

Traffic Impact Assessment

Roselands Shopping Centre Alterations & Additions

Prepared for HMC Capital

19 August 2026

241764

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Section 1 Introduction

1.1 Project Description

This Development Application (DA) is for alterations and additions of the existing HomeCo. Roselands Shopping Centre including a new specialised retail premises, located at 24 Roselands Avenue, Roselands, approximately 15 kilometres south-west of the Sydney CBD.

The proposal involves alteration and additions of the existing HomeCo. Roselands shopping centre to provide the following:

- New specialised retail premises with the following floor area:
 - 11,002m² retail gross floor area (GFA)
 - 10,452 gross leasable floor area (GLFA)
- Additional shopping centre retail area with the following floor area:
 - 1,153m² retail GFA
 - -4,236 m² retail GLFA, the reduction is as a result of existing retail floor area to back-of house
- Replacement of unused parking to the south of Roselands Drive, providing approximately 507 new car parking spaces
- Proposed roundabout at the existing Roselands Drive / Roselands Avenue intersection
- New loading dock to facilitate additional specialised retail premises

The site is located within the Canterbury-Bankstown local Government area (LGA) and has been assessed in accordance with the Canterbury-Bankstown Development Control Plan (DCP) 2023 and Local Environmental Plan 2023 LEP (2023).

1.2 Scope of Works

Taylor Thomson Whitting (TTW) has been engaged by HMC Capital to provide traffic engineering consultancy services for the alterations and additions proposal.

This Traffic Impact Assessment (TIA) has been developed to assess and address the traffic and transport impacts of the proposal and define the key related design elements of the proposal. This report has been prepared in support of the proposal and should be read in the context of the Statement of Environmental Effects (SEE), prepared separately by Willow Tree Planning. This report covers the following areas:

- Section 2: Describes the site and existing traffic and parking conditions in the locality.
- Section 3: Describes the proposal.
- Section 4: Assesses the parking requirement of the proposal.
- Section 5: Assesses the traffic impact of the proposal
- Sections 6: Presents the design aspects
- Section 7: Summarises the overall study providing recommendations and conclusions

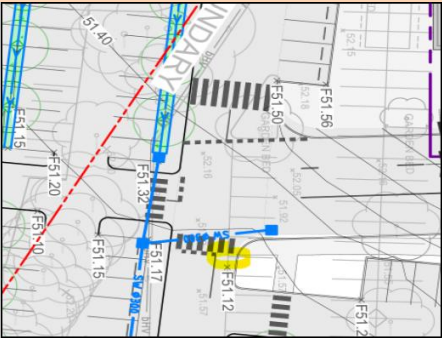
1.3 References

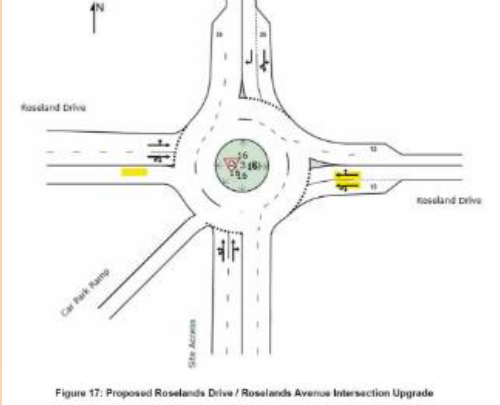
- Canterbury Bankstown Development Control Plan Chapter 3 General Requirements (Amended 2025), 2023
- Canterbury Bankstown Local Environmental Plan, 2023
- TfNSW Guide to Traffic Impact Assessment, 2024
- Halcrow Trip Generation and Parking Demand Surveys of Shopping Centre Analysis Report, 2011

1.4 Consultation

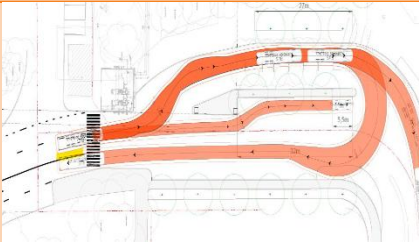
The project's development application (DA) was lodged in December 2025. Following submission Canterbury-Bankstown Council have provided response letters dated 22 July 2026 & 10 April 2026 (PAN-604644). The Council's comments have been reviewed and relevant responses are listed in Table 1 below.

Table 1: Response to Council's Comments

Council Comments	References / Discussions
RFI #2 - 22 July 2026	
a) Onsite Arrangement The centre line marking is skewed and does not allow sufficient width for two-way flow. This issue must be addressed. 	Updated Linemarking has been updated. Please refer to 241764-TTW-00-DR-CV-04101 Revision P4 for updated linemarking.
b) Road Layout Please provide a detailed layout of proposed road changes to ensure they are compliant with TfNSW Guidelines, Australian Standards and Austroads including: i) Proposed pedestrian crossing dimensions.	Updated Pedestrian crossing dimension is shown in Drawing 241764-TTW-00-DR-CV-04101 Pedestrian crossing width will be 3.5m and will be design as per AS 1742.10.
ii) The proposal will bring increased pedestrian circulation throughout the precinct, therefore to increase pedestrian safety and upgrade to current TfNSW standards, the existing pedestrian crossing on Roselands Avenue is to be converted to a raised crossing with kerb extensions to ensure there is no more than one lane of moving traffic on each approach. This	As mentioned in the previous RFI, the proposal will retain the existing crossing in its current location. The crossing will be provided in accordance with relevant Australian Standards. Kerb extensions will be provided; Signage and layout will be further detailed to ensure the safety of pedestrians.

Council Comments	References / Discussions
crossing is a key component in the Bus, Taxi and rideshare walking route shown in Figure 15 of the traffic report.	
iii) There are concerns regarding the roundabout layout: o SIDRA Layout - 2 westbound through lanes on the eastern leg and 1 westbound through lane on the western leg.  Considering that the northern, eastern and western leg merge into a single lane shortly after the exiting the roundabout there are concerns about safety at these conflict points. Consideration is to be given to a one-lane roundabout instead.	Updated Council's comment has been considered. The modelling has been updated to a one-lane roundabout. Refer to Section 5.2. The updated SIDRA modelling indicates that the proposed one-lane roundabout would continue to operate satisfactorily during the assessed peak periods, with the intersection operating within acceptable capacity and delay thresholds. The one-lane arrangement provides a simpler lane configuration and addresses Council's concern regarding the potential for lane-merging conflicts on the downstream approaches. In addition, the one-lane roundabout still improves the overall traffic from the existing condition within the vicinity of the site. Modelling results for both of the intersections are further detailed in Section 5
c) Modelling With reference to the Traffic Report (Table 1, 3I), for the Saturday peak there will be an additional 28 vehicles generated by the development (both inbound and outbound traffic), not 14 vehicles per hour as stated. Evidence is to be provided to support claims regarding the traffic impacts – site observations are insufficient. Therefore, to determine the impact of the development traffic on Council's local roads, both the following intersections are to also be modelled due to their proximity to each other: i) Violet Street and Martin Street. ii) Karne Street and Martin Street. Additional information addressing these issues must be submitted.	Updated Additional modelling for Violet Street/Martin Street and Karne Street/Martin Street has been included as part of the assessment. Modelling results indicate that the additional development traffic can be accommodated at both intersections, with the intersections continuing to operate at an acceptable level of service (LoS A) and within available intersection capacity. Modelling results for both of the intersections are further detailed in Section 5
d) Swept Paths There appears to be encroachment onto kerbs with the AV swept paths.	Updated Revised swept paths has been updated as part of the RTS. Please refer to TTW-00-DR-TR-10002-P2 for revised swept path.

Council Comments	References / Discussions
	
e) Bus swept path is overlapping kerb extension. 	Updated Revised swept paths has been updated as part of the RTS. Please refer to TTW-00-DR-TR-00003-P2 for revised swept path.
f) Please ensure lane width at crossing is sufficient to accommodate bus movements and amend swept paths accordingly.	Updated Revised swept paths has been updated as part of the RTS. Please refer to TTW-00-DR-TR-20001-P2 for revised swept path.

Council Comments	References / Discussions
 Amended plans that address these issues and demonstrate compliance with all relevant controls must be submitted for Council's review.	
g) Bus Stop and Taxi Changes Please consult with and provide evidence of support from TfNSW and the Taxi Association for the proposed changes to the Bus stops and Taxi Zone. Noting that Council will need this to be provided during the DA stage.	TfNSW has provided comments on 8th July. TfNSW provides its preliminary advice on the matter as follows: • Bus stopping and waiting area: Stops and layover spaces need to stay in line with the NSW Bus Infrastructure Guidelines. The total number of existing stops and layover spaces need to be maintained. TfNSW should be consulted closer to the planned implementation of any modifications/relocations (prior to the commencement of works), to ensure signs and stops are appropriately designed and marked. Response: The number of stops is retained, and the length of layover spaces will be maintained. Upgraded layover spaces will be further detailed and designed in accordance with the NSW Bus Infrastructure Guideline. TfNSW will be consulted closer to the implementation of modification/relocation. • TfNSW requires that the stop 'Roselands Dr Opp Lantern Club' either stays open or is given a nearby appropriate replacement. Response: The project team is currently intending to retain the existing bus stop location, upgrade the waiting area and ensure that 'Roselands Dr Opp Lantern Club' bus stop remains open. However, the bus stop location will be investigated further, as it will be located close to the proposed secondary car park entrance. Because of this, the bus zone is likely to be relocated eastward along Roseland Drive, approximately an additional 10 to 20m further from the proposed car park entrance, to ensure no impact between the bus zone and the car park entrance. The bus zone and the upgraded waiting area will be further detailed in accordance with the NSW Bus Planning Guideline. The detailed design documentation of bus zone will be submitted to TfNSW for review. In addition, as the bus stop is only occasionally used for special events only, upgrades to the bus stop can occur outside of the large events, thus having no impact on bus stop usage and can remain open

Council Comments	References / Discussions
	• Any proposed relocation/modifications of bus stops associated with the DA (either temporary or permanent) should be determined in consultation with the bus stop operator and TfNSW (please contact: BusApproval@transport.nsw.gov.au). These works shall be at no cost to TfNSW. For any temporary relocation/modifications during construction activities, the bus stop and associated infrastructure shall be returned and reinstated at the completion of the construction works, at no cost to TfNSW. Response: Any further modification/proposal to the bus stop will be informed to TfNSW. NSW Taxi has provided comments on 9th August 2026. NSW Taxi Association provides its preliminary advice on the matter as follows: Based on the information provided, NSW Taxi Council has no further concerns with the proposed relocation of the taxi zone at this stage. We note that the proposed design maintains the existing taxi capacity, provides sufficient space for taxis to safely wait and service passengers and allows for general traffic and bus operations to continue without conflict. We also note that appropriate signage and line marking will be incorporated into the final design. We appreciate the consultation and ask that NSW Taxi Council be kept informed should there be any future changes to the proposal or construction arrangements that may impact taxi operations. Response: Any modification/proposal to the taxi will be informed to NSW Taxi Association in the future. Based on the above, both TfNSW and NSW Taxi Association is supportive to the proposed project. Copy of the TfNSW and NSW Taxi Association correspondence can be referred in Appendix A.
h) Due to the safety concerns regarding conflict between light and heavy vehicles, loading and waste collection is to occur outside of operational hours. A Loading Dock Management Plan is to be submitted detailing this arrangement.	The project team acknowledges Council's concerns regarding potential conflicts between light vehicles and heavy vehicles. A Loading Dock Management Plan will be prepared prior to operation, detailing loading and waste collection arrangements as well as the management of any occasional heavy vehicle delivery or service activities required during operational hours. The Plan will outline the appropriate traffic management and safety measures to ensure there is no adverse impact on customer vehicle movements or pedestrian safety.

Council Comments	References / Discussions
RFI #1 – 10 April 2026	
2f) Sitting and circulation (vi) Bicycle parking appears to have been considered only minimally. A broader cycling strategy for the centre should be explored, including the provision of convenient and visible bike parking near key entrances for both visitors and staff.	Updated Bicycle parking has been assessed in accordance with Council's DCP which requires 65 bicycle parking spaces, comprising 41 staff and 24 visitor bicycle parking. In response, the project will provide 65 bicycle parking for both visitors and staff. The bicycle parking will be located adjacent to the travelators to provide closer access to the entrance. Further details are provided in Section 4.8. and shown on Level 1 Plan Ref: DA1121 Rev A provided by Group GSA.
2. Provide a detailed circulation strategy addressing pedestrian movement, vertical transport and ride-share access.	Updated Section 3.4 has been updated to provide a map showing the pedestrian connection path between the proposed site access and the existing bus and ride-share. This is located a short 5min walk (400m) from the main centre access.
3. Car Parking, Road Layout, and Traffic a) There are concerns that the usage of the "specialised retail premises" rate from Council's DCP of 1/60m² does not adequately capture the parking requirements of the proposed development. It is suggested that the parking requirement of existing similar sites be assessed, noting that they may already be operating at over capacity.	Sensitivity Test Completed The proposed new building has been classified as specialist retail and therefore the 'specialist retail premises' parking rate within Council's DCP has been adopted. To provide a conservative assessment, we have also completed a sensitivity test to assess other parking rates to validate the proposed parking provision. Refer to Section 4.4 for details. In summary, the sensitivity test shows applying the shopping centre parking rate from TfNSW GTIA and the current shopping centre parking rate the proposed provision of 507 car parking spaces is sufficient. It is also noteworthy to mention, linked and shared trips are expected given the site's integration with Roselands Shopping Centre. As the existing centre already generates a substantial proportion of local retail travel, many vehicle movements associated with the proposal will form part of multi-purpose trips rather than new, standalone journeys. Existing parking supply should therefore be considered in this context, supported by a Green Travel Plan to encourage sustainable transport in line with Council's objectives.
b) Section 4.5 - Accessible Parking, states that there is a requirement for 1 staff accessible space and 9 visitor accessible spaces, however on the plan, 2 accessible staff spaces and 8 visitor accessible spaces have been provided.	Updated Refer to Level 1 Plan Ref: DA1121 Rev A provided by Group GSA, which has been updated to provide 2 staff accessible space and 9 visitor accessible spaces.
c) The parking spaces allocated for customer parking shall be designed for User Class 3A with minimum width of 2.7m for each space and aisle widths of minimum 6.2m as required under AS2890.1:2004 – Table 1.1 and Figure 2.2. This is to ensure adequate service	Updated The project understands the expected high turnover and short term parking for the proposed development. As such, wider parking spaces have been provided, with a width of 2.8m, length of 5.4m and aisle width of 6.2m. These dimensions exceed the requirements of AS 2890.1.

Council Comments	References / Discussions
levels are maintained for short term, high turnover parking in shopping centres. Aisle widths of minimum 6.2m shall be maintained.	The parking dimension are clearly shown on Level 1 Plan Ref: DA1121 Rev A provided by Group GSA.
d) The net reduction of parking in Zone A appears to have not been accounted for in the parking assessment.	<u>Updated</u> The parking assessment has been updated to account for Zone A refer to Section 2.6 and Section 4.2.
e) Safety concerns with pedestrian and truck conflict regarding 11 spaces located next to the loading dock. As there is no defined pedestrian path, pedestrians must cross over the loading dock area to access the entrance. If light vehicles are also accessing this area then conflict with light vehicles are an additional concern.	<u>Updated</u> A dedicated walkway has been implemented to the south of the Loading Dock to ensure pedestrian and vehicle movements are separated. Zebra crossings have also been provided to provide a safe crossing opportunity for pedestrians. These details are shown on Level 1 Plan Ref: DA1121 Rev A provided by Group GSA.
f) Lack of clarity regarding priority at the intersection between the truck access and carpark access raises safety concerns.	<u>Updated</u> The site plan has been updated to provide further clarity regarding priority at the intersection between the truck access and carpark access. These details are shown on drawing TTW-00-DR-CV-04101, P3 provided by TTW. A detailed signage and linemarking plan will be provided in the detailed design phase clearly identifying required signage.
g) The pages in Appendix A, B, C, D and F are missing from the traffic report. Please provide so that traffic generation and swept paths can be properly assessed.	<u>Updated</u> All appendices have been included as part of this revision.
h) Please provide a detailed layout of proposed road changes to ensure they are compliant with TfNSW Guidelines, Australian Standards and Austroads including: i. Lane and road widths ii. Directional arrows and lane markings iii. Lane markings iv. Lengths of proposed Bus Zones, Taxi Zones and any other parking restrictions v. Roundabout dimensions	<u>Updated</u> The civil plans have been modified to provide details showing i. Lane and road widths ii. Directional arrows and lane markings iii. Lane markings iv. Lengths of proposed Bus Zones, Taxi Zones v. Roundabout dimensions An updated layout has been provided in TTW-00-DR-CV-04101, P3 provided by TTW. Proposed road changes are compliant with TfNSW Guidelines, Appropriate Australian Standard and Austroads.

Council Comments	References / Discussions
i) As part of the proposal, both pedestrian crossings on Roselands Avenue (at the Bus Stops and south of the Lantern Club) are to be reinstalled as raised pedestrian crossings and shown on the plan.	Updated Roselands Drive: The proposal will reinstall a raised pedestrian further south of the existing crossing. Roseland Avenue: The proposal will retain the existing crossing in its current location. Kerb extensions will be provided, however this crossing is not intended to be upgraded to a raised pedestrian crossing. An updated layout has been provided in TTW-00-DR-CV-04101, P3 provided by TTW.
j) Section 5.1 of the traffic report utilises the traffic generation rates derived from the survey data for Roselands Shopping Centre in 2011. However, the proposal is a new specialised retail premises with different parking and traffic generation characteristics to a shopping centre. Evidently, for the parking analysis, TTW have not applied the shopping centre parking rate to this new development. Therefore, traffic generation rates derived from surveys from similar existing sites in Sydney are to be utilised instead.	Updated As noted in Section 5.1, the TfNSW GTIA does not provide traffic generation rates for '<i>specialised retail premises</i>'. Accordingly, TTW adopted the most comparable available rates, selecting retail shopping centre rates as the most appropriate and conservative proxy for the proposed development. This approach is supported by the parking rate comparison in Section 4.2, which indicates that typical retail rates are more conservative than those expected for the proposed specialised retail premises use. While the comparison is not exact, the adopted methodology is considered to provide a robust and conservative assessment of traffic generation. The TIA demonstrates that, under these conservative assumptions, the surrounding intersections continue to operate at satisfactory levels with minimal impact on the external road network. It is also noted that identifying directly comparable sites is difficult given the proposal involves a unique specialised retail tenant integrated within an existing shopping centre.

Section 2 Existing Conditions

2.1 Site Overview

The site is located at 24 Roselands Avenue, Roseland NSW 2196, known as HomeCo. Roselands shopping centre. It is approximately 1.2 to 1.6km north of Narwee and Beverly Hills Railway Station and approximately 15 kilometres southwest of Sydney CBD.

The site comprises of multiple lots and is irregular in configuration with a total area of approximately 14 ha. The site has seven (7) street frontages, Diana Avenue & Pentland Avenue to the north, Violet Street to the east, Martin Street to the south, and Roseland Avenue, Centre Avenue & Roselands Drive to the west, with the main frontage being Roselands Avenue. The site is identified below in Figure 1.



Figure 1: Site Location
Source: Modified from Nearmap

2.2 Existing Operations

The site currently features over 210 shops and anchor tenants, which include retail, restaurants, supermarkets, etc. The shopping centre also provides approximately 2,337 car parking spaces, located at various locations within the site. The centre is generally open as per below:

- Monday, Tuesday, Wednesday & Friday : 9am to 5.30pm
- Thursday : 9am to 9pm
- Saturday : 9am to 5pm
- Sunday : 10am to 4pm

2.3 Road Network

The road hierarchy in the vicinity of the site is shown in Figure 2 and described below in Table 2.

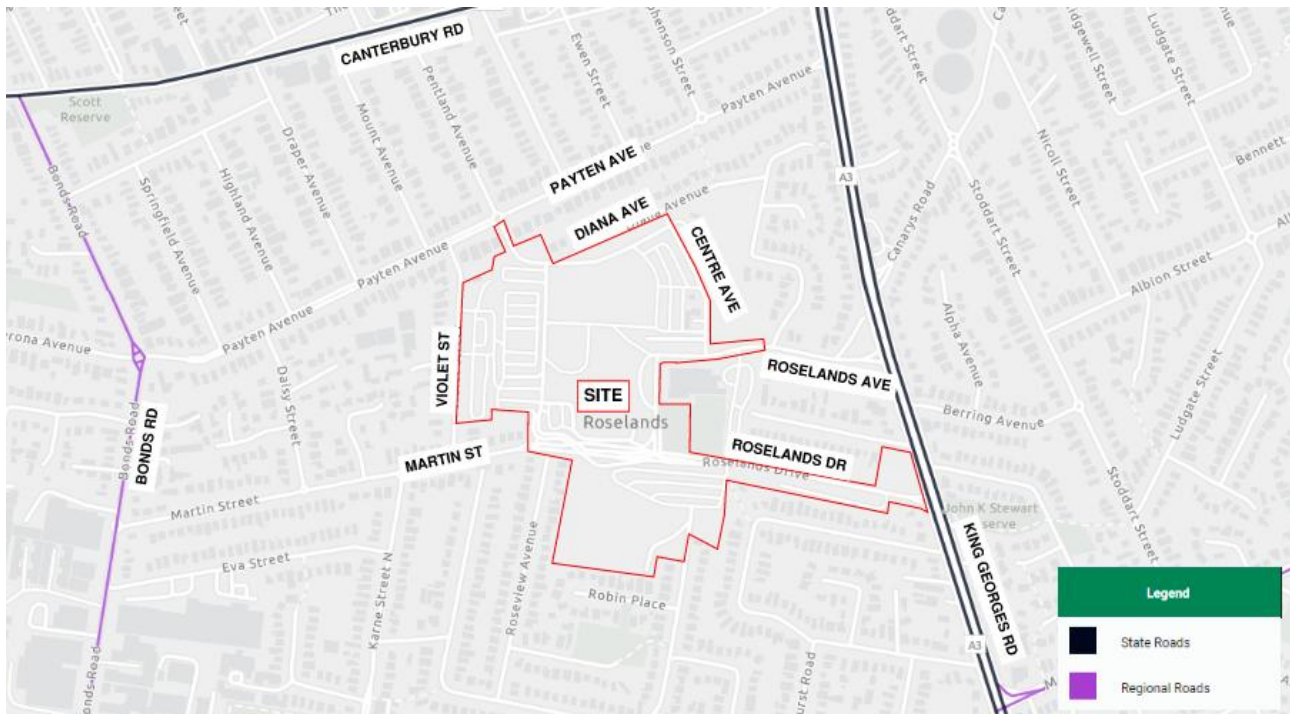


Figure 2: Road Network System

Source: Modified from Transport for NSW

Table 2: Local Road Network

Road Name	Classification	Speed Limit	Road Geometry	Parking Restrictions
Canterbury Road	State Road (167)	60 km/h	Two (2) lanes in each direction within a 12m undivided carriageway	No Stopping restrictions along both kerbsides
King Georges Road	State Road (200)	60 km/h	Three (3) lanes in each direction within a divided 9m dual carriageway	No Stopping restrictions along both kerbsides
Roselands Drive	Local Road	60 km/h	Two (2) lanes in each direction within a 14m undivided carriageway	No Parking restrictions
Roselands Avenue	Local Road	50 km/h	One (1) lane in each direction with the addition of parking bays along the northern and southern kerbsides within a 11.5m undivided carriageway	Unrestricted Parking
Violet Street	Local Road	50 km/h	One (1) lane in each direction with the addition of parking bays along the northern and southern kerbsides within a 10.8m undivided carriageway	Unrestricted Parking
Martin Street	Local Road	50 km/h	One (1) way lane within a 8m undivided carriageway	No Parking

2.4 Active Transport

2.4.1 Pedestrian Infrastructure

The site is located within the Canterbury-Bankstown LGA and provides a vast amount of pedestrian infrastructure. Pedestrian footpaths are currently provided along all surrounding streets, including Roselands Drive, Roselands Avenue, Violet Street and King Georges Road. Pedestrian crossing footpaths are also provided near the shopping centre, with a zebra crossing located at Roselands Avenue and Roselands Drive.

2.4.2 Cyclist Network

Figure 3 shows that the site has limited access to the local bicycle network within the vicinity of the site. Cyclists are required to use general road to access the shopping centre.

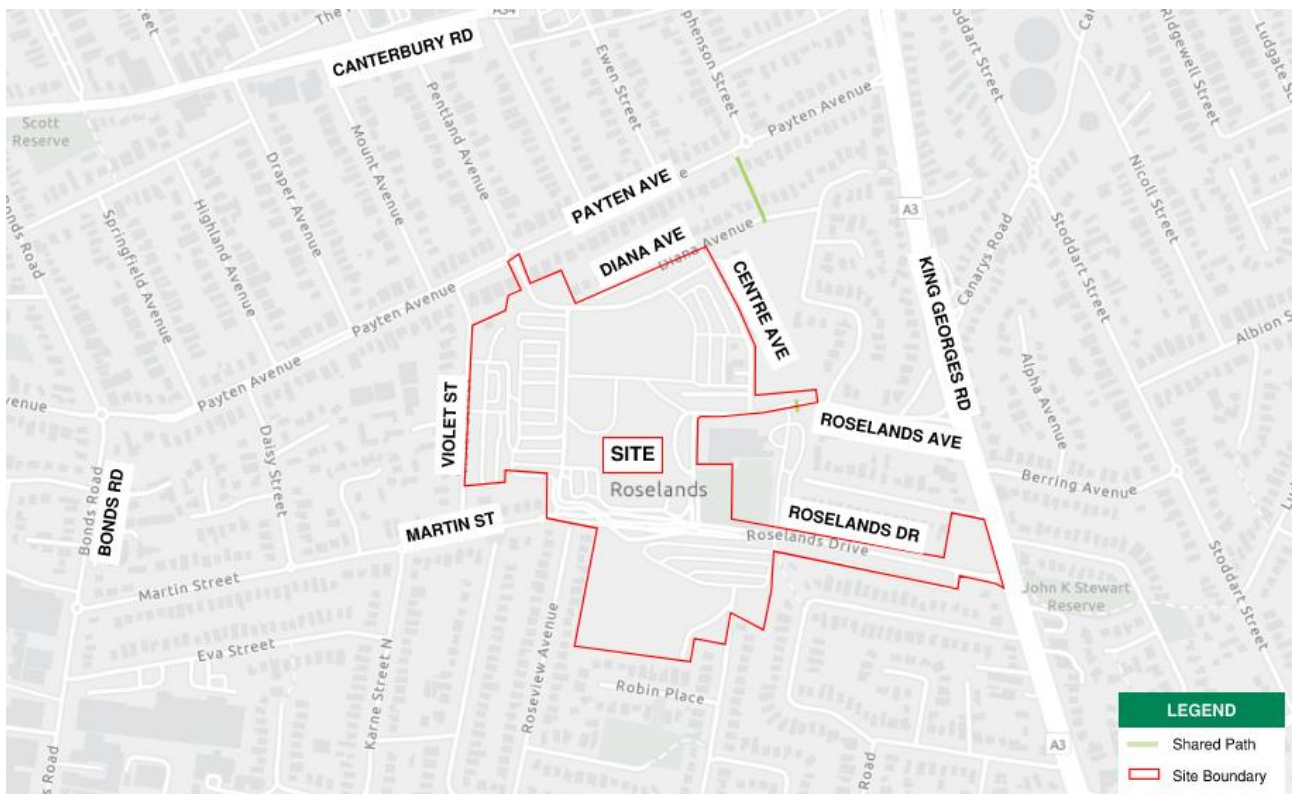


Figure 3: Local Cycle Route Map
Source: Modified from Cycle Finder

2.5 Public Transport

2.5.1 Bus Services

The integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area, states that the walking catchment for bus services includes all areas within a 400-metre radius of a bus stop. As shown by Figure 4 there are several bus stops within 400 metres of the site, therefore falling well within the walking catchment area. Table 3 and Figure 4 detail the notable bus routes that are accessible and average headways during peak and off-peak periods on weekdays and weekends.

