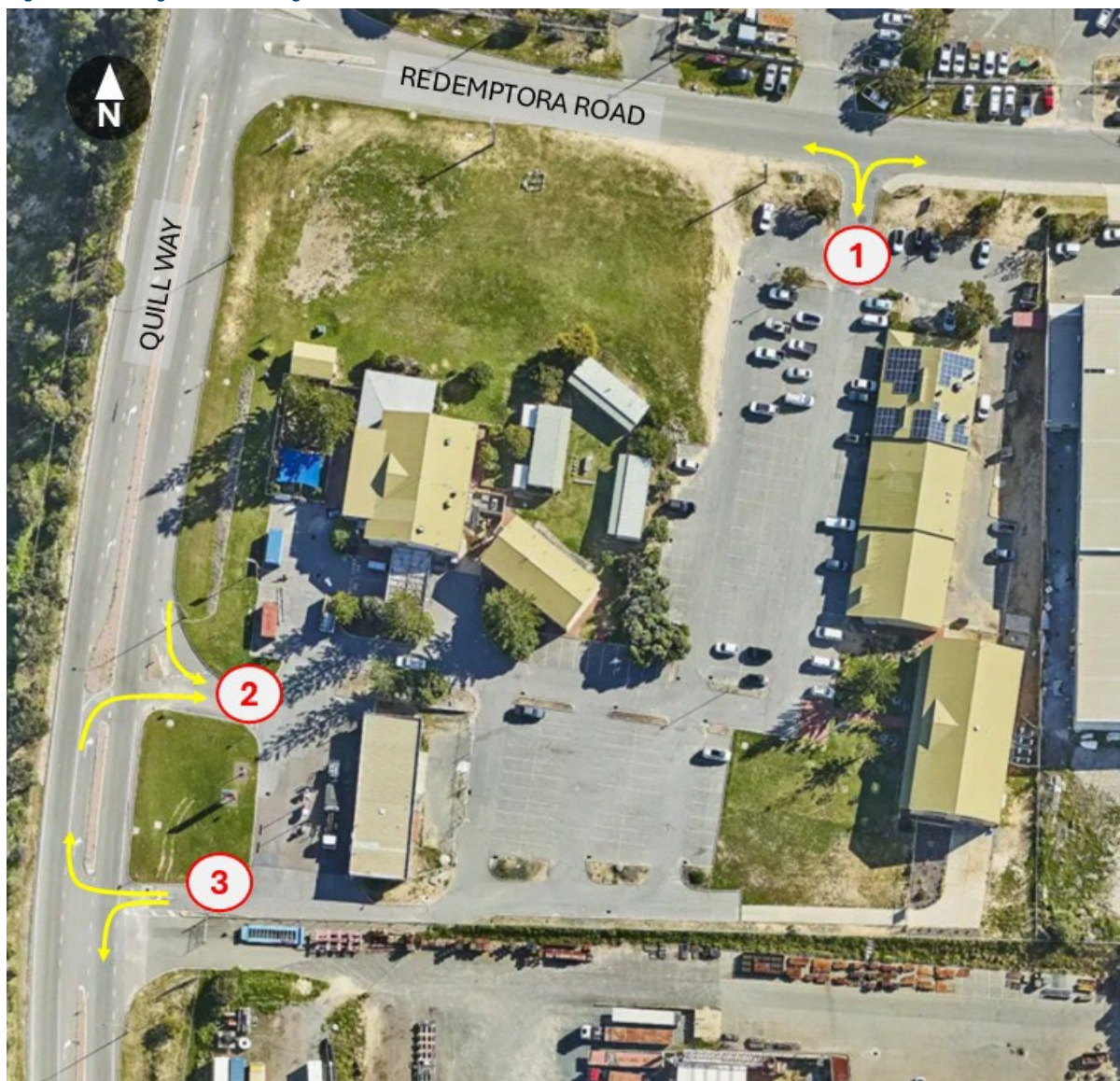
The Site is shown in **Figure 1**. The Site contains existing structures, as shown in **Figure 2**, which will be demolished and/or modified as part of the proposed development.

Figure 1 - Existing Site Boundaries



Source: MetroMap (2025)

Figure 3 - Existing Access Arrangement

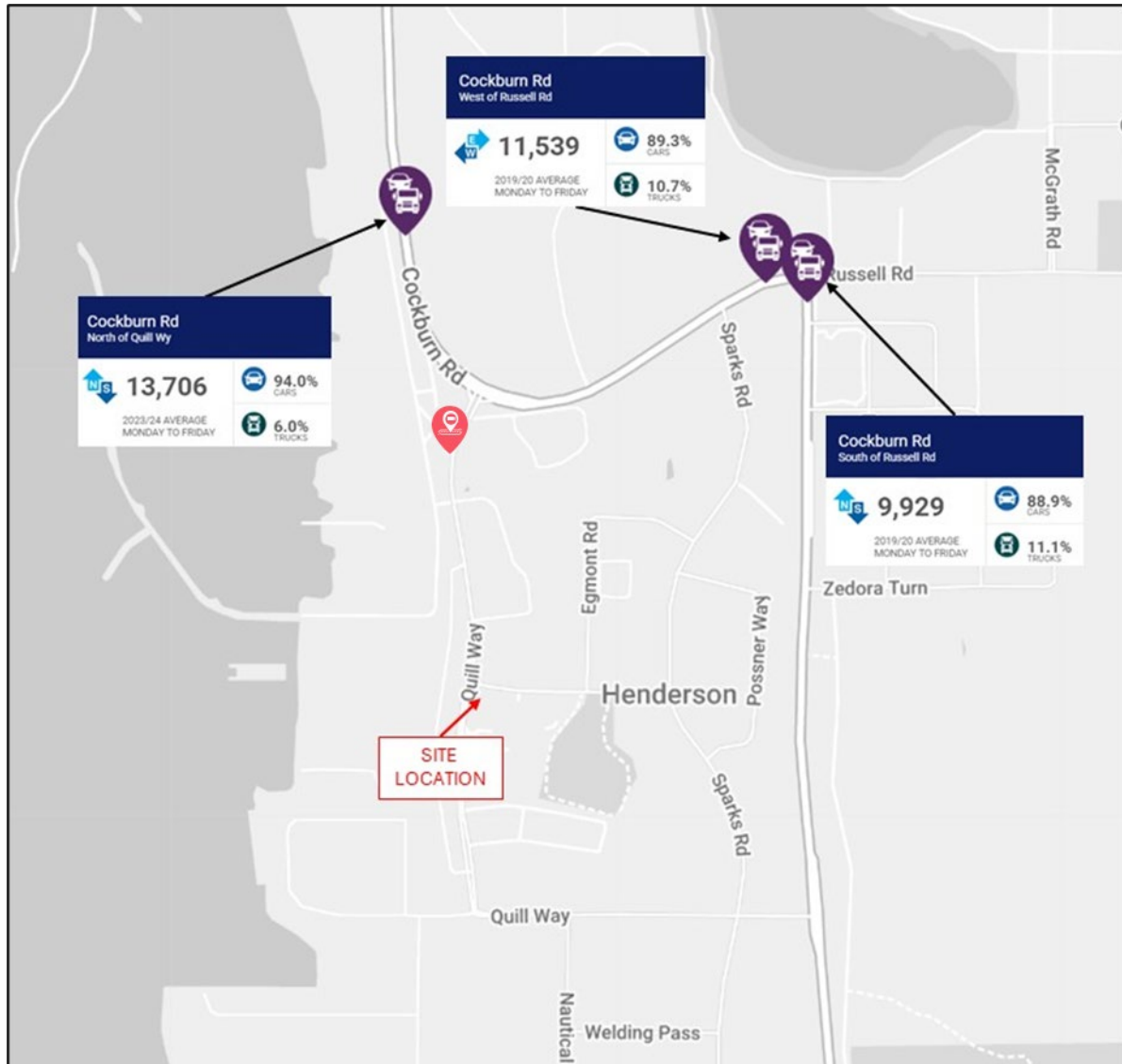


Source: MetroMap (2025)

2.4 Existing Site Traffic

Traffic data was available for Quill way (at the intersection with Clarence Beach Road) from a video survey undertaken in May 2024, while midblock traffic counts were also available at the Cockburn Road locations shown in **Figure 4**.

Figure 4 - Existing Traffic Volumes



2.5 Existing Road Network and Traffic Management

Road Classifications are defined in the Main Roads Functional Hierarchy as follows:

- » Primary Distributors (light blue): Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads.
- » Regional Distributors (red): Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.
- » District Distributor A (green): These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.
- » District Distributor B (dark blue): Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- » Local Distributors (orange): Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local government.
- » Access Roads (grey): Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local government.

Figure 5 shows the surrounding area road hierarchy and the characteristics of the surrounding road network are summarised in Table 1.

Figure 5- Existing Road Network



Source: MRWA Road Information Mapping

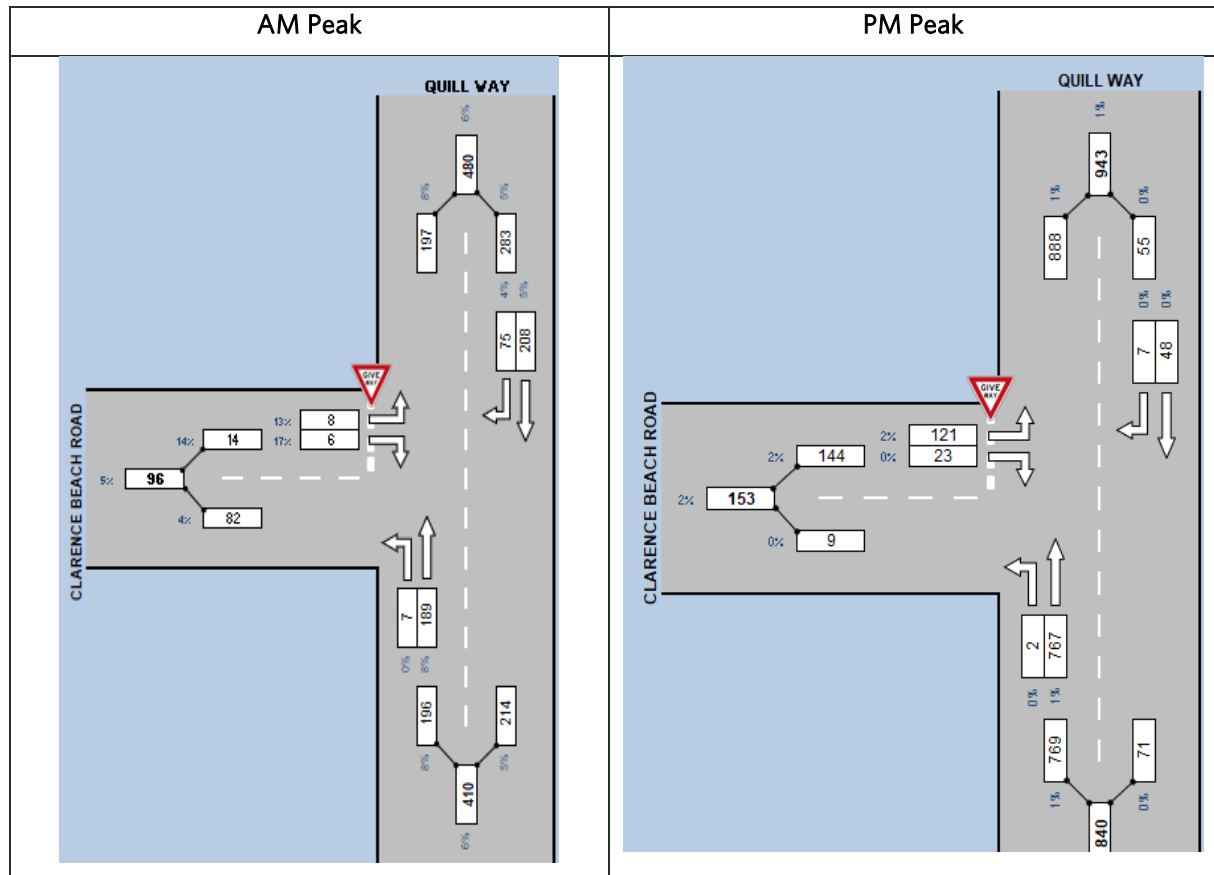
Table 1 - Existing Road Network

Road Name	Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Road Pavement Width (m)	Speed Limit (km/h)
Cockburn Road	Primary Distributor	MRWA	2	0	15-23	60
Quill Way	Distributor B	Local Government	2	0	10-15	60
Redemptora Road	Access Road	Local Government	2	1	9.8	50
Sparks Road	Access Road	Local Government	2	1	9.5-10	50

2.6 Traffic Flows on Surrounding Roads and Intersection

The nearest intersection with recorded traffic data is Quill Way/ Clarence Beach Road. The AM and PM peak hour traffic volumes for this intersection are shown in **Figure 6**.

Figure 6 - Existing AM and PM Peak Hour Traffic Volumes for Quill Way



There are no available data for the other intersections adjacent to the Site.

2.7 Operation of Surrounding Intersections

The only intersection adjacent to the Site is the priority-controlled intersection of Quill Way / Redemptora Road, shown in **Figure 7**.

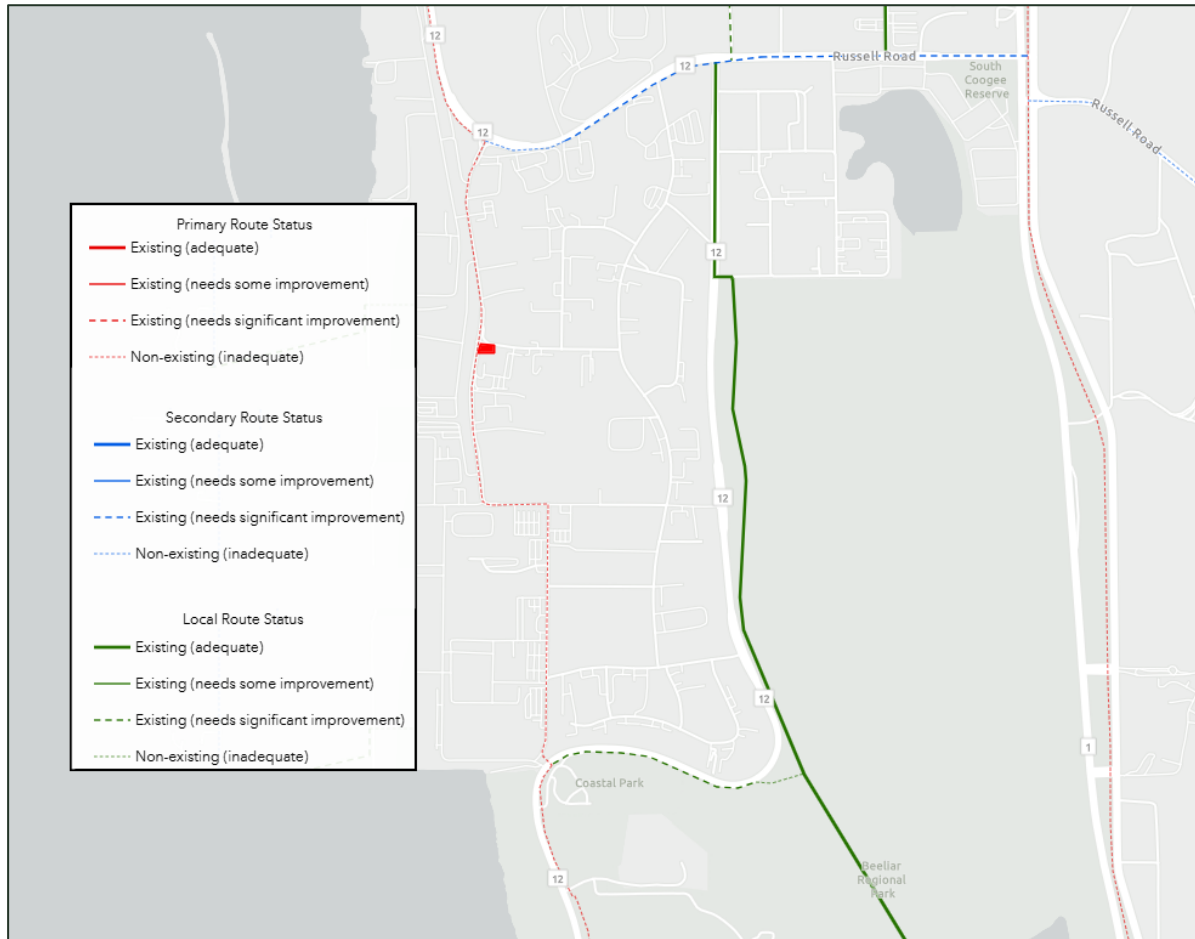
Figure 7 - Existing Intersection of Quill Way / Redemptora Road



2.8 Existing Pedestrian / Cycle Networks

Figure 8 shows the existing status of the cycle paths that form part of the Perth and Peel Long Term Cycling Network (LTCN) for the areas adjacent to the Site. While Cockburn Road includes sealed shoulders that can be used for on-road bike riding, the status of the Primary Route along Quill Way is classified as “Non-existing (inadequate)”.