Table 3: Local Bus Route Destinations

Bus Route Number	Bus Route	Average Headway
446	St Georges Hospital to Roselands	Every 30 minutes
450	Hurstville to Roseland	Every 30 minutes
487	Canterbury to Bankstown Central	Every 30 minutes
493	Roselands to Rockdale	6 daily services
941	Hurstville to Bankstown via Greenacre	Every 30 minutes
942	Lugarno to Campsie	Every 30 minutes
944	Mortdale to Bankstown via Peakhurst Heights	Every 30 minutes
946	Roselands to Bankstown via Lakemba & Greenacree	Every 30 minutes
S14	Mount Lewis to Lakemba via Roselands	2 daily services

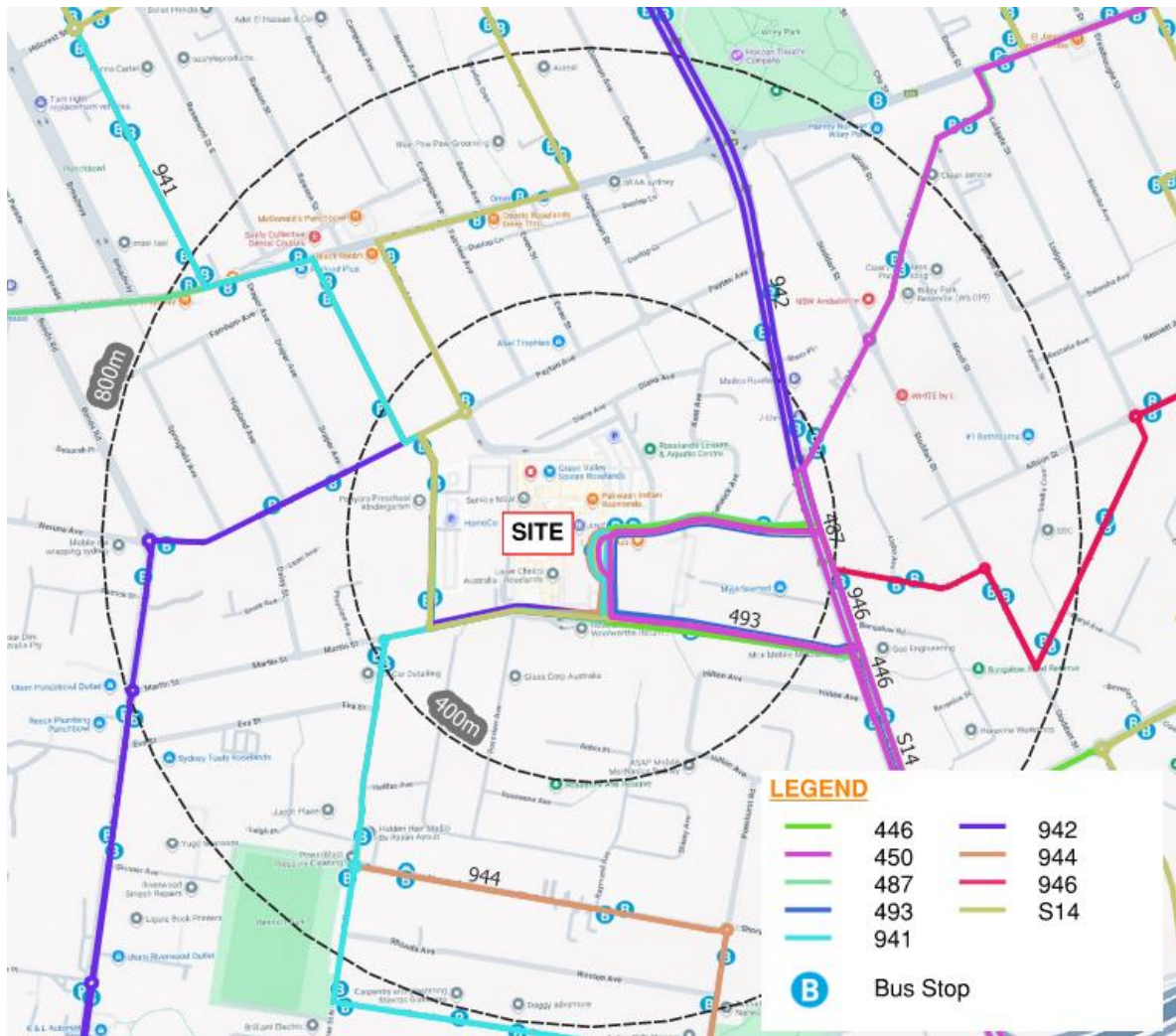


Figure 4: Local Bus Route Map
Source: Modified from Google Maps

2.5.2 Sydney Olympic Park – Major Event Bus Route

Additional bus services are periodically provided for major events at Sydney Olympic Park. One of the designated stops is Roseland, located on Roselands Drive opposite the Lantern Club, offering a direct connection toward Cronulla. As these services operate only occasionally, detailed timetables are available on the Transport for NSW website at <https://transportnsw.info/routes/bus>. Further service information is shown in Figure 5 below.



Figure 5: Sydney Olympic Park Major Event Bus Routes

Source: Modified from Transport for NSW

2.5.3 Railway Services

The integrated Public Transport Service Planning Guidelines, states that the walking catchment for metropolitan railway stations includes all areas within an 800-metre radius of a railway station. The nearest train station to the site is Wiley Park and Narwee Railway Station which both are located 1.4km from the site. Based on the distance, both railway stations are outside of the walking catchment. However, both railway stations can be reached by existing bus services via 941 service to Narwee Station and 942 service to Wiley Park Station. Currently, the Wiley Park Railway Station is closed for construction and will be converted to a Metro Station for the Sydney Metro South West service. Additional detail of the proposed metro service is further detailed in Section 2.5.4

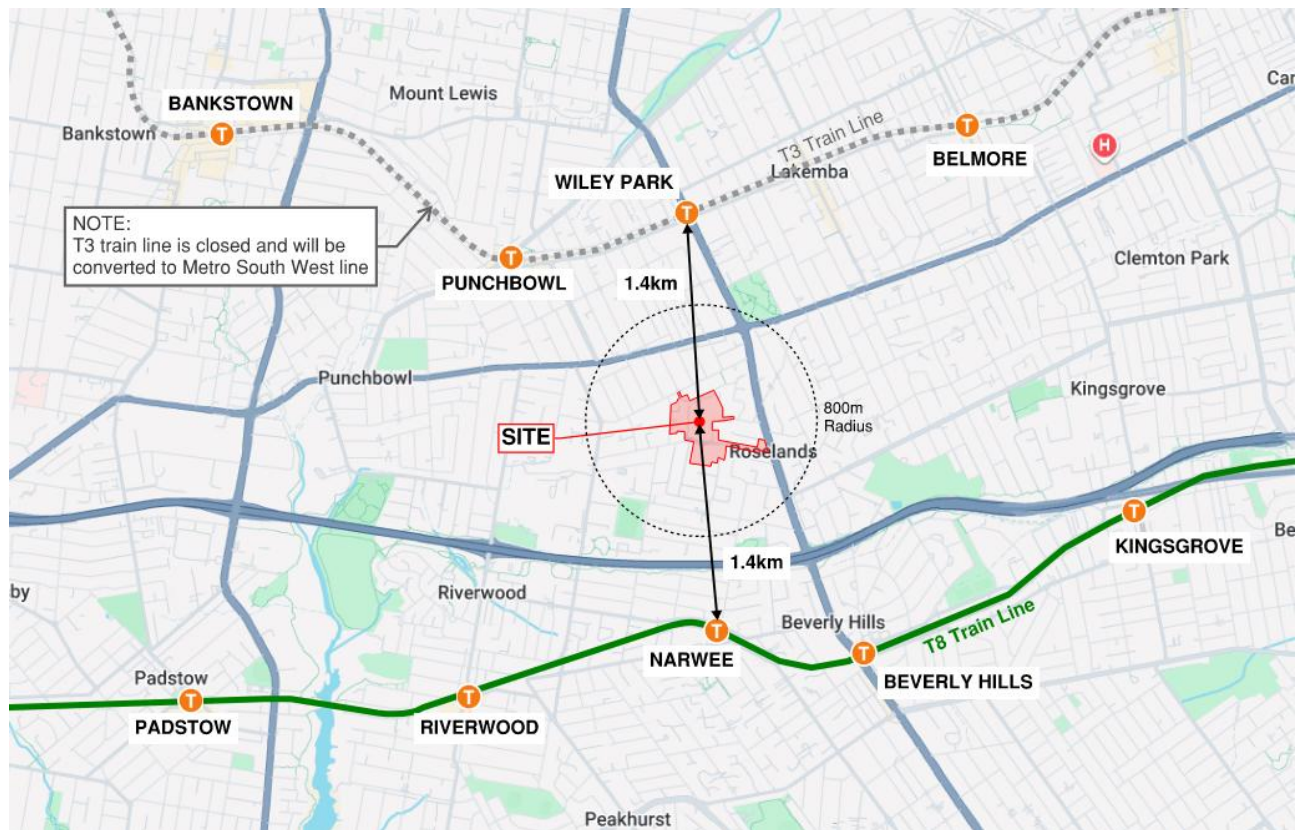


Figure 6: Nearby Train Station to the Site

Source: Modified from Nearmap

2.5.4 Proposed Metro Station

The T3 Bankstown Line is being converted to metro service between Sydenham and Bankstown with all stations to be fully accessible with lifts and level access between platforms and trains.

Sydney Metro Southwest will operate fully segregated from the existing Sydney Trains railway between Sydenham and Bankstown. The T3 Line west beyond Bankstown will continue to be operated by Sydney Trains, serving stations between Liverpool, Lidcombe and Bankstown. Sydney Metro received planning approval on 19 December 2018 to upgrade the T3 Bankstown Line between Sydenham and Bankstown to metro standards. The extent of the Sydney Metro South West is shown in Figure 7.

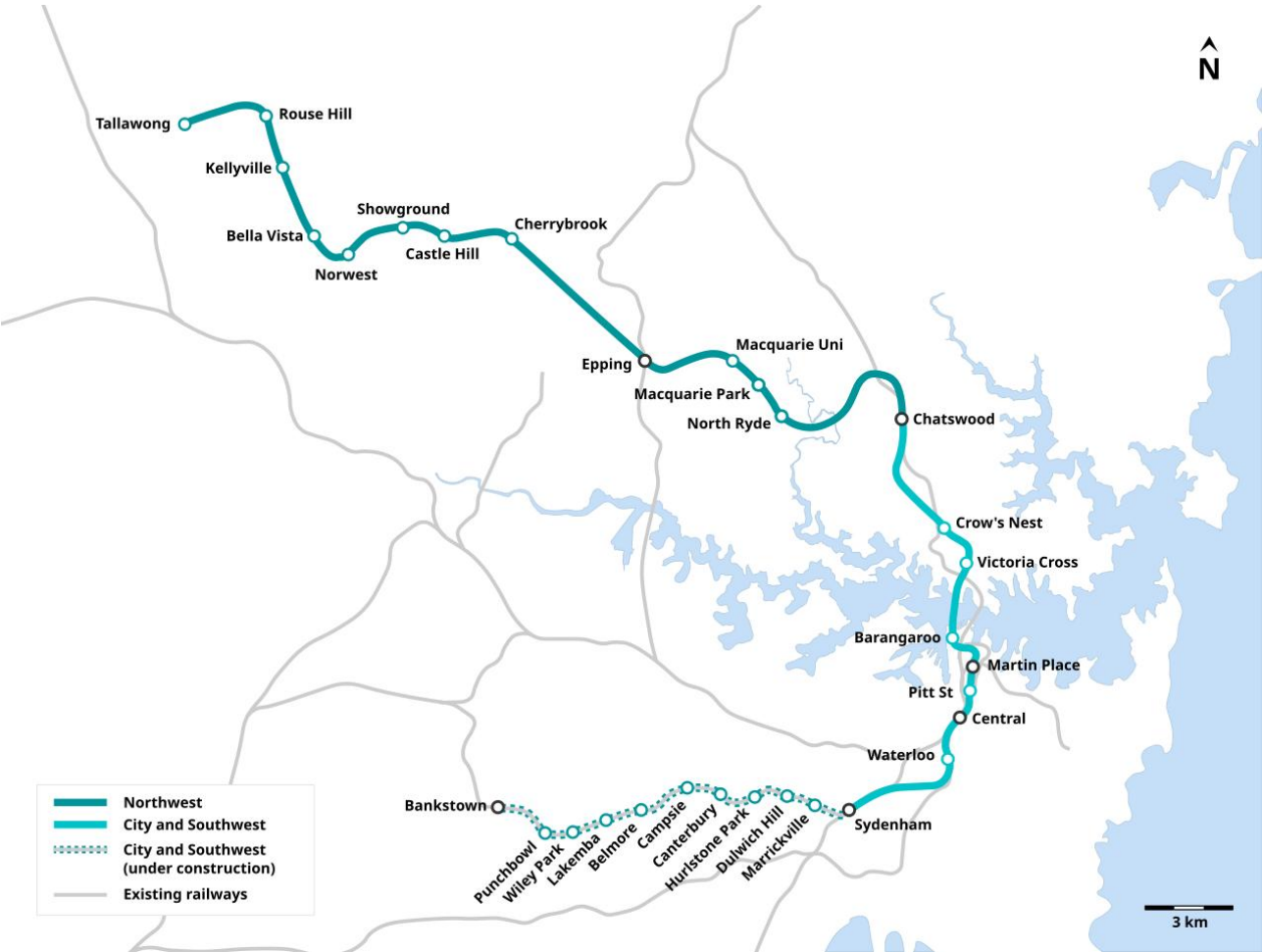


Figure 7: Sydney Metro South West
Source: Wikipedia

At the time of writing this report, the current T3 Bankstown line between Sydenham and Bankstown is closed due to the metro upgrade. Replacement buses have been provided in the meantime. The replacement bus runs every 10 minutes during off-peak hours and every 5 minutes during the peak period.

2.6 Existing Car Parking

The site currently accommodates HomeCo. Roselands shopping centre. The shopping centre provides several on-grade car parks distributed throughout the site, as well as a multi level car park on the western side. These parking facilities are accessible via Roselands Drive, Roselands Avenue, and Violet Street.

TTW reviewed the existing architectural plans for the site and confirmed a total parking provision of **3,082 car spaces**. A site inspection was completed to confirm the ‘actual’ number of parking spaces on-site which confirmed **2,530 car spaces**. The inspection was completed on Thursday 11th September 2025. Details of the existing parking arrangements are provided in Figure 8 and Table 4.

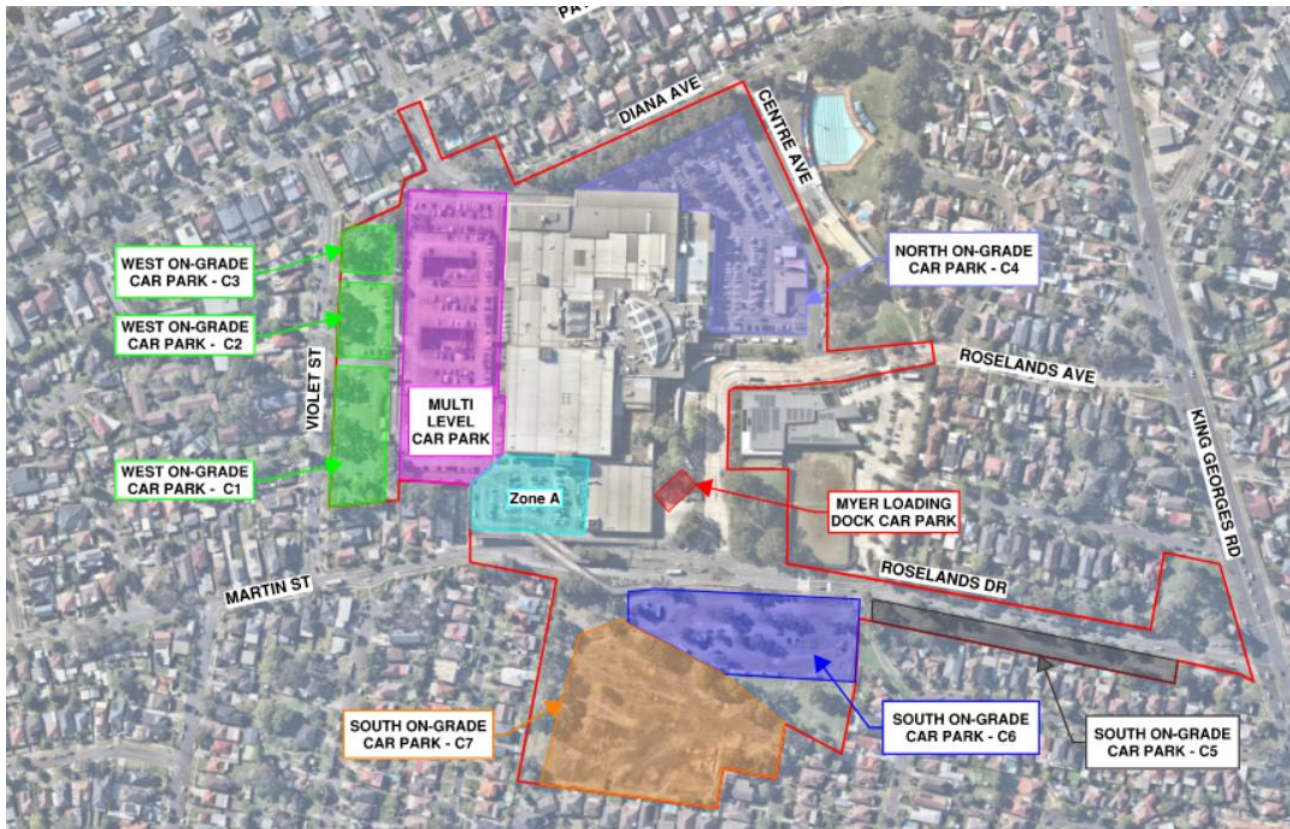


Figure 8: Existing On-site Parking

Source: Modified from Nearmap

Table 4: Existing On-site Car Parking Numbers

Existing Parking	Existing Architectural Plans	Confirmed on-site
Multi-level Car Park Existing Parking		
Pink Level (Level B2)	121	121
Yellow Level (Level B1)	459	474
Red Level (Level G)	402	381
Blue Level (Level 1)	356	360
Zone A	83	83
Green Level (Level 1M)	195	190
Roof Top (Level 2)	219	220
Total	1,835	1,829
On Grade Existing Parking		
West On Grade Car Park		
C1	108	105
C2	61	62
C3	26	26
North On Grade Car Park		
C4	220	222
Myer Loading Dock Parking	12	10
South On Grade Car Park		
C5 (Closed)	74	0
C6	276	276
C7 (Closed)	470	0
Grand Total	3,082	2,530
Difference	-552	

Staff parking shown in blue

Parking areas shown in red were closed to the public.

As shown above in Table 4, the actual number of existing parking spaces on-site is **2,530 car spaces** this is due to a few parking areas (**shown 0 above**) are closed to the public. TTW confirmed with the client car park C5 and C6 are closed to the public and **never opened**, these car parks require resurfacing and are unusable, they have therefore been excluded from the existing parking count.

It is also noteworthy to mention, the client confirmed car park C6 is open to the public but very rarely used by HomeCo. customers. The only exception would be Christmas period where the car park would reach max occupancy of 30% (83 car spaces). The parking areas are outlined in Figure 9.



Figure 9: Existing On-site Parking Details

Source: Modified from Nearmap

2.6.1 Existing Accessible Parking

The shopping centre provides a total of 76 accessible parking spaces located throughout the site. 19 accessible parking are provided on the northern on grade car park and 57 accessible parking provided within the multi level car park.

2.6.2 Existing Parking Demand

On-site Parking Spot Count 2025

TTW completed a car parking occupancy spot count study on Thursday 11th September 2025. This approximate assessment provides a representative measure of actual parking use. The resulting occupancy figures reflect the true parking demand generated by the shopping centre. Table 5 below shows the details of the existing parking demand at HomeCo. Roseland Shopping Centre.

Table 5: Existing Parking Demand Assessment

Existing Parking	No. Car Spaces	Occupancy %	Occupancy #
Multi level Car Park Existing Parking			
Pink Level (Level B2)	121	50%	61
Yellow Level (Level B1)	474	95%	450
Red Level (Level G)	381	98%	373
Blue Level (Level 1)	360	85%	306
Zone A	83	85%	71
Green Level (Level 1M)	190	50%	95
Roof Top (Level 2)	220	50%	110
Total	1829	80%	1466
On Grade Existing Parking			
West On Grade Car Park			
C1	105	20%	21
C2	62	50%	31
C3	26	0%	0
North On Grade Car Park			
C4	222	95%	211
Myer Loading Dock Car Park	10	100%	10
South On Grade Car Park			
C5 (Closed)	0	0%	0
C6	276	4%	10
C7 (Closed)	0	0%	0
Grand Total	2,530	69%	1,749

Staff parking shown in blue

Parking shown in red is closed to the public

Table 4 indicates that the total on-site car parking demand on a Thursday between 2:00 pm and 4:00 pm reaches a total occupancy of 69%. The busiest car parks were the north on-grade car park (C4 near Coles) at 95% and multistorey car park at 80%. It is noteworthy to mention, the car park (C6) to the south of Roseland Drive had minimal parking occupancy at 4%.

TfNSW Parking Demand Surveys – Roseland Shopping Centre 2011

A review of the TfNSW GTIA survey data was undertaken. It was confirmed that the Roseland shopping centre was one of the shopping centres that was surveyed to confirm parking demand and trip generations in 2011. The survey was undertaken on a Thursday and Sunday a summary of the results is detailed below in Table 6

Table 6: Roseland Shopping Centre Parking Accumulation 2011

	Thursday	Friday	Saturday	Sunday
No. Occupied	2,340	2,172	2,182	2,016
% Occupied	92%	86%	86%	80%
Total Spaces	2,530 car spaces			

Note: total parking provision has been adjusted as per site visit.

Whilst the surveys were completed in 2011 and are typically outdated it is noteworthy to review the data which outlines the existing centre was operating at a maximum car parking capacity not exceeding 2,340 car spaces.

Nearmap Review

In addition to reviewing on-site parking demands, a review of Nearmap images was completed from 2022 to 2025 of Roseland shopping centre to confirm the car parking occupancy. The data is retrieved by calculating the number of occupied car park in each parking area and accumulate to confirm the total occupancy percentage. Only the at-grade car parks can be reviewed due to insufficient data from Nearmap to the multilevel car park. Table 7 summaries the data, showing the maximum, minimum and average car parking occupancy between 2022 and 2025.



Figure 10: Parking Location Reference for Nearmap Review

Source: Modified from Nearmap

Table 7: Existing Parking Demand from Nearmap Image Data

	West	North	South*	Total
Minimum cars parked (Wednesday 3/01/2024, 9:06am)	22	167	2	191
Maximum cars parked (Saturday 23/11/2024, 3:13pm)	52	231	5	288
Total Parking Capacity	193	234	276	703
Maximum Parking Occupancy	27%	99%	2%	41%

*The south car park only accounts for the Overflow Car Park Area 1.

As shown in Table 7, the maximum car parking occupancy between 2022-2025, is 288 (41%) parking spaces. Specifically, the south car park is very underutilised with an occupancy of 2%. A review of Nearmap data between 2025-2022 was completed and confirmed the maximum occupancy of this car park was 31 cars.

2.6.3 On-Street Parking

As can be seen from Figure 11, there is an abundant amount of on street car parking within a 400 metre radius of the site. This includes unrestricted car parking provided along Roselands Avenue, Violet Street, and Payten Avenue.



Figure 11: On-Street Parking
Source: Modified from Nearmap

2.7 Existing Loading Docks

The site currently accommodates five (5) separate loading docks throughout the shopping centre. The loading docks are used for delivery for MYER, Woolworths, Coles, Kmart, etc and waste collection. Deliveries typically start around 4am and continue throughout the day. Waste collection also occurs at these loading areas and is managed by the individual tenancies.

2.8 Existing Traffic Conditions

In order to provide accurate traffic surveys, intersection movement counts were conducted at various locations in the vicinity of the site. The location of the intersection surveys are shown below in Figure 12. The data collection took place on Thursday, 20th November 2025, between 7:00 am to 10:00 am and 4:00 pm to 8:00 pm and Saturday, 22nd November 2025 between 8:00 am to 4:00 pm. The traffic counts included light vehicles, heavy vehicles, and buses. The intersection movement counts have been conducted at the following intersections:

1. King Georges Road & Roselands Drive
2. Roselands Drive & Roselands Avenue
3. King Georges Road & Roselands Avenue

The results of the surveys were used to develop existing (base case) SIDRA models of the above intersections. The peak period of all the intersections has been calculated by accumulating the hourly traffic block, result in the highest number of traffic per hour. As result, the weekday morning and evening peak periods which were identified as 7:30 am-8:30 am (AM peak) and 4:45 pm-5:45 pm (PM peak) and Saturday 12:30pm-1:30pm.

Following comments received from Council during response to submissions, additional traffic surveys were undertaken at the following intersections on Thursday, 6 August 2026 and Saturday, 8 August 2026, during the same survey periods:

- Violet Street & Martin Street
- Karne Street & Martin Street

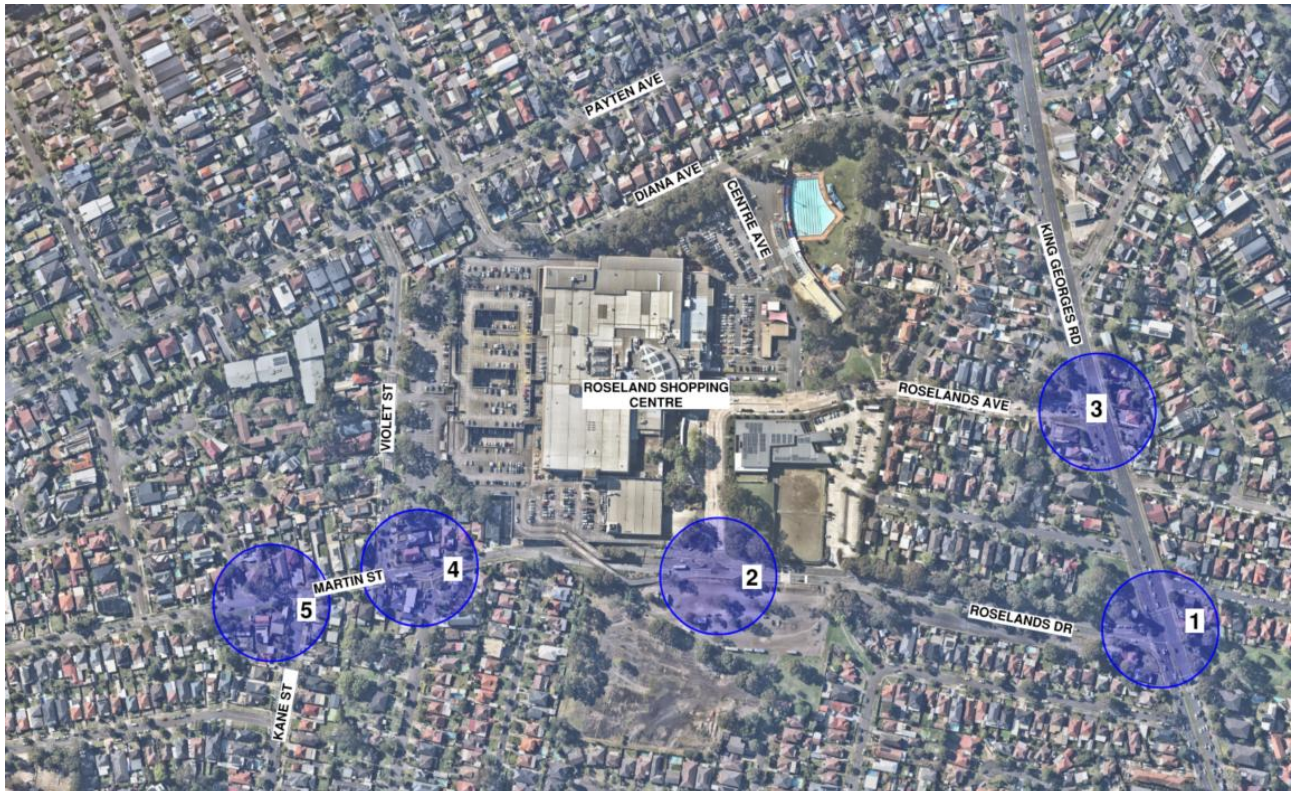


Figure 12: Location of Intersection Surveys

Source: Modified from Nearmap

Total intersection traffic volumes at the nominated study intersections are summarised in Table 9 with full survey results included in **Appendix A**. The traffic analysis is further detailed in Section 5.

2.8.1 Existing Network Performance

SIDRA modelling outputs provide a range of performance measures, in particular:

- Degree of saturation (DOS) – The DOS is used to measure the performance of intersections, where a value of 1.0 represents an intersection at theoretical capacity. As the performance of an intersection approaches DOS of 1.0, queue lengths and delays increase rapidly. It is usual to attempt to keep DOS to less than 0.9, with satisfactory intersection operation generally achieved with a DOS below 0.8.
- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority intersections, the AVD reported relates to the worst performing vehicle movement at the intersection.

- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance, based on AVD.

Table 8: Intersection Performance Criteria

LOS	AVD (Seconds)	Traffic Signals	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause delays	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2.9 Modelling Calibration

The SIDRA base models have been validated by reviewing the modelled queue lengths against on-site queue length observations. Site observations of the morning and afternoon peak periods were undertaken on the same day as the intersection movement counts for consistency. The typical and maximum queues were recorded at each intersection, which represent the average and 95th percentile queues in SIDRA, respectively. Interrogation of the SIDRA outputs indicates that the model accurately reflects the observed on-site queues for the same day and peak period.

The SIDRA intersection modelling has been completed for the intersections during the weekday AM and PM peak, and Saturday midday peak. A summary of the modelling results for the existing (base case) models is provided in Table 9 below. Reference should also be made to the detailed SIDRA outputs provided in **Appendix C** which provides additional information regarding intersection performance.

Table 9: Summary of SIDRA Modelling Results – Existing

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
King Georges Road & Roselands Avenue	AM	0.582	11.4	A	93.2
	PM	0.611	11.9	A	91.4
	Saturday	0.660	12.3	A	95.2
Roselands Drive & Roselands Avenue	AM	0.141	20.5	B	1.6
	PM	0.58	57.9	E	6.6
	Saturday	1.075	198	F	25.5
King Georges Road & Roselands Drive	AM	0.671	13.3	A	145.4
	PM	0.831	19.9	B	199.8
	Saturday	0.872	24.0	B	221.4
Violet Street & Martin Street	AM	0.235	8.8	A	1.6
	PM	0.330	9.5	A	4.3
	Saturday	0.330	9	A	4.3
Karne Street & Martin Street	AM	0.363	8.6	A	6.9
	PM	0.360	9.3	A	7.2
	Saturday	0.293	8.9	A	5.4

Note: Results shown are from the movement with the highest delay in accordance with the RMS Guide

The existing traffic modelling key findings are detailed below:

- **King Georges Road / Roseland Avenue** – The intersection operates well in all scenarios, with LOS A and minimal delays DOS. The maximum queues are recorded on the right turn leg of Roseland Avenue, this was expected as the main through movement is the priority movement.
- **Roseland Avenue / Roseland Drive** – The intersection is currently oversaturated and has no spare capacity during the PM peak and Saturday operating at a LOS E and F. This is due to the right turn movement turning from Roseland Avenue having to wait for a significant time to exit the intersection.
- **King Georges Road / Roseland Drive** – The intersection operates well in all scenarios, with LOS A / B and minimal delays DOS. The maximum queues are recorded on the south leg travelling through the intersection. This is due to upstream queuing at the intersection further to the north, this was observed on-site.
- **Violet Street/Martin Street** – The intersection operates well in all scenarios, with LOS A, minimal delays and low DoS. The maximum queue is approximately 4.3 m during the PM peak and Saturday periods, indicating that queuing is minimal and the intersection has substantial spare capacity.
- **Karne Street/Martin Street** – The intersection operates well in all scenarios, with LOS A, minimal delays and low DoS. The maximum queue is approximately 7.2 m during the PM peak, indicating that queuing is minor and the intersection has substantial spare capacity.

SIDRA modelling files can also be provided directly to Council and TfNSW alongside submission of this traffic impact assessment upon request.

2.10 Existing Travel Modes

2.10.1 Census Travel Data

For comparison, the 2021 Journey to Work (JTW) data¹ was also reviewed. The data provides an estimate of employee travel modes into and out of the local area for the purposes of travel to or from a place of employment. JTW data is defined by Travel Zones and can be assessed as a destination (employees in the zone, who may be from the local area or elsewhere). The site is located within the Roselands, within Destination Zones (DZN) 119021367 and Statistical Area Level 2 Zone (SA2).

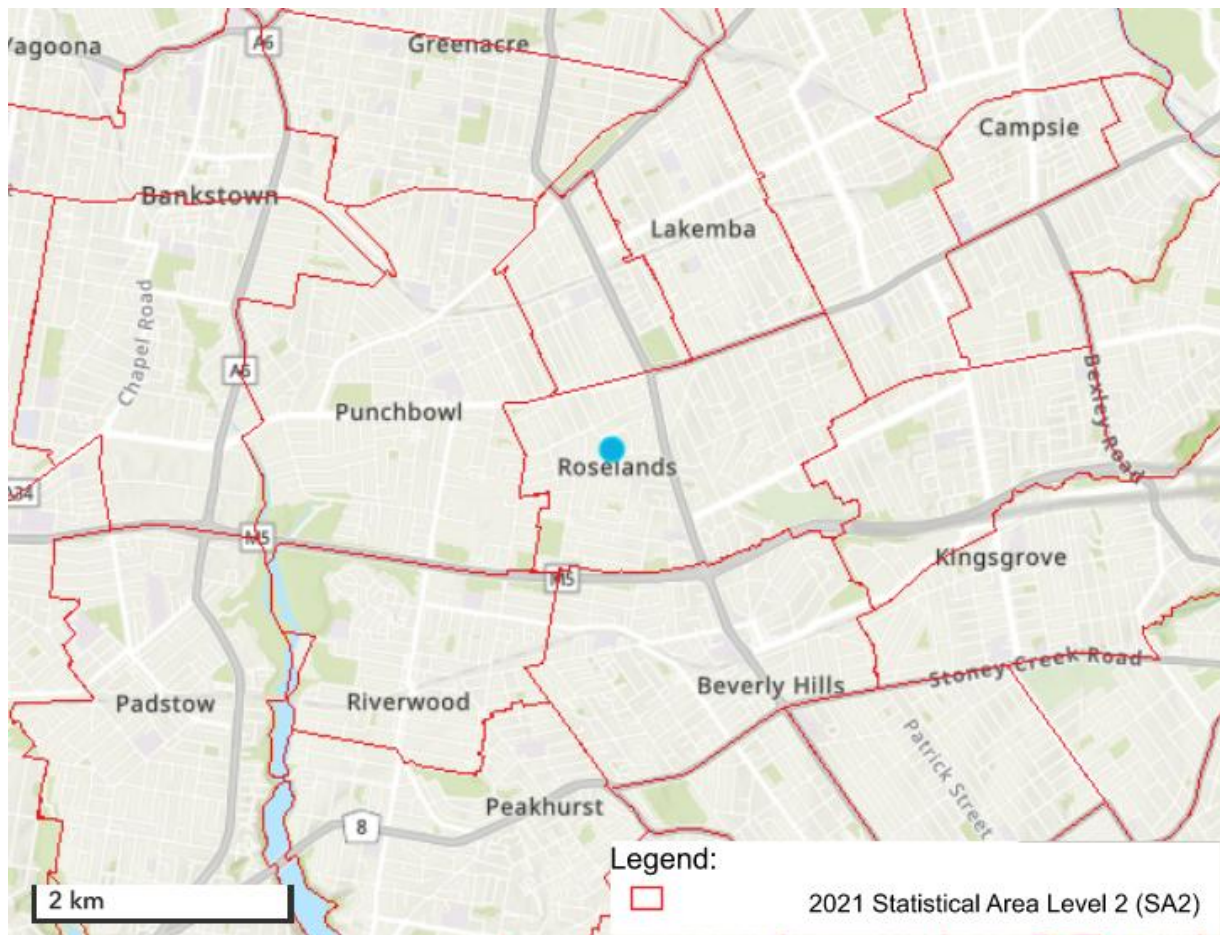


Figure 13: ABS Maps

To determine existing travel mode patterns to the site the JTW data has been analysed and a summary is shown below in Table 10. It is also noteworthy to mention, 'Mode15' categorisation of travel modes is used for a simpler assessment of key travel modes through allocation of one (1) primary mode when multiple modes have been used in one (1) trip (e.g. 'bus' includes responses of 'bus' + 'car as driver' in one trip).

Table 10: Journey to Work Travel Mode Split

Travel Mode	Place of Work (2021 SA2)	Place of Residence (2021 SA2)
Train	5%	6%
Bus	5%	1%
Ferry	0%	0%

Tram	0%	0%
Taxi	0%	0%
Car as driver	72%	80%
Car as passenger	11%	6%
Truck	1%	1%
Motorbike	1%	1%
Bicycle	0%	0%
Walked only	4%	2%
Other mode	1%	3%
Total	100%	100%

A summary of key mode categories is also provided below in Table 11.

Table 11: Journey to Work Summary

Travel Mode	Place of Work (2021 SA2)	Place of Residence (2021 SA2)
Private vehicle (car, taxi, truck, motorbike)	85%	88%
Public transport (train, bus, ferry)	10%	7%
Active transport (bicycle, walking)	4%	2%
Total (exc. other mode)	99%	97%

The 2021 census travel data is detailed in Table 10 and Table 11 identified that 85% of employees travel by a private vehicle, 10% travel by public transport, and 4% of employees typically walk to / from work. Car travel is relatively high, with 83% of employees travelling to work via private vehicle, either as the driver or the passenger. In addition, it is also shown a high level of private vehicle usage for the residents with 88% travelling with a private vehicle and a low level of residents choosing to travel by walking. This result shows a relatively high car usage for both staff and residents.

Section 3 Proposed Works

3.1 Description of Works

The proposal involves alteration and additions of the existing HomeCo. Roselands shopping centre, including a new specialised retail premises to provide the following:

- New specialised retail premises with the following floor area:
 - 11,002m² retail gross floor area (GFA)
 - 10,452 gross leasable floor area (GLFA)
- Additional shopping centre retail area with the following floor area:
 - 1,153m² retail GFA
 - -4,236 m² retail GLFA, the reduction is as a result of existing retail floor area to back-of house
- Replacement of unused parking to the south of Roselands Drive, providing approximately 507 new car parking spaces
- Reconfiguration of Zone A parking, providing 37 new car parking spaces
- Proposed roundabout at the existing Roselands Drive / Roselands Avenue intersection
- New loading dock to facilitate additional specialised retail premises



Figure 14: Site Plan

Source: Group GSA (L-2000 MASTER PLAN Rev E)

3.2 Proposed Operation of Specialised Retail Premises

The following breakdown details the operation hours of the new specialised retail premises, as summarised in Table 12, provides an overview of the anticipated Specialised retail premises activities throughout a typical year.

Table 12: Specialised retail premises Operation Hours

Details	Operation
Hours of Operation	Monday - Friday: 10 AM - 8:30 PM Saturday: 9:30 AM - 6:30 PM Sunday: 10 AM - 6 PM
Proposed Staff Number	21 Staff
Delivery Time	Before 9 AM
Waste Collection Time	4:30 AM to 6 AM

3.3 Parking Facilities

The proposal will provide parking provisions within the new car park, south of Roselands Drive. The following on-site parking provisions are provided:

- Main Car Park – 470 car spaces
- Zone A Parking –37 car spaces

An overview of the car park layout is provided above in Figure 14.

3.4 Public Transport & Taxi Zone

As part of the proposal, alterations to the existing bus and taxi facilities are proposed at the main shopping centre access to create a more user-friendly experience. The bus and taxi facilities will be relocated further to the south to provide more waiting area at the entrance of the shopping mall. The length of the bus zone will be retained, and the proposed works will result in no change to existing public transport services. The new taxi zone will be approximately 35m in length and accommodate 4 to 5 taxis at one time.

The proposal may also result in a relocation of the existing bus stop on Roseland Drive which currently services Sydney Olympic Park major event bus route. Further consultation will be required with the client and TfNSW to ensure existing bus services are not distributed.

Pedestrians can access the shopping centre directly from the bus stop, which is located adjacent to the existing entrance. This is the expected pedestrian movement pattern for passengers arriving at or departing from the bus stop. However, Figure 15 illustrates an alternative pedestrian route connecting the proposed site's alternative access point to the existing bus stops and taxi/rideshare facilities. This route is approximately a five-minute walk (400 m) from the main shopping centre entrance.

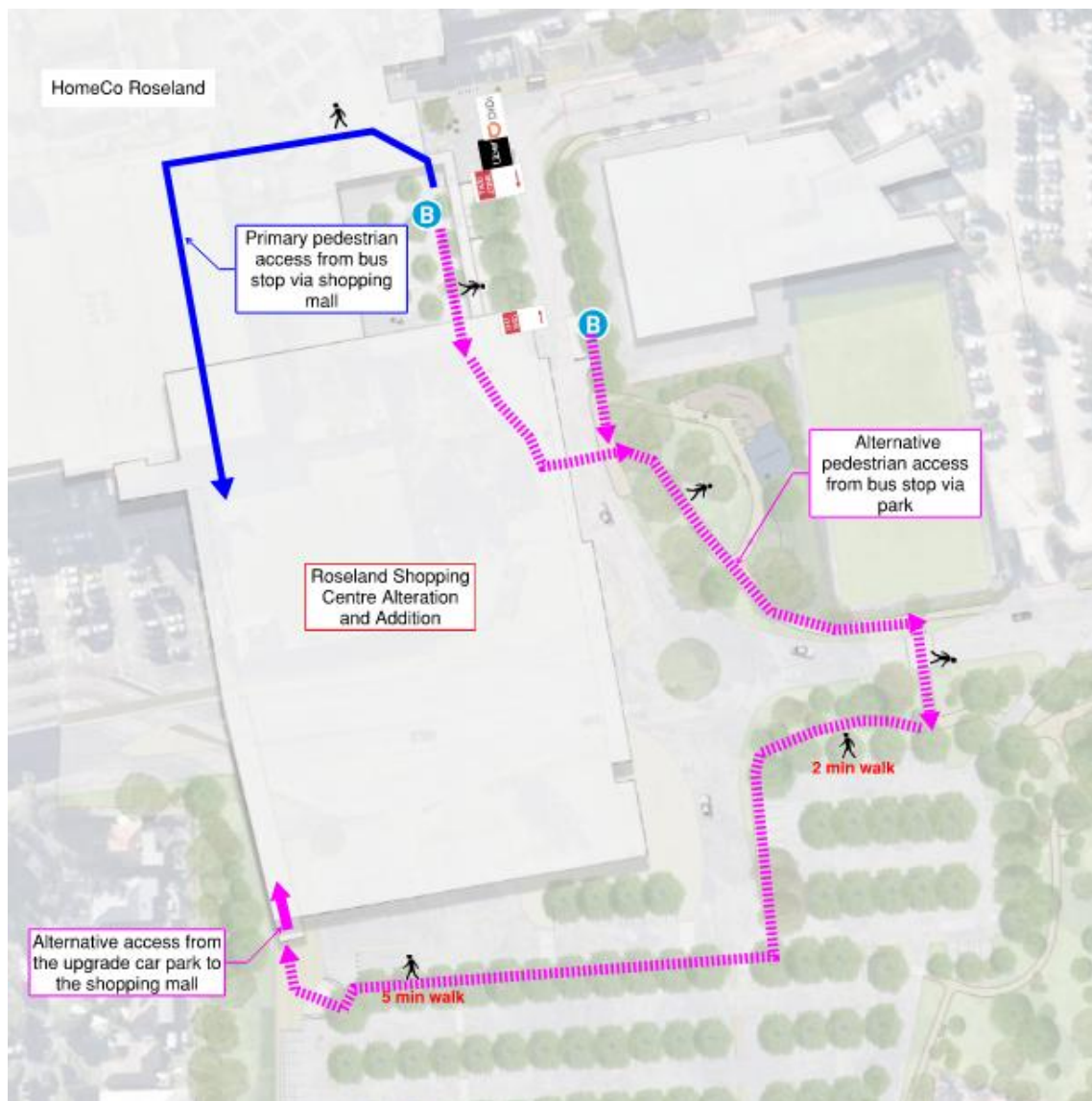


Figure 15: Bus, Taxi & Rideshare Walking Route

3.5 Service Vehicles & Waste Collection

The proposal will provide alterations to existing Loading Dock 1 and a new loading dock to accommodate the new retail space. The following provisions will be provided:

3.5.1 Loading Dock 1

- Modifications to the existing dock to accommodate the new retail space above.
- Retention of the existing 4 loading bays
- Accommodating vehicles up to and including a 20m articulated vehicle (AV)

3.5.2 New Specialised Retail Space Loading Dock

- Provision of 4 loading bays with vehicle access via Roseland Drive
- Accommodating vehicles up to and including a 20m AV
- Waste collection zone to accommodate vehicles up to 12.5m Heavy Rigid Vehicle (HRV).
- Service vehicle access to the loading dock will be provided via the new site access at the proposed upgraded Roselands Drive / Roselands Avenue intersection.

3.6 Pedestrian Access & Facilities

The proposal will provide a new wombat crossing at the southern leg of the new roundabout of Roselands Drive and Roselands Avenue. Associated footpath upgrades will also be included as part of the proposal to connect the new car park to the HomeCo. shopping centre and bus stops.

3.7 Cyclist Facilities

The proposal will provide bicycle parking spaces for staff and visitors. The following on-site parking provisions are provided:

- Bicycle parking – 37 staff & 22 visitors

Section 4 provides an analysis of the proposed provisions and details the proposed impacts.

Section 4 Analysis of Impacts

4.1 Car Parking Proposal

4.1.1 Proposed Parking Provision

The proposal will provide a total of **507 new car parking spaces**, which consists of 470 new car spaces that will replace the unused car parking areas to the south of Roselands Drive and 37 new car parking spaces from a reconfiguration of existing parking in Zone A. Figure 9 provides an overview of the proposed car park layout.



Figure 16: Proposed Car Park

Source: : Group GSA (L-2000 MASTER PLAN Rev E)

4.2 Car Parking Assessment

4.2.1 New Retail Premises Parking Assessment

The Canterbury Bankstown DCP 2023 stipulates a parking rate for 'specialised retail premises'. This has been applied to the new specialised retail area. The additional shopping centre retail area has adopted the 'retail premises' rate. Parking rates and provisions are detailed below in Table 13.

Table 13: DCP Parking Rates and Provision

Retail Area	Area GFA	DCP Rate	DCP Rate	Proposed Provision
New specialised retail	11,002 m ²	1 space per 60m ²	183	507
Additional retail premises	1,153 m ²	1 car space per 22m ² GFA (>1,000m ²)	52	
Total			235	

Note: Canterbury Bankstown DCP 2023 assesses parking rates by applying GFA

Table 13 shows the Canterbury Bankstown DCP 2023 requires 183 car spaces for the new specialised retail area and 52 car spaces for the additional retail area, resulting in a total parking rate of 235 car spaces.

The proposal will provide a net total of 507 car spaces and therefore satisfactorily meets the minimum rates of the Canterbury Bankstown DCP 2023. The proposed parking provision is therefore considered acceptable to meet the parking demand of the proposal.

4.2.2 Total Site Parking Assessment

The proposal will replace the existing south at-grade car park C6 and Zone A as shown in Figure 8. Therefore, to provide a wholistic planning approach, an assessment of the total on-site parking rates and provision was completed. A summary of the total parking numbers is detailed below in Table 14

Table 14: Total on-site Parking Provision

Land Use	Existing	Reduction	Proposed
Roseland shopping Centre	2,530	C6: 276 Zone A: 83	2,171

An assessment of the following parking rates has been completed to understand the appropriate level of parking provision is provided for the total shopping centre:

- Canterbury Bankstown DCP 2023
- TfNSW Guide to Transport Impact Assessment, 2024 (GTIA, 2024)
- Site specific existing parking supply

Table 15: DCP Parking Rates and Provision

Retail Area	Area GFA	DCP Rate	DCP Rate	Proposed Provision
New specialised retail	11,002 m²	1 space per 60m²	183	507
Additional retail	1,153 m²	1 car space per 22m² GFA (>1,000m²)	52	
Existing retail premises	70,000		3,182	2,171
Total			3,417	2,678

Note: Canterbury Bankstown DCP 2023 assess parking rates by applying GFA

Table 15 shows the Canterbury Bankstown DCP 2023 states a minimum parking rate of 3,417 car spaces. Roseland shopping centre will provide a total parking provision of 2,678 car spaces once the proposed new 507 parking spaces are provided. Whilst this provision results in a shortfall in 738 car spaces. It is considered reviewing Roseland shopping centre as a whole, the DCP parking rate is **not considered appropriate** for following reasons:

- Regardless of the proposal the existing shopping centre does not meet the Canterbury Bankstown DCP 2023 parking rate of 3,417 as the existing centre currently provides 2,530 parking spaces. This shows there is already an existing deviation from the DCP parking rate.
- The DCP 'retail premises' parking rates vary with size of development they cap out at 1,000m² and are typically based on smaller, stand-alone retail premises where high turnover and short-duration parking demand are expected. In contrast, a large shopping centre similar to Roselands, with a GFA of over 70,000 m², accommodates a mix of retail, food, and service tenancies, supported by shared and time-variable parking demand allow a reduced parking rate to be applied.
- The DCP applies its rate to GFA, which includes non-retail and back-of-house areas (e.g. plant rooms, corridors and public areas) that do not generate customer parking demand. It is considered more appropriate to apply a **GLFA** rate, representing the net tenant area that directly contributes to parking demand.
- Larger centres benefit from parking efficiency due to multi-purpose trips (e.g. one visitor shops, eats, and completes errands in a single stay), resulting in lower peak demand per square metre.

It is therefore considered more appropriate to review other parking rate options to determine a suitable parking provision.

Transport for NSW Guide to Transport Impact Assessment, 2024

The TfNSW GTIA 2024 provides specific parking rates for shopping centres. Reference was made to Chapter 8, Table 8.6 and shown below in Table 16.

Table 16: TfNSW GTIA Parking Rates and Provision

Retail Area	Area	DCP Rate	TfNSW Rate	DCP Requirement	Proposed
New specialised retail	11,002 m² GFA	1 space per 60m²	-	183	2,678
Additional retail	-4,236 m² GLFA	-	1 car space per 24.39m² GLFA (>30,000m²)	0	
Existing retail premises	60,576 m² GLFA			2,484	
Total				2,667	

Note:

- No TfNSW rate for 'specialised retail premises' therefore DCP has been applied to specialised retail only.
- Reduction in GLFA due to internal reconfiguration of existing centre, resulting in loss of GLFA

Table 16 shows the TfNSW GTIA states a parking rate of 2,667 car spaces for the total site. The proposal will provide a total of 2,678 parking spaces and therefore satisfactorily meets the minimum requirements of the TfNSW GTIA. The proposed parking provision is therefore considered acceptable to meet the parking demand of the proposal.

Adoption of the TfNSW GTIA is considered more appropriate for the total centre for the following reasons:

- The TfNSW GTIA recommends a parking rate of 4.1 spaces per 100 m² GLFA (≈ 1 space per 24.39 m²) for shopping centres greater than 30,000 m² GLFA. This guidance is based on empirical data from a wide range of shopping centres across NSW and represents industry-accepted practice for developments of this type and scale.
- The TfNSW GTIA states “GLFA is preferred to GFA for this land use category, because it refers most specifically to the factor that generates / attracts trips.” In addition, the Trip Generation and Parking Demand Study of Shopping Centres, completed for TfNSW also states the GLFA is considered to be **the most reliable variable** to choose since this information is well documented in NSW Shopping Centre Directory and reviewed/updated by the Property Council of Australia.

4.2.3 Site Specific Parking Rate

2025 On-site Parking Demand Study

As previously mentioned, TTW conducted a site inspection in September 2025, to confirm existing and available on-site parking spaces. Given that the southern at-grade car park C6 is open and available for customers (or staff) to park in if desired, but only limited occupancy is evident, it can be safely assumed that there is no further demand occurring off-site such as in the surrounding local streets, and that the current on-site capacity is therefore a suitable proxy for the current demands.

To provide a conservative assessment we have assumed all existing parking is at capacity (with the exception of south on-grade car park shown in Figure 9 which has been assumed at 30% capacity) this results in a total existing on-site parking demand of **2,337 parking spaces**.

Applying the total **2,337 parking spaces** to the existing 60,576m² GLFA enables an existing parking rate of 25.92m² to be determined. This parking rate has then been applied to the additional and end total GLFA as shown in

Table 17: Site Specific Parking Rates (GLFA)

Retail Area	GLFA	Site Specific Rate	Site Specific Rate	Proposed Provision
Total	66,792 m ²	1 space per 25.92m ²	2,577	2,678

GLFA breakdown:

- New specialised retail: 10,452 m²
- Additional retail: -4,236 m²
- Existing site: 60,576m²

Table 17 shows the site specific parking rate the specific parking rate requires 2,577 car spaces; the proposal will provide a total of 2,678 car spaces and therefore satisfactorily meets the minimum requirements of the TfNSW GTIA. The proposed parking provision is therefore considered acceptable to meet the parking demand of the proposal.

Determining a site-specific parking rate is also considered a more appropriate way of confirming parking for the following reasons:

- By assuming the total available on-site parking (2,337 spaces) is fully in demand, the calculation takes a conservative approach, ensuring that any projected increase in floor area is matched against an upper-bound estimate of parking need.
- The existing parking utilisation represents how the centre currently functions in practice, rather than relying solely on generic DCP rates.

4.3 Car Parking Provision Summary

4.3.1 New Retail Premises Parking Assessment

As detailed below in Table 18, a summary of the parking rates and provisions is detailed below.

Table 18: Parking Rate & Provision Summary

Supply Rate	Parking Rate	Additional Provision	Total Parking Rate	End Total Provision
DCP Rate	235 spaces	507 spaces	3,417 spaces	2,678 spaces
TfNSW Rate	N/A		2,667 spaces	
Site specific Rate	N/A		2,577 spaces	

In summary, the proposed additional parking provision meets the requirements of the Canterbury Bankstown DCP and is considered acceptable.

When compared to the total site, whilst the Canterbury Bankstown DCP does not strictly meet the end total provision. The TfNSW GTIA parking rates and site-specific car parking rate are met, these are also considered more appropriate rates as the existing parking utilisation represents how the centre currently functions in practice.

4.4 Car Parking Assessment Sensitivity Test

It is understood the new retail area may not operate exactly as a 'specialised retail' facility; therefore, a sensitivity assessment has been completed to assess **all new retail** under the following parking rates:

- Retail parking rate under Canterbury Bankstown DCP 2023
- Shopping Centre under GTIA, 2024
- Site specific existing parking supply rate

A summary of the results is provided below in Table 19.

Table 19: Car Parking Provision Sensitivity Test

Land Use	New Retail GFA	DCP Rates	Parking Rate	Proposed Provision
Retail	12,155 m ²	1 space per 22m ²	553	507
	New Retail GLFA	TfNSW GTIA Rates	Parking Rate	Proposed Provision
Shopping Centre	6,216 m ²	1 space per 24.39m ²	255	507
	New Retail GLFA	Site Specific Rates	Parking Rate	Proposed Provision
Existing shopping centre	6,216 m ²	1 space per 25.92m ²	240	507

GFA breakdown:

- New specialised retail: (11,002 m² + Additional retail: -1,153 m² = **12,115 m²**)

GLFA breakdown:

- New specialised retail: (10,452 m² + Additional retail: -4,236 m² = **6,216 m²**)

As shown above in Table 19 if the proposed new retail areas are assessed under the current DCP retail parking rate, the TfNSW GTIA shopping centre parking rate or the existing shopping centre current parking rate the proposed provision of 507 car parking spaces is sufficient to meet all of the above parking rates.

The proposed parking provision of 507 car parking spaces is therefore considered acceptable.

It is also noteworthy to mention, linked and shared trips are expected given the site's integration with Roselands Shopping Centre. As the existing centre already generates a substantial proportion of local retail travel, many vehicle movements associated with the proposal will form part of multi-purpose trips rather than new, standalone journeys. The proposed parking provision can not be reviewed in isolation. To provide a holistic planning approach an assessment of the existing shopping centre parking provisions should also be included. However as discussed in Section 4.2.3, regardless of the proposal the existing shopping centre does not meet the Canterbury Bankstown DCP 2023 parking rates which shows there is already an existing deviation from the DCP parking rate.

It is recommended the following measures be taken into consideration to reduce car travel and parking demand to and from the site as a whole. These recommendations also align with Council's objectives set out in Chapter 3.2 of the Canterbury Bankstown DCP:

- Reduce car dependency by encouraging alternative means of transport such as cycling, walking and public transport. The site benefits from frequent bus services as detailed in Section 2.5.1. These should be promoted to staff and visitors.
- Implementation of a Green Travel Plan (GTP) to encourage and inform staff of sustainable travel methods. Further details are provided in Section 4.5.
- Regularly provide communications via social media promotions active and public transport to / from the site.