Figure 8 - Existing Pedestrian / Cycle Networks



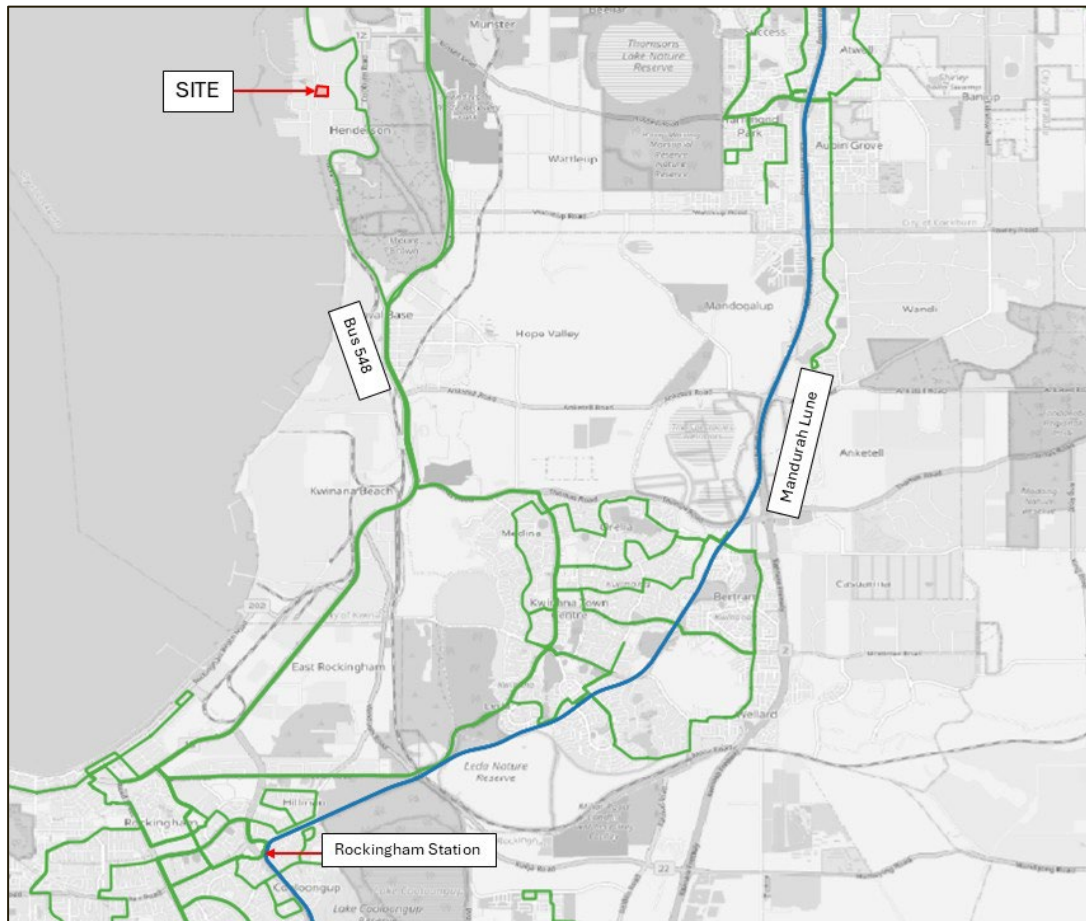
Source: Department of Transport

While there are currently no pedestrian paths along Quill Way, there is a 2.0m wide concrete footpath along a section on the southern side of Quill Way (east of Access 2).

2.9 Existing Public Transport Services

Bus 548 is the nearest bus service near the site as shown in **Figure 9**. Due to the low frequencies of the bus services, it is not anticipated that many staff or visitors will travel to the Site via public transport.

Figure 9 Existing Public Transport Routes and Bus Stops



2.10 Crash Data

A review of the existing crash data from Main Roads WA Traffic Map for the period between 1st January 2020 to 31st December 2024 was conducted for the following roads surrounding the site:

- » Quill Way/ Redemptora Road Intersection
- » Redemptora Road Midblock
- » Quill Way Midblock (no crashes)

The crash locations are illustrated in **Figure 10**, while the crash details summarised in **Table 2** and **Table 3**.

Figure 10 Crash Locations



Source: Main Roads WA

Table 2 Quill Way/ Redemptora Road Intersection Crashes

Crash Nature	Fatal	Hospital	Medical	PDO Major	PDO Minor	Total Crashes
Right Angle	-	-	1	-	-	1

Table 3 Redemptora Road Midblock Crashes

Crash Nature	Fatal	Hospital	Medical	PDO Major	PDO Minor	Total Crashes
Not Known	-	-	-	1	-	1

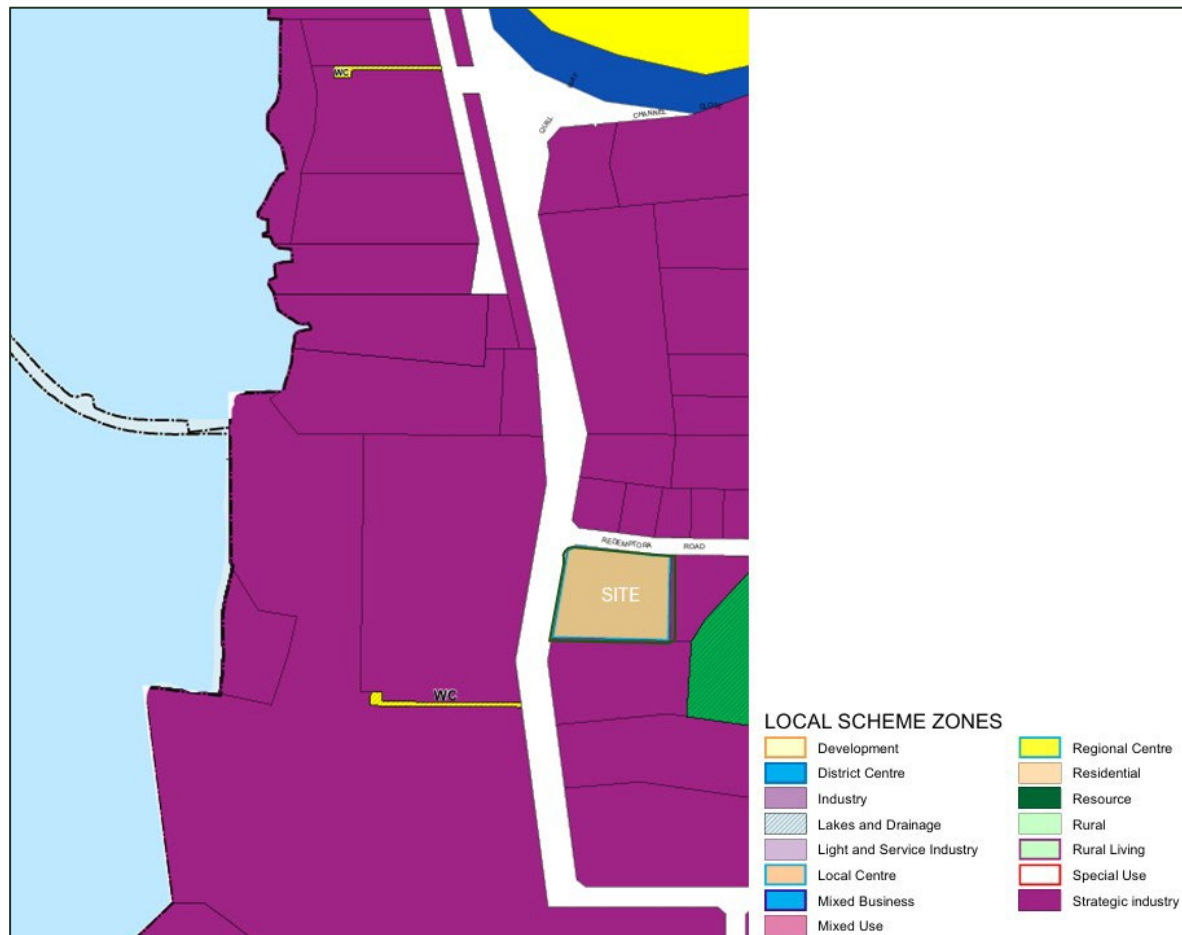
A total of 2 crashes were recorded for these roads; one was a right-angle crash at the intersection of Quill Way / Redemptora Road which resulted in medical attention on-site. The other crash occurred midblock on Redemptora Road and resulted in major property damage and was caused by a reversing car colliding with a motorcycle. The low frequency of accidents suggest they are isolated rather than indicative of a systematic safety issues on the frontage roads.

3 PROPOSED DEVELOPMENT

3.1 Regional Context

In accordance with the City of Cockburn Town Planning Scheme No. 3, the Site is currently zoned as “Local Centre”, as shown in **Figure 11**. The area is mostly surrounded by strategic industry land use.

Figure 11 Existing Land Use Zoning



Source: City of Cockburn Town Planning Scheme No.3

3.2 Proposed Land Use

The proposed development (ground floor) layout is shown in **Figure 12**, while a summary of the proposed development yields provided in **Table 4**. As shown in **Table 4**, the proposed development will include a total of 737 parking bays across the entire Site. Further details regarding the parking supply are provided in **Section 3.4** of this report.

A high-resolution copy of the proposed development layout is included in **Appendix B**.

Figure 12 Proposed Development Layout



Source: Pennock Architects

Table 4 Proposed Development Yields

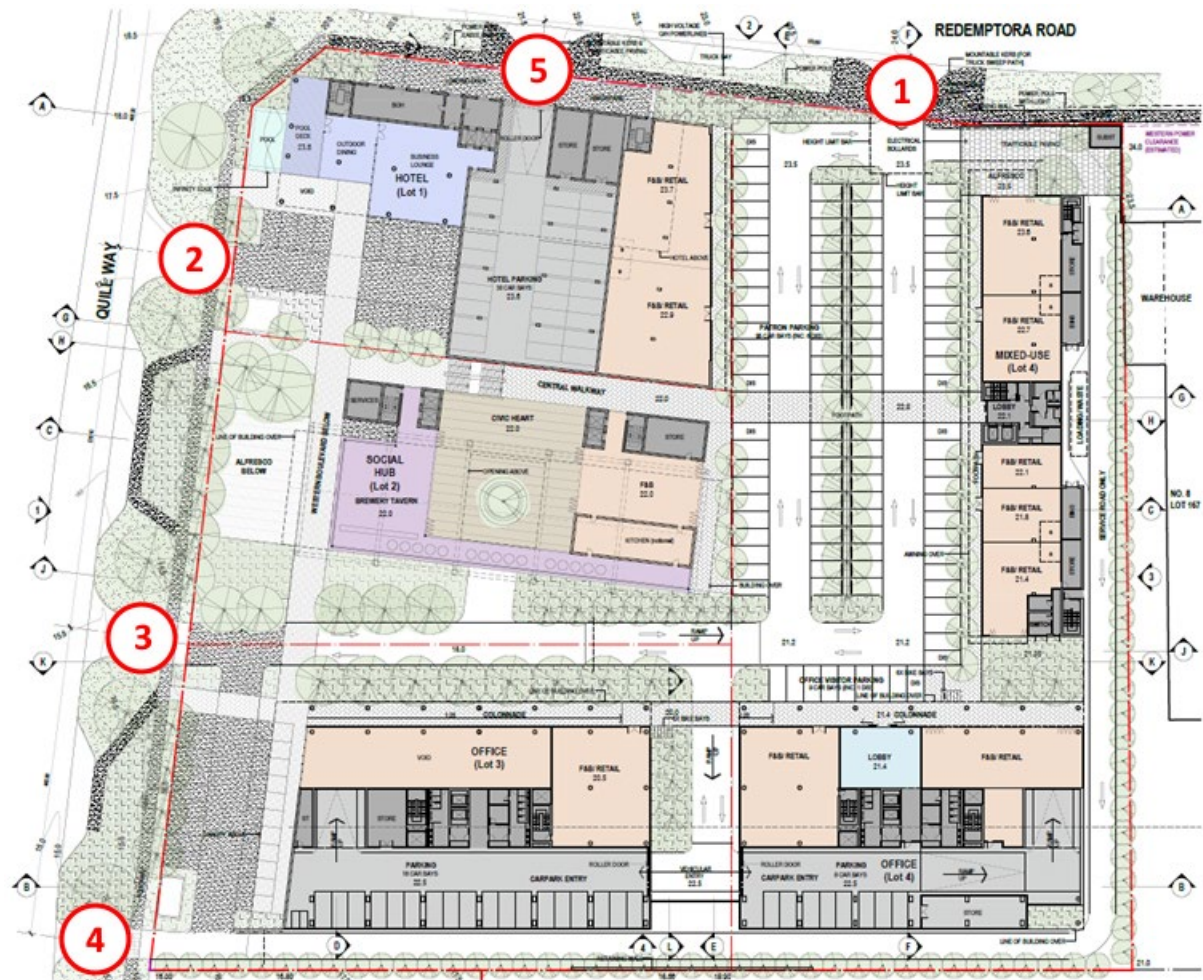
Land Use		Yields	Car Parking Bays
Lot 1 (Hotel)	Hotel	161 rooms	118
	Retail / F&B	557m ²	
Lot 2 (Social Hub)	Tavern	505m ²	59
	Fitness	836m ²	
	Convention Centre	600 person capacity	
	Restaurant	100 seat capacity	
Lot 3 (Office)	Retail / F&B	939m ²	217
	Office	12,439m ²	
Lot 4 (Mixed Use)	Retail / F&B	635m ²	95
	Office/ Medical	1,155m ²	
	Office	1,125m ²	
Lot 4 (Office)	Office	10,333m ²	248
	Retail / F&B	536m ²	

3.3 Access Arrangements

Vehicular access is proposed at the 5 locations shown in **Figure 13**.

- **Access 1** - Entry and exit access for heavy and light vehicles only via Redemptora Road
- **Access 2** - Left-in and left-out access for light vehicles along Quill Way.
- **Access 3** - Left-in, left-out and right-in entry and exit access for heavy vehicles and light vehicles.
- **Access 4** - Left-out exit access for heavy vehicles.
- **Access 5** - Entry and exit access to Lot 1 car park via Redemptora Road

Figure 13 Proposed Vehicular Access Locations



3.3.1 Access Routes – Servicing and Delivery

The loading areas for Lots 1 and 2 can be accessed by up to 12.5m Heavy Rigid Vehicles (HRVs), while Lots 3 and 4 can be accessed up to 8.8m Medium Rigid Vehicles (MRVs). The swept paths for these service/delivery vehicles are shown in **Figure 14** to **Figure 17**.

Figure 14 - HRV Swept Path for Lot 1



Figure 15 HRV Swept Path for Lot 2

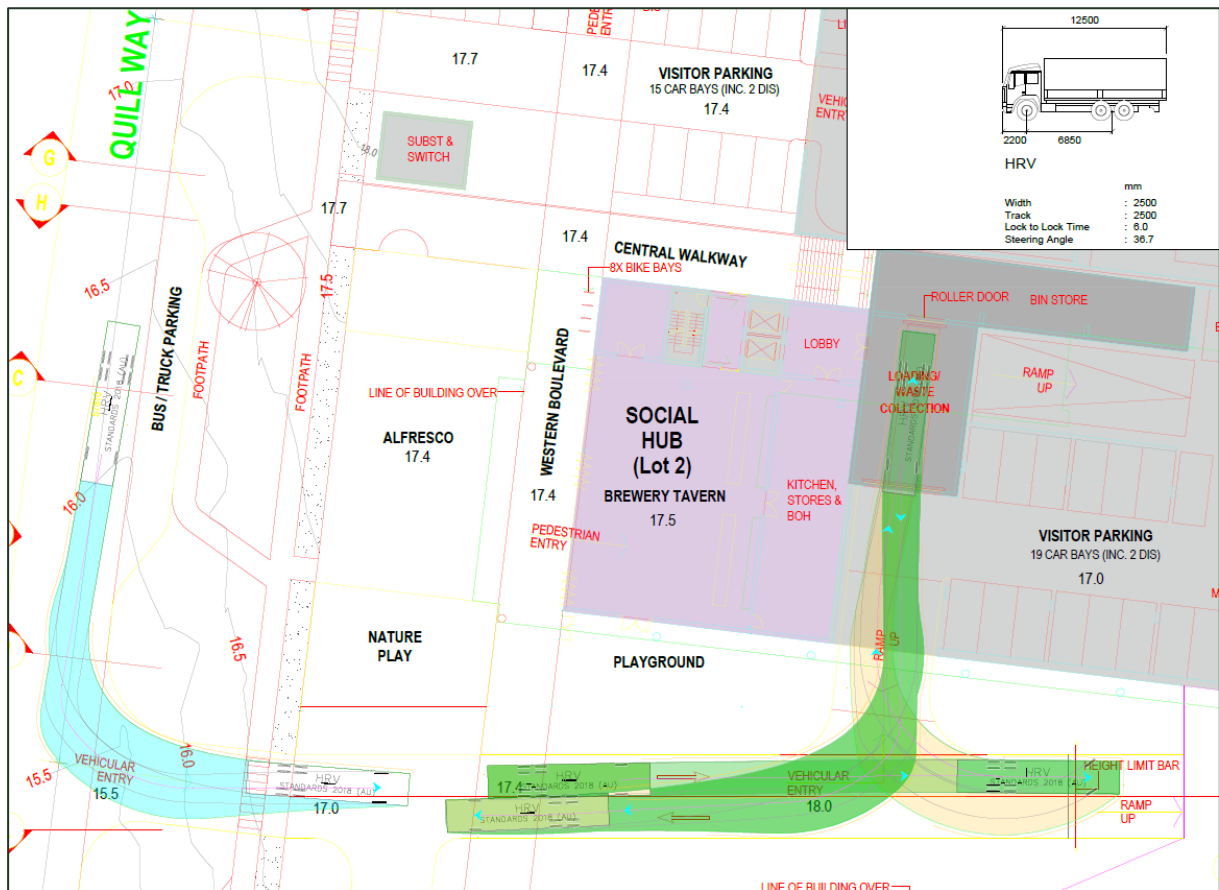


Figure 16 MRV Swept Path for Site Circulation



Figure 17 HRV Swept Path for Lot 4

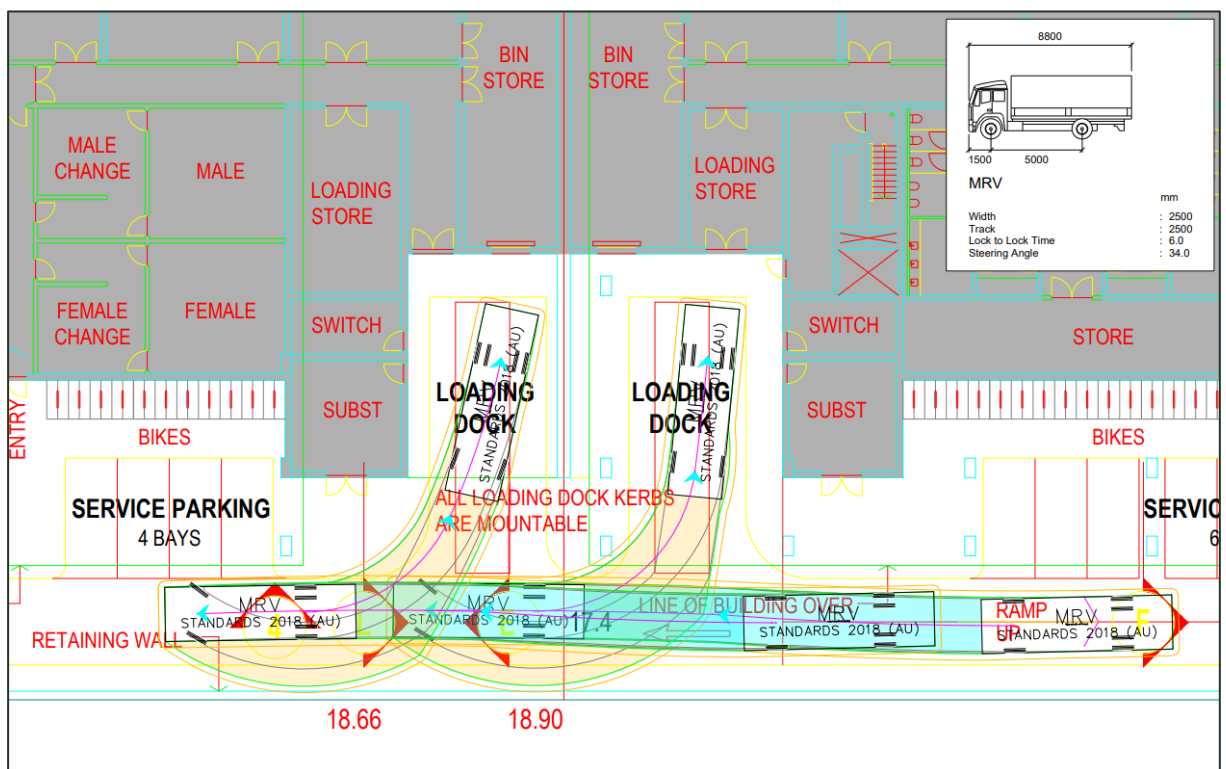


Figure 20 Waste Truck Swept Path - 10m (Lot 3 & 4- Office)

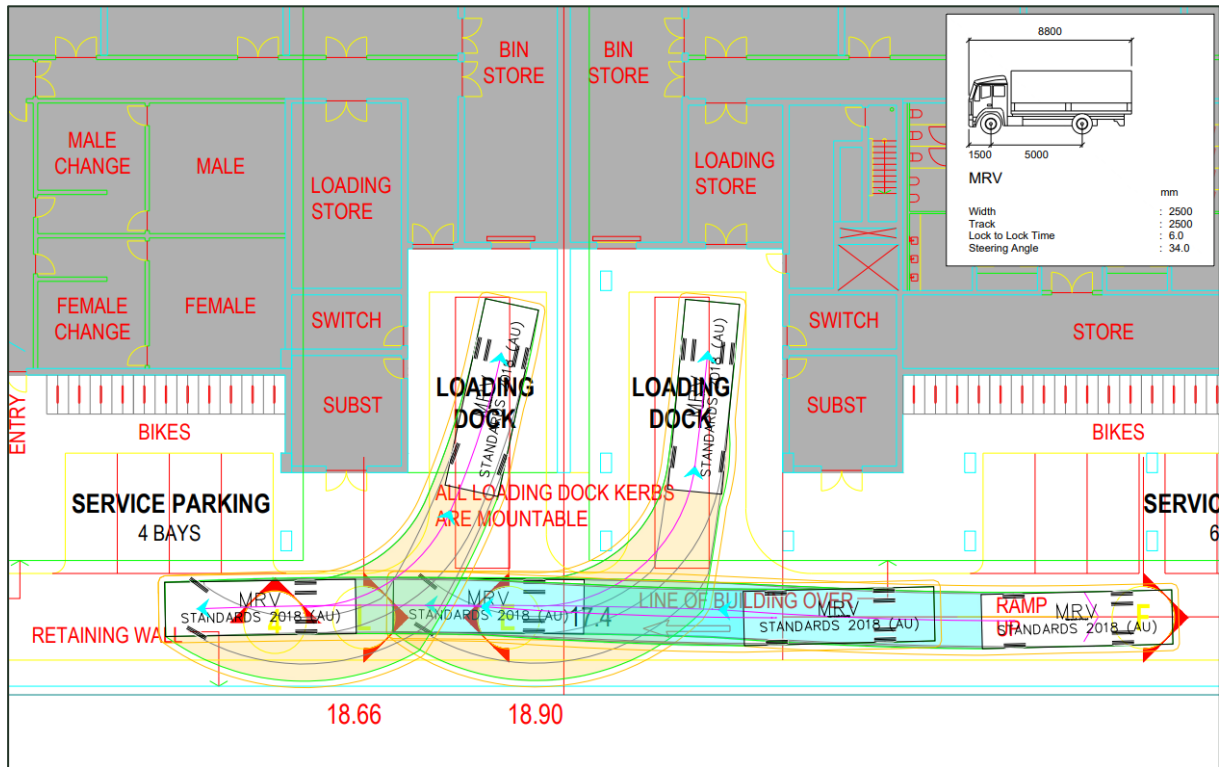
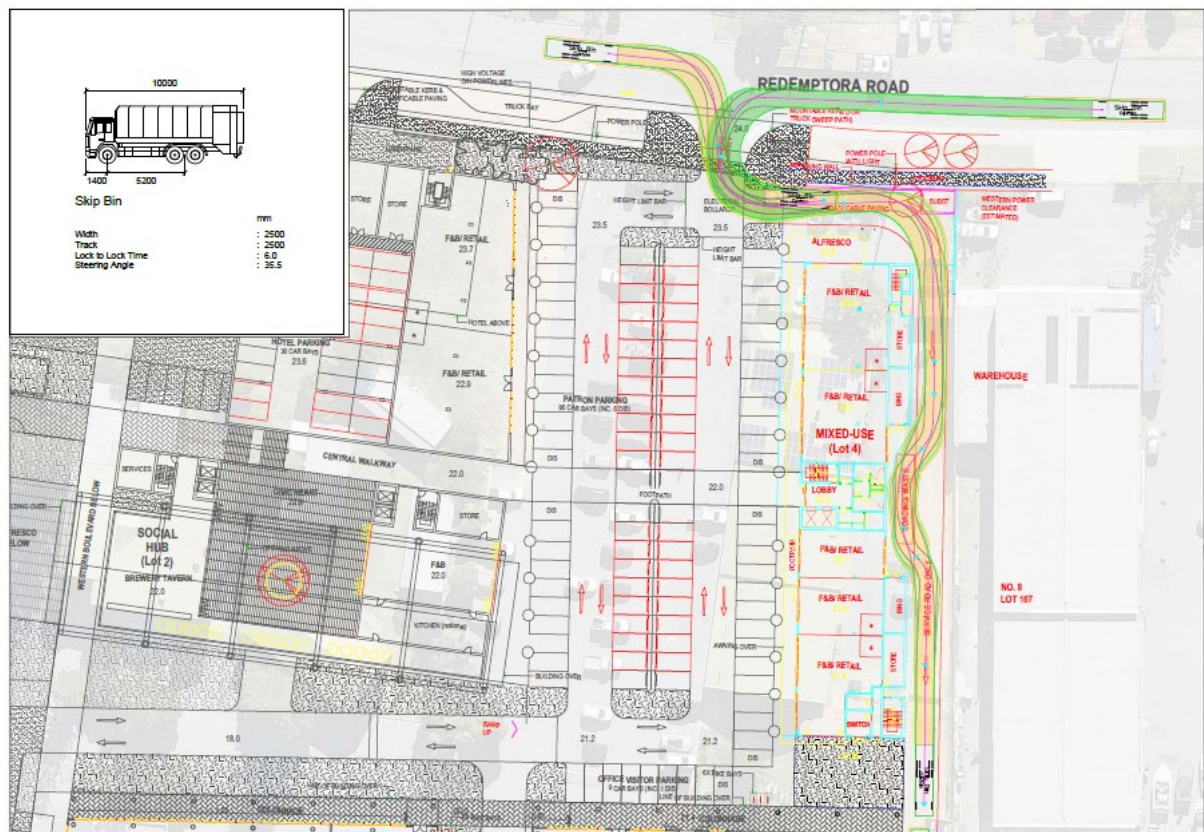


Figure 21 Waste Truck Swept Path - 10m (Lot 4- Mixed Use)



3.4 Parking Provision

The statutory car parking requirements as documented in the City of Cockburn Local Planning Scheme No. 3 (Part IV, Table 2 and Table 3) has been used to estimate the parking requirements for the Master Plan (Revision A, dated 11/12/2024). A summary of the parking requirements and provisions of the proposed development is shown in **Table 5** below.

Table 5 Car Parking Requirements and Supply

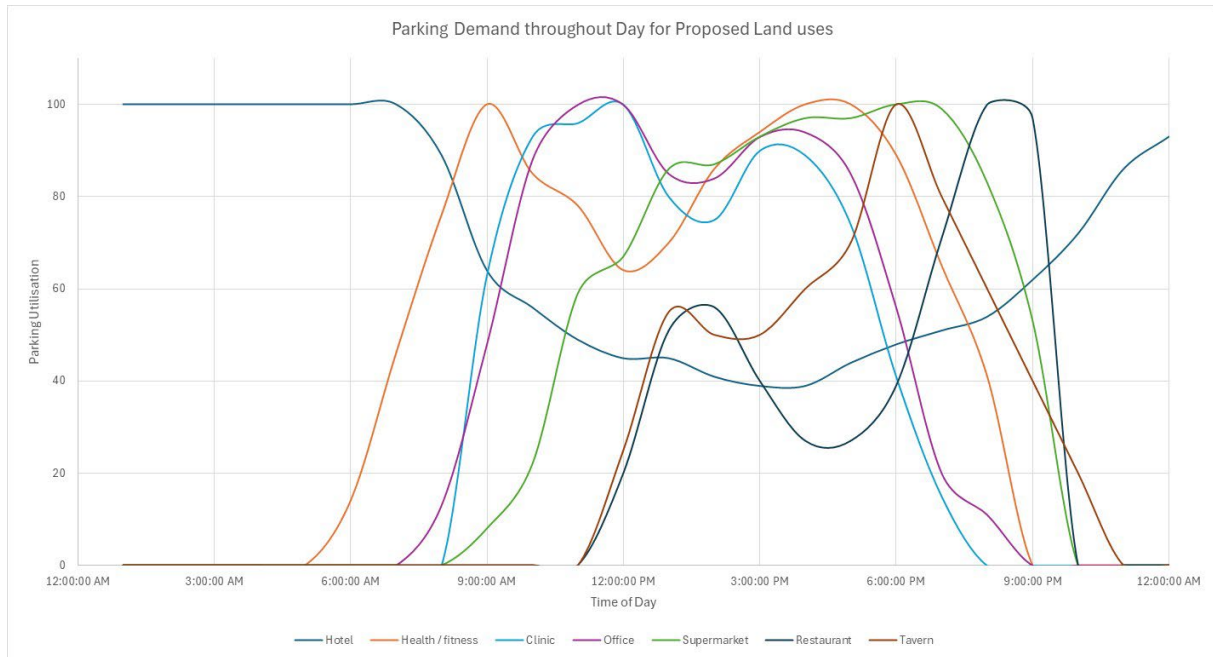
Lots	Land Use	Yield	Car Parking Requirements		Number of Bays Provided
Lot 1 (Hotel)	Hotel	161 rooms	1 : 1 bedroom	161	118
	Retail/F&B	557 sqm NLA	1 : 12m ² NLA	46	
Lot 2 (Social Hub)	Tavern	505 sqm NLA	1 : 2 m ² NLA of Drinking Area	252	59
	Restaurant	100 seats	1 per 4 seats	25	
	Gym/Fitness	836 sqm NLA + 10 staff	1 : 20 m ² NLA + 1 per staff member	52	
	Convention Centre	600 persons	1 per 4 persons	150	
Lot 3 (Office)	Office	12,439 sqm GFA	1 : 50m ² GLA	249	217
	Retail/F&B	939 sqm NLA	1 : 12 m ² NLA	78	
Lot 4 (Mixed Use)	Medical	1,155 sqm NLA (20 practitioners)	5 : 1 Practitioner*	100	95
	Office	1,125 sqm NLA	1 : 50m ² GLA	23	
	Retail/F&B	635 sqm NLA	1 : 12 m ² NLA	53	
Lot 4 (Office)	Office	12,439 sqm GFA	1 : 50m ² GLA	249	248
	Retail/F&B	536 sqm NLA	1 : 12m ² NLA	45	
Total On-Site Car Bay Required				1,483	
Total On-Site Car Bays Provided				737	
Parking Surplus/Shortfall (+/-)				-746	

As outlined in **Table 5**, the proposed development requires a total parking supply of 1,483 car parking bays based on the statutory requirements. As the Site will provide a total of 737 parking bays (which includes 13 ACROD bays), this represents a shortfall of 746 bays compared to the statutory requirements. However, as shown in **Figure 22**, there is a substantial reciprocity between the parking demands associated with the proposed land uses throughout the day. For example, the parking demand for the hotel will be highest at night time ((when the hotel guests have returned with their cars and staying overnight) when the parking demands for the other land uses are lowest (as the businesses will be closed), while the parking demand for the office buildings will be highest in the morning and afternoon, and the parking demand for the tavern and restaurant will be highest in the evenings.

It is also noted that the car parking requirements are considered in isolation for each of the land uses and therefore do not consider shared users between the land uses. The close proximity of the office buildings, hotel, retail uses, gym, tavern and restaurants would encourage on-site trip chaining, reducing the need for multiple vehicle movements and repeat parking demand by the same users. This internal capture effect effectively lowers the overall parking demand compared to standalone developments. For example, the majority of visitors/customers at the retail land uses, gym, tavern and restaurants are expected to be staff from the office buildings or guests at the hotel.

When assessed holistically, the combined peak parking demand across all land uses, as well as the internal capture effect, is substantially lower than the sum of the individual statutory requirements assessed in isolation.

Figure 22 Parking Demand throughout Day for Proposed Land uses



3.5 End of Trip Facilities

As outlined in the City of Cockburn Local Planning Scheme No. 3 (Part IV, Table 3), the required bike parking spaces for the Site are summarised in **Table 6**.

Table 6 - Bicycle Racks Requirements and Supply

Proposed Land Use		Yield	Bike Parking Requirements		Number of Bays Provided
Lot 1 (Hotel)	Hotel	161 rooms	Not applicable	-	-
	Retail/F&B	557 sqm NLA	1:200m²NLA	3	
Lot 2 (Social Hub)	Tavern	1,035 sqm NLA	1:50m² GLA	21	8 bike bays
	Gym/Fitness	836 sqm NLA	1:200m²NLA	4	
Lot 3 (Office)	Office	453 sqm NLA	1:200m² GLA employees 1:750 m² GLA visitors	3	54 bike bays
	R Retail/F&B	635 sqm NLA	1:200m²NLA	3	
Lot 4 (Mixed Use)	Medical	1,155 sqm NLA	1:400m² GLA employees 1:200 m² GLA visitors	8	-
	Office	1,125 sqm NLA	1:200m² GLA employees 1:750 m² GLA visitors	8	
	Retail/F&B	635 sqm NLA	1:200m²NLA	3	
Lot 4 (Office)	Office	10,333 sqm NLA	1: 1:200m² GLA employees 1:750 m² GLA visitors	66	90 bike bays
	Retail/F&B	536 sqm NLA	1:200m²NLA	3	
Total On-Site Bike Rack Required				122	
Total On-Site Bike Racks Provided				152	
Bike Parking Surplus				30	

A total of 152 bicycle parking spaces is provided on site, resulting in a surplus of 30 spaces compared to the City's requirement of 122 bicycle parking spaces.

The bike parking facilities are to be shared within the whole development. The site also provides male and female changing rooms are also available at Lot 3 (Office) and Lot 4 (Office).

3.6 Road Network

The proposed development will utilise the existing road network for access to the Site. There are no public roads proposed within the Site, only driveways and internal circulating roadways.