4.5 Green Travel Plan

A GTP is a travel demand management tool to promote the use of active and public transport to / from developments. The primary purpose of the GTP is to coordinate a site-wide approach to influence the travel behaviour of staff and visitors away from the use of private vehicles towards more efficient modes of transport including active transport such as walking and cycling; public transport such as rail and bus; car-pooling and car sharing.

A GTP includes a Transport Access Guide, in the form of a map / brochure, illustrating the available modes of transport available in the locality including, but not limited to, the following:

- Location of GoGet and other car share service pods within close proximity to the site;
- Bus routes, stops and a table of services;
- Rail stations and a table of services;
- Bicycle network and the location of any on-site or on-street bicycle parking facilities;
- Details on how to download transport phone applications such as Car Next Door, Uber, OLA and Taxify.

With regard to the above, Council is invited to impose a suitable condition requiring a GTP to be submitted and approved prior to the issue of any occupation certificate for the site. The GTP will ensure that staff and visitors are aware of and encouraged to use the abovementioned alternative modes of transport and infrastructure within the site's locality, thereby minimising the reliance on private vehicles.

4.6 Electrical Vehicle (EV) Parking

Canterbury Bankstown DCP 2023 does not stipulate any rates for electric vehicle parking. The proposal will provide 507 on-site car parking spaces and 10 parking spaces will be provided for electric vehicle (EV) parking spaces. This provision is considered acceptable.

4.7 Accessible Parking

Reference was made to the Canterbury Bankstown DCP 2023, Section 2 to confirm the requirements for accessible parking provisions for retail premises. The requirements and provisions in response are provided below in Table 20.

Table 20: Accessible Parking Requirement & Provision

	Proposed Retail Car Parking	DCP Accessible Parking Rate	Parking Rate	Provision
Staff	21	1 accessible car space per 50 car spaces for staff	1	1
Visitors	486	1 accessible car space for visitors per 50 car spaces where a car park has less than 500 car spaces	10	10
	Total		11	11

As shown above in Table 20, the proposed development is required to provide a total of 11 accessible parking spaces. In response, the proposed development provides 11 accessible parking spaces at the new car park, and this is considered acceptable.

4.8 Bicycle Parking

The specialised retail premises does not stipulate any of bicycle parking. Hence, Reference was made to general retail premises bicycle parking rate from the Canterbury Bankstown DCP 2023 Section 2.8 to confirm the parking rate for on-site bicycle parking provisions for retail premises. The requirements and provisions in response are provided below in Table 21.

Table 21: Bicycle Parking Requirement & Provision

	Retail GFA	Bicycle Parking Rate	Parking Rate	Provision
Retail Premises	12,155 m ²	Staff: 1 space / 300m ² GFA	41	41
		Visitor: 1 space / 500m ² GFA over 1,000m ²	24	24
		Total	65	65

As shown above in Table 21 the proposed development is required to provide a total of 59 bicycle parking spaces, comprising of 37 staff parking spaces and 22 visitor parking spaces. The proposed development provides 59 bicycle parking spaces located close to the main entrance. The bicycle parking provision is considered to be acceptable.

4.9 Service Vehicle Parking

Canterbury Bankstown DCP 2023 does not stipulate any rates for service vehicle parking rate for retail establishments. Nevertheless, the proposed development will provide an on-site loading bay for the proposed development. The proposed development will provide 4 new loading bay which can accommodate up to 20 metre AV and 1 waste collection parking which can accommodate up to 10.8 metre waste truck.

It is expected that the approximate maximum service vehicle movement is listed below:

- 4 heavy vehicle peak movements in a 15-minute period at daytime operations (7AM to 6PM)
- 2 heavy vehicle peak movements in a 15-minute period at evening operations (6PM to 10PM)
- 1 heavy vehicle peak movement at night operations (10PM to 7AM)

Based on the above, it is assumed that the maximum number of service vehicle movements is 16 movements per hour or equivalent to 8 vehicles entering and exiting per hour. This level of provision is expected to occur only during peak time and can be varied according to delivery time. A Loading Dock Management Plan will be prepared prior to operation, detailing loading and waste collection arrangements as well as the management of any occasional heavy vehicle delivery or service activities required during operational hours. The Plan will outline the appropriate traffic management and safety measures to ensure there is no adverse impact on customer vehicle movements or pedestrian safety.

Hence, with management, this level of provision is considered to be minimal to the overall number of traffic entering and exiting the site and has no impact on the overall traffic within the vicinity. In addition, all service vehicles will enter and exit in the forward direction. Therefore, the proposed service vehicle and waste collection arrangements are considered acceptable.

Section 5 Traffic Analysis

5.1 Proposed Traffic Generation

The TfNSW GTIA 2024 contains traffic generation rates based on survey data collected from retail shopping centre development within Sydney and regional centres. The rates provide Thursday, Friday, and Saturday rates for the shopping centre. It does not provide 'specialised retail' rates therefore the shopping centre rates were applied to the proposed GLFA.

For this assessment, a review of the GTIA survey data was completed which confirmed that Roseland shopping centre was one of the shopping centres that was surveyed in 2011. From review of the trip rates the Roseland site specific rates were higher than the average GTIA shopping centre rates. Therefore, to provide a conservative assessment the Roseland shopping centre rates have been adopted and are summarised in Table 22.

It is noted that a 50 / 50 inbound and outbound split has been applied to the traffic generation as a conservative assumption.

Table 22: TfNSW Peak Hour Trip Generation Rates
Source: Trip Generation & Parking Demand Surveys of Shopping Centres 2011

Day	Additional GLFA	Vehicle Trips Rates	Roseland Shopping Centre Rate (Vehicle trips / 100m ² GLFA)	Proposed Additional Traffic Generation
Thursday	6,216 m ²	Network AM Peak ¹	1.84 trip / 100 m ² GLFA	114 trips / hour (57 in, 57 out)
		Network PM Peak ¹	3.72 trip / 100 m ² GLFA	231 trips / hour (116 in, 116 out)
		Daily ²	43.76 trip / 100 m ² GLFA	2,720 total trips (1360 in, 1360 out)
Saturday		Network Peak ¹	4.43 trip / 100 m ² GLFA	275 trips / hour (138 in, 138 out)
		Daily ²	37.02 trip / 100 m ² GLFA	2,312 total trips (1156 in, 1156 out)

1. Network AM and PM rates refer to the road network peak on one-hour period on the weekday. The weekend only accounts for the maximum one-hour peak period of the day.

2. Daily rates is based on the 11.5-hour survey period between 7am to 6.30pm

As shown in Table 22, during the peak periods the development will generate an additional traffic generation of:

- AM Peak Period: 114 vehicle trips (57 in, 57 out)
- PM Peak Period: 231 vehicle trips (116 in, 116 out)
- Saturday Peak Period: 275 vehicle trips (138 in, 138 out)

5.2 Proposed Intersection Upgrade

The project proposes to upgrade the existing intersection at Roseland Drive / Roseland Avenue from a giveaway intersection to a roundabout. The intersection will be upgraded into a single-lane roundabout and will become a secondary access to the proposed new car park via the southern leg of the roundabout. The proposed intersection configuration is shown in Figure 17.

The intersection will be further developed during detailed design. The concept design and layout has been provided to show general set out and to complete traffic modelling.

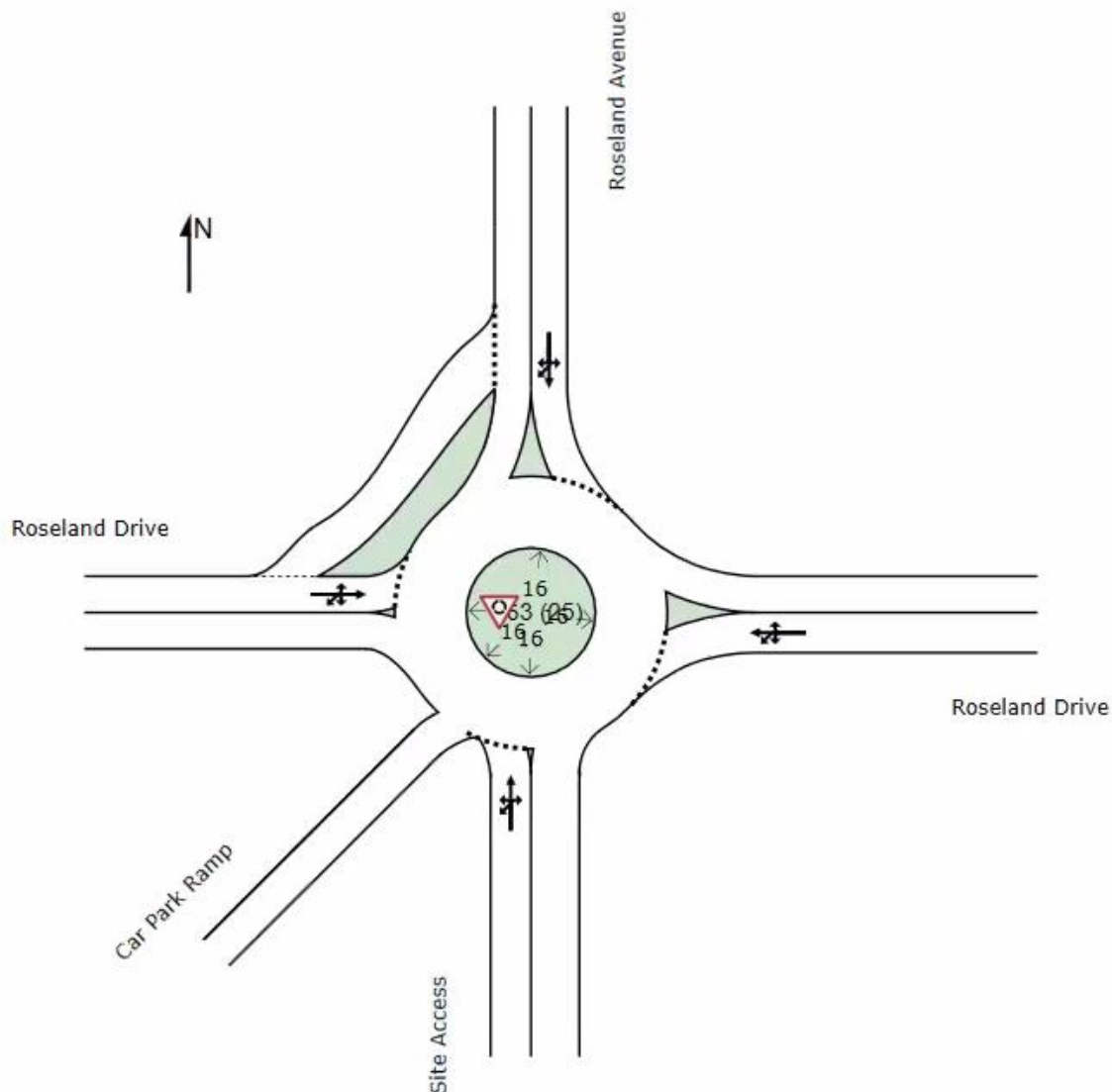


Figure 17: Proposed Roselands Drive / Roselands Avenue Intersection Upgrade

5.3 Trip Distribution

5.3.1 Prior to Intersection Upgrade

Distribution of the proposed development trips have been calculated based on the existing traffic counts distribution in each peak hour for the existing intersections are shown in the below Figures. The detailed trip distribution analysis is included in **Appendix D**.

Peak Period

- Inbound movements: 100% entry via left turn from Roseland Drive
- Outbound movements: 100% exit via left turn from Roseland Drive and 90% right turn onto Roseland Avenue and 10% through on Roseland Drive

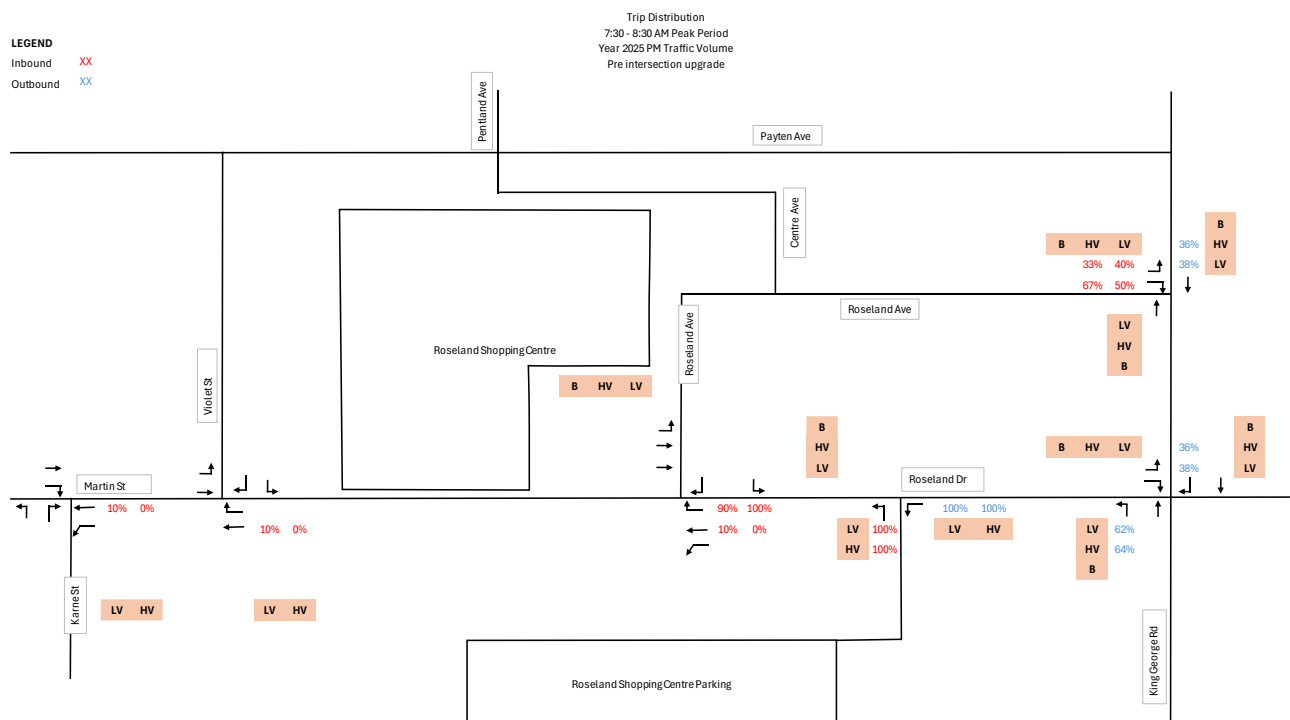


Figure 18: Development Trip Distribution Weekday AM Peak (Pre Intersection Upgrade)

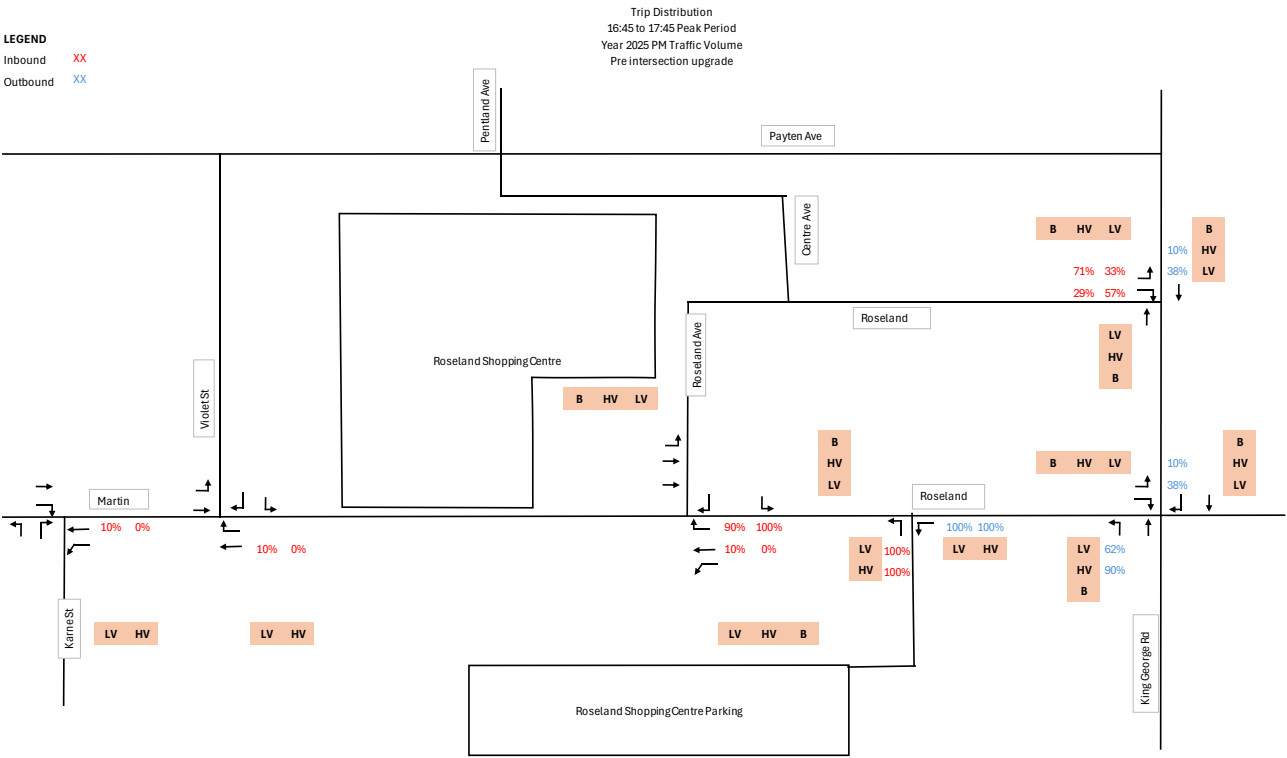


Figure 19: Development Trip Distribution Weekday PM Peak (Pre Intersection Upgrade)

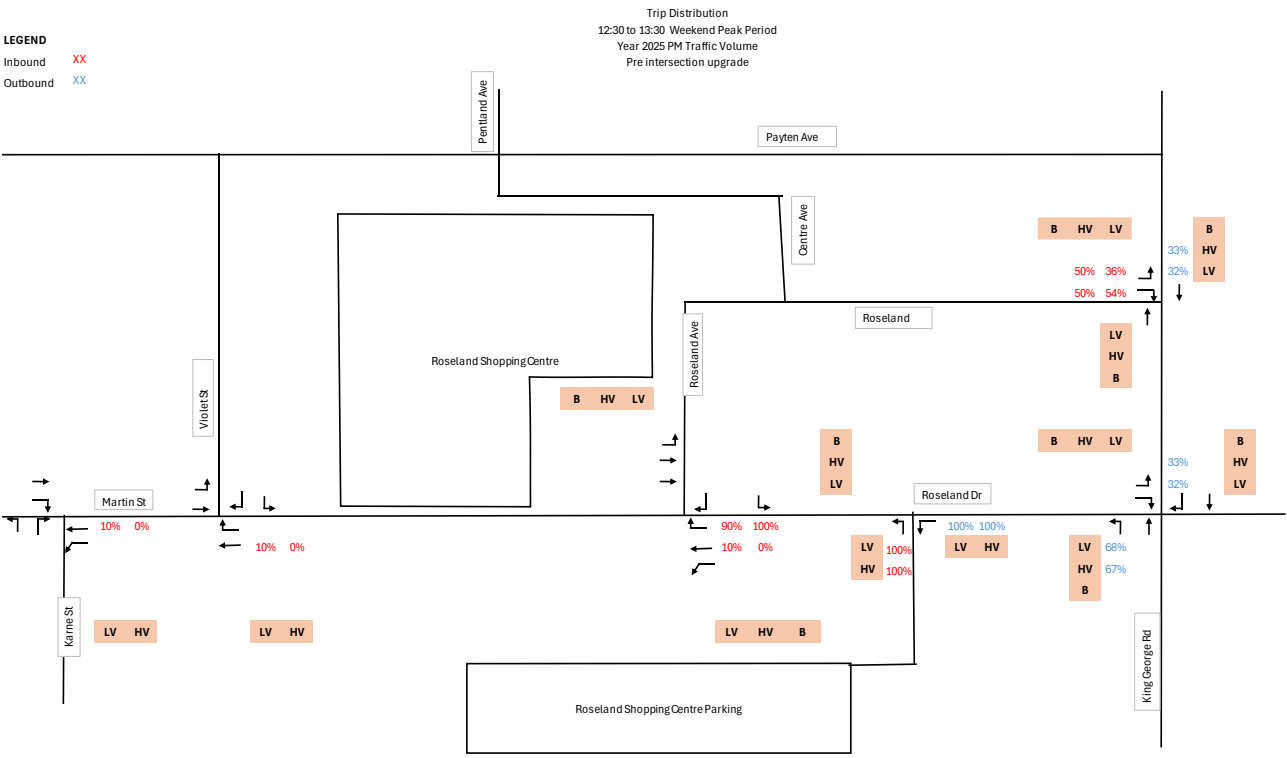


Figure 20: Development Trip Distribution Saturday Midday Peak (Pre Intersection Upgrade)

5.3.2 Post Intersection Upgrade

As mentioned in Section 5.2, the Roselands Drive / Roselands Avenue will be upgraded to a roundabout and will become a secondary access to the new car park. The adopted trip distribution at the Roselands Drive / Roselands Avenue intersection for the split in each peak hour is as follows:

- Light Vehicle
 - Entry
 - 60% enter via first access along Roselands Drive
 - 40% enter via second access at the proposed roundabout
 - Exit
 - 10% left exit to Roselands Drive
 - 40% exit to Roselands Avenue
 - 50% right exit to Roselands Drive towards King George Road
- Heavy Vehicle
 - Entry: 100% enter via secondary access at the proposed roundabout
 - Exit: 100% right exit to Roselands Drive towards King George Road

Distribution of both King Georges Road/Roselands Drive and King Georges Road/Roselands Avenue has been calculated based approximately on the existing traffic counts distribution in each peak hour. The proposed trip distribution after the intersection upgrade is shown in Figure 21, Figure 22 and Figure 23.

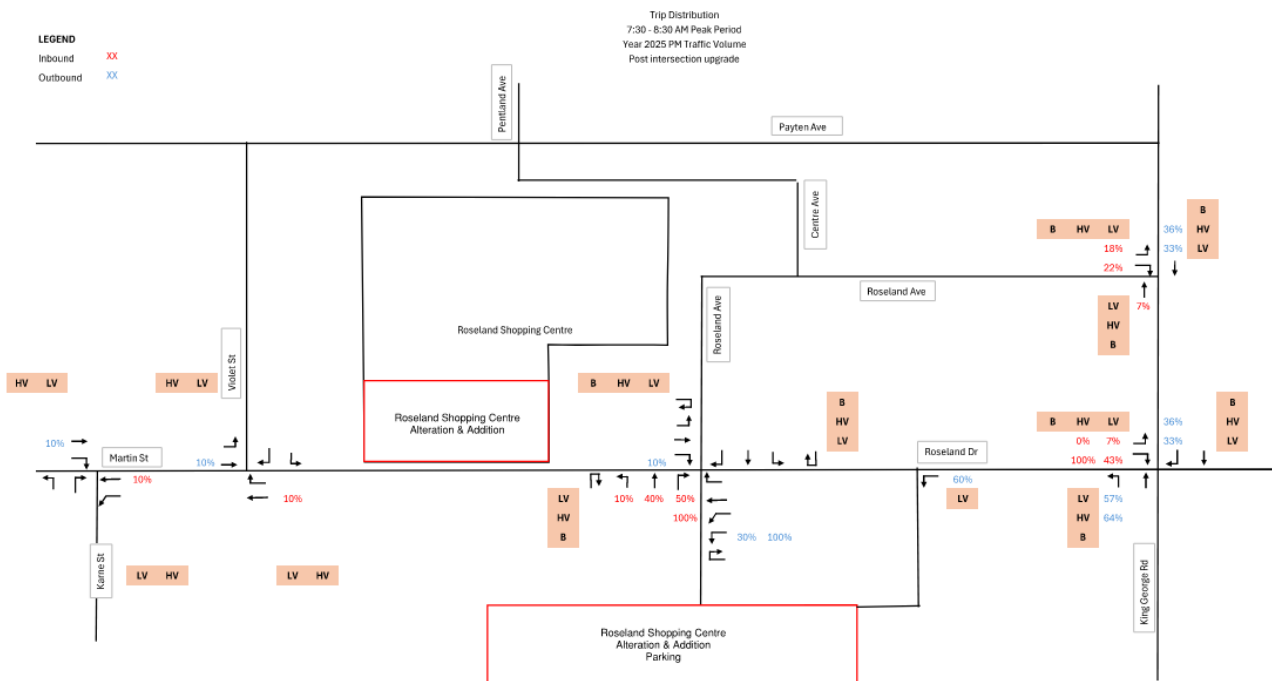


Figure 21: Development Trip Distribution Weekday AM Peak (Post Intersection Upgrade)

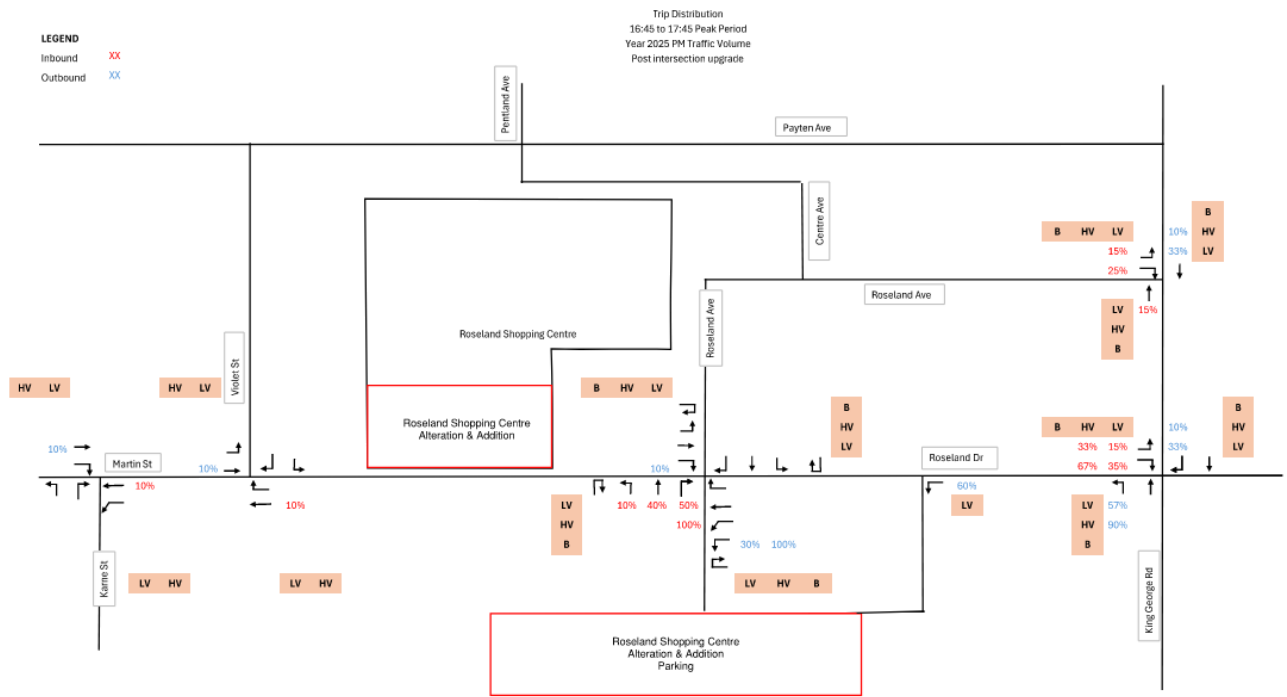


Figure 22: Development Trip Distribution Weekday PM Peak (Post Intersection Upgrade)

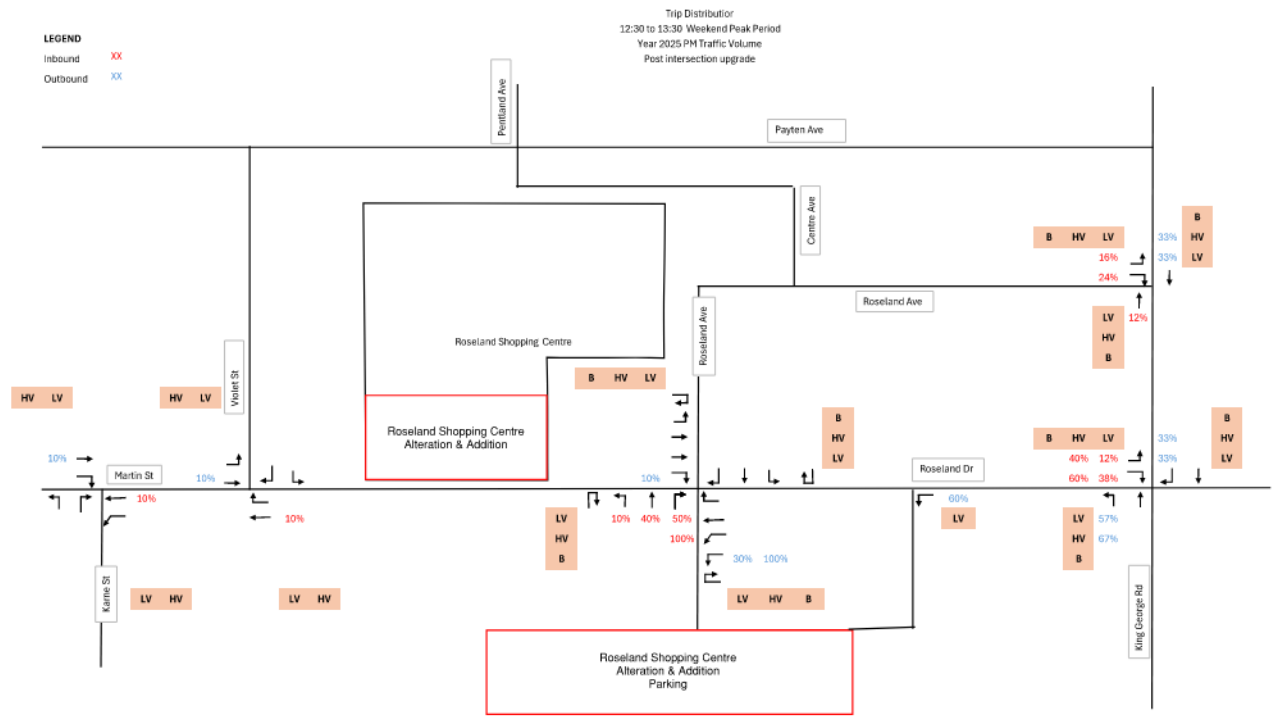


Figure 23: Development Trip Distribution Saturday Midday Peak (Post Intersection Upgrade)

5.4 Scope of Modelling

5.4.1 Traffic volumes

As previously mentioned in Section 2.8, traffic surveys were commissioned on Thursday, 20 November 2025 and Saturday, 22 November 2025. Additional traffic surveys were undertaken on Thursday, 6 August 2026 and Saturday, 8 August 2026. The adopted peak hours are as follows:

- Thursday: 7:30 to 8:30 AM peak
- Thursday: 16:45 to 17:45 PM peak
- Saturday: Peak hour period is 12:30 to 13:30

5.4.2 Traffic Signal Data

The SCATS data provided by TfNSW was reviewed to confirm traffic signal timing during the peak periods at King Georges Rd / Roselands Drive and King Georges Rd / Roselands Avenue.