3.7 Intersection Layouts and Controls

The intersections and controls for the proposed access locations are described in **Section 3.3**.

3.8 Pedestrian / Cycle Networks and Crossing Facilities

The proposed development will include construction of a 1.8m wide footpath along the section of Quill Way and Redemptora Road fronting the Site.

3.9 Public Transport Services

No changes to the public transport services are proposed as part of the development.

4 INTEGRATION WITH SURROUNDING AREA

4.1 Surrounding Major Attractors / Generators

As shown in **Figure 23**, the Site is located within the Australian Marine Complex (AMC). The purpose of the proposed development is to provide land uses and services to support the general industrial and marine construction and maintenance activities undertaken within the AMC.

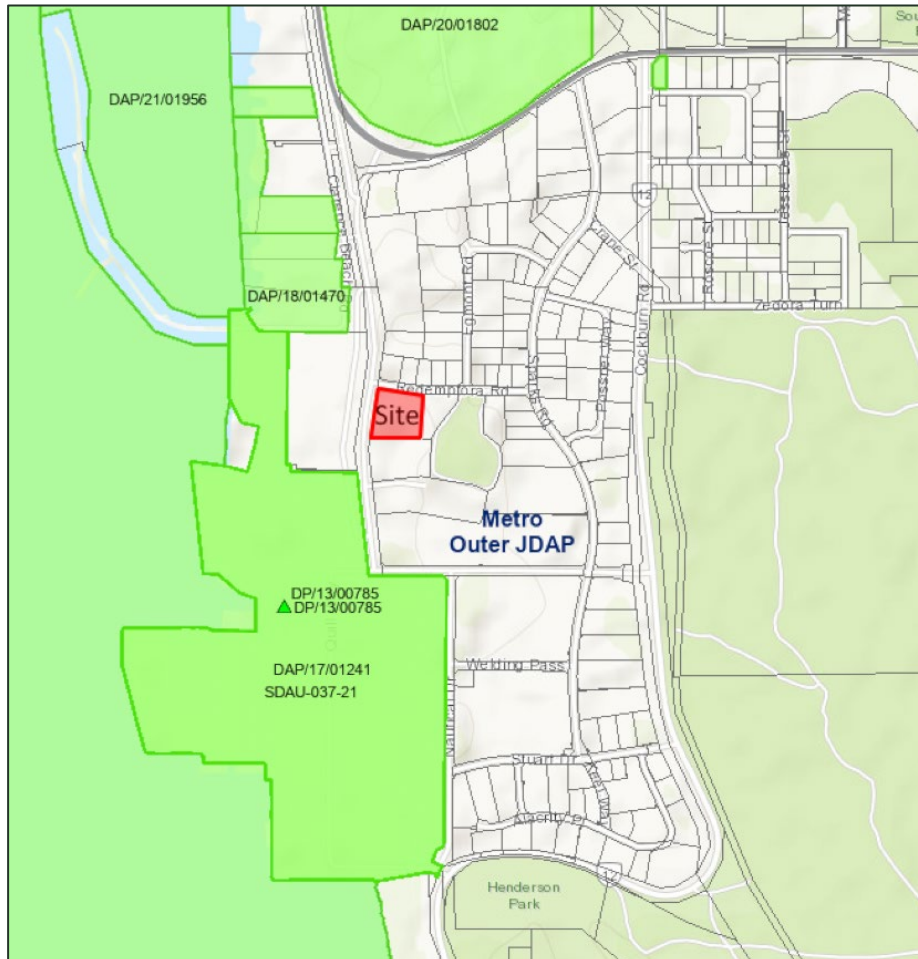
Figure 23 Surrounding Major Attractors / Generators



4.2 Committed Development and Transport Proposals

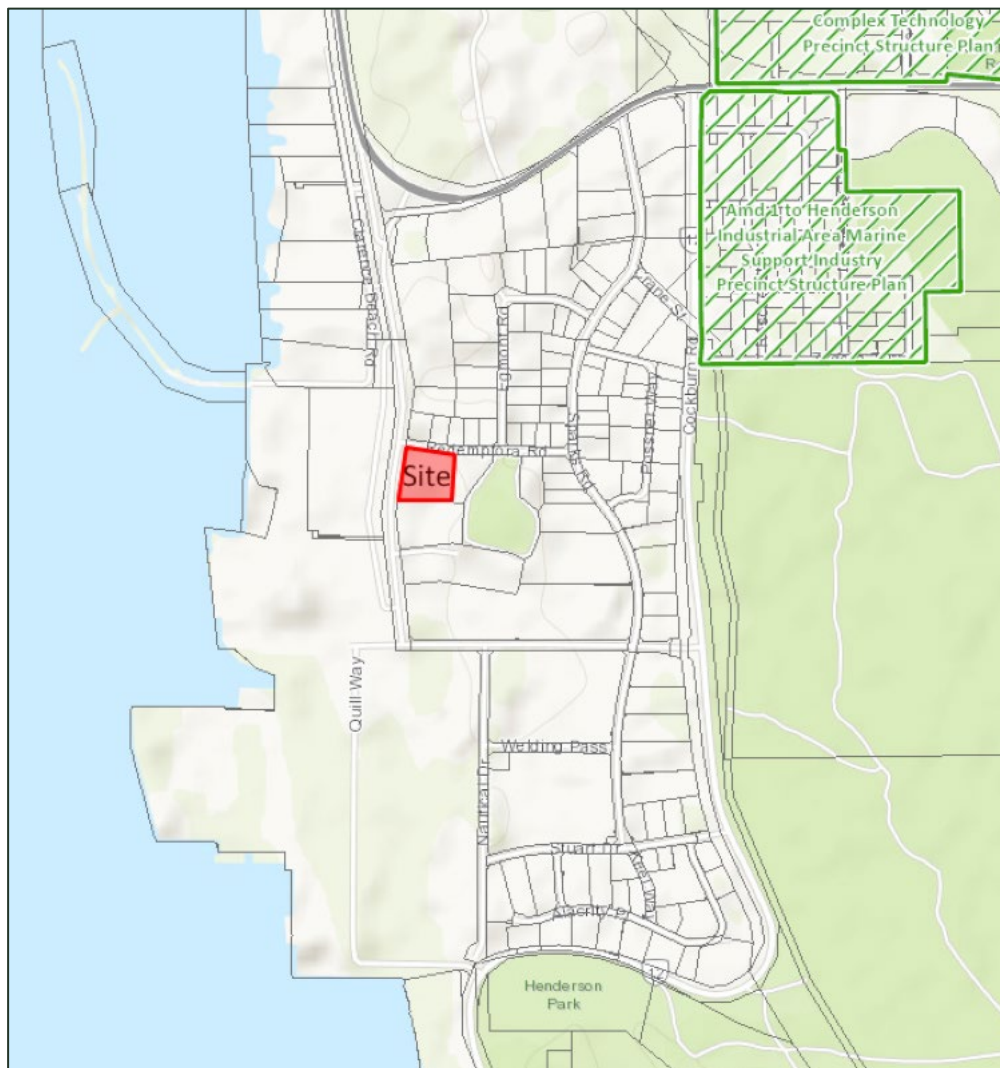
A search of the PlanWA website and database did not show any active development applications (refer to **Figure 24**) or structure plans (refer to **Figure 25**) within or adjacent to the Site. The development applications shown in **Figure 24** were resolved in 2020/21 or earlier.

Figure 24 Development Applications adjacent to Site



Source: PlanWA

Figure 25 Approved Structure Plans adjacent to Site



Source: PlanWA

4.3 Proposed Changes to External Road Network

PTG also contacted Department of Energy and Economic Diversification (DEED) (formerly the Department of Jobs, Tourism, Science and Innovation) who has previously commissioned a detailed transport study for the AMC precinct. While DEED confirmed that there are no immediate plans for changes to the existing road network along Quill Way they advised that a shared path is proposed to be constructed on one side of Quill Way to improve pedestrian and cyclist connectivity in the area. At this stage, the proposal remains unfunded and as a result an indicative timeframe for the construction of the shared path has not yet been determined.

4.4 Proposed Changes to Land Uses within 1200 metres

PTG is not aware of any proposed land use changes within 1200 metres of the Site.

4.5 Deficiencies in Existing Transport Networks and Remedial Measures

While the existing road network is considered sufficient, the pedestrian and cycling networks within AMC are generally considered to be deficient. As described in **Section 3.8**, the proposed development will include construction of a 1.8m wide footpath along the section of Quill Way and Redemptora Road fronting the Site.

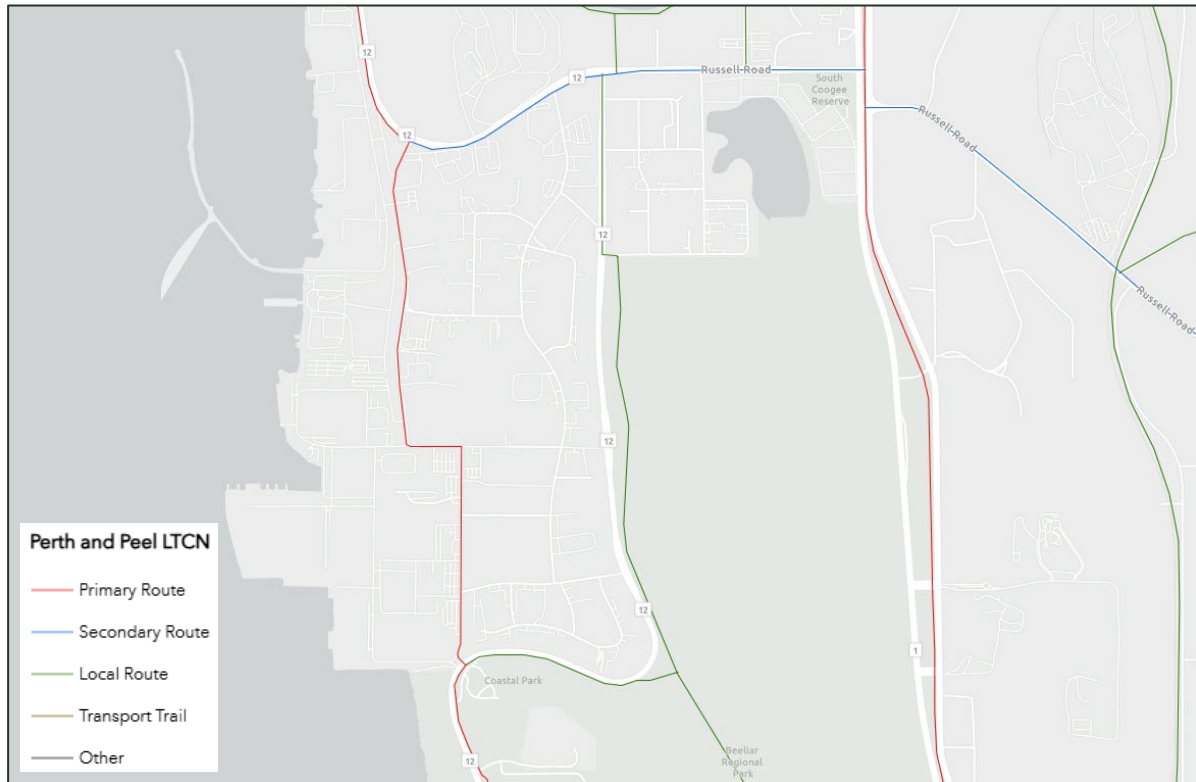
The proposed shared path along Quill Way, as described in **Section 4.2**, will improve both the pedestrian and cycling connectivity from AMC to the adjacent paths.

4.6 Proposed Changes to Pedestrian / Cycle Network

The Long-Term Cycle Network (LTCN) designates Quill Way as one of the Primary Routes, Cockburn Road/Russell Road as a Secondary Route, and Redemptora Road as a Local Route.

The LTCN for the immediate surrounds of the Site is shown in **Figure 26**.

Figure 26 Perth and Peel Long-Term Cycle Network



Source: Department of Transport

5 ANALYSIS OF TRANSPORT NETWORK

5.1 Assessment Years and Time Periods

The following time periods have been identified as the peak times in terms of traffic generation for the proposed land uses:

- » Weekday AM Peak
- » Weekday PM Peak

Based on information provided by the Client, the Site is expected to be fully developed by 2028. As such, assessment has been undertaken for the following assessment years:

- » 2028, representing the year of full development for the Site
- » 2038, representing 10 years post-opening

5.2 Development Generated Traffic

The traffic generation rates for the proposed Neighbourhood Activity Centre (NAC) land uses were based on the following sources:

- » Institute of Transportation Engineers (ITE) 11th Edition
- » RMS NSW Trip Generation and Parking Demand Surveys

The trip generation rates and development yields are detailed in **Table 7**, while the trip in/out distribution are summarised in **Table 8**. The total expected traffic volumes generated are summarised in **Table 9** for each of the proposed land uses and in **Table 10** for each of the Lots within the Site.

Table 7 - Development Trip Generation Rates

Lot	Proposed Land Use	Source	Yield	Weekday AM Peak	Weekday PM Peak
Lot 1	Hotel	ITE310	161 rooms	0.53/room	0.6/room
	Retail/ F&B	WAPC	557m ² NLA	2.50/100sqm GFA	5.00/100sqm GFA
Lot 2	Tavern	ITE 975	505m ² NLA	-	16.72/100sqm GFA
	Fitness	ITE492	836m ² NLA	1.4/100sqm GLFA	3.92/100sqm GLFA
	Convention Centre	Parking rate	600 persons	1 per parking bay (1 per 4 people)	1 per parking bay (1 per 4 people)
	Restaurant	ITE 931	100 seats	-	0.28 per seat
Lot 3	Retail/ F&B	WAPC	939m ² NLA	2.50/100sqm GFA	5.00/100sqm GFA
	Office	ITE710	10,079m ² NLA	1.64/100sqm GLFA	1.98/100sqm GLFA
Lot 4- Mixed Use	Retail, F&B	NSW	635m ² NLA	2.50/100sqm GFA	5.00/100sqm GFA
	Medical	ITE630	1,155m ² NLA	3.7/100sqm GLFA	4.54/100sqm GLFA
	Office	NSW	1,125m ² NLA	1.64/100sqm GLFA	1.98/100sqm GLFA
Lot 4 - Office	Retail/ F&B	WAPC	536m ² NLA	2.50/100sqm GFA	5.00/100sqm GFA
	Office	ITE710	10,333 m ² NLA	1.64/100sqm GLFA	1.98/100sqm GLFA

Table 8 - Directional Distribution

Land Use	Weekday AM Peak		Weekday PM Peak	
	IN	OUT	IN	OUT
Hotel	39%	61%	55%	45%
Retail F&B	80%	20%	50%	50%
Conference Centre	100%	0%	0%	100%
Restaurant	-	-	67%	33%
Tavern	-	-	68%	32%
Office	88%	12%	17%	83%
Medical	60%	40%	42%	58%
Fitness	46%	54%	52%	48%

Table 9 - Total Trip Generation per Land Use

Land Use	Weekday AM Peak		Weekday PM Peak	
	IN	OUT	IN	OUT
Hotel	45	41	57	41
Retail F&B	54	14	134	134
Conference Centre	150	0	0	150
Restaurant	-	-	18	9
Tavern	-	-	118	55
Office	310	42	57	277
Medical	21	14	20	24
Fitness	5	6	16	15
TOTAL	585	117	359	677
	702		1,036	

Table 10 - Total Trip Generation per Lot

Land Use	Weekday AM Peak		Weekday PM Peak	
	IN	OUT	IN	OUT
Lot 1	56	44	85	69
Lot 2	155	6	91	201
Lot 3	164	25	74	177
Lot 4 (mixed use)	50	19	55	70
Lot 4 (office)	160	23	54	160
TOTAL	585	117	359	677
	702		1,036	

5.3 Distribution of Generated Traffic

The assumed distribution of the development-generated traffic is shown in **Figure 27** and **Figure 28**.

Figure 27 - Directional Distribution (Inbound)



Figure 28 - Directional Distribution (Outbound)

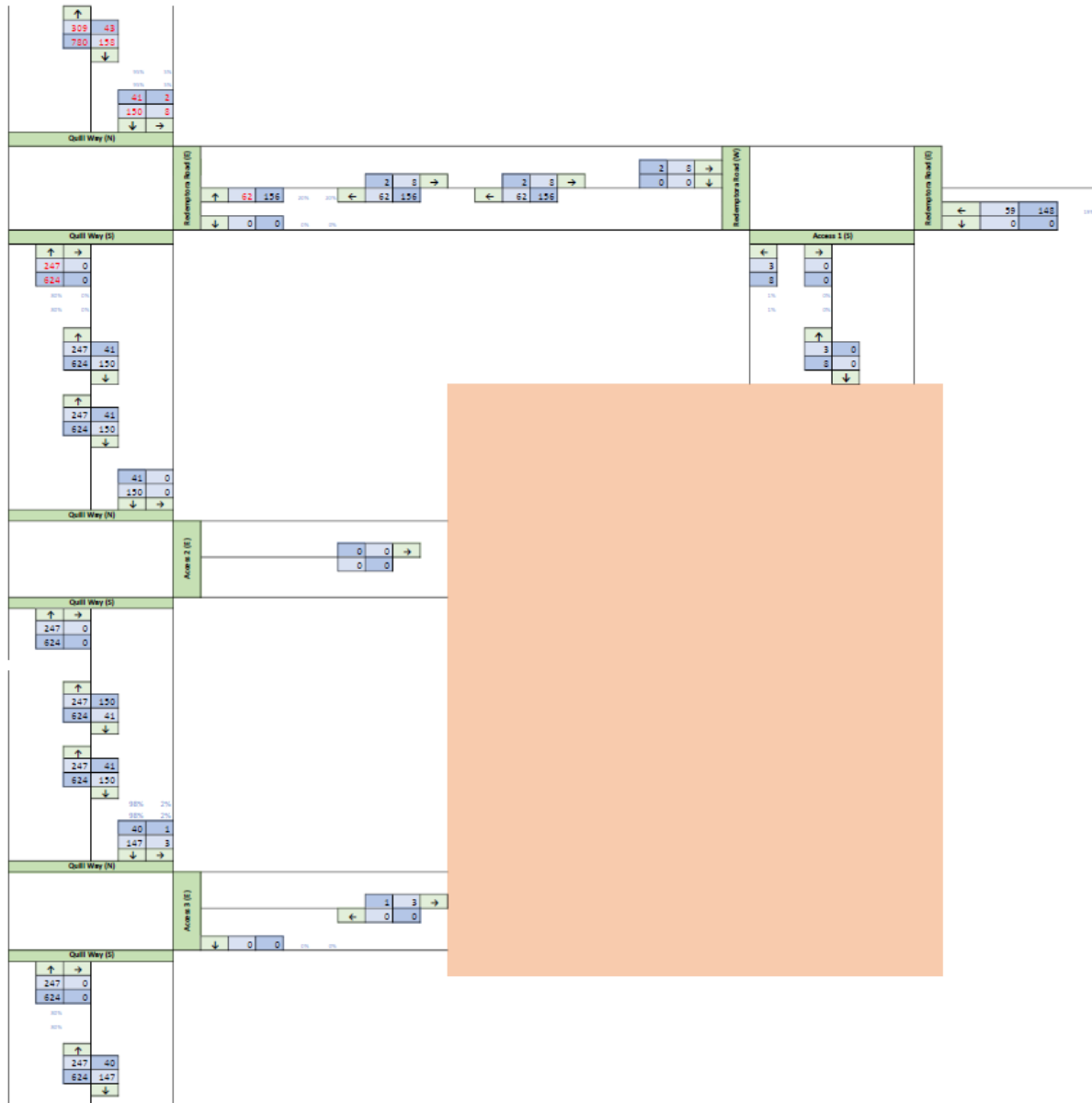


5.4 Existing Background Traffic Flows

Background traffic volumes on Quill Way were sourced from the MRWA Traffic Video Survey conducted at the intersection of Quill Way and Clarence Beach Road on May 14, 2024. This intersection, located 700 meters from the site, was used in the analysis to provide a robust assessment, as it is the nearest available reference point.

The existing background traffic volumes for Quill way and Redemptora Road are shown in **Figure 29**.

Figure 29 Background Traffic Flows



5.5 Background and 'With Development' Traffic Flows

The combined Background and Development traffic flows are shown in **Figure 30** for the 2028 scenarios and in **Figure 31** for the 2038 scenarios.

A growth rate of 2.0% per annum was applied to the existing background traffic volumes to estimate the 2028 and 2038 background traffic volumes.

Figure 30 - 2028 Background and Development Traffic Flows

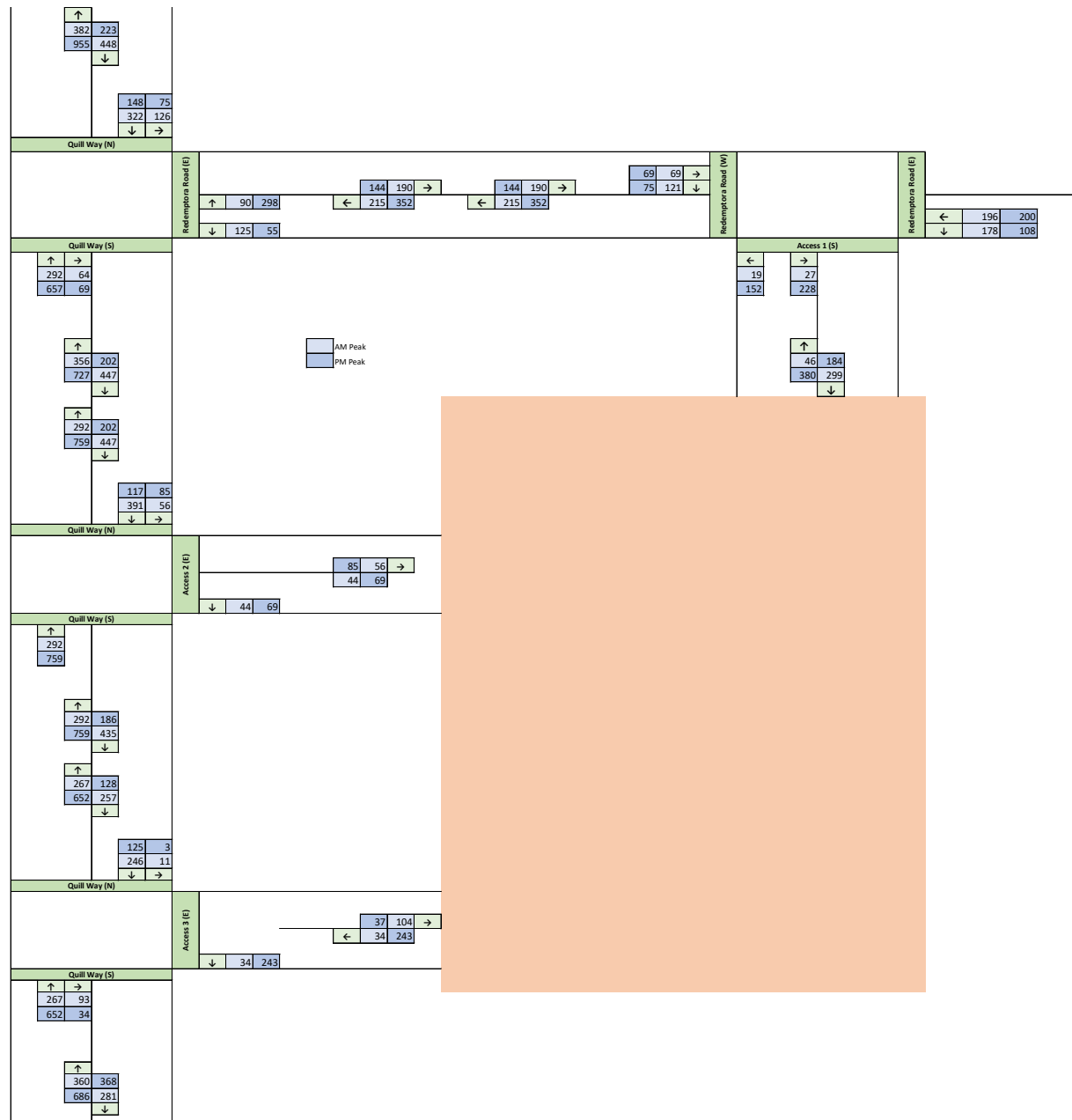
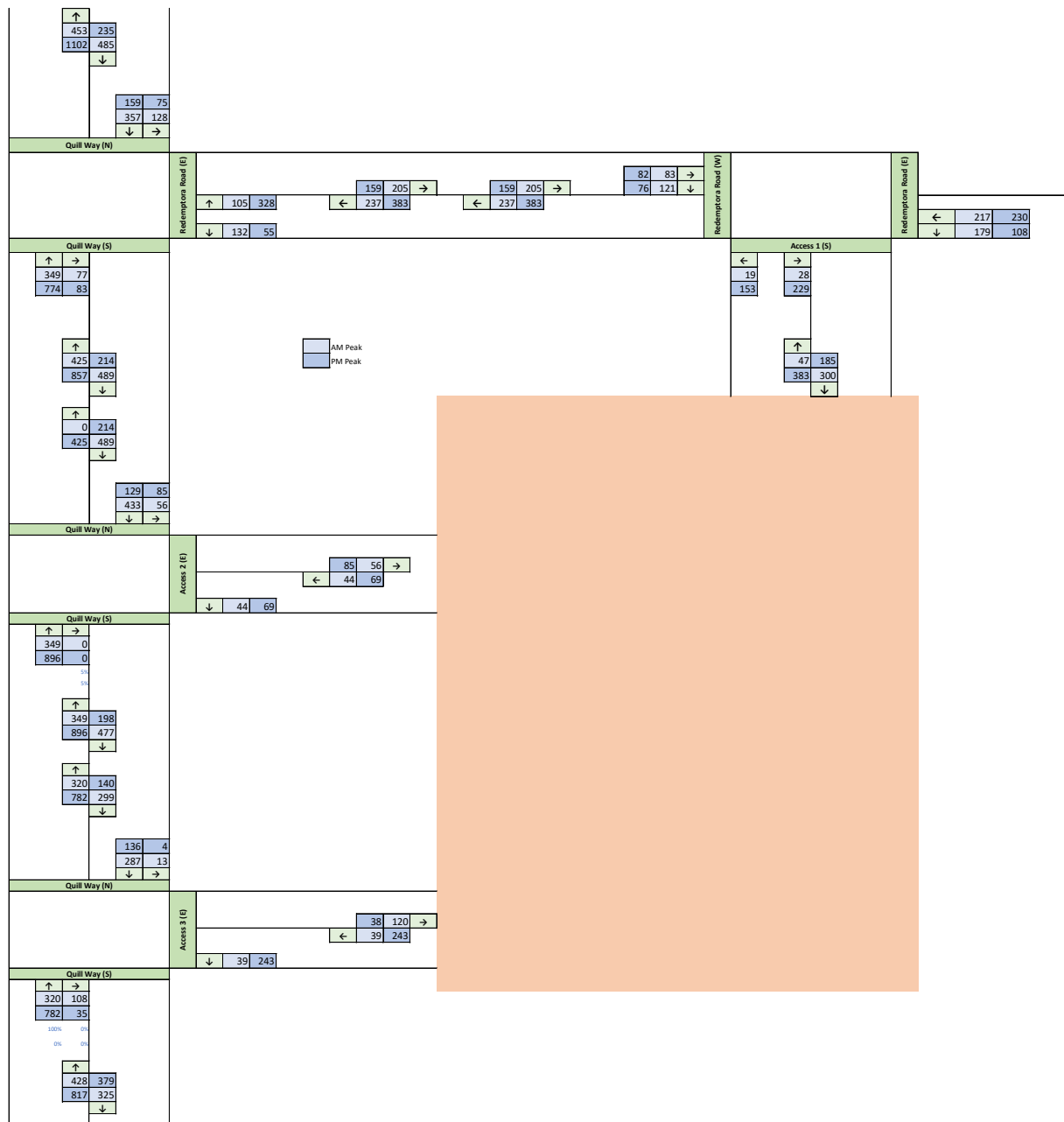


Figure 31 - 2038 Background and Development Traffic Flows



5.6 Analysis of Development Accesses

SIDRA intersection analysis was undertaken for the following intersections:

- » Quill Way/ Redemptora Road intersection
- » Redemptora Road/ Access 1 intersection
- » Quill Way/ Access 2 intersection
- » Quill Way/ Access 3 intersection

The above intersections have been analysed using the SIDRA analysis program. This program calculates the performance of intersections based on input parameters, including geometry and traffic volumes. As an output, SIDRA provides values for the Degree of Saturation (DOS), queue lengths, delays, level of service, and 95th Percentile Queue. These parameters are defined as follows:

- » DOS: is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded from an un-signalized intersection where $DOS > 80$;
- » 95% Queue: is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected;
- » Average Delay: is the average of all travel delays for vehicles through the intersection; and
- » Level of Service (LOS): is the qualitative measure describing operational conditions within a traffic system and the perception by motorists and/or passengers. The different levels of service can generally be described as shown in **Table 11**. A LOS exceeding these values indicates that the road section is exceeding its practical capacity. Above these values, users of the intersections are likely to experience unsatisfactory queueing and delays during the peak hour periods.

Table 11 LOS Performance Criteria

LOS	Description	Signalised Intersection	Roundabout	Unsignalised Intersection
A	No or minimal delays (best condition). Queues are rarely more than one vehicle	≤ 10 sec	≤ 10 sec	≤ 10 sec
B	Short traffic delays. Occasionally more than one queued vehicle.	10-20 sec	10-20 sec	10-15 sec
C	Average traffic delays. Often more than one queued.	20-35 sec	20-35 sec	15-25 sec
D	Long traffic delays. Regularly more than one queued vehicle.	35-55 sec	30-50 sec	25-35 sec
E	Very long traffic delays. Traffic demand is near or equal to the practical capacity of the intersection. Almost always more than one queued vehicle.	55-80 sec	50-70 sec	35-50 sec
F	Forced flow conditions with extensive delays caused by geometric and/or operational constraints external to the intersection.	≥ 80 sec	≥ 70 sec	≥ 50 sec

Source: Highway Capacity Manual

Detailed SIDRA Movement Summaries are provided in **Appendix C** for each of the intersections and scenarios.

5.6.1 Quill Way/ Redemptora Road Intersection

The SIDRA Layout for the intersection of Quill Way/ Redemptora Intersection is shown in **Figure 32**.

The SIDRA model results are summarised in **Table 12** to **Table 14** for Scenarios 1, 2, 3 respectively. The model results suggest that while the development traffic will increase the average delays at the intersection, the delays will remain below the WAPC-recommended thresholds.

Figure 32 - SIDRA Layout of Quill Way/ Redemptora Road Intersection - Scenarios 1,2 and 3

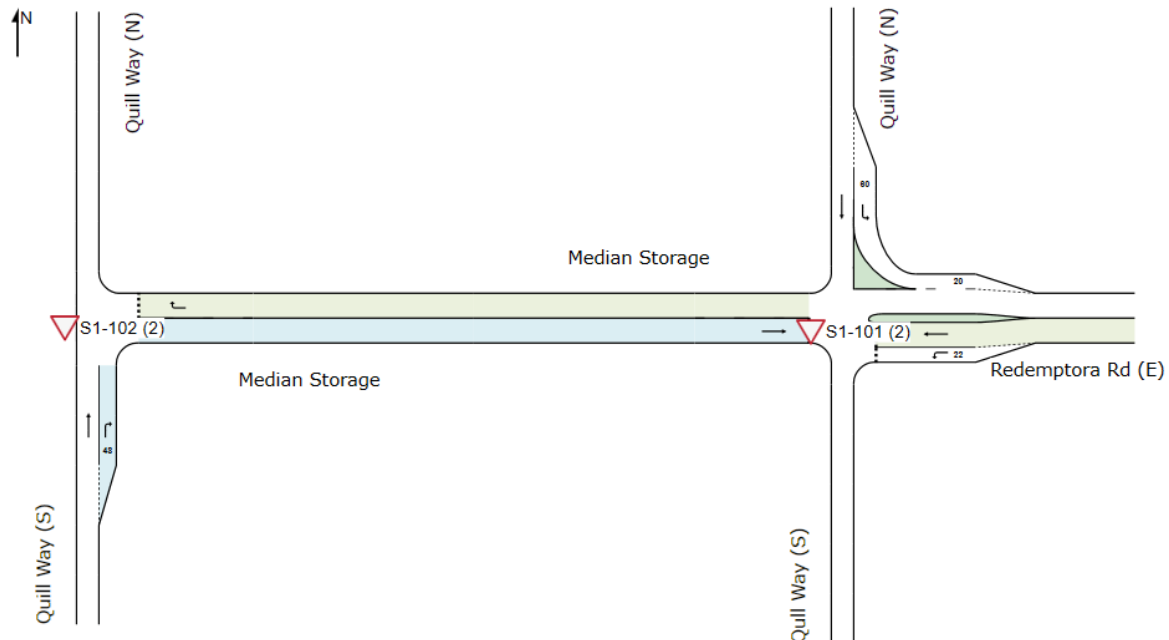


Table 12 - Summary of SIDRA Movement Summary for Quill Way/ Redemptora Road Intersection (Scenario 1)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.157	0	A	0	0.458	0.5	A	21.5
	R	0.057	6.8	A	3.5	0.078	8.6	A	3.8
Redemptora Road (E)	L	0.04	6.2	A	1.2	0.001	5.7	A	0
	R	0.075	4.8	A	3.1	0.211	9.6	A	8.8
Quill Way (N)	L	0.005	5.8	A	0	0.002	5.7	A	0
	T	0.094	-	-	3.5	0.029	-	-	21.5

Table 13 - Summary of SIDRA Movement Summary for Quill Way/ Redemptora Road Intersection (Scenario 2)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.16	0	A	0	0.34	0	A	0
	R	0.04	7	A	3	0.04	7	A	2
Redemptora Road (E)	L	0.13	7	A	4	0.04	5	A	1
	R	0.13	8	A	4	0.41	12	B	11
Quill Way (N)	L	0.07	0	A	0	0.04	0	A	0
	T	0.19	0	A	0	0.07	0	A	0
All Vehicles	-	0.19	-	-	4		-	-	11

Table 14 - Summary of SIDRA Movement Summary for Quill Way/ Redemptora Road Intersection (Scenario 3)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.19	0	A	0	0.40	0	A	0
	R	0.08	8	A	3	0.07	7	A	2
Redemptora Road (E)	L	0.19	7	A	4	0.04	5	A	2
	R	0.13	9	A	4	0.59	16	C	23
Quill Way (N)	L	0.07	6	A	0	0.04	0	A	0
	T	0.19	0	A	0	0.08	0	A	0
All Vehicles	-	0.19	-	-	4	0.59	-	-	23

5.6.2 Redemptora Road/ Access 1 Intersection

The SIDRA Layout for the intersection of Redemptora Road/Access 1 Intersection is shown in **Figure 33**. The SIDRA model results are summarised in **Table 15** to **Table 17** for Scenarios 1 - 3. The model results this intersection will perform satisfactorily for all scenarios.