5.4.3 Assessment Years

The SIDRA Models were prepared for the base year 2025, 5-year horizon year 2030, and a 10-year horizon year 2035.

5.4.4 Background Traffic Growth

The background traffic volume growth of future years has been calculated using the annual growth rate of 2.3% per annum. The TfNSW Traffic Volume Viewer has also been reviewed and shows a decline in traffic volume along King Georges Road. Hence, 2.3% annual growth rate is considered to be conservative and acceptable to be applied.

5.4.5 Modelling Scenarios

The following modelling scenarios were developed for the assessment and listed in Table 23.

Table 23: Modelling Scenario

No.	Scenario	Description
2025 Baseline		
1	2025 Baseline	Existing 2025 traffic surveys
2	2025 Baseline + Development (pre intersection upgrade)	Existing 2025 traffic surveys including development traffic
3	2025 Baseline + Development (post intersection upgrade)	Existing 2025 traffic surveys including development traffic distributed on the proposed roundabout
2030 Future Scenario		
4	2030 Future	Background traffic applying 2.3% per annum growth rate
5	2030 Future + Development (post intersection upgrade)	Background traffic applying 2.3% per annum growth rate for 5 years + development traffic
2035 Future Scenario		
6	2035 Future	Background traffic applying 2.3% per annum growth rate
7	2035 Baseline + Development (post intersection upgrade)	Background traffic applying 2.3% per annum growth rate for 10 years + development traffic

5.5 Network Performance

Traffic impacts as a result of the proposed development through the key intersections, was analysed using SIDRA. A summary of the modelling results is presented in Table 25 below, with the detailed future modelling scenarios and SIDRA outputs provided in **Appendix E & Appendix F**.

5.5.1 2025 Baseline Scenarios

Table 24: Summary of SIDRA Modelling Results – Existing

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
King Georges Road & Roselands Avenue	AM	0.582	11.4	A	93.2
	PM	0.611	11.9	A	91.4
	Saturday	0.660	12.3	A	95.2
Roselands Drive & Roselands Avenue	AM	0.141	20.5	B	1.6
	PM	0.58	57.9	E	6.6
	Saturday	1.075	198	F	25.5
King Georges Road & Roselands Drive	AM	0.671	13.3	A	145.4
	PM	0.831	19.9	B	199.8
	Saturday	0.872	24.0	B	221.4
Violet Street & Martin Street	AM	0.235	8.8	A	1.6
	PM	0.330	9.5	A	4.3
	Saturday	0.330	9	A	4.3
Karne Street & Martin Street	AM	0.363	8.6	A	6.9
	PM	0.360	9.3	A	7.2
	Saturday	0.293	8.9	A	5.4

Note: Results shown are from the movement with the highest delay in accordance with the RMS Guide

Table 25: Summary of SIDRA Modelling Results – Existing + Development

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
2025 Baseline + Development (Existing Layout)					
King Georges Road & Roselands Avenue	AM	0.595	12.0	A	93.2
	PM	0.789	13.4	A	91.4
	Saturday	0.862	14.1	A	95.2
Roselands Drive & Roselands Avenue	AM	0.165	24.0	B	2
	PM	0.8	100	F	10
	Saturday	1.7	710	F	70
King Georges Road &	AM	0.697	14.1	A	154.5
	PM	0.881	23.3	B	231.3

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
Roselands Drive Violet Street & Martin Street	Saturday	0.909	27.9	B	256.6
	AM	0.23	8.8	A	1.6
	PM	0.335	9.7	A	4.4
	Saturday	0.331	9.1	A	4.3
Karne Street & Martin Street	AM	0.363	8.6	A	7
	PM	0.369	9.4	A	7.5
	Saturday	0.296	8.9	A	5.5
2025 Baseline + Development (post-intersection upgrade)					
King Georges Road & Roselands Avenue	AM	0.583	11.7	A	93.5
	PM	0.689	12.5	A	92.6
	Saturday	0.749	13.0	A	96.4
Roselands Drive & Roselands Avenue	AM	0.320	10.5	A	5.4
	PM	0.546	12.3	A	11.6
	Saturday	0.684	15	B	20.9
King Georges Road & Roselands Drive	AM	0.694	14.4	A	153.1
	PM	0.875	23.5	B	227.3
	Saturday	0.962	30.5	C	250.8
Violet Street & Martin Street	AM	0.234	8.9	A	1.6
	PM	0.339	9.8	A	4.5
	Saturday	0.342	9.4	A	4.5
Karne Street & Martin Street	AM	0.368	8.6	A	7.1
	PM	0.369	9.4	A	7.5
	Saturday	0.306	9	A	5.7

* Sensitivity testing in SIDRA showed that the model outputs for the crossing in the vicinity of Roselands Drive / Roselands Avenue were highly sensitive to the assumed pedestrian crossing demand. Site observations and traffic data indicated that the crossing is minimally used by pedestrians. Hence, adopting an assumed pedestrian demand was considered likely to result in modelled conditions that do not reflect the actual operating environment and hence the crossing is not included in the model/ outputs.

Notwithstanding this, the wombat crossing forms part of the project upgrade and is accompanied by a reduction in the approach and departure lanes from two lanes to one lane in each direction. This single-lane configuration has been explicitly incorporated into the SIDRA model for the post-intersection upgrade scenario. Accordingly, the modelling accounts for the permanent lane reduction associated with the proposed upgrade.

The 2025 baseline + development pre intersection upgrade and post intersection upgrades traffic modelling key findings are detailed below:

- **King Georges Road / Roseland Avenue** – Once development traffic has been added the intersection operates well in all scenarios, with LOS A / B and minimal delays DOS. The maximum queues are recorded on the right turn leg of Roseland Avenue, this was expected as the main through movement is the priority movement and therefore gets more green time.
- **Roseland Avenue / Roseland Drive** – The existing intersection is oversaturated and has no spare capacity during the PM peak and Saturday operating at a LOS F. When upgraded to a single lane roundabout the intersection operates very well with LOS A-B and minimal delays. The upgrade improves the intersection performance and this is seen as a benefit to the wider road network.
- **King Georges Road / Roseland Drive** – Once development traffic has been added the intersection operates well in all scenarios. The intersection continues to operate satisfactorily following the proposed intersection upgrade, with LOS A during the AM peak and LOS B during the PM peak. During the Saturday peak, the intersection changes from LOS B to LOS C, with DoS increasing from 0.909 to 0.962. Notwithstanding this change, the intersection remains below capacity, with a DoS of less than 1. Overall, the proposed upgrade results in no material adverse operational impact at the King Georges Road / Roselands Drive intersection.
- **Violet Street/Martin Street** – The intersection continues to operate very well across all assessment scenarios, with LOS A maintained during the AM, PM and Saturday peak periods. The maximum DoS increases only marginally from 0.33 under existing conditions to 0.342 in the post-intersection upgrade scenario, while average delays remain below 10 seconds and queues remain short.
- **Karne Street/Martin Street** – The intersection also continues to operate very well across all assessment scenarios, with LOS A maintained in all peak periods. The maximum DoS increases marginally from 0.363 under existing conditions to 0.369 in the post-intersection upgrade scenario, with average delays remaining at approximately 9 seconds and queues remaining below 8 m. The development therefore has a negligible effect on the operation of the intersection,

5.5.2 Intersection Performance Summary

Based on the scenarios tested, the summary of LoS results is shown in Table 26 below.

Table 26: Intersection Performance Summary

Scenario	Peak Hour	Roseland Ave / King Georges Rd	Roseland Ave / Roseland Dr	Roseland Dr / King Georges Rd	Violet Street/ Martin Street	Karne Street/ Martin Street
2025						
2025 Baseline (Existing Layout)	AM	A	B	A	A	A
	PM	A	E	B	A	A
	Saturday	A	F	B	A	A
2025 Baseline + Development (post-intersection upgrade)	AM	A	A	A	A	A
	PM	A	A	B	A	A
	Saturday	A	B	C	A	A
2030						
2030 Background Traffic (Existing Layout)	AM	A	B	B	A	A
	PM	A	D	F	A	A
	Saturday	A	F	D	A	A
2030 + Development (post-intersection upgrade)	AM	A	A	B	A	A
	PM	B	A	F	A	A
	Saturday	B	B	E	A	A
2035						
2035 Background Traffic (Existing Layout)	AM	A	B	C	A	A
	PM	B	F	F	A	A
	Saturday	B	F	F	A	A
2035 + Development (post-intersection upgrade)	AM	A	A	C	A	A
	PM	B	A	F	A	A
	Saturday	C	B	F	A	A

The modelling results indicate the following:

- **2025 Baseline Scenarios + Development:** Under the 2025 baseline + development scenario, the surrounding intersections generally operate at LOS A or B. The proposed intersection upgrade results in a significant improvement at Roselands Avenue / Roselands Drive, with the intersection improving from LOS

E to LOS A during the PM peak and from LOS F to LOS B during the Saturday peak. The only notable deterioration occurs at King Georges Road / Roselands Drive during the Saturday peak, which changes from LOS B to LOS C. Notwithstanding this change, the associated queue lengths can be accommodated within the available turning lanes and the DOS remains below 1.0, indicating that the intersection retains sufficient capacity and the development is not expected to result in adverse network impacts.

In summary, the proposal will provide an improved outcome for the wider road network. The proposal can therefore be supported from a traffic perspective.

- **2030 Future Scenarios + Development:** Under the 2030 future background scenario, capacity constraints are already evident at Roselands Avenue / Roselands Drive and King Georges Road / Roselands Drive, particularly during the PM and Saturday periods. With the proposed development and intersection upgrade, Roselands Avenue / Roselands Drive improves substantially to LOS A during the AM and PM periods and LOS B during Saturday. King Georges Road / Roselands Drive remains constrained, operating at LOS F during the PM period and LOS E during Saturday. This constraint is evident under the background traffic scenario prior to the addition of development traffic and is primarily attributable to the growth in background traffic. The additional development traffic at this intersection is relatively minor compared with the overall background traffic demand and results in only a comparatively small change in intersection performance.
- In summary, the King Georges Road / Roseland intersection will reach capacity in 2030, regardless of the **proposed development**. The proposal results in negligible additional traffic delays. It is recommended consultation with TfNSW is completed to better coordinate the upstream signals and elevate the queues to the south by 2030.
- **2035 Future Scenarios + Development:** In 2035 all intersections operate well, with the exception of King Georges Road / Roseland Drive worsening from the 2030 scenario. To reiterate this not as a result of the **proposal**. Consultation with TfNSW may be required to better coordinate the upstream signals and elevate the queues to the south.

In summary, the traffic modelling indicates the proposal will have a minimal impact on the surrounding external road network. Consultation with TfNSW is recommended to alleviate delays in future years at the Roseland Drive / King Georges Road intersection. The proposal can therefore be supported from a traffic and transport perspective.

Section 6 Design Aspects

The internal parking arrangements of the proposed development generally comply with the relevant requirements of AS 2890.1, AS 2890.2, AS 2890.3 and AS 2890.6, with the following design aspects considered noteworthy.

Site Access

- The internal driveway has a minimum width of 6.0m between kerbs and will therefore accommodate two-lane, two-way traffic flow.
- The internal car park has a maximum grade of 2.5% (1 in 40) along its centreline, thereby satisfying Clause 2.4.6 of AS 2890.1.
- The proposed arrangements have also been assessed using swept path analysis which confirms compliance with AS 2890.1 and AS 2890.2, and that the proposed access arrangements will operate safely and efficiently.

Parking Modules

- The car park is classified as User Class 3A in accordance with Table 1.1 of AS 2890.1, having a minimum space width of 2.8 metres and length of 5.4 metres, with a minimum aisle width of 6.2m.
- The loading area will accommodate vehicles up to an 20m AV MRV, this area complies with AS 2890.2.
- All walls are located outside of the space design envelope, as required under Figure 5.2 of AS 2890.1.

Head Heights

- A minimum clear head height of 4.5 metres is required above the loading dock area and accordingly compliant head clearances are achieved in accordance with Table 4.1 of AS 2890.2.

Taxi Zone

- The proposed design for the pick up and drop off taxi zone is approximately 35 metres in length, which would be sufficient to accommodate 5 cars with a maximum length of approximately 6m.

Other Design Aspects

- All bicycle parking spaces are provided as Security Level B facilities, in accordance with AS 2890.3.
- All motorcycle spaces are provided in accordance with Clause 2.4.7 of AS 2890.1.

In summary, the internal parking arrangements have been designed in accordance with AS 2890. Any minor amendments considered necessary (if any) can be dealt with during the detailed design phase.

External Design

As previously mentioned, as part of the proposal the project, will deliver an intersection upgrade at the site access / Roselands Drive / Roselands Avenue, providing a roundabout. The roundabout has been designed in accordance with Austroads Guide to Road Design Part 4B Roundabouts. Roundabouts design will be further detailed following the approval of the Development Application.

Swept path analysis has been provided by **Appendix F**.

Section 7 Conclusion

7.1 Transport Strategy

The proposed development involves alteration and additions of the existing HomeCo. Roselands shopping centre to provide the following:

- New specialised retail premises with the following floor area:
 - 11,002m² retail GFA
 - 10,452 GLFA
- Additional shopping centre retail area with the following floor area:
 - 1,153m² retail GFA
 - -4,236 m² retail GLFA, the reduction is as a result of existing retail floor area to back-of house
- Replacement of unused parking to the south of Roselands Drive, providing approximately 507 new car parking spaces
- Reconfiguration of Zone A parking, providing 37 new car parking spaces
- Proposed roundabout at the existing Roselands Drive / Roselands Avenue intersection
- New loading dock to facilitate additional specialised retail premises

7.2 Key Findings

This TIA report has reviewed and analysed the proposal and has summarised the key findings below:

- The proposal will provide **507 car parking spaces**. The proposed provision meets the requirements of the Canterbury Bankstown DCP 2023 and is considered acceptable.
- A parking assessment for the total site has also been completed which provides a total of **2,678 car parking spaces**. Whilst the total provision will not meet the requirements of the Canterbury Bankstown DCP it is deemed appropriate to adopt the TfNSW GTIA and site-specific parking rate as these methods are considered more appropriate for the extension of an existing shopping centre.
- 59 bicycle parking will be provided, including 22 visitor spaces and 37 staff spaces and designed according to AS 2890.3.
- The loading dock will accommodate a total of four (4) service vehicle up to and including an 20m AV for deliveries and one (1) waste collection zone up to 12.5m HRV and will be designed in accordance to AS 2890.2
- Trip generation has been calculated based on the overall parking demand and the potential movements of this capacity within a peak period.
- The maximum trip generation of the site is estimated at a total of 275 trips, comprising 138 arrivals and 138 departures during a peak hour period.
- The project is intended to upgrade the current giveway intersection at Roseland Drive / Roseland Avenue to a one-lane roundabout. Based on the SIDRA modelling, the proposed intersection upgrade results in a significant improvement at Roselands Avenue / Roselands Drive, with the intersection improving from LOS E to LOS A during the PM peak and from LOS F to LOS B during the Saturday peak

- The SIDRA modelling results confirm that the proposed increase in traffic generation will have a negligible impact on the performance of the surrounding intersections, with only minor increases to DOS and AVD during the AM and PM peak periods in the baseline years.

The SIDRA modelling results also show in the future years when the background traffic grows the Roseland Avenue / Roseland Drive intersection will operate at an unsatisfactory level, with a LOS F during the Saturday and weekday peaks. Coordination with TfNSW may be required to better improve the efficiency of the intersection as this performance level is prior to development traffic and therefore not as a result of the project.

7.3 Recommendations

We find that the proposal can be recommended for approval based on suitable transport provisions and acceptable traffic impacts, with only minor items required to be resolved during the detailed design development and prior to construction, including:

Prepared by

TTW (NSW) PTY LTD



MICHAEL PARTADINATA

Traffic Engineer

Reviewed by

TTW (NSW) PTY LTD



MARIA MULHOLLAND

Senior Traffic Engineer

Appendix A TfNSW and NSW Taxi Association Correspondence

Michael Partadinata

From: Jim Tsirimiagos (MACROPLAN) <Jim.Tsirimiagos2@transport.nsw.gov.au>
Sent: Wednesday, 8 July 2026 1:45 PM
To: Michael Partadinata
Cc: Maria Mulholland
Subject: RE: TfNSW Comment on Alteration and Addition of Roseland Shopping Centre (DA-52/2026)

Follow Up Flag: Follow up
Flag Status: Flagged

Some people who received this message don't often get email from jim.tsirimiagos2@transport.nsw.gov.au. [Learn why this is important](#)

[External Email]: Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Michael,

Apologies for the delay in responding to this matter. TfNSW provides its preliminary advice on the matter as follows:

- Bus stopping and waiting area: Stops and layover spaces need to stay in line with the NSW Bus Infrastructure Guidelines. The total number of existing stops and layover spaces need to be maintained. TfNSW should be consulted closer to the planned implementation of any modifications/relocations (prior to the commencement of works), to ensure signs and stops are appropriately designed and marked.
- TfNSW requires that the stop 'Roselands Dr Opp Lantern Club' either stays open or is given a nearby appropriate replacement.
- Any proposed relocation/modifications of bus stops associated with the DA (either temporary or permanent) should be determined in consultation with the bus stop operator and TfNSW (please contact: BusApproval@transport.nsw.gov.au). These works shall be at no cost to TfNSW. For any temporary relocation/modifications during construction activities, the bus stop and associated infrastructure shall be returned and reinstated at the completion of the construction works, at no cost to TfNSW.

Note: It is emphasised that the comments provided above are informal and of a pre-lodgement nature. They are not to be interpreted as binding upon TfNSW and may change following formal assessment of a submitted development application from the appropriate consent authority

TfNSW has also received the DA referral (DA-52/2026) from Canterbury-Bankstown Council. TfNSW will provide further comment on the development more broadly in response to the formal referral received from Council.

Kind Regards,

Jim Tsirimiagos

Land Use Planner, Land Use Assessment - Eastern
Transport Planning
Planning, Integration and Passenger
Transport for NSW

M 0412 376 198 **E** jim.tsirimiagos2@transport.nsw.gov.au

transport.nsw.gov.au

Level 8, 4 Parramatta Square
12 Darcy Street,
Parramatta NSW 2150



I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

Please consider the environment before printing this email.

OFFICIAL

From: Michael Partadinata <Michael.Partadinata@ttwengineers.com>
Sent: Tuesday, 5 May 2026 12:22 PM
To: Development Sydney <Development.Sydney@transport.nsw.gov.au>
Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>
Subject: TfNSW Comment on Alteration and Addition of Roseland Shopping Centre (DA-52/2026)

You don't often get email from michael.partadinata@ttwengineers.com. [Learn why this is important](#)

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

To whom it may concern,

TTW is currently working on a Development Application in Roseland and the application has been submitted to the Council (Application number: DA-52/2026). The project is an alteration and addition to the Roseland Shopping Centre, which will include

- A new specialised retail
- An additional shopping centre retail area
- A replacement of unused parking to the south of Roseland Drive
- Other parking and traffic-related upgrades

As part of this project, the project will also include

1. Alteration of the existing bus and taxi on Roseland Avenue

- The bus and taxi facilities will be relocated further to the south, providing more waiting area at the shopping mall
- Bus zone will be retained
- No proposed change to the public transport services

2. Possible relocation of the existing bus stop on Roseland Drive (currently servicing the Sydney Olympic Park major event bus route)

- This is due to the entry to the upgraded western car park

See below screenshot for location



Thanks,
Michael P

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3



Consider the environment. Please don't print this e-mail unless really necessary.

Michael Partadinata

From: NSW Taxi Council Communications <communications@nswtaxi.org.au>
Sent: Sunday, 9 August 2026 2:59 PM
To: Michael Partadinata
Cc: Maria Mulholland; Michael Babbage
Subject: Re: Taxi Association Consultation for DA

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Hi Michael,

Thank you for providing the additional information and clarification.

Based on the information provided, NSW Taxi Council has no further concerns with the proposed relocation of the taxi zone at this stage.

We note that the proposed design maintains the existing taxi capacity, provides sufficient space for taxis to safely wait and service passengers and allows for general traffic and bus operations to continue without conflict. We also note that appropriate signage and line marking will be incorporated into the final design.

We appreciate the consultation and ask that NSW Taxi Council be kept informed should there be any future changes to the proposal or construction arrangements that may impact taxi operations.

Regards,

Mona Bucog

Admin and Comms

NSW Taxi Council

Po Box 1249, Darlinghurst NSW 1300

11/85 Bourke Road Alexandria NSW 2015

P 02 8339 4644 | F 02 8339 4839

E admin@nswtaxi.org.au | www.nswtaxi.org.au



NSW Taxi Council Platinum Partner



From: Michael Partadinata <Michael.Partadinata@ttwengineers.com>
Date: Thursday, August 6, 2026 at 7:28 AM
To: NSW Taxi Council Communications <communications@nswtaxi.org.au>
Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>, Michael Babbage <Michael.Babbage@ttwengineers.com>
Subject: RE: Taxi Association Consultation for DA

Hi Mona,

Just want to follow up regarding the below. If you have any more questions, feel free to let me know.

Thanks,
Michael P

Michael Partadinata

Traffic Engineer



D +61 2 9067 5012
E michael.partadinata@ttwengineers.com
W www.ttwengineers.com

Brisbane / Canberra / Melbourne / **Sydney** / Jakarta / Singapore

From: Michael Partadinata

Sent: Tuesday, 28 July 2026 9:09 AM

To: 'NSW Taxi Council Communications' <communications@nswtaxi.org.au>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>; Michael Babbage <Michael.Babbage@ttwengineers.com>

Subject: RE: Taxi Association Consultation for DA

Hi Mona,

Appreciate the response. Please see our response below in **red**.

- Will the relocated taxi zone remain operational throughout the construction period, or will temporary arrangements be required?
At this stage of the project, there are still many unknowns regarding the construction methodology, as there has not been any contractor engaged yet. We would assume that the taxi zone will remain operational for most of the construction stage as it is located outside of the building footprint. However, this will need to be confirmed in the future and detailed further once a contractor has been appointed.
- Has the proposed layout been designed to allow taxis to safely queue, load and exit without impacting bus operations or general traffic?
The proposed layout provides separate facilities for taxis and buses to minimise operational conflicts. The current design allows space for approximately **5–6 vehicles and a **3.2 m-wide taxi zone** for taxis to wait and/or pick up and drop off passengers. On top of this, there is still another 3.2 m-wide road for general traffic to pass through the taxi zone. As a result, taxis will not impact the bus operation and general traffic.**
- Will the taxi zone be clearly signed and line-marked as part of the final works?
Correct, a signage and line marking plan will be detailed further, closer to the construction, to ensure a clear indicator for taxis and buses and for any passenger.

Thanks,
Michael

From: NSW Taxi Council Communications <communications@nswtaxi.org.au>

Sent: Monday, 27 July 2026 10:20 AM

To: Michael Partadinata <Michael.Partadinata@ttwengineers.com>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>

Subject: Re: Taxi Association Consultation for DA

[External Email]: Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Michael,

Firstly, my apologies for the delayed response. Your email was inadvertently overlooked.

Thank you for sharing the proposal and providing the updated plans for the Roselands Shopping Centre development.

We appreciate the opportunity to review the proposed relocation of the taxi zone as part of the DA.

It is encouraging to note that the proposal retains the existing taxi zone capacity while providing an increased waiting area adjacent to the shopping centre.

Before we provide any formal comments, could you please clarify the following:

- Will the relocated taxi zone remain operational throughout the construction period, or will temporary arrangements be required?
- Has the proposed layout been designed to allow taxis to safely queue, load and exit without impacting bus operations or general traffic?
- Will the taxi zone be clearly signed and line-marked as part of the final works?

Based on the information provided, we have no immediate concerns with the proposed relocation, subject to the taxi zone capacity being maintained and safe, convenient access for taxi drivers and passengers being preserved.

We appreciate being consulted on the proposal and would welcome the opportunity to review any updated plans should there be any changes affecting taxi operations.

Regards,

Mona Bucog

Admin and Comms

NSW Taxi Council

Po Box 1249, Darlinghurst NSW 1300

11/85 Bourke Road Alexandria NSW 2015

P 02 8339 4644 | F 02 8339 4839

E admin@nswtaxi.org.au | www.nswtaxi.org.au



NSW Taxi Council Major Sponsors and Preferred



From: Michael Partadinata <Michael.Partadinata@ttwengineers.com>
Date: Monday, July 27, 2026 at 8:12 AM
To: NSW Taxi Council Communications <communications@nswtaxi.org.au>
Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>
Subject: RE: Taxi Association Consultation for DA

Hi Mona & NSW Taxi Council,

We just want to follow up again regarding the comments on the DA (below) for the Roseland Shopping Centre Project. If you have any questions, feel free to contact me.

Thanks,
Michael

Michael Partadinata
Traffic Engineer



D: +61 2 9067 5012

E: Michael.Partadinata@ttwengineers.com

W: www.ttwengineers.com

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From: Michael Partadinata
Sent: Thursday, 9 July 2026 10:19 AM
To: 'NSW Taxi Council Communications' <communications@nswtaxi.org.au>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>

Subject: RE: Taxi Association Consultation for DA

Hi Mona & NSW Taxi Council,

Hope you are well.

We just want to follow up regarding the below. If you have further questions or require any clarification. Please feel free to let me know.