Figure 33 - SIDRA Layout of Redemptora Road/Access 1 Intersection - Scenarios 1,2 and 3

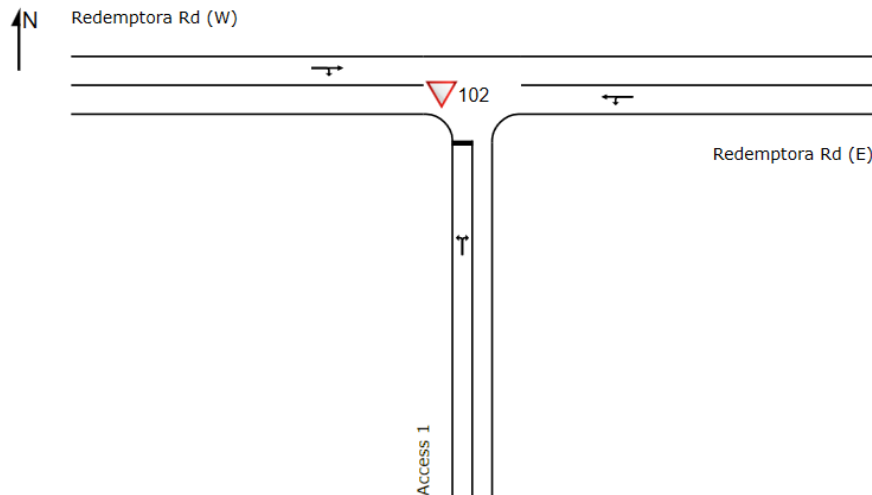


Table 15 - Summary of SIDRA Movement Summary for Redemptora Road / Access 1 Intersection (Scenario 1)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Access 1 (S)	L	0.01	5	A	0	0.01	5	A	0
	R	0.01	5	A	0	0.01	5	A	0
Redemptora Road (E)	L	0.07	5	A	0	0.07	5	A	0
	T	0.07	0	A	0	0.07	0	A	0
Redemptora Road (W)	L	0.04	0	A	0	0.04	0	A	0
	T	0.04	5	A	0	0.04	5	A	0
All Vehicles		0.07	-	-	0	0.07	-	-	0

Table 16 - Summary of SIDRA Movement Summary for Redemptora Road / Access 1 Intersection (Scenario 2)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Access 1 (S)	L	0.05	5	A	1	0.39	6	A	15
	R	0.05	7	A	1	0.39	7	A	15
Redemptora Road (E)	L	0.20	5	A	0	0.16	5	A	0
	T	0.20	0	A	0	0.16	0	A	0
Redemptora Road (W)	L	0.14	1	A	5	0.10	1	A	3
	T	0.14	6	A	5	0.10	6	A	3
All Vehicles		0.20	-	-	5	0.39	-	-	15

Table 17- Summary of SIDRA Movement Summary for Redemptora Road / Access 1 (Scenario 3)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Access 1 (S)	L	0.06	6	A	1	0.41	6	A	17
	R	0.06	7	A	1	0.41	8	A	17
Redemptora Road (E)	L	0.21	5	A	0	0.17	5	A	0
	T	0.21	0	A	0	0.17	0	A	0
Redemptora Road (W)	L	0.15	2	A	6	0.10	1	A	4
	T	0.15	6	A	6	0.10	6	A	4
All Vehicles	-	0.21	-	-	6	0.41	-	-	17

5.6.3 Quill Way/ Access 2 Intersection

The SIDRA Layout for the intersection of Quill Way/ Access 2 Intersection is shown in **Figure 34**.

The SIDRA model results are summarised in **Table 18** and **Table 19**, and suggest that the intersection will perform satisfactorily for both scenarios.

Figure 34 - SIDRA Layout of Quill Way/ Redemptora Road Intersection - Scenario 2 and 3

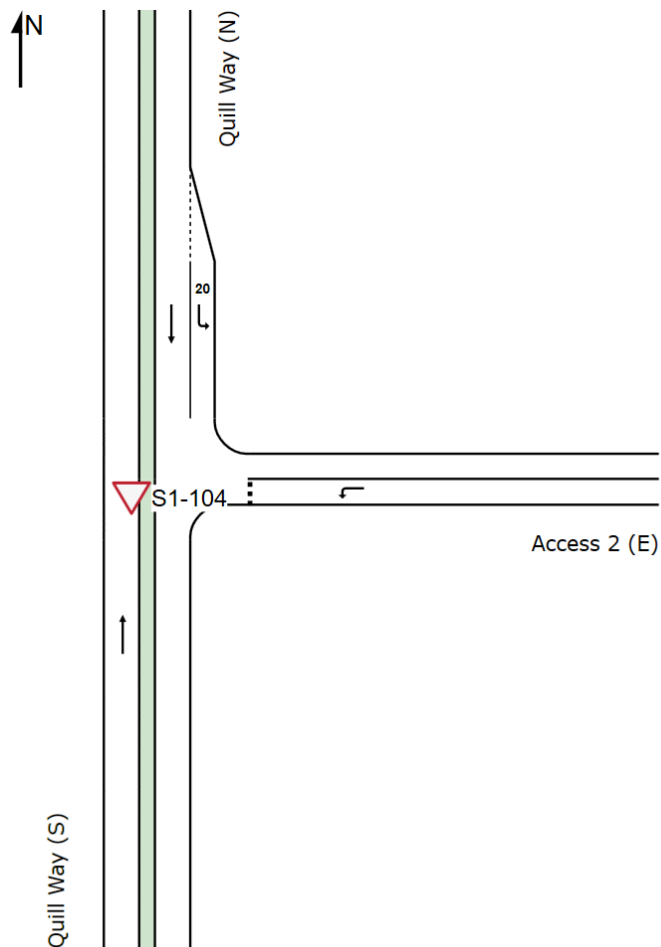


Table 18 - Summary of SIDRA Movement Summary for Quill Way/ Access 2 Intersection (Scenario 2)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.16	0	A	0	0.39	0	A	0
Quill Way (N)	L	0.03	4	A	0	0.05	0	A	0
	T	0.21	0	A	0	0.06	0	A	0
Access (E)	L	0.03	4	A	0	0.05	3	A	2
All Vehicles		0.21	-	-	1		-	-	

Table 19 - Summary of SIDRA Movement Summary for Quill Way/ Access 2 (Scenario 3)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.19	0	A	0	0.46	0	A	0
Quill Way (N)	L	0.03	4	A	0	0.05	4	A	0
	T	0.23	0	A	0	0.07	0	A	0
Access (E)	L	0.05	4	A	1	0.05	3	A	2
All Vehicles		0.23	-	-	1	0.46	-	-	

5.6.4 Quill Way/ Access 3 Intersection

The SIDRA Layout for the intersection of Quill Way/ Access 3 Intersection is shown in **Figure 35**. The SIDRA model results are summarised in **Table 20** to **Table 22** and suggest that the intersection will perform satisfactorily for all scenarios.

Figure 35 - SIDRA Layout of Quill Way/ Redemptora Road Intersection

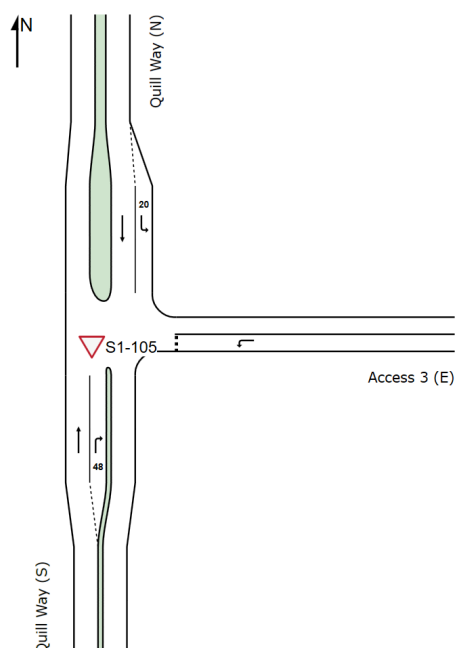


Table 20 - Summary of SIDRA Movement Summary for Quill Way/ Access 3 Intersection (Scenario 1)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.19	0	A	0	0.34	0	A	0
	R	0.01	4	A	0	0.01	4	A	0
Access 3 (E)	L	0.01	4	A	0	0.01	3	A	0
Quill Way (N)	L	0.14	4	A	5	0.01	4	A	0
	T	0.01	0	A	0	0.02	0	A	0
All Vehicles		0.19	-	-	5	0.34	-	-	0

Table 21 -Summary of SIDRA Movement Summary for Quill Way/ Access 3 Intersection (Scenario 2)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.15	0	A	0	0.34	0	A	0
	R	0.10	5	A	3	0.03	4	A	1
Access 3 (E)	L	0.04	5	A	1	0.22	3	A	7
Quill Way (N)	L	0.01	4	A	0	0.01	4	A	0
	T	0.13	0	A	0	0.06	0	A	0
All Vehicles		0.15	-	-	4	0.34	-	-	7

Table 22 -Summary of SIDRA Movement Summary for Quill Way/ Access 3 Intersection (Scenario 3)

Intersection Approach		Weekday AM Peak				Weekday PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Quill Way (S)	T	0.18	0	A	0	0.40	0	A	0
	R	0.12	6	A	4	0.03	4	A	1
Access 3 (E)	L	0.04	5	A	1	0.22	3	A	7
Quill Way (N)	L	0.01	4	A	0	0.01	4	A	0
	T	0.15	0	A	0	0.07	0	A	0
All Vehicles		0.18	-	-	4	0.40	-	-	7

6 ROAD SAFETY AND ACCESSIBILITY IMPACT

6.1 Impact on Neighbouring Areas

The traffic analysis undertaken in **Section 5** show that the existing road network will have sufficient capacity to accommodate the development-generated traffic.

The proposed development will provide essential land uses and services to support the general industrial and marine construction and maintenance activities undertaken within the AMC.

6.2 Road Safety

As described in **Section 2.10**, only 2 crashes have been recorded in the vicinity of the Site over the past 5 year period. The low rate of crashes suggest that the crashes are isolated incidents rather than indicative of a systematic safety issues on the frontage roads.

6.3 Public Transport Access

No changes to public transport accessibility or services are proposed or warranted by the proposed development.

6.4 Analysis of Pedestrian / Cycle Network

While the existing road network is considered sufficient, the pedestrian and cycling networks within AMC are generally considered to be deficient. As described in **Section 3.8**, the proposed development will include construction of a 1.8m wide footpath along the section of Quill Way and Redemptora Road fronting the Site.

The proposed shared path along Quill Way, as described in **Section 4.2**, will improve both the pedestrian and cycling connectivity from AMC to the adjacent paths.

6.5 Safe Walk / Cycle to School (for residential and school site development only)

N/A.

6.6 Traffic Management Plan (where appropriate)

N/A.

7 SUMMARY AND CONCLUSIONS

This report has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016); the checklist is included at Appendix A. The following conclusions can be drawn from this TIA:

- » The proposed development will provide a mix of service, retail, hospitality and office land uses and services that will support the general industrial and marine construction and maintenance activities
- » The proposed development will include 737 parking bays across the entire Site.
 - In accordance with the statutory requirement documented in the City of Cockburn Local Planning Scheme No. 3, the proposed land uses will result in a statutory requirement of 1,483 car parking bays which represents a shortfall of 746 car parking bays.
 - However, when considering the reciprocity between the parking demands associated with the proposed land uses throughout the day, as well as the internal trip capture effect, the parking shortfall is considered manageable.
- » A total of 152 bicycle parking spaces is provided across the Site. This represents a surplus 30 bike parking spaces when compared to the statutory requirements.
- » Upon full development of the Site, the proposed development is estimated to generate 702 vehicle trips in the AM peak hour and 1,036 in the PM peak hour.
- » The results of SIDRA assessment suggest that the internal roads and intersections, as well as the surrounding external roads and intersections, will have sufficient capacity to accommodate the development-generated traffic volumes.



Appendix A

WAPC CHECKLIST FOR INDIVIDUAL
DEVELOPMENT - TRANSPORT
IMPACT ASSESSMENT



APPENDIX A – WAPC CHECKLIST

Item	Status	Comments/Proposal
Background	Section 1.1	
Existing situation	Section 2	
Existing land uses	Section 2.1	
Existing parking and demand	Section 2.2	
Existing access arrangements	Section 2.3	
Existing site traffic	Section 2.4	
Existing road network and traffic management	Section 2.5	
Traffic flows on surrounding roads and intersection	Section 2.6	
Operation of surrounding intersections	Section 2.7	
Existing pedestrian/cycle networks	Section 2.8	
Existing public transport services	Section 2.9	
Crash data	Section 2.10	
Proposed development	Section 3	
Regional context	Section 3.1	
Proposed land use	Section 3.2	
Access arrangements	Section 3.3	
Parking provision	Section 3.4	
End of trip facilities	Section 3.5	
Road network	Section 3.6	
Intersection layouts and controls	Section 3.7	
Pedestrian/cycle networks and crossing facilities	Section 3.8	
Public transport services	Section 3.9	
Integration with surrounding area	Section 4	
Surrounding major attractors/generators	Section 4.1	
Committed development and transport proposals	Section 4.2	
Proposed changes to land uses within 1200 meters	Section 4.3	
Deficiencies in existing transport network and remedial measures	Section 4.4	
Proposed changes to pedestrian/cycle network	Section 4.5	
Analysis of transport network	Section 5	
Assessment years and time periods	Section 5.1	
Development generated traffic	Section 5.2	
Distribution of generated traffic	Section 5.3	
Existing background traffic flows	Section 5.4	
Background 'with development' traffic flows	Section 5.5	

Analysis of development accesses	Section 5.6	
Impact on the surrounding roads and intersection	Section 5.7	
Road Safety and Accessibility Impact	Section 6	
Impact on neighbouring areas	Section 6.1	
Road safety	Section 6.2	
Public transport access	Section 6.3	
Analysis of pedestrian/cycle network	Section 6.4	
Safe walk/cycle to school (for residential and school site developments only)	Section 6.5	
Traffic management plan (where appropriate)	Section 6.6	

Appendix B

Site Plans





PENNOCK
ARCHITECTS

DRAWING TITLE
SITE PLAN - LEVEL B

SCALE 1:250@A1 / 1:500@A3 DATE 12.11.2019

DRAWING No.	PROJECT No.	REVISION
A2.02	240615	1

Appendix C

SIDRA Movement Summary Tables



MOVEMENT SUMMARY

Site: [S1-101-AM] S1-S1 L AM (S1-2026 Background)
Network: [N101-AM] S1-AM (S1-2026 BG)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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
East: Redemptora Rd (E)															
1	L2	All MCs	39	6.0	39	6.0	0.029	6.2	LOS A	0.1	0.9	0.28	0.55	0.28	30.6
2	T1	All MCs	79	7.2	79	7.2	0.070	4.4	LOS A	0.3	2.0	0.32	0.51	0.32	31.8
Approach			118	6.8	118	6.8	0.070	5.0	LOS A	0.3	2.0	0.31	0.53	0.31	31.4
North: Quill Way (N)															
3	L2	All MCs	9	5.1	9	5.1	0.005	5.8	LOS A	0.0	0.0	0.00	0.53	0.00	51.0
4	T1	All MCs	185	5.1	185	5.1	0.094	1.2	LOS A	0.0	0.0	0.00	0.20	0.00	57.7
Approach			195	5.1	195	5.1	0.094	1.5	NA	0.0	0.0	0.00	0.21	0.00	57.4
West: Median Storage															
5	T1	All MCs	67	5.1	67	5.1	0.055	1.9	LOS A	0.2	1.5	0.27	0.45	0.27	22.4
Approach			67	5.1	67	5.1	0.055	1.9	LOS A	0.2	1.5	0.27	0.45	0.27	22.4
All Vehicles			380	5.7	380	5.7	0.094	2.6	NA	0.3	2.0	0.14	0.35	0.14	51.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-102-AM] S1-S2 L AM (S1-2026 Background)
Network: [N101-AM] S1-AM (S1-2026 BG)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)															
2	T1	All MCs	299	7.2	299	7.2	0.157	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	67	7.2	67	7.2	0.054	5.0	LOS A	0.2	1.9	0.40	0.59	0.40	25.5
Approach			366	7.2	366	7.2	0.157	0.9	NA	0.2	1.9	0.07	0.11	0.07	58.0
East: Median Storage															
1	R2	All MCs	79	7.2	79	7.2	0.075	2.9	LOS A	0.2	1.9	0.33	0.54	0.33	46.6
Approach			79	7.2	79	7.2	0.075	2.9	LOS A	0.2	1.9	0.33	0.54	0.33	46.6
All Vehicles			445	7.2	445	7.2	0.157	1.3	NA	0.2	1.9	0.12	0.19	0.12	55.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: PTG GROUP | Licence: NETWORK / FLOATING | Processed: Tuesday, 2 December 2025 11:18:11 AM
Project: C:\OneDrive\Protest Engineering\Perth Transport Advisory - General\3-Projects\PTG.01516 - 81 Quill Way, Henderson Masterplanning - Traffic Advice\3-Modelling\SIDRA Model_Quill Way_v5.sipx

MOVEMENT SUMMARY



Site: [S1-103-AM] S1-Redemptora Road/ Access 1

Intersection AM (S1-2026 Background)

Network: [N101-AM] S1-AM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Access 1 (S)															
1	L2	All MCs	4	7.2	4	7.2	0.007	5.0	LOS A	0.0	0.2	0.22	0.50	0.22	29.5
3	R2	All MCs	4	0.0	4	0.0	0.007	5.2	LOS A	0.0	0.2	0.22	0.50	0.22	42.7
Approach			8	3.6	8	3.6	0.007	5.1	LOS A	0.0	0.2	0.22	0.50	0.22	40.0
East: Redemptora Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.058	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	47.8
5	T1	All MCs	114	5.1	114	5.1	0.058	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.8
Approach			117	5.0	117	5.0	0.058	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.7
West: Redemptora Rd (W)															
11	T1	All MCs	73	5.1	73	5.1	0.039	0.0	LOS A	0.0	0.2	0.03	0.04	0.03	49.6
12	R2	All MCs	4	0.0	4	0.0	0.039	4.8	LOS A	0.0	0.2	0.03	0.04	0.03	43.0
Approach			77	4.9	77	4.9	0.039	0.3	NA	0.0	0.2	0.03	0.04	0.03	49.4
All Vehicles			202	4.9	202	4.9	0.058	0.4	NA	0.0	0.2	0.02	0.04	0.02	49.3

Site Level of Service (LOS) Method: Delay (SIDRA). 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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Project: C:\OneDrive\Protest Engineering\Perth Transport Advisory - General\3-Projects\PTG.01516 - 81 Quill Way, Henderson Masterplanning - Traffic Advice\3-Modelling\SIDRA Model_Quill Way_v5.sipx

MOVEMENT SUMMARY

Site: [S1-104-AM] S1-Quill Way/ Access 2 Intersection AM
(S1-2026 Background)

Network: [N101-AM] S1-AM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	299	7.2	299	7.2	0.157	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			299	7.2	299	7.2	0.157	0.0	NA	0.0	0.0	0.00	0.00	59.9
East: Access 2 (E)														
4	L2	All MCs	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.30	0.45	21.7
Approach			1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.30	0.45	21.7
North: Quill Way (N)														
7	L2	All MCs	1	5.1	1	5.1	0.001	4.1	LOS A	0.0	0.0	0.00	0.51	32.3
8	T1	All MCs	224	5.1	224	5.1	0.114	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			225	5.1	225	5.1	0.114	0.0	NA	0.0	0.0	0.00	0.00	59.5
All Vehicles			525	6.3	525	6.3	0.157	0.0	NA	0.0	0.0	0.00	0.00	59.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105-AM] S1-Quill Way/ Access 3 Intersection AM
(S1-2026 Background)

Network: [N101-AM] S1-AM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)															
2	T1	All MCs	281	7.2	281	7.2	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	16	7.2	16	7.2	0.011	4.6	LOS A	0.0	0.4	0.32	0.53	0.32	28.4
Approach			297	7.2	297	7.2	0.148	0.2	NA	0.0	0.4	0.02	0.03	0.02	54.2
East: Access 3 (E)															
4	L2	All MCs	4	0.0	4	0.0	0.033	4.5	LOS A	0.1	0.9	0.50	0.62	0.50	24.4
6	R2	All MCs	18	4.1	18	4.1	0.033	7.8	LOS A	0.1	0.9	0.50	0.62	0.50	20.3
Approach			22	3.3	22	3.3	0.033	7.2	LOS A	0.1	0.9	0.50	0.62	0.50	21.4
North: Quill Way (N)															
7	L2	All MCs	12	5.1	12	5.1	0.007	4.1	LOS A	0.0	0.2	0.06	0.50	0.06	32.1
8	T1	All MCs	213	5.1	213	5.1	0.108	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			224	5.1	224	5.1	0.108	0.2	LOS A	0.0	0.2	0.00	0.03	0.00	57.1
All Vehicles			543	6.2	543	6.2	0.148	0.5	NA	0.1	0.9	0.03	0.05	0.03	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-101-PM] S1-S1 L PM (S1-2026 Background)
Network: [N101-PM] S1-PM (S1-2026 BG)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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			
East: Redemptora Rd (E)														
1	L2	All MCs	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.14	0.53	31.9
2	T1	All MCs	161	1.1	161	1.1	0.121	4.8	LOS A	0.5	3.5	0.23	0.52	33.8
Approach			162	1.1	162	1.1	0.121	4.8	LOS A	0.5	3.5	0.22	0.52	33.8
North: Quill Ways (N)														
3	L2	All MCs	3	0.0	3	0.0	0.002	5.7	LOS A	0.0	0.0	0.00	0.53	51.0
4	T1	All MCs	61	0.0	61	0.0	0.029	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			64	0.0	64	0.0	0.029	0.3	NA	0.0	0.0	0.00	0.03	59.5
West: Median Storage														
5	T1	All MCs	73	0.0	73	0.0	0.058	2.0	LOS A	0.2	1.5	0.29	0.46	22.2
Approach			73	0.0	73	0.0	0.058	2.0	LOS A	0.2	1.5	0.29	0.46	22.2
All Vehicles			299	0.6	299	0.6	0.121	3.1	NA	0.5	3.5	0.19	0.40	45.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-102-PM] S1-S2 L PM (S1-2026 Background)
Network: [N101-PM] S1-PM (S1-2026 BG)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Ways (S)														
2	T1	All MCs	613	1.1	613	1.1	0.459	0.5	LOS A	2.9	21.5	0.26	0.12	58.7
3	R2	All MCs	73	1.1	73	1.1	0.080	6.6	LOS A	0.3	2.4	0.56	0.73	21.5
Approach			685	1.1	685	1.1	0.459	1.1	NA	2.9	21.5	0.29	0.18	57.4
East: Median Storage														
1	R2	All MCs	161	4.0	161	4.0	0.211	4.8	LOS A	0.7	5.3	0.51	0.73	45.9
Approach			161	4.0	161	4.0	0.211	4.8	LOS A	0.7	5.3	0.51	0.73	45.9
All Vehicles			846	1.7	846	1.7	0.459	1.8	NA	2.9	21.5	0.33	0.29	54.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-103-PM] S1-Redemptora Road/ Access 1 Int PM
(S1-2026 Background)

Network: [N101-PM] S1-PM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Access 1 (S)														
1	L2	All MCs	7	1.1	7	1.1	0.009	5.0	LOS A	0.0	0.2	0.25	0.51	29.3
3	R2	All MCs	4	0.0	4	0.0	0.009	5.3	LOS A	0.0	0.2	0.25	0.51	42.6
Approach			12	0.7	12	0.7	0.009	5.1	LOS A	0.0	0.2	0.25	0.51	38.5
East: Redemptora Rd (E)														
4	L2	All MCs	1	0.0	1	0.0	0.073	4.6	LOS A	0.0	0.0	0.00	0.00	47.9
5	T1	All MCs	154	0.0	154	0.0	0.073	0.0	LOS A	0.0	0.0	0.00	0.00	49.9
Approach			155	0.0	155	0.0	0.073	0.0	NA	0.0	0.0	0.00	0.00	49.9
West: Redemptora Rd (W)														
11	T1	All MCs	73	0.0	73	0.0	0.037	0.0	LOS A	0.0	0.2	0.04	0.04	49.5
12	R2	All MCs	4	0.0	4	0.0	0.037	5.0	LOS A	0.0	0.2	0.04	0.04	43.0
Approach			77	0.0	77	0.0	0.037	0.3	NA	0.0	0.2	0.04	0.04	49.4
All Vehicles			243	0.0	243	0.0	0.073	0.4	NA	0.0	0.2	0.02	0.04	49.3

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-104-PM] S1-Quill Way/ Access 2 Intersection PM
(S1-2026 Background)

Network: [N101-PM] S1-PM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	720	1.1	720	1.1	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	59.8
Approach			720	1.1	720	1.1	0.353	0.0	NA	0.0	0.0	0.00	0.00	59.8
East: Access 2 (E)														
4	L2	All MCs	1	0.0	1	0.0	0.001	2.7	LOS A	0.0	0.0	0.14	0.45	23.4
Approach			1	0.0	1	0.0	0.001	2.7	LOS A	0.0	0.0	0.14	0.45	23.4
North: Quill Way (N)														
7	L2	All MCs	1	0.0	1	0.0	0.001	4.1	LOS A	0.0	0.0	0.00	0.52	32.3
8	T1	All MCs	62	0.0	62	0.0	0.030	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			63	0.0	63	0.0	0.030	0.1	NA	0.0	0.0	0.00	0.01	58.6
All Vehicles			784	1.0	784	1.0	0.353	0.0	NA	0.0	0.0	0.00	0.00	59.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105-PM] S1-Quill Way/ Access 3 Intersection PM
(S1-2026 Background)

Network: [N101-PM] S1-PM (S1-2026 BG)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	686	1.1	686	1.1	0.336	0.0	LOS A	0.0	0.0	0.00	0.00	59.8
3	R2	All MCs	3	1.1	3	1.1	0.002	4.0	LOS A	0.0	0.1	0.15	0.51	29.8
Approach			689	1.1	689	1.1	0.336	0.0	NA	0.0	0.1	0.00	0.00	59.3
East: Access 3 (E)														
4	L2	All MCs	4	4.1	4	4.1	0.095	2.7	LOS A	0.3	2.5	0.61	0.66	17.4
6	R2	All MCs	35	4.1	35	4.1	0.095	11.0	LOS B	0.3	2.5	0.61	0.66	10.9
Approach			39	4.1	39	4.1	0.095	10.1	LOS B	0.3	2.5	0.61	0.66	11.8
North: Quill Way (N)														
7	L2	All MCs	3	4.1	3	4.1	0.002	4.1	LOS A	0.0	0.1	0.02	0.52	32.5
8	T1	All MCs	59	4.1	59	4.1	0.030	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			62	4.1	62	4.1	0.030	0.2	LOS A	0.0	0.1	0.00	0.03	57.2
All Vehicles			791	1.5	791	1.5	0.336	0.5	NA	0.3	2.5	0.03	0.04	51.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-101-] S2-S1 L AM (S2-2028+DEV)

Network: [N102-AM] S2-AM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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			
East: Redemptora Rd (E)														
1	L2	All MCs	139	5.1	139	5.1	0.127	7.1	LOS A	0.5	4.0	0.44	0.66	29.2
2	T1	All MCs	111	7.2	111	7.2	0.131	5.9	LOS A	0.5	3.8	0.49	0.66	29.0
Approach			249	6.1	249	6.1	0.131	6.6	LOS A	0.5	4.0	0.46	0.66	29.1
North: Quill Way (N)														
3	L2	All MCs	135	5.1	135	5.1	0.072	5.8	LOS A	0.0	0.0	0.00	0.53	51.0
4	T1	All MCs	376	5.1	376	5.1	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			511	5.1	511	5.1	0.191	1.6	NA	0.0	0.0	0.00	0.14	57.2
West: Median Storage														
5	T1	All MCs	81	5.1	81	5.1	0.092	3.5	LOS A	0.3	2.5	0.47	0.62	14.9
Approach			81	5.1	81	5.1	0.092	3.5	LOS A	0.3	2.5	0.47	0.62	14.9
All Vehicles			841	5.4	841	5.4	0.191	3.3	NA	0.5	4.0	0.18	0.34	51.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-102-] S2-S2 L AM (S2-2028+DEV)

Network: [N102-AM] S2-AM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Quill Way (S)															
2	T1	All MCs	307	7.2	307	7.2	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	67	7.2	67	7.2	0.039	3.8	LOS A	0.0	0.0	0.00	0.56	0.00	29.5
Approach			375	7.2	375	7.2	0.162	0.7	NA	0.0	0.0	0.00	0.10	0.00	58.5
East: Median Storage															
1	R2	All MCs	95	7.2	95	7.2	0.091	3.0	LOS A	0.3	2.3	0.34	0.55	0.34	46.5
Approach			95	7.2	95	7.2	0.091	3.0	LOS A	0.3	2.3	0.34	0.55	0.34	46.5
All Vehicles			469	7.2	469	7.2	0.162	1.2	NA	0.3	2.3	0.07	0.19	0.07	55.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-103-] S2-Redemptora Road/ Access 1 Intersection
AM (S2-2028+DEV)

Network: [N102-AM] S2-AM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Access 1 (S)															
1	L2	All MCs	20	7.2	20	7.2	0.051	5.4	LOS A	0.2	1.3	0.38	0.59	0.38	28.0
3	R2	All MCs	28	0.0	28	0.0	0.051	6.8	LOS A	0.2	1.3	0.38	0.59	0.38	42.2
Approach			48	3.0	48	3.0	0.051	6.2	LOS A	0.2	1.3	0.38	0.59	0.38	39.9
East: Redemptora Rd (E)															
4	L2	All MCs	187	0.0	187	0.0	0.195	4.6	LOS A	0.0	0.0	0.00	0.26	0.00	45.7
5	T1	All MCs	206	5.1	206	5.1	0.195	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	47.1
Approach			394	2.7	394	2.7	0.195	2.2	NA	0.0	0.0	0.00	0.26	0.00	46.3
West: Redemptora Rd (W)															
11	T1	All MCs	73	5.1	73	5.1	0.140	1.4	LOS A	0.7	5.3	0.46	0.53	0.46	45.1
12	R2	All MCs	127	0.0	127	0.0	0.140	6.1	LOS A	0.7	5.3	0.46	0.53	0.46	34.4
Approach			200	1.9	200	1.9	0.140	4.4	NA	0.7	5.3	0.46	0.53	0.46	40.4
All Vehicles			642	2.5	642	2.5	0.195	3.2	NA	0.7	5.3	0.17	0.37	0.17	44.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-104-] S2-Quill Way/ Access 2 Intersection AM
(S2-2028+DEV)

Network: [N102-AM] S2-AM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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. Number of Cycles to Depart
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
South: Quill Way (S)														
2	T1	All MCs	307	7.2	307	7.2	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	0.00
Approach			307	7.2	307	7.2	0.162	0.0	NA	0.0	0.0	0.00	0.00	59.9
East: Access 2 (E)														
4	L2	All MCs	46	0.0	46	0.0	0.042	4.1	LOS A	0.2	1.2	0.43	0.58	0.43
Approach			46	0.0	46	0.0	0.042	4.1	LOS A	0.2	1.2	0.43	0.58	19.4
North: Quill Way (N)														
7	L2	All MCs	59	5.1	59	5.1	0.034	3.9	LOS A	0.0	0.0	0.00	0.55	0.00
8	T1	All MCs	412	5.1	412	5.1	0.209	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			471	5.1	471	5.1	0.209	0.5	NA	0.0	0.0	0.00	0.07	50.8
All Vehicles			824	5.6	824	5.6	0.209	0.5	NA	0.2	1.2	0.02	0.07	50.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105-] S2-Quill Way/ Access 3 Intersection AM
(S2-2028+DEV)

Network: [N102-AM] S2-AM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	281	7.2	281	7.2	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
3	R2	All MCs	98	7.2	98	7.2	0.096	5.2	LOS A	0.4	3.1	0.38	0.61	27.6
Approach			379	7.2	379	7.2	0.148	1.4	NA	0.4	3.1	0.10	0.16	40.9
East: Access 3 (E)														
4	L2	All MCs	36	0.0	36	0.0	0.035	4.9	LOS A	0.1	0.9	0.33	0.55	27.5
Approach			36	0.0	36	0.0	0.035	4.9	LOS A	0.1	0.9	0.33	0.55	27.5
North: Quill Way (N)														
7	L2	All MCs	12	5.1	12	5.1	0.007	3.9	LOS A	0.0	0.0	0.00	0.55	31.2
8	T1	All MCs	259	5.1	259	5.1	0.131	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			271	5.1	271	5.1	0.131	0.2	NA	0.0	0.0	0.00	0.02	57.6
All Vehicles			685	6.0	685	6.0	0.148	1.1	NA	0.4	3.1	0.07	0.12	45.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-101] S2-S1 L PM (S2-2028+DEV)

Network: [N102-PM] S2-PM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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			
East: Redemptora Rd (E)														
1	L2	All MCs	58	0.0	58	0.0	0.040	5.0	LOS A	0.2	1.2	0.25	0.51	30.0
2	T1	All MCs	314	1.1	314	1.1	0.407	4.9	LOS A	1.5	11.2	0.43	0.58	30.7
Approach			372	0.9	372	0.9	0.407	4.9	LOS A	1.5	11.2	0.40	0.57	30.6
North: Quill Way (N)														
3	L2	All MCs	79	0.0	79	0.0	0.040	5.7	LOS A	0.0	0.0	0.00	0.53	51.0
4	T1	All MCs	156	0.0	156	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			235	0.0	235	0.0	0.075	1.9	NA	0.0	0.0	0.00	0.18	56.6
West: Median Storage														
5	T1	All MCs	73	0.0	73	0.0	0.074	3.0	LOS A	0.3	1.9	0.43	0.58	16.6
Approach			73	0.0	73	0.0	0.074	3.0	LOS A	0.3	1.9	0.43	0.58	16.6
All Vehicles			679	0.5	679	0.5	0.407	3.7	NA	1.5	11.2	0.27	0.44	45.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-102] S2-S2 L PM (S2-2028+DEV)