Thanks,
Michael P

From: Michael Partadinata

Sent: Monday, 25 May 2026 6:03 PM

To: 'NSW Taxi Council Communications' <communications@nswtaxi.org.au>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>

Subject: RE: Taxi Association Consultation for DA

Hi Mona,

Thank you for the confirmation. TTW is currently working on a Development Application in Roseland, and the application has been submitted to the Council (Application number: DA-52/2026). The project is an alteration and addition to the Roseland Shopping Centre, which will include

- A new specialised retail
- An additional shopping centre retail area
- A replacement of unused parking to the south of Roseland Drive
- Other parking and traffic-related upgrades

As part of this project, the project will also include

1. **Alteration of the existing bus and taxi on Roseland Avenue**
 - The bus and taxi facilities will be relocated further to the south, providing more waiting area at the shopping mall
 - Bus zone length will be retained
 - **The taxi zone capacity will be retained as per the existing. Hence, there will be no loss of taxi waiting spaces**

Please find attached the markup for the relocated taxi zone for your review.

Could NSW Taxi Council please provide any comments on the proposal? Note that the project is still under development. However, feel free to let us know if more information is required.

Thanks,
Michael P

From: NSW Taxi Council Communications <communications@nswtaxi.org.au>

Sent: Monday, 25 May 2026 1:36 PM

To: Michael Partadinata <Michael.Partadinata@ttwengineers.com>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>

Subject: Re: Taxi Association Consultation for DA

[External Email]: Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Michael,

Thank you for your enquiry.

Yes, the NSW Taxi Council is the appropriate body to consult regarding construction, access, traffic flow, kerbside arrangements, taxi infrastructure, and design changes that may impact taxi operations within the public domain.

Please feel free to forward the relevant plans, proposed changes, and any supporting documentation for our review.

Regards,

Mona Bucog

Admin and Comms

NSW Taxi Council

Po Box 1249, Darlinghurst NSW 1300

11/85 Bourke Road Alexandria NSW 2015

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E admin@nswtaxi.org.au | www.nswtaxi.org.au



NSW Taxi Council Major Sponsors and Preferred



TOYOTA

smartMOVE

From: Michael Partadinata <Michael.Partadinata@ttwengineers.com>

Date: Friday, May 22, 2026 at 9:06 AM

To: NSW Taxi Council Communications <communications@nswtaxi.org.au>

Cc: Maria Mulholland <Maria.Mulholland@ttwengineers.com>

Subject: Taxi Association Consultation for DA

Hi,

We are working on a Development Application in Roseland Shopping Centre, and one of the comments from Council is to consult with the Taxi Association regarding the proposed change within the public domain. Is the NSW Taxi Association the best person to consult regarding this?

Thanks,

Michael P

Michael Partadinata

Traffic Engineer

TTW

D: +61 2 9067 5012

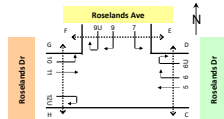
E: Michael.Partadinata@ttwengineers.com

W: www.ttwengineers.com

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Appendix B Existing Traffic Volume

Job No. : AUNSW14179
Client : TTW (Taylor Thomson Whiting) (NSW) Pty Ltd
Suburb : Roseland
Location : 2. Roselands Dr / Roselands Ave
Day/Date : Saturday, 22 November 2025
Weather : Fine
Description : Classified Intersection Count
Hourly Summary



Approach	Roselands Dr																			
Lane	Lane 1 (to Shopping Centre On Ramp)				Lane 2 (to Roselands Dr)				Lane 3											
Direction	Direction 5 (Through)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)							
Time Period	Lights	Motor	Bike	Total	Lights	Motor	Bike	Total	Lights	Motor	Bike	Total	Lights	Motor	Bike	Total				
8:00 to 8:05	171	0	0	171	207	0	0	207	177	6	8	191	1	0	0	1				
8:15 to 8:25	212	0	0	212	201	0	0	201	184	5	9	198	1	0	0	1				
8:30 to 8:35	251	0	0	251	120	0	0	120	213	5	9	227	0	0	0	0				
8:45 to 8:45	280	0	0	280	127	3	0	130	212	5	9	226	0	0	0	0				
9:00 to 10:00	285	0	0	285	125	5	0	130	243	3	10	256	0	0	0	0				
9:15 to 10:15	288	0	0	288	118	5	0	123	254	1	10	265	0	0	0	0				
9:30 to 10:30	295	0	0	295	101	8	0	111	256	2	9	267	0	0	0	0				
9:45 to 10:45	314	0	0	314	203	6	0	209	250	1	9	259	0	0	0	0				
10:00 to 11:00	322	0	0	322	101	5	0	106	256	4	9	269	0	0	0	0				
10:15 to 12:15	334	0	0	334	104	5	0	109	249	6	7	262	0	0	0	0				
10:30 to 11:30	339	0	0	339	104	3	0	107	237	5	7	249	0	0	0	0				
10:45 to 11:45	367	0	0	367	218	2	0	218	226	6	9	1	234	0	0	0	0			
11:00 to 12:00	315	0	0	315	127	4	0	121	212	5	7	1	224	0	0	0	0			
11:15 to 12:15	311	0	0	311	120	6	0	126	213	3	9	1	225	0	0	0	0			
11:30 to 12:30	309	0	0	309	114	5	0	119	214	2	10	1	241	0	0	0	0			
11:45 to 12:45	305	0	0	305	280	5	0	284	216	9	7	0	232	0	0	0	0			
12:00 to 13:00	284	0	0	284	280	2	0	280	227	7	8	0	242	0	0	0	0			
12:15 to 13:15	273	0	0	273	290	0	0	1	296	221	10	9	0	240	0	0	0	0		
12:30 to 13:30	278	0	0	278	104	0	0	1	304	229	6	8	0	243	0	0	0	0		
13:00 to 13:45	274	0	0	274	107	1	0	1	318	242	5	10	0	257	0	0	0	0		
13:15 to 14:15	295	0	0	295	234	1	0	1	325	236	6	12	0	254	1	0	0	1		
13:15 to 14:15	293	0	0	293	101	2	0	0	307	249	10	2	0	261	1	0	0	1		
13:30 to 14:30	229	0	0	229	100	3	0	0	313	257	6	10	0	263	1	0	0	1		
13:45 to 14:45	220	0	0	220	290	2	0	0	297	251	4	9	0	264	1	0	0	1		
14:00 to 15:00	224	0	0	224	290	2	0	0	298	225	3	7	0	235	0	0	0	0		
14:15 to 15:15	205	0	0	205	287	1	0	0	288	221	3	7	0	231	0	0	0	0		
14:30 to 15:30	201	0	0	201	292	2	0	0	294	225	1	6	0	232	0	0	0	0		
14:45 to 15:45	181	0	0	181	271	2	0	0	273	215	1	7	0	219	0	0	0	0		
15:00 to 16:00	171	0	0	171	245	2	0	0	246	244	1	8	0	253	0	0	0	0		
Totals	2,627	0	0	2,627	2,361	21	0	1	2,382	1,802	35	69	1	1,906	2	0	0	0		

Approach	Roselands Ave																Roselands Dr																Crossing Pedestrians																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Lane	Direction 7 (Left Turn)						Direction 9 (Right Turn)						Direction 9U (U Turn)						Lane 1						Lane 2 (From Roselands Dr)						Lane 3 (From Shopping Centre Off Ramp)						Direction 12U (U Turn)						Direction 12C (Left Turn)						Direction 12F (Right Turn)						Direction 12H (Through)						Direction 12G (Through)						Direction 12E (Through)						Direction 12D (Through)						Direction 12A (Through)						Direction 12B (Through)						Direction 12I (Through)						Direction 12J (Through)						Direction 12K (Through)						Direction 12L (Through)						Direction 12M (Through)						Direction 12N (Through)						Direction 12O (Through)						Direction 12P (Through)						Direction 12Q (Through)						Direction 12R (Through)						Direction 12S (Through)						Direction 12T (Through)						Direction 12V (Through)						Direction 12W (Through)						Direction 12X (Through)						Direction 12Y (Through)						Direction 12Z (Through)						Direction 12AA (Through)						Direction 12AB 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(Through)						Direction 12GL (Through)						Direction 12GM (Through)						Direction 12GN (Through)						Direction 12GO (Through)						Direction 12GP (Through)						Direction 12GQ (Through)						Direction 12GR (Through)						Direction 12GS (Through)						Direction 12GT (Through)						Direction 12GU (Through)						Direction 12GV (Through)						Direction 12GW (Through)						Direction 12GX (Through)						Direction 12GY (Through)						Direction 12GZ (Through)						Direction 12HA (Through)						Direction 12HB (Through)						Direction 12HC (Through)						Direction 12HD (Through)						Direction 12HE (Through)						Direction 12HF (Through)						Direction 12HG (Through)						Direction 12HH (Through)						Direction 12HI (Through)						Direction 12HJ (Through)						Direction 12HK (Through)						Direction 12HL (Through)						Direction 12HM (Through)						Direction 12HN (Through)						Direction 12HO (Through)						Direction 12HP (Through)						Direction 12HQ (Through)						Direction 12HR (Through)						Direction 12HS (Through)						Direction 12HT (Through)						Direction 12HU (Through)						Direction 12HV (Through)						Direction 12HW (Through)						Direction 12HX (Through)						Direction 12HY (Through)						Direction 12HZ (Through)						Direction 12IA (Through)						Direction 12IB (Through)						Direction 12IC (Through)						Direction 12ID (Through)						Direction 12IE (Through)						Direction 12IF (Through)						Direction 12IG (Through)						Direction 12IH (Through)						Direction 12II (Through)						Direction 12IJ (Through)						Direction 12IK (Through)						Direction 12IL (Through)						Direction 12IM (Through)						Direction 12IN (Through)						Direction 12IO (Through)						Direction 12IP (Through)						Direction 12IQ (Through)						Direction 12IR (Through)						Direction 12IS (Through)						Direction 12IT (Through)						Direction 12IU (Through)						Direction 12IV (Through)						Direction 12IW (Through)						Direction 12IX (Through)						Direction 12IY (Through)						Direction 12IZ (Through)						Direction 12JA (Through)						Direction 12JB (Through)						Direction 12JC (Through)						Direction 12JD (Through)						Direction 12JE (Through)						Direction 12JF (Through)						Direction 12JG (Through)						Direction 12JH (Through)						Direction 12JI (Through)						Direction 12JJ (Through)						Direction 12JK (Through)						Direction 12JL (Through)						Direction 12JM (Through)						Direction 12JN (Through)						Direction 12JO (Through)						Direction 12JP (Through)						Direction 12JQ (Through)						Direction 12JR (Through)						Direction 12JS (Through)						Direction 12JT (Through)						Direction 12JU (Through)						Direction 12JV (Through)						Direction 12JW (Through)						Direction 12JX (Through)						Direction 12JY (Through)						Direction 12JZ (Through)						Direction 12KA (Through)						Direction 12KB (Through)						Direction 12KC (Through)						Direction 12KD (Through)						Direction 12KE (Through)						Direction 12KF (Through)						Direction 12KG (Through)						Direction 12KH (Through)						Direction 12KI (Through)						Direction 12KJ (Through)						Direction 12KK (Through)						Direction 12KL (Through)						Direction 12KM (Through)						Direction 12KN (Through)						Direction 12KO (Through)						Direction 12KP (Through)						Direction 12KQ (Through)						Direction 12KR (Through)						Direction 12KS (Through)						Direction 12KT (Through)						Direction 12KU (Through)						Direction 12KV (Through)						Direction 12KW (Through)						Direction 12KX (Through)						Direction 12KY (Through)						Direction 12KZ (Through)						Direction 12LA (Through)						Direction 12LB (Through)						Direction 12LC (Through)						Direction 12LD (Through)						Direction 12LE (Through)						Direction 12LF (Through)						Direction 12LG (Through)						Direction 12LH (Through)						Direction 12LI (Through)						Direction 12LJ (Through)						Direction 12LK (Through)						Direction 12LL (Through)						Direction 12LM (Through)						Direction 12LN (Through)						Direction 12LO (Through)						Direction 12LP (Through)						Direction 12LQ (Through)						Direction 12LR (Through)						Direction 12LS (Through)						Direction 12LT (Through)						Direction 12LU (Through)						Direction 12LV (Through)						Direction 12LW (Through)						Direction 12LX (Through)						Direction 12LY (Through)						Direction 12LZ (Through)						Direction 12MA (Through)						Direction 12MB (Through)						Direction 12MC (Through)						Direction 12MD (Through)						Direction 12ME (Through)						Direction 12MF (Through)						Direction 12MG (Through)						Direction 12MH (Through)						Direction 12MI (Through)						Direction 12MJ (Through)						Direction 12MK (Through)						Direction 12ML (Through)						Direction 12MN (Through)						Direction 12MO (Through)						Direction 12MP (Through)						Direction 12MQ (Through)						Direction 12MR (Through)						Direction 12MS (Through)						Direction 12MT (Through)						Direction 12MU (Through)						Direction 12MV (Through)						Direction 12MW (Through)						Direction 12MX (Through)						Direction 12MY (Through)						Direction 12MZ (Through)						Direction 12NA (Through)						Direction 12NB (Through)						Direction 12NC (Through)						Direction 12ND (Through)						Direction 12NE (Through)						Direction 12NF (Through)						Direction 12NG (Through)						Direction 12NH (Through)						Direction 12NI (Through)						Direction 12NJ (Through)						Direction 12NK (Through)						Direction 12NL (Through)						Direction 12NM (Through)						Direction 12NO (Through)						Direction 12NP (Through)						Direction 12NQ (Through)						Direction 12NR (Through)						Direction 12NS (Through)						Direction 12NT (Through)						Direction 12NU (Through)						Direction 12NV (Through)						Direction 12NW (Through)						Direction 12NX (Through)						Direction 12NY (Through)						Direction 12NZ (Through)						Direction 12OA (Through)						Direction 12OB (Through)						Direction 12OC (Through)						Direction 12OD (Through)						Direction 12OE (Through)						Direction 12OF (Through)						Direction 12OG (Through)						Direction 12OH (Through)						Direction 12OI (Through)						Direction 12OJ (Through)						Direction 12OK (Through)						Direction 12OL (Through)						Direction 12OM (Through)						Direction 12ON (Through)						Direction 12OO (Through)						Direction 12OP (Through)						Direction 12OQ (Through)						Direction 12OR (Through)						Direction 12OS (Through)						Direction 12OT (Through)						Direction 12OU (Through)						Direction 12OV (Through)						Direction 12OW (Through)						Direction 12OX (Through)						Direction 12OY (Through)						Direction 12OZ (Through)						Direction 12PA (Through)						Direction 12PB (Through)						Direction 12PC (Through)						Direction 12PD (Through)						Direction 12PE (Through)						Direction 12PF (Through)						Direction 12PG (Through)						Direction 12PH (Through)						Direction 12PI (Through)						Direction 12PJ (Through)						Direction 12PK (Through)						Direction 12PL (Through)						Direction 12PM (Through)						Direction 12PN (Through)						Direction 12PO (Through)						Direction 12PP (Through)						Direction 12PQ (Through)						Direction 12PR (Through)						Direction 12PS (Through)						Direction 12PT (Through)						Direction 12PU (Through)						Direction 12PV (Through)						Direction 12PW (Through)						Direction 12PX (Through)						Direction 12PY (Through)						Direction 12PZ (Through)						Direction 12QA (Through)						Direction 12QB (Through)						Direction 12QC (Through)						Direction 12QD (Through)						Direction 12QE (Through)						Direction 12QF (Through)						Direction 12QG (Through)						Direction 12QH (Through)						Direction 12QI (Through)						Direction 12QJ (Through)						Direction 12QK (Through)						Direction 12QL (Through)						Direction 12QM (Through)						Direction 12QN (Through)						Direction 12QO (Through)						Direction 12QP (Through)						Direction 12QQ (Through)						Direction 12QR (Through)						Direction 12QS (Through)						Direction 12QT (Through)						Direction 12QU (Through)						Direction 12QV (Through)						Direction 12QW (Through)						Direction 12QX (Through)						Direction 12QY (Through)						Direction 12QZ (Through)						Direction 12RA (Through)						Direction 12RB (Through)						Direction 12RC (Through)						Direction 12RD (Through)						Direction 12RE (Through)						Direction 12RF (Through)						Direction 12RG (Through)						Direction 12RH (Through)						Direction 12RI (Through)						Direction 12RJ (Through)						Direction 12RK (Through)						Direction 12RL (Through)						Direction 12RM (Through)						Direction 12RN (Through)						Direction 12RO (Through)						Direction 12RP (Through)						Direction 12RQ (Through)						Direction 12RR (Through)						Direction 12RS (Through)						Direction 12RT (Through)						Direction 12RU (Through)						Direction 12RV (Through)						Direction 12RW (Through)						Direction 12RX (Through)						Direction 12RY (Through)						Direction 12RZ (Through)						Direction 12SA (Through)						Direction 12SB (Through)						Direction 12SC (Through)						Direction 12SD (Through)						Direction 12SE (Through)						Direction 12SF (Through)						Direction 12SG (Through)						Direction 12SH (Through)						Direction 12SI (Through)						Direction 12SJ (Through)						Direction 12SK (Through)						Direction 12SL (Through)						Direction 12SM (Through)						Direction 12SN (Through)						Direction 12SO (Through)						Direction 12SP (Through)						Direction 12SQ (Through)						Direction 12SR (Through)						Direction 12SS (Through)						Direction 12ST (Through)						Direction 12SU (Through)						Direction 12SV (Through)						Direction 12SW (Through)						Direction 12SX (Through)						Direction 12SY (Through)						Direction 12SZ (Through)						Direction 12TA (Through)						Direction 12TB (Through)						Direction 12TC (Through)						Direction 12TD (Through)						Direction 12TE (Through)						Direction 12TF (Through)						Direction 12TG (Through)						Direction 12TH (Through)						Direction 12TI (Through)						Direction 12TJ (Through)						Direction 12TK (Through)						Direction 12TL (Through)						Direction 12TM (Through)						Direction 12TN (Through)						Direction 12TO (Through)						Direction 12TP (Through)						Direction 12TQ (Through)						Direction 12TR (Through)						Direction 12TS (Through)						Direction 12TT (Through)						Direction 12TU (Through)						Direction 12TV (Through)						Direction 12TW (Through)						Direction 12TX (Through)						Direction 12TY (Through)						Direction 12TZ (Through)						Direction 12UA (Through)						Direction 12UB (Through)						Direction 12UC (Through)						Direction 12UD (Through)						Direction 12UE (Through)						Direction 12UF (Through)						Direction 12UG (Through)						Direction 12UH (Through)						Direction 12UI (Through)						Direction 12UJ (Through)						Direction 12UK (Through)						Direction 12UL (Through)						Direction 12UM (Through)						Direction 12UN (Through)						Direction 12UO (Through)						Direction 12UP (Through)						Direction 12UQ (Through)						Direction 12UR (Through)						Direction 12US (Through)						Direction 12UT (Through)						Direction 12UU (Through)						Direction 12UV (Through)						Direction 12UW (Through)						Direction 12UX (Through)						Direction 12UY (Through)						Direction 12UZ (Through)						Direction 12VA (Through)						Direction 12VB (Through)						Direction 12VC (Through)						Direction 12VD (Through)						Direction 12VE (Through)						Direction 12VF (Through)						Direction 12VG (Through)						Direction 12VH (Through)						Direction					

Appendix C Existing Traffic Modelling Result

MOVEMENT SUMMARY

 **Site: [7 (3)] Martin Street/ Karne Street** (2025 Baseline
(Saturday))

Network: [3] Saturday (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	Dist] m			km/h
South: Karne St														
1	L2	All MCs	66	0.0	66	0.0	0.213	6.4	LOS A	0.5	3.4	0.43	0.63	50.8
3	R2	All MCs	155	0.7	155	0.7	0.213	8.9	LOS A	0.5	3.4	0.43	0.63	47.4
Approach			221	0.5	221	0.5	0.213	8.1	LOS A	0.5	3.4	0.43	0.63	48.9
East: Martin St														
4	L2	All MCs	162	2.6	161	2.6	0.294	4.4	LOS A	0.8	5.4	0.29	0.49	49.0
5	T1	All MCs	216	0.0	215	0.0	0.294	4.1	LOS A	0.8	5.4	0.29	0.49	49.9
Approach			378	1.1	376	1.1	0.294	4.2	LOS A	0.8	5.4	0.29	0.49	49.5
West: Martin St														
11	T1	All MCs	232	0.0	232	0.0	0.278	5.8	LOS A	0.7	4.9	0.40	0.56	48.9
12	R2	All MCs	79	0.0	79	0.0	0.278	8.5	LOS A	0.7	4.9	0.40	0.56	51.4
Approach			311	0.0	311	0.0	0.278	6.5	LOS A	0.7	4.9	0.40	0.56	49.9
All Vehicles			909	0.6	907	0.6	0.294	6.0	LOS A	0.8	5.4	0.36	0.55	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (2)] King Georges Road / Roseland Avenue (2025**
Baseline (Weekday AM))

Network: [1] Weekday AM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
2	T1	All MCs	2318	6.2	2318	6.2	*0.582	7.9	LOS A	12.6	93.2	0.51	0.47	50.4
Approach			2318	6.2	2318	6.2	0.582	7.9	LOS A	12.6	93.2	0.51	0.47	50.4
North: King Georges Road														
8	T1	All MCs	2003	9.1	2003	9.1	0.517	7.3	LOS A	10.1	76.3	0.47	0.43	48.6
Approach			2003	9.1	2003	9.1	0.517	7.3	LOS A	10.1	76.3	0.47	0.43	48.6
West: Roseland Avenue														
10	L2	All MCs	145	6.5	145	6.5	0.392	60.5	LOS E	2.5	18.6	0.97	0.77	21.6
12	R2	All MCs	188	8.4	188	8.4	*0.517	61.4	LOS E	3.3	25.0	0.99	0.78	4.6
Approach			334	7.6	334	7.6	0.517	61.0	LOS E	3.3	25.0	0.98	0.77	13.7
All Vehicles			4655	7.6	4655	7.6	0.582	11.4	LOS A	12.6	93.2	0.52	0.47	45.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic Modelling\05.sipx

MOVEMENT SUMMARY

Site: [3 (2)] Roseland Drive / Roseland Avenue (2025 Baseline
(Weekday AM))

Network: [1] Weekday AM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Weekday AM
7:30 - 8:30 AM Peak Period
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
East: Roseland Drive														
4a	L1	All MCs	60	0.0	60	0.0	0.141	5.0	LOS A	0.0	0.0	0.00	0.17	0.00
5	T1	All MCs	212	1.0	212	1.0	0.141	0.3	LOS A	0.0	0.0	0.00	0.17	0.00
6	R2	All MCs	114	20.4	114	20.4	0.117	6.2	LOS A	0.2	1.5	0.37	0.58	0.37
Approach			385	6.6	385	6.6	0.141	2.7	NA	0.2	1.5	0.11	0.29	0.11
North: Roseland Avenue														
7	L2	All MCs	12	0.0	12	0.0	0.010	5.0	LOS A	0.0	0.1	0.22	0.50	0.22
9a	R1	All MCs	1	100.0	1	100.0	0.127	36.3	LOS C	0.2	1.6	0.74	0.87	0.74
9	R2	All MCs	25	41.7	25	41.7	0.127	20.5	LOS B	0.2	1.6	0.74	0.87	0.74
Approach			38	30.6	38	30.6	0.127	16.2	LOS B	0.2	1.6	0.58	0.76	0.58
West: Roseland Drive														
10	L2	All MCs	151	8.4	151	8.4	0.085	4.4	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	261	2.8	261	2.8	0.070	0.0	LOS A	0.0	0.1	0.01	0.00	0.01
12b	R3	All MCs	1	100.0	1	100.0	0.070	8.2	LOS A	0.0	0.1	0.01	0.01	0.01
Approach			413	5.1	413	5.1	0.085	1.7	NA	0.0	0.1	0.00	0.17	0.00
All Vehicles			836	6.9	836	6.9	0.141	2.8	NA	0.2	1.6	0.08	0.25	0.08

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [1 (2)] King Georges Road / Roselands Drive (2025**
Baseline (Weekday AM))

Network: [1] Weekday AM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
1	L2	All MCs	235	4.5	235	4.5	0.671	5.8	LOS A	0.3	1.9	0.00	0.15	57.1
2	T1	All MCs	2303	6.0	2303	6.0	* 0.671	12.3	LOS A	19.8	145.4	0.53	0.53	42.7
Approach			2538	5.8	2538	5.8	0.671	11.7	LOS A	19.8	145.4	0.48	0.49	43.8
North: King Georges Road														
8	T1	All MCs	2013	9.2	2013	9.2	0.514	7.4	LOS A	10.2	77.1	0.47	0.43	50.9
9	R2	All MCs	147	7.9	147	7.9	* 0.659	47.5	LOS D	5.0	32.8	1.00	1.11	9.9
Approach			2160	9.1	2160	9.1	0.659	10.1	LOS A	10.2	77.1	0.51	0.51	47.0
West: Roselands Drive														
10	L2	All MCs	38	0.0	38	0.0	0.439	55.5	LOS D	4.5	32.0	0.94	0.79	17.6
12	R2	All MCs	240	3.9	240	3.9	* 0.439	52.4	LOS D	4.6	33.3	0.94	0.79	28.5
Approach			278	3.4	278	3.4	0.439	52.8	LOS D	4.6	33.3	0.94	0.79	27.4
All Vehicles			4976	7.1	4976	7.1	0.671	13.3	LOS A	19.8	145.4	0.52	0.50	43.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

Site: [6] Martin Street/ Violet Street (2025 Baseline (Weekday AM))

Network: [1] Weekday AM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	149	4.9	149	4.9	0.127	1.0	LOS A	0.2	1.4	0.29	0.33	0.29
6	R2	All MCs	43	22.0	43	22.0	0.127	8.2	LOS A	0.2	1.4	0.29	0.33	0.29
Approach			193	8.7	193	8.7	0.127	2.6	NA	0.2	1.4	0.29	0.33	0.29
North: Violet Street														
7	L2	All MCs	58	16.4	58	16.4	0.144	7.6	LOS A	0.2	1.6	0.49	0.73	0.49
9	R2	All MCs	58	1.8	58	1.8	0.144	8.8	LOS A	0.2	1.6	0.49	0.73	0.49
Approach			116	9.1	116	9.1	0.144	8.2	LOS A	0.2	1.6	0.49	0.73	0.49
West: Martin Street														
10	L2	All MCs	55	1.9	55	1.9	0.235	4.3	LOS A	0.0	0.0	0.00	0.07	0.00
11	T1	All MCs	393	2.7	393	2.7	0.235	0.0	LOS A	0.0	0.0	0.00	0.07	0.00
Approach			447	2.6	447	2.6	0.235	0.5	NA	0.0	0.0	0.00	0.07	0.00
All Vehicles			756	5.2	756	5.2	0.235	2.2	NA	0.2	1.6	0.15	0.24	0.15

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7] Martin Street/ Karne Street** (2025 Baseline (Weekday AM))

Network: [1] Weekday AM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	63	5.0	63	5.0	0.184	5.9	LOS A	0.4	3.0	0.33	0.60	50.9
3	R2	All MCs	144	2.9	144	2.9	0.184	8.3	LOS A	0.4	3.0	0.33	0.60	47.8
Approach			207	3.6	207	3.6	0.184	7.6	LOS A	0.4	3.0	0.33	0.60	49.2
East: Martin St														
4	L2	All MCs	82	9.0	82	9.0	0.182	4.6	LOS A	0.4	3.0	0.32	0.50	48.4
5	T1	All MCs	126	0.8	126	0.8	0.182	4.3	LOS A	0.4	3.0	0.32	0.50	49.8
Approach			208	4.0	208	4.0	0.182	4.4	LOS A	0.4	3.0	0.32	0.50	49.2
West: Martin St														
11	T1	All MCs	304	2.4	304	2.4	0.363	5.9	LOS A	1.0	6.9	0.42	0.56	48.8
12	R2	All MCs	112	1.9	112	1.9	0.363	8.6	LOS A	1.0	6.9	0.42	0.56	51.3
Approach			416	2.3	416	2.3	0.363	6.6	LOS A	1.0	6.9	0.42	0.56	49.8
All Vehicles			832	3.0	832	3.0	0.363	6.3	LOS A	1.0	6.9	0.37	0.56	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY



Site: [2 (3)] King Georges Road / Roseland Avenue (2025

Baseline (Weekday PM))