Network: [N102-PM] S2-PM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	692	1.1	692	1.1	0.339	0.0	LOS A	0.0	0.0	0.00	0.00	59.8
3	R2	All MCs	73	1.1	73	1.1	0.039	3.8	LOS A	0.0	0.0	0.00	0.57	29.5
Approach			764	1.1	764	1.1	0.339	0.4	NA	0.0	0.0	0.00	0.05	59.1
East: Median Storage														
1	R2	All MCs	314	1.1	314	1.1	0.437	6.6	LOS A	2.0	14.6	0.63	0.90	45.3
Approach			314	1.1	314	1.1	0.437	6.6	LOS A	2.0	14.6	0.63	0.90	45.3
All Vehicles			1078	1.1	1078	1.1	0.437	2.2	NA	2.0	14.6	0.18	0.30	54.3

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-103] S2-Redemptora Road/ Access 1 Int PM
(S2-2028+DEV)

Network: [N102-PM] S2-PM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Access 1 (S)															
1	L2	All MCs	160	0.0	160	0.0	0.392	5.8	LOS A	2.1	15.2	0.46	0.66	0.52	27.0
3	R2	All MCs	240	0.0	240	0.0	0.392	7.3	LOS A	2.1	15.2	0.46	0.66	0.52	41.7
Approach			400	0.0	400	0.0	0.392	6.7	LOS A	2.1	15.2	0.46	0.66	0.52	39.4
East: Redemptora Rd (E)															
4	L2	All MCs	114	0.0	114	0.0	0.155	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	46.3
5	T1	All MCs	211	0.0	211	0.0	0.155	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	47.9
Approach			324	0.0	324	0.0	0.155	1.6	NA	0.0	0.0	0.00	0.19	0.00	47.2
West: Redemptora Rd (W)															
11	T1	All MCs	73	0.0	73	0.0	0.095	0.9	LOS A	0.5	3.4	0.38	0.43	0.38	45.9
12	R2	All MCs	79	0.0	79	0.0	0.095	5.7	LOS A	0.5	3.4	0.38	0.43	0.38	35.8
Approach			152	0.0	152	0.0	0.095	3.4	NA	0.5	3.4	0.38	0.43	0.38	42.7
All Vehicles			876	0.0	876	0.0	0.392	4.3	NA	2.1	15.2	0.28	0.45	0.30	43.1

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-104] S2-Quill Way/ Access 2 Intersection PM
(S2-2028+DEV)

Network: [N102-PM] S2-PM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)															
2	T1	All MCs	799	1.1	799	1.1	0.391	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			799	1.1	799	1.1	0.391	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
East: Access 2 (E)															
4	L2	All MCs	73	0.0	73	0.0	0.049	2.9	LOS A	0.2	1.5	0.22	0.48	0.22	22.6
Approach			73	0.0	73	0.0	0.049	2.9	LOS A	0.2	1.5	0.22	0.48	0.22	22.6
North: Quill Way (N)															
7	L2	All MCs	89	0.0	89	0.0	0.049	3.9	LOS A	0.0	0.0	0.00	0.55	0.00	29.3
8	T1	All MCs	123	0.0	123	0.0	0.059	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			213	0.0	213	0.0	0.059	1.6	NA	0.0	0.0	0.00	0.23	0.00	39.1
All Vehicles			1084	0.8	1084	0.8	0.391	0.5	NA	0.2	1.5	0.01	0.08	0.01	50.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105] S2-Quill Way/ Access 3 Intersection PM
(S2-2028+DEV)

Network: [N102-PM] S2-PM (S2-2028+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Quill Way (S)															
2	T1	All MCs	686	1.1	686	1.1	0.336	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	36	1.1	36	1.1	0.028	4.3	LOS A	0.1	0.8	0.24	0.53	0.24	29.2
Approach			722	1.1	722	1.1	0.336	0.2	NA	0.1	0.8	0.01	0.03	0.01	54.7
East: Access 3 (E)															
4	L2	All MCs	256	0.0	256	0.0	0.217	3.2	LOS A	0.9	6.6	0.26	0.50	0.26	27.6
Approach			256	0.0	256	0.0	0.217	3.2	LOS A	0.9	6.6	0.26	0.50	0.26	27.6
North: Quill Way (N)															
7	L2	All MCs	3	0.0	3	0.0	0.002	3.9	LOS A	0.0	0.0	0.00	0.55	0.00	31.5
8	T1	All MCs	132	0.0	132	0.0	0.064	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			135	0.0	135	0.0	0.064	0.1	NA	0.0	0.0	0.00	0.01	0.00	58.7
All Vehicles			1113	0.7	1113	0.7	0.336	0.9	NA	0.9	6.6	0.07	0.13	0.07	43.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-101-A] S3-S1 L AM (S3-2038+DEV)
Network: [N103-AM] S3-AM (S3-2038+DEV)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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			
East: Redemptora Rd (E)														
1	L2	All MCs	139	5.1	139	5.1	0.127	6.2	LOS A	0.5	4.0	0.44	0.63	28.4
2	T1	All MCs	111	7.2	111	7.2	0.131	5.9	LOS A	0.5	3.8	0.49	0.66	29.0
Approach			249	6.1	249	6.1	0.131	6.1	LOS A	0.5	4.0	0.46	0.65	28.6
North: Quill Way (N)														
3	L2	All MCs	135	5.1	135	5.1	0.072	5.8	LOS A	0.0	0.0	0.00	0.53	51.0
4	T1	All MCs	376	5.1	376	5.1	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			511	5.1	511	5.1	0.191	1.6	NA	0.0	0.0	0.00	0.14	57.2
West: Median Storage														
5	T1	All MCs	81	5.1	81	5.1	0.089	2.1	LOS A	0.3	2.4	0.46	0.38	12.5
Approach			81	5.1	81	5.1	0.089	2.1	LOS A	0.3	2.4	0.46	0.38	12.5
All Vehicles			841	5.4	841	5.4	0.191	3.0	NA	0.5	4.0	0.18	0.31	51.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-102-A] S3-S2 L AM (S3-2038+DEV)

Network: [N103-AM] S3-AM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	367	7.2	367	7.2	0.193	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
3	R2	All MCs	81	7.2	81	7.2	0.080	6.0	LOS A	0.3	2.7	0.51	0.67	22.8
Approach			448	7.2	448	7.2	0.193	1.1	NA	0.3	2.7	0.09	0.12	57.7
East: Median Storage														
1	R2	All MCs	111	7.2	111	7.2	0.114	3.3	LOS A	0.4	2.9	0.38	0.59	46.1
Approach			111	7.2	111	7.2	0.114	3.3	LOS A	0.4	2.9	0.38	0.59	46.1
All Vehicles			559	7.2	559	7.2	0.193	1.5	NA	0.4	2.9	0.15	0.21	54.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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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Project: C:\OneDrive\Protest Engineering\Perth Transport Advisory - General\3-Projects\PTG.01516 - 81 Quill Way, Henderson Masterplanning - Traffic Advice\3-Modelling\SIDRA Model_Quill Way_v5.sipx

MOVEMENT SUMMARY

Site: [S1-103-A] S3-Redemptora Road/ Access 1 Intersection
AM (S3-2038+DEV)
Network: [N103-AM] S3-AM (S3-2038+DEV)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Access 1 (S)														
1	L2	All MCs	20	7.2	20	7.2	0.055	5.5	LOS A	0.2	1.4	0.40	0.61	27.6
3	R2	All MCs	29	0.0	29	0.0	0.055	7.0	LOS A	0.2	1.4	0.40	0.61	42.0
Approach			49	2.9	49	2.9	0.055	6.4	LOS A	0.2	1.4	0.40	0.61	39.8
East: Redemptora Rd (E)														
4	L2	All MCs	188	0.0	188	0.0	0.206	4.6	LOS A	0.0	0.0	0.00	0.24	45.8
5	T1	All MCs	228	5.1	228	5.1	0.206	0.1	LOS A	0.0	0.0	0.00	0.24	47.2
Approach			417	2.8	417	2.8	0.206	2.1	NA	0.0	0.0	0.00	0.24	46.5
West: Redemptora Rd (W)														
11	T1	All MCs	87	5.1	87	5.1	0.151	1.5	LOS A	0.8	5.8	0.47	0.53	45.3
12	R2	All MCs	127	0.0	127	0.0	0.151	6.3	LOS A	0.8	5.8	0.47	0.53	34.6
Approach			215	2.1	215	2.1	0.151	4.3	NA	0.8	5.8	0.47	0.53	41.1
All Vehicles			681	2.6	681	2.6	0.206	3.1	NA	0.8	5.8	0.18	0.36	44.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-104-A] S3-Quill Way/ Access 2 Intersection AM
(S3-2038+DEV)

Network: [N103-AM] S3-AM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Quill Way (S)															
2	T1	All MCs	367	7.2	367	7.2	0.193	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			367	7.2	367	7.2	0.193	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
East: Access 2 (E)															
4	L2	All MCs	46	0.0	46	0.0	0.045	4.3	LOS A	0.2	1.2	0.46	0.60	0.46	18.7
Approach			46	0.0	46	0.0	0.045	4.3	LOS A	0.2	1.2	0.46	0.60	0.46	18.7
North: Quill Way (N)															
7	L2	All MCs	59	5.1	59	5.1	0.034	3.9	LOS A	0.0	0.0	0.00	0.55	0.00	29.2
8	T1	All MCs	456	5.1	456	5.1	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			515	5.1	515	5.1	0.231	0.5	NA	0.0	0.0	0.00	0.06	0.00	51.4
All Vehicles			928	5.7	928	5.7	0.231	0.5	NA	0.2	1.2	0.02	0.06	0.02	51.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105-A] S3-Quill Way/ Access 3 Intersection AM
(S3-2038+DEV)

Network: [N103-AM] S3-AM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	337	7.2	337	7.2	0.177	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
3	R2	All MCs	114	7.2	114	7.2	0.118	5.6	LOS A	0.5	3.8	0.42	0.64	27.0
Approach			451	7.2	451	7.2	0.177	1.4	NA	0.5	3.8	0.11	0.16	40.6
East: Access 3 (E)														
4	L2	All MCs	41	0.0	41	0.0	0.042	5.2	LOS A	0.1	1.1	0.37	0.57	27.3
Approach			41	0.0	41	0.0	0.042	5.2	LOS A	0.1	1.1	0.37	0.57	27.3
North: Quill Way (N)														
7	L2	All MCs	14	5.1	14	5.1	0.008	3.9	LOS A	0.0	0.0	0.00	0.55	31.2
8	T1	All MCs	302	5.1	302	5.1	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach			316	5.1	316	5.1	0.153	0.2	NA	0.0	0.0	0.00	0.02	57.5
All Vehicles			807	6.0	807	6.0	0.177	1.1	NA	0.5	3.8	0.08	0.13	45.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-101-P] S3-S1 L PM (S3-2038+DEV)

Network: [N103-PM] S3-PM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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			
East: redemptora Rd (E)														
1	L2	All MCs	58	0.0	58	0.0	0.041	5.1	LOS A	0.2	1.2	0.26	0.52	29.9
2	T1	All MCs	345	1.1	345	1.1	0.594	5.7	LOS A	2.3	17.2	0.57	0.68	29.5
Approach			403	0.9	403	0.9	0.594	5.6	LOS A	2.3	17.2	0.53	0.66	29.5
North: Quill Way (N)														
3	L2	All MCs	79	0.0	79	0.0	0.040	5.8	LOS A	0.0	0.0	0.00	0.53	51.0
4	T1	All MCs	167	0.0	167	0.0	0.081	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			246	0.0	246	0.0	0.081	1.9	NA	0.0	0.0	0.00	0.17	56.7
West: Median Storage														
5	T1	All MCs	87	0.0	87	0.0	0.072	2.1	LOS A	0.3	1.9	0.30	0.47	21.5
Approach			87	0.0	87	0.0	0.072	2.1	LOS A	0.3	1.9	0.30	0.47	21.5
All Vehicles			737	0.5	737	0.5	0.594	4.0	NA	2.3	17.2	0.32	0.47	45.3

Site Level of Service (LOS) Method: Delay (SIDRA). 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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Project: C:\OneDrive\Protest Engineering\Perth Transport Advisory - General\3-Projects\PTG.01516 - 81 Quill Way, Henderson Masterplanning - Traffic Advice\3-Modelling\SIDRA Model_Quill Way_v5.sipx

MOVEMENT SUMMARY



Site: [S1-102-P] S3-S2 L PM (S3-2038+DEV)

Network: [N103-PM] S3-PM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

Type A Two-Stage T-Intersection Crossing

Site Category: (None)

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	815	1.1	815	1.1	0.399	0.0	LOS A	0.0	0.0	0.00	0.00	59.7
3	R2	All MCs	87	1.1	87	1.1	0.047	3.8	LOS A	0.0	0.0	0.00	0.57	29.5
Approach			902	1.1	902	1.1	0.399	0.4	NA	0.0	0.0	0.00	0.05	59.0
East: Median Storage														
1	R2	All MCs	345	1.1	345	1.1	0.578	9.3	LOS A	-N8	-N8	0.76	1.04	42.5
Approach			345	1.1	345	1.1	0.578	9.3	LOS A	-N8	-N8	0.76	1.04	42.5
All Vehicles			1247	1.1	1247	1.1	0.578	2.8	NA	-N8	-N8	0.21	0.33	53.3

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

N8 The Percentile Back of Queue extends to upstream Site lanes.

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Project: C:\OneDrive\Protest Engineering\Perth Transport Advisory - General\3-Projects\PTG.01516 - 81 Quill Way, Henderson Masterplanning - Traffic Advice\3-Modelling\SIDRA Model_Quill Way_v5.sipx

MOVEMENT SUMMARY



Site: [S1-103-P] S3-Redemptora Road/ Access 1 Int PM
(S3-2038+DEV)

Network: [N103-PM] S3-PM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Access 1 (S)															
1	L2	All MCs	161	0.0	161	0.0	0.411	6.1	LOS A	2.3	16.9	0.50	0.70	0.60	26.2
3	R2	All MCs	241	0.0	241	0.0	0.411	7.9	LOS A	2.3	16.9	0.50	0.70	0.60	41.4
Approach			402	0.0	402	0.0	0.411	7.2	LOS A	2.3	16.9	0.50	0.70	0.60	38.9
East: Redemptora Rd (E)															
4	L2	All MCs	114	0.0	114	0.0	0.170	4.6	LOS A	0.0	0.0	0.00	0.17	0.00	46.4
5	T1	All MCs	242	0.0	242	0.0	0.170	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	48.0
Approach			356	0.0	356	0.0	0.170	1.5	NA	0.0	0.0	0.00	0.17	0.00	47.5
West: Redemptora Rd (W)															
11	T1	All MCs	86	0.0	86	0.0	0.104	1.0	LOS A	0.5	3.7	0.39	0.43	0.39	46.1
12	R2	All MCs	80	0.0	80	0.0	0.104	5.9	LOS A	0.5	3.7	0.39	0.43	0.39	36.0
Approach			166	0.0	166	0.0	0.104	3.3	NA	0.5	3.7	0.39	0.43	0.39	43.2
All Vehicles			924	0.0	924	0.0	0.411	4.3	NA	2.3	16.9	0.29	0.45	0.33	43.1

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-104-P] S3-Quill Way/ Access 2 Intersection PM
(S3-2038+DEV)

Network: [N103-PM] S3-PM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Quill Way (S)															
2	T1	All MCs	943	1.1	943	1.1	0.462	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			943	1.1	943	1.1	0.462	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
East: Access 2 (E)															
4	L2	All MCs	73	0.0	73	0.0	0.050	2.9	LOS A	0.2	1.5	0.23	0.48	0.23	22.4
Approach			73	0.0	73	0.0	0.050	2.9	LOS A	0.2	1.5	0.23	0.48	0.23	22.4
North: Quill Way (N)															
7	L2	All MCs	89	0.0	89	0.0	0.049	3.9	LOS A	0.0	0.0	0.00	0.55	0.00	29.3
8	T1	All MCs	136	0.0	136	0.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			225	0.0	225	0.0	0.066	1.6	NA	0.0	0.0	0.00	0.22	0.00	39.9
All Vehicles			1241	0.8	1241	0.8	0.462	0.5	NA	0.2	1.5	0.01	0.07	0.01	51.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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: [S1-105-P] S3-Quill Way/ Access 3 Intersection PM
(S3-2038+DEV)

Network: [N103-PM] S3-PM (S3-2038+DEV)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

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: Quill Way (S)														
2	T1	All MCs	823	1.1	823	1.1	0.403	0.0	LOS A	0.0	0.0	0.00	0.00	59.7
3	R2	All MCs	37	1.1	37	1.1	0.030	4.4	LOS A	0.1	0.9	0.25	0.54	29.1
Approach			860	1.1	860	1.1	0.403	0.2	NA	0.1	0.9	0.01	0.02	55.2
East: Access 3 (E)														
4	L2	All MCs	256	0.0	256	0.0	0.219	3.2	LOS A	0.9	6.7	0.27	0.51	27.5
Approach			256	0.0	256	0.0	0.219	3.2	LOS A	0.9	6.7	0.27	0.51	27.5
North: Quill Way (N)														
7	L2	All MCs	4	0.0	4	0.0	0.002	3.9	LOS A	0.0	0.0	0.00	0.55	31.5
8	T1	All MCs	143	0.0	143	0.0	0.069	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach			147	0.0	147	0.0	0.069	0.1	NA	0.0	0.0	0.00	0.02	58.4
All Vehicles			1263	0.7	1263	0.7	0.403	0.8	NA	0.9	6.7	0.06	0.12	44.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