Network: [2] Weekday PM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
2	T1	All MCs	2305	5.5	2305	5.5	* 0.576	7.8	LOS A	12.5	91.4	0.50	0.46	50.5
Approach			2305	5.5	2305	5.5	0.576	7.8	LOS A	12.5	91.4	0.50	0.46	50.5
North: King Georges Road														
8	T1	All MCs	1721	4.0	1721	4.0	0.423	6.5	LOS A	7.8	56.5	0.42	0.38	49.5
Approach			1721	4.0	1721	4.0	0.423	6.5	LOS A	7.8	56.5	0.42	0.38	49.5
West: Roseland Avenue														
10	L2	All MCs	143	10.3	143	10.3	0.398	60.6	LOS E	2.5	19.0	0.97	0.77	21.6
12	R2	All MCs	231	4.6	231	4.6	* 0.611	62.3	LOS E	4.1	30.1	1.00	1.02	4.5
Approach			374	6.8	374	6.8	0.611	61.6	LOS E	4.1	30.1	0.99	0.79	12.7
All Vehicles			4400	5.0	4400	5.0	0.611	11.9	LOS A	12.5	91.4	0.51	0.46	44.8

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic Modelling\05.sipx

MOVEMENT SUMMARY

▼ Site: [3 (4)] Roseland Drive / Roseland Avenue (2025 Baseline (Weekday PM))

Network: [2] Weekday PM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Weekday PM
16:45 to 17:45 Peak Period
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
East: Roseland Drive														
4a	L1	All MCs	146	0.0	146	0.0	0.286	5.1	LOS A	0.0	0.0	0.00	0.21	0.00
5	T1	All MCs	402	1.6	402	1.6	0.286	0.3	LOS A	0.0	0.0	0.00	0.21	0.00
6	R2	All MCs	237	10.2	237	10.2	0.253	6.7	LOS A	0.4	3.3	0.46	0.65	0.46
Approach			785	3.9	785	3.9	0.286	3.2	NA	0.4	3.3	0.14	0.34	0.14
North: Roseland Avenue														
7	L2	All MCs	27	7.7	27	7.7	0.025	5.4	LOS A	0.0	0.3	0.27	0.52	0.27
9a	R1	All MCs	1 100.		1 100.		0.589	191.7	LOS F	0.8	6.6	0.94	1.11	1.40
			0		0									
9	R2	All MCs	56	18.9	56	18.9	0.589	57.9	LOS E	0.8	6.6	0.94	1.11	1.40
Approach			84	16.2	84	16.2	0.589	42.5	LOS C	0.8	6.6	0.72	0.92	1.03
West: Roseland Drive														
10	L2	All MCs	160	9.2	160	9.2	0.090	4.5	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	354	0.6	354	0.6	0.093	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1 100.		1 100.		0.093	11.6	LOS A	0.0	0.1	0.02	0.02	0.02
			0		0									
Approach			515	3.5	515	3.5	0.093	1.4	NA	0.0	0.1	0.01	0.15	0.01
All Vehicles			1384	4.5	1384	4.5	0.589	4.9	NA	0.8	6.6	0.12	0.30	0.14

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [1 (3)] King Georges Road / Roselands Drive (2025**
Baseline (Weekday PM))

Network: [2] Weekday PM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
1	L2	All MCs	484	3.7	484	3.7	0.831	4.6	LOS A	0.6	4.7	0.00	0.25	50.9
2	T1	All MCs	2244	5.5	2244	5.5	*0.831	21.6	LOS B	27.3	199.8	0.73	0.73	34.8
Approach			2728	5.2	2728	5.2	0.831	18.6	LOS B	27.3	199.8	0.60	0.65	36.9
North: King Georges Road														
8	T1	All MCs	1639	4.1	1639	4.1	0.399	6.5	LOS A	7.3	53.0	0.41	0.37	51.9
9	R2	All MCs	304	4.2	304	4.2	*0.827	59.4	LOS E	9.9	62.4	1.00	1.27	7.9
Approach			1943	4.1	1943	4.1	0.827	14.8	LOS B	9.9	62.4	0.50	0.53	40.6
West: Roselands Drive														
10	L2	All MCs	115	0.9	115	0.9	0.602	57.0	LOS E	6.1	43.2	0.98	0.81	17.0
12	R2	All MCs	265	0.8	265	0.8	*0.602	54.0	LOS D	6.7	47.3	0.97	0.82	28.1
Approach			380	0.8	380	0.8	0.602	54.9	LOS D	6.7	47.3	0.98	0.82	25.4
All Vehicles			5052	4.4	5052	4.4	0.831	19.9	LOS B	27.3	199.8	0.59	0.61	36.7

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					
		ped/h	sec		ped	m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

Site: [6 (2)] Martin Street/ Violet Street (2025 Baseline
(Weekday PM))

Network: [2] Weekday PM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	268	3.5	268	3.5	0.181	0.4	LOS A	0.2	1.3	0.16	0.18	55.8
6	R2	All MCs	41	23.1	41	23.1	0.181	7.5	LOS A	0.2	1.3	0.16	0.18	53.6
Approach			309	6.1	309	6.1	0.181	1.3	NA	0.2	1.3	0.16	0.18	55.2
North: Violet Street														
7	L2	All MCs	63	20.0	63	20.0	0.330	7.6	LOS A	0.6	4.3	0.54	0.79	46.4
9	R2	All MCs	193	0.0	193	0.0	0.330	9.5	LOS A	0.6	4.3	0.54	0.79	46.4
Approach			256	4.9	256	4.9	0.330	9.0	LOS A	0.6	4.3	0.54	0.79	46.4
West: Martin Street														
10	L2	All MCs	59	0.0	59	0.0	0.175	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	277	1.1	277	1.1	0.175	0.0	LOS A	0.0	0.0	0.00	0.10	50.8
Approach			336	0.9	336	0.9	0.175	0.8	NA	0.0	0.0	0.00	0.10	53.1
All Vehicles			901	3.9	901	3.9	0.330	3.3	NA	0.6	4.3	0.21	0.32	50.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

Gap-Acceptance Capacity Formula: SIDRA Standard (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: [7 (2)] Martin Street/ Karne Street** (2025 Baseline
(Weekday PM))

Network: [2] Weekday PM (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back	Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Karne St															
1	L2	All MCs	96	2.2	96	2.2	0.257	6.8	LOS A	0.6	4.3	0.50	0.64	0.50	50.6
3	R2	All MCs	156	3.4	156	3.4	0.257	9.3	LOS A	0.6	4.3	0.50	0.64	0.50	47.2
Approach			252	2.9	252	2.9	0.257	8.4	LOS A	0.6	4.3	0.50	0.64	0.50	49.0
East: Martin St															
4	L2	All MCs	202	3.6	202	3.6	0.360	4.5	LOS A	1.0	7.2	0.31	0.49	0.31	48.8
5	T1	All MCs	260	0.8	260	0.8	0.360	4.2	LOS A	1.0	7.2	0.31	0.49	0.31	49.8
Approach			462	2.1	462	2.1	0.360	4.3	LOS A	1.0	7.2	0.31	0.49	0.31	49.3
West: Martin St															
11	T1	All MCs	188	0.0	188	0.0	0.246	5.8	LOS A	0.6	4.2	0.40	0.57	0.40	48.7
12	R2	All MCs	82	0.0	82	0.0	0.246	8.5	LOS A	0.6	4.2	0.40	0.57	0.40	51.3
Approach			271	0.0	271	0.0	0.246	6.6	LOS A	0.6	4.2	0.40	0.57	0.40	49.9
All Vehicles			984	1.7	984	1.7	0.360	6.0	LOS A	1.0	7.2	0.38	0.55	0.38	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [1] King Georges Road / Roselands Drive (2025 Baseline (Saturday))**

Network: [3] Saturday (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
1	L2	All MCs	601	1.2	601	1.2	0.864	5.9	LOS A	0.9	6.2	0.00	0.33	54.2
2	T1	All MCs	2281	3.2	2281	3.2	* 0.864	25.5	LOS B	30.8	221.4	0.78	0.80	32.8
Approach			2882	2.8	2882	2.8	0.864	21.4	LOS B	30.8	221.4	0.62	0.71	35.8
North: King Georges Road														
8	T1	All MCs	1918	3.7	1918	3.7	0.482	8.3	LOS A	10.0	72.5	0.48	0.44	50.0
9	R2	All MCs	292	2.5	292	2.5	* 0.872	67.7	LOS E	10.2	73.1	1.00	1.28	7.4
Approach			2209	3.6	2209	3.6	0.872	16.2	LOS B	10.2	73.1	0.55	0.58	40.4
West: Roselands Drive														
10	L2	All MCs	149	1.4	149	1.4	* 0.862	65.8	LOS E	11.7	83.0	1.00	0.98	15.5
12	R2	All MCs	477	0.9	477	0.9	0.862	62.8	LOS E	12.6	89.0	1.00	0.98	26.1
Approach			626	1.0	626	1.0	0.862	63.5	LOS E	12.6	89.0	1.00	0.98	24.1
All Vehicles			5718	2.9	5718	2.9	0.872	24.0	LOS B	30.8	221.4	0.64	0.68	35.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.
		ped/h	sec		[Ped]	[Dist]			sec	m
					ped	m				m/sec
North: King Georges Road										
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0
West: Roselands Drive										
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

Site: [6 (3)] Martin Street/ Violet Street (2025 Baseline (Saturday))

Network: [3] Saturday (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	178	1.8	176	1.8	0.127	0.6	LOS A	0.1	1.0	0.20	0.23	54.8
6	R2	All MCs	35	21.2	34	21.2	0.127	7.7	LOS A	0.1	1.0	0.20	0.23	53.4
Approach			213	5.0	210	4.9	0.127	1.7	NA	0.1	1.0	0.20	0.23	54.3
North: Violet Street														
7	L2	All MCs	65	14.5	65	14.5	0.331	7.6	LOS A	0.6	4.3	0.53	0.78	46.8
9	R2	All MCs	203	0.5	203	0.5	0.331	9.1	LOS A	0.6	4.3	0.53	0.78	46.8
Approach			268	3.9	268	3.9	0.331	8.7	LOS A	0.6	4.3	0.53	0.78	46.8
West: Martin Street														
10	L2	All MCs	85	0.0	85	0.0	0.202	4.3	LOS A	0.0	0.0	0.00	0.13	54.2
11	T1	All MCs	304	0.3	304	0.3	0.202	0.0	LOS A	0.0	0.0	0.00	0.13	49.0
Approach			389	0.3	389	0.3	0.202	1.0	NA	0.0	0.0	0.00	0.13	52.5
All Vehicles			871	2.5	868	2.5	0.331	3.5	NA	0.6	4.3	0.21	0.35	50.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2] King Georges Road / Roseland Avenue (2025 Baseline (Saturday))**

Network: [3] Saturday (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh]	[Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2408	3.1	2408	3.1	*0.588	7.9	LOS A	13.3	95.2	0.51	0.47	50.3
Approach			2408	3.1	2408	3.1	0.588	7.9	LOS A	13.3	95.2	0.51	0.47	50.3
North: King Georges Road														
8	T1	All MCs	2031	3.6	2031	3.6	0.498	7.1	LOS A	10.0	72.1	0.46	0.42	48.8
Approach			2031	3.6	2031	3.6	0.498	7.1	LOS A	10.0	72.1	0.46	0.42	48.8
West: Roseland Avenue														
10	L2	All MCs	167	3.8	167	3.8	0.443	60.8	LOS E	2.9	21.1	0.98	0.77	21.6
12	R2	All MCs	252	2.9	252	2.9	*0.660	63.1	LOS E	4.6	32.8	1.00	0.83	4.5
Approach			419	3.3	419	3.3	0.660	62.2	LOS E	4.6	32.8	0.99	0.81	12.9
All Vehicles			4858	3.3	4858	3.3	0.660	12.3	LOS A	13.3	95.2	0.53	0.48	44.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic Modelling\05.sipx

MOVEMENT SUMMARY

Site: [3] Roseland Drive / Roseland Avenue (2025 Baseline (Saturday))

Network: [3] Saturday (2025 Baseline)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline
Saturday
12:30 to 13:30 Peak Period
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h	
East: Roseland Drive															
4a	L1	All MCs	293	0.0	293	0.0	0.317	5.3	LOS A	0.0	0.0	0.00	0.35	0.00	49.6
5	T1	All MCs	320	0.0	320	0.0	0.317	0.6	LOS A	0.0	0.0	0.00	0.35	0.00	49.0
6	R2	All MCs	256	5.8	256	5.8	0.347	9.1	LOS A	0.7	5.1	0.60	0.83	0.73	42.8
Approach			868	1.7	868	1.7	0.347	4.7	NA	0.7	5.1	0.18	0.49	0.21	46.7
North: Roseland Avenue															
7	L2	All MCs	43	2.4	43	2.4	0.044	5.9	LOS A	0.1	0.4	0.36	0.57	0.36	43.0
9a	R1	All MCs	1 100.		1 100.		1.075	493.2	LOS F	3.2	25.5	1.00	1.78	3.69	14.2
			0		0										
9	R2	All MCs	74	14.3	74	14.3	1.075	198.7	LOS F	3.2	25.5	1.00	1.78	3.69	8.3
Approach			118	10.7	118	10.7	1.075	130.7	LOS F	3.2	25.5	0.76	1.34	2.47	11.8
West: Roseland Drive															
10	L2	All MCs	183	5.2	183	5.2	0.101	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	45.6
11	T1	All MCs	580	0.5	580	0.5	0.151	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.9
12b	R3	All MCs	1 100.		1 100.		0.151	11.3	LOS A	0.0	0.1	0.01	0.01	0.01	47.5
			0		0										
Approach			764	1.8	764	1.8	0.151	1.1	NA	0.0	0.1	0.00	0.12	0.00	47.8
All Vehicles			1751	2.3	1751	2.3	1.075	11.6	NA	3.2	25.5	0.14	0.39	0.28	39.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Appendix D Traffic Generation & Traffic Distribution

Proposed Additional Vehicle Trip Generation

This assessment will focus on the additional GLFA of the shopping centre

ROSELAND SITE SPECIFIC RATES

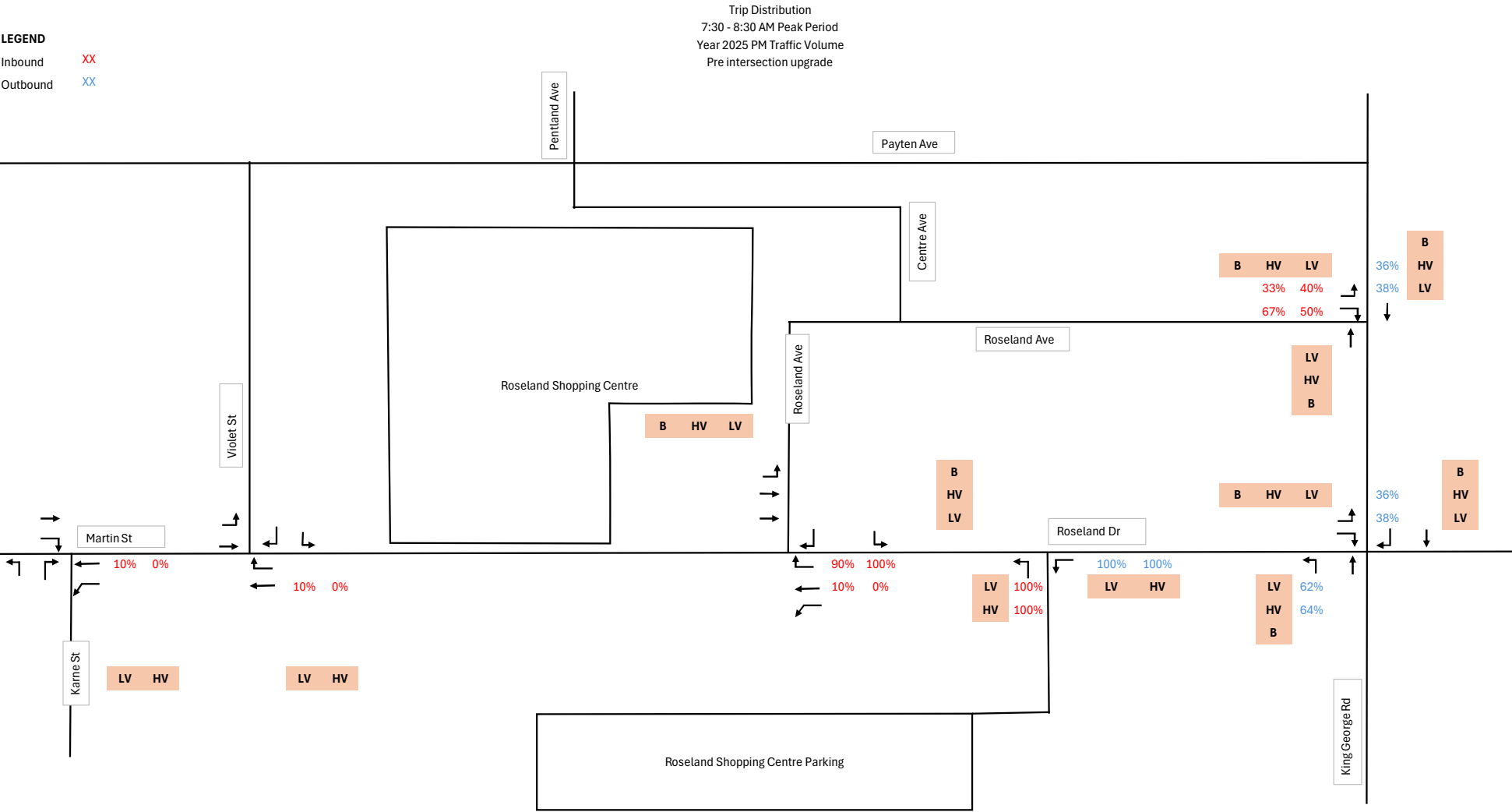
Items	Additional GLFA m2	Vehicle Trips Rates	ROSELAND Traffic Gen Rate (per hour)	Traffic Generation	Vehicle in	Vehicle out
Thursday	6,216	Network AM peak	1.84 trip / 100 m2 GLFA	114 trips/ hour	57	57
		Network PM peak	3.72 trip / 100 m2 GLFA	231 trips / hour	116	116
		Daily	43.76 trip / 100 m2 GLFA	2720 total trips	1360	1360
Weekend		Network peak	4.43 trip / 100 m2 GLFA	275 trips / hour	138	138
		Daily	37.20 trip / 100 m2 GLFA	2312 total trips	1156	1156

Notes:

1. Vehicle in and out has assumed a conservative split of 50% in and 50% out
2. Network AM and PM refer to the trip generated during the road peak one-hour period
3. Daily is the total trip generated for the day

LEGEND

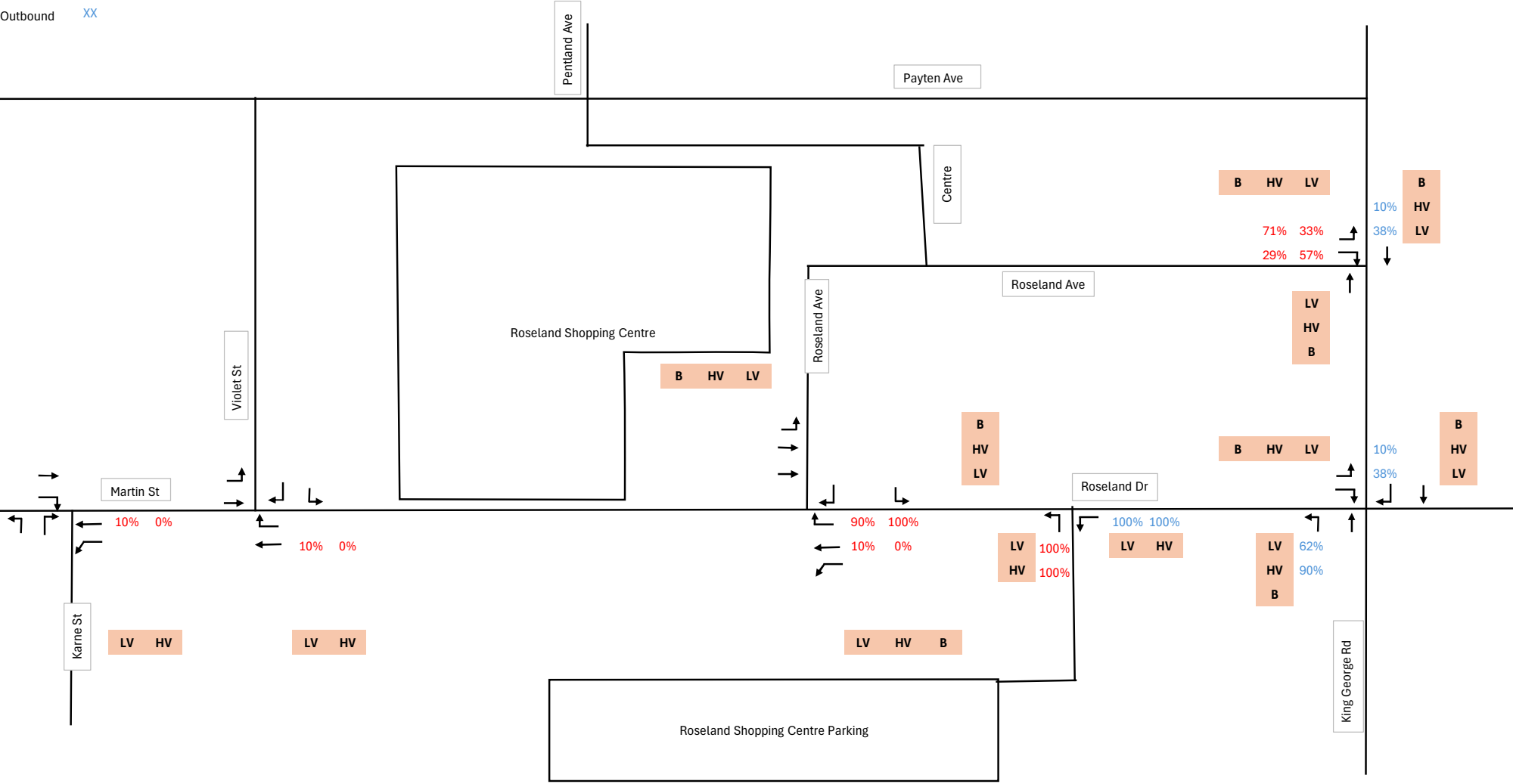
Inbound XX
Outbound XX



LEGEND

Inbound XX
Outbound XX

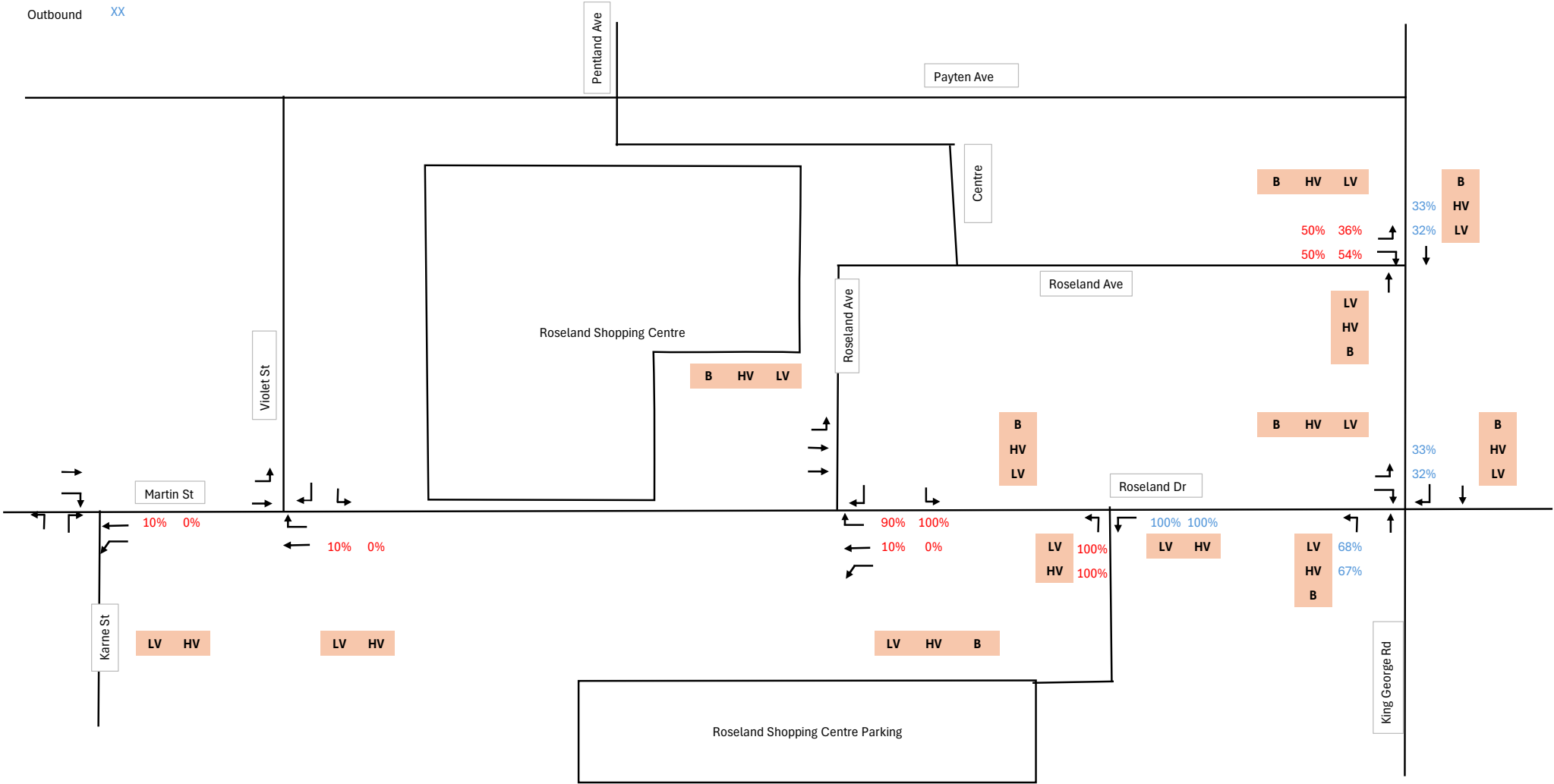
Trip Distribution
16:45 to 17:45 Peak Period
Year 2025 PM Traffic Volume
Pre intersection upgrade



LEGEND

Inbound XX
Outbound XX

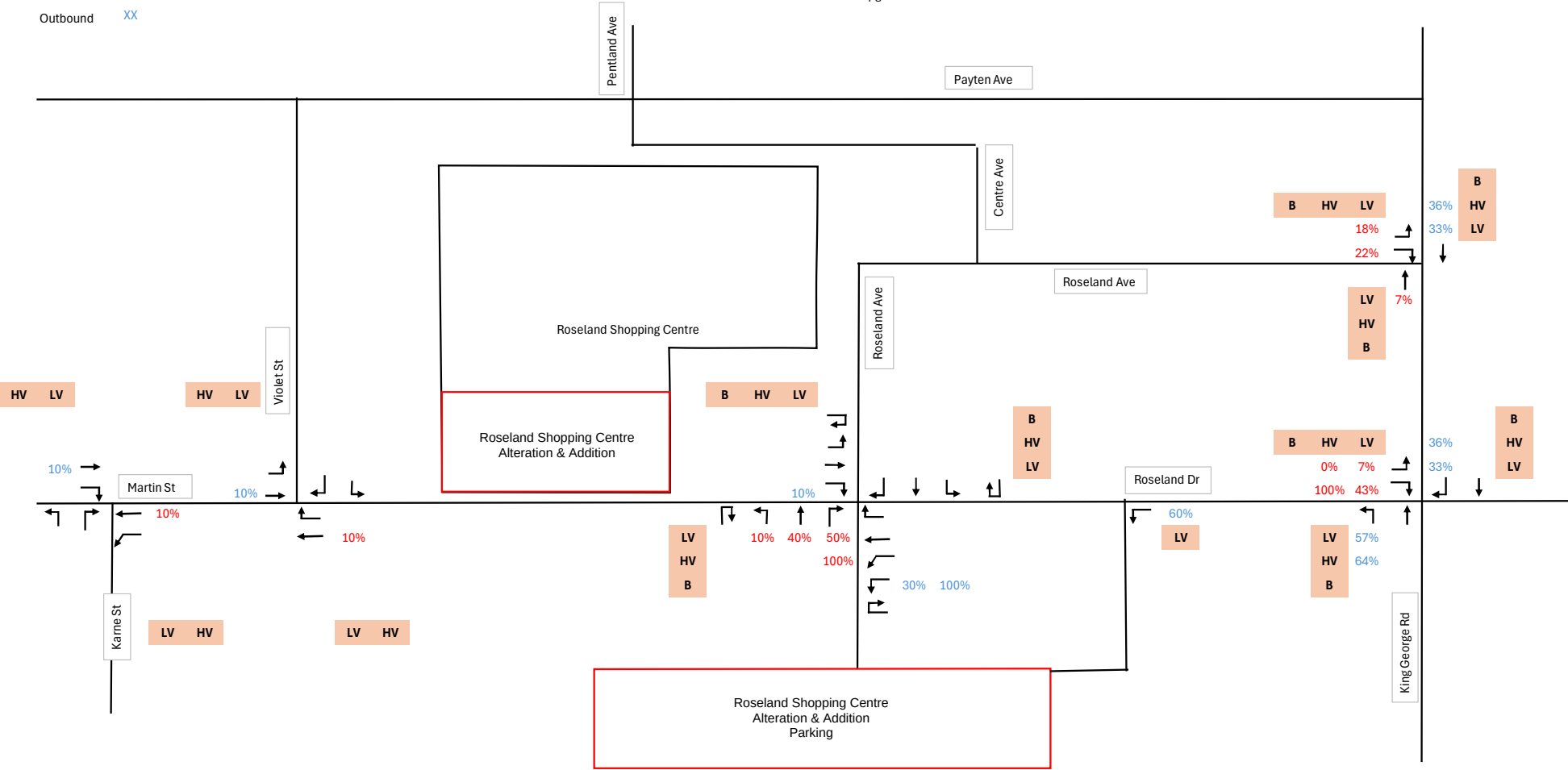
Trip Distribution
12:30 to 13:30 Weekend Peak Period
Year 2025 PM Traffic Volume
Pre intersection upgrade



LEGEND

Inbound XX
Outbound XX

Trip Distribution
7:30 - 8:30 AM Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade

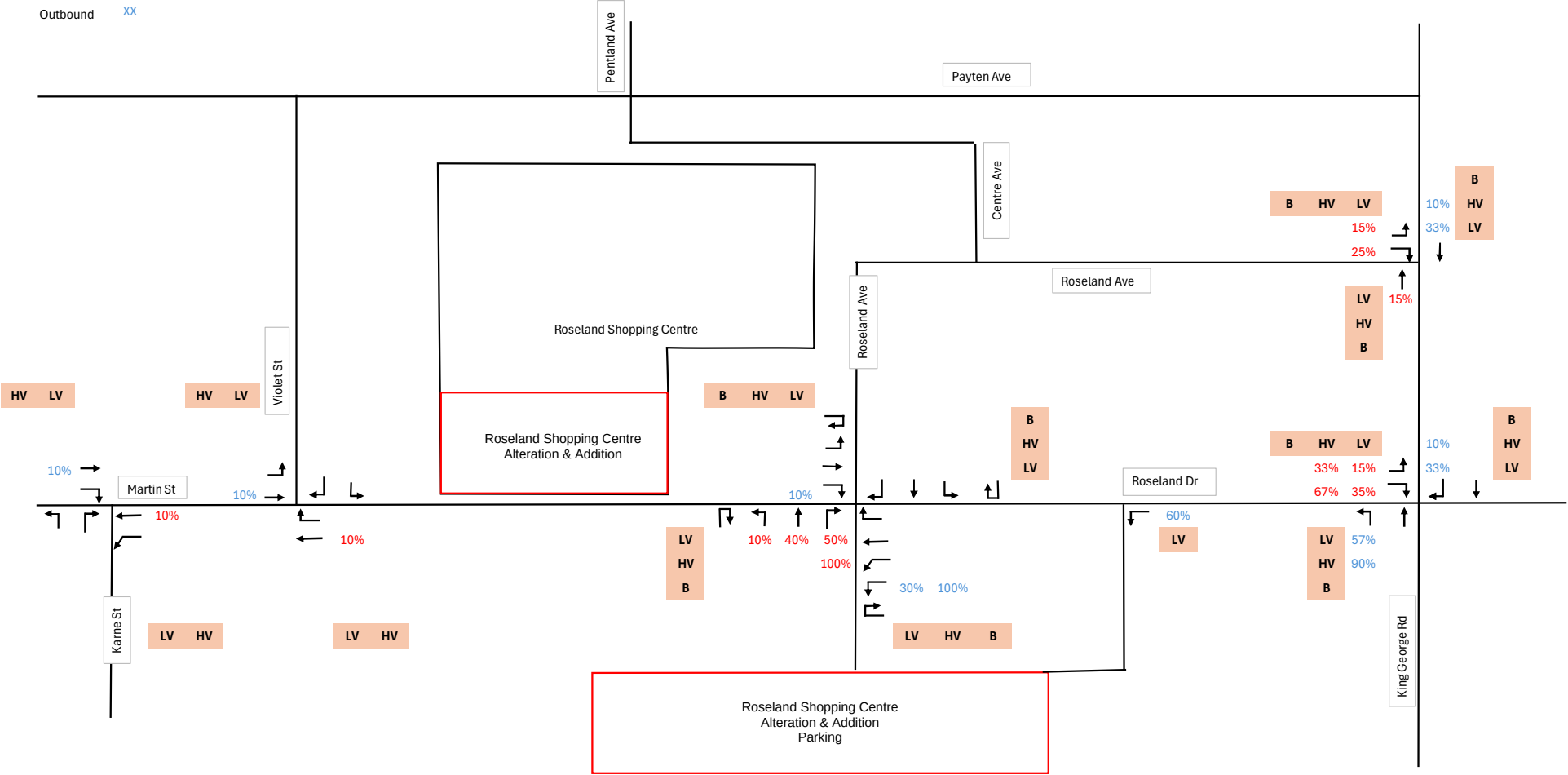


LEGEND

Inbound XX

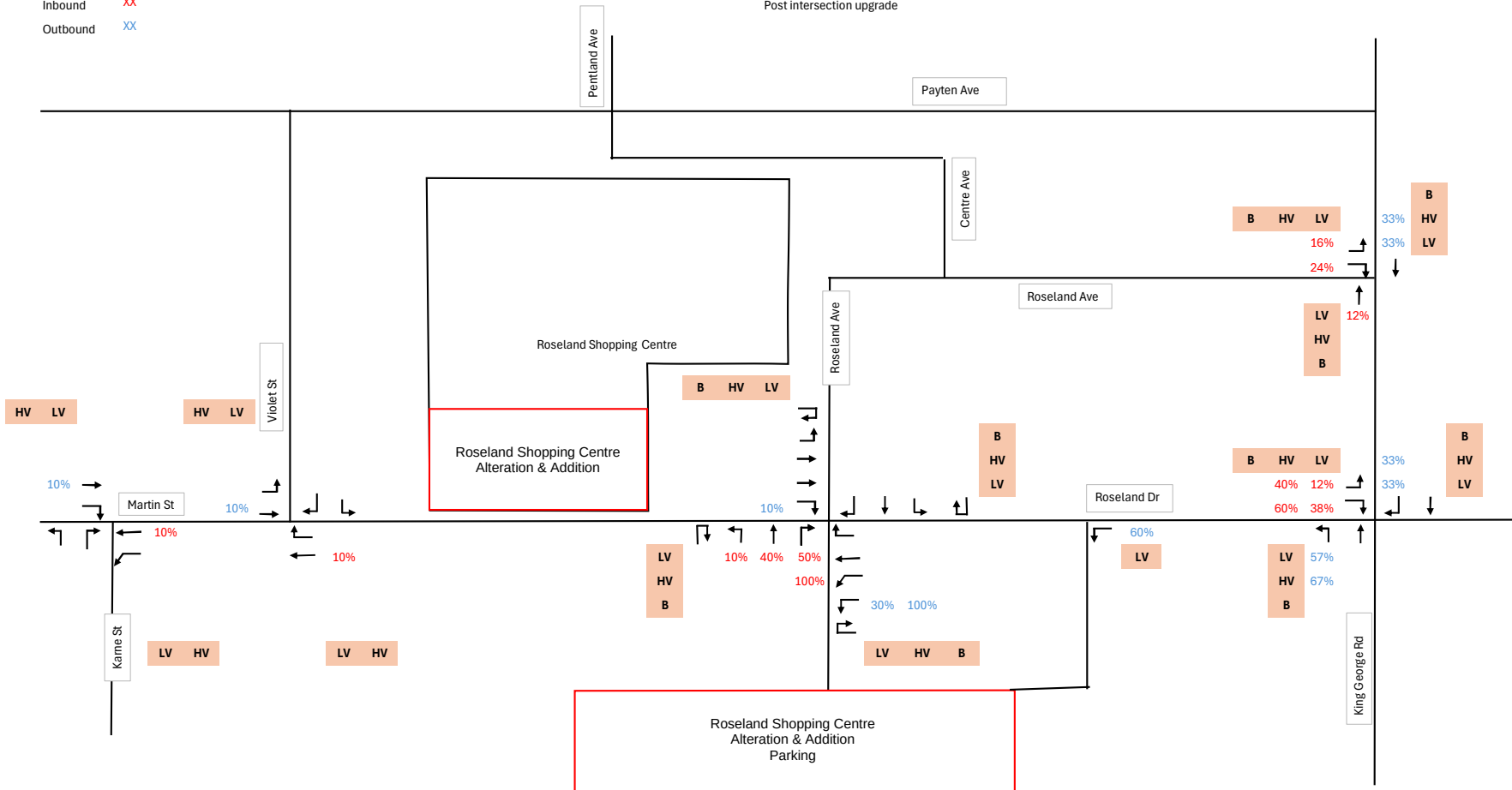
Outbound XX

Trip Distribution
16:45 to 17:45 Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade



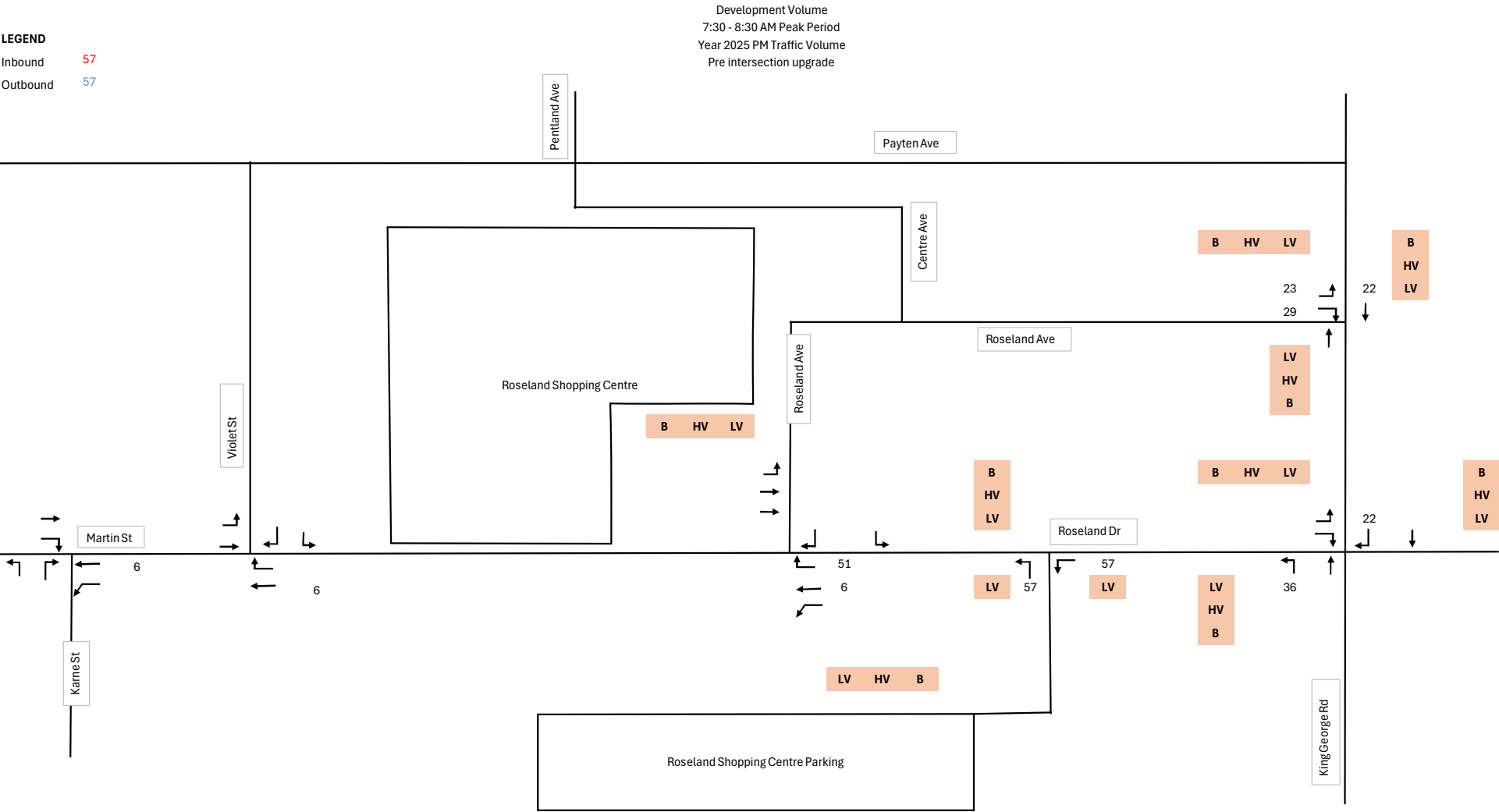
Trip Distributor
12:30 to 13:30 Weekend Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade

LEGEND
Inbound XX
Outbound XX



LEGEND

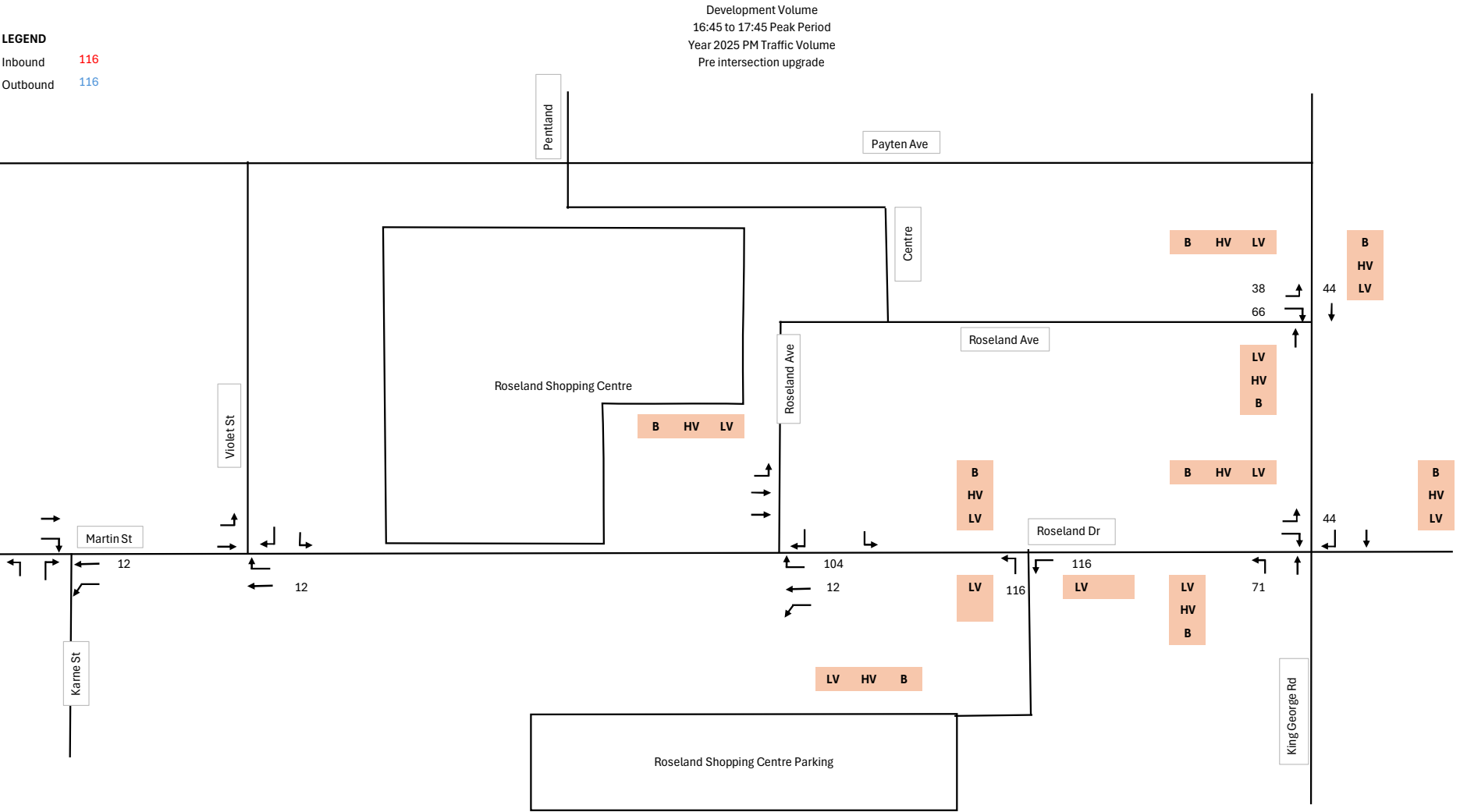
Inbound 57
Outbound 57



LEGEND

Inbound 116

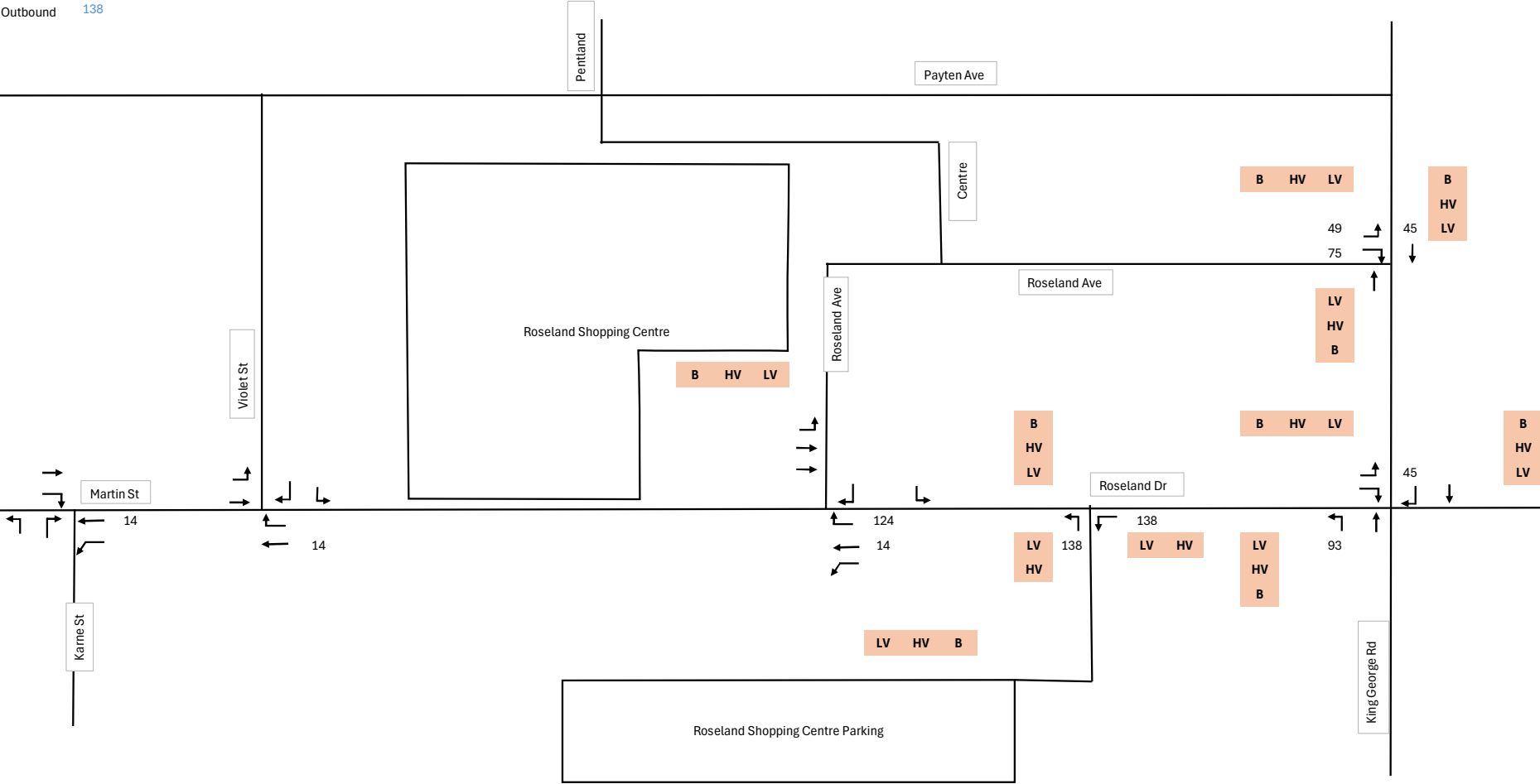
Outbound 116



LEGEND

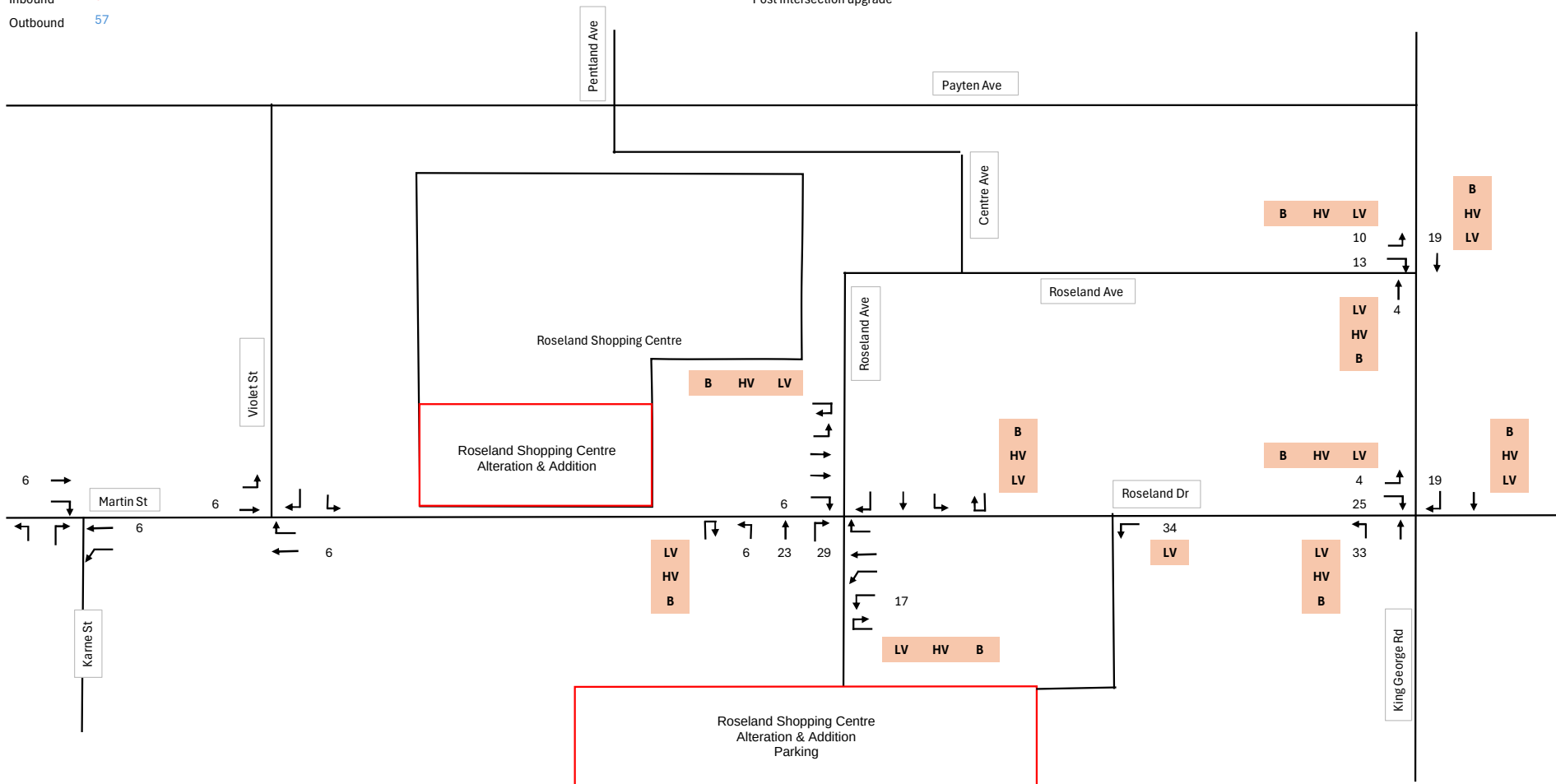
Inbound 138
Outbound 138

Development Volume
12:30 to 13:30 Weekend Peak Period
Year 2025 PM Traffic Volume
Pre intersection upgrade



Inbound	57
Outbound	57

Development Volume
7:30 - 8:30 AM Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade

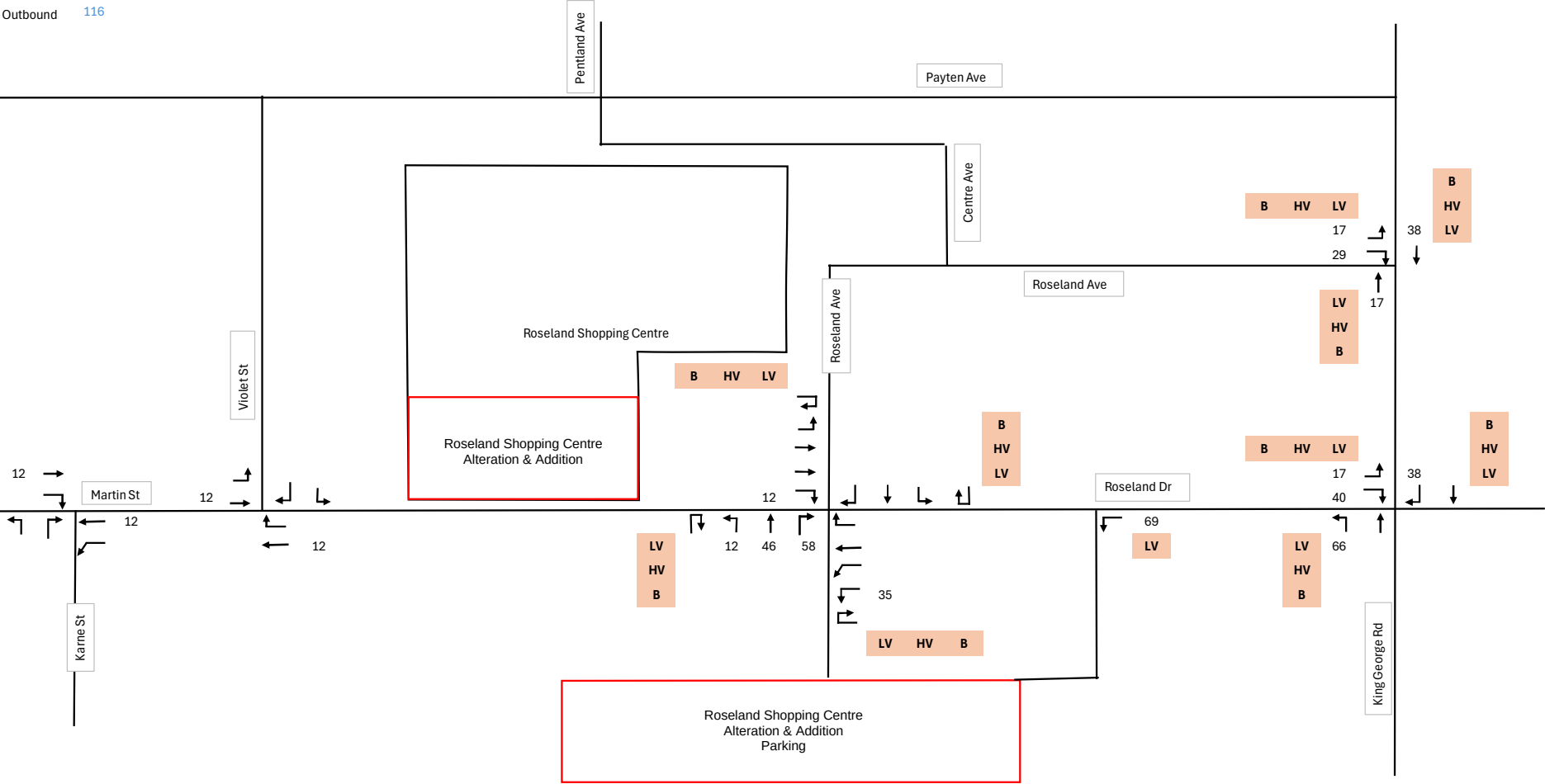


LEGEND

Inbound 116

Outbound 116

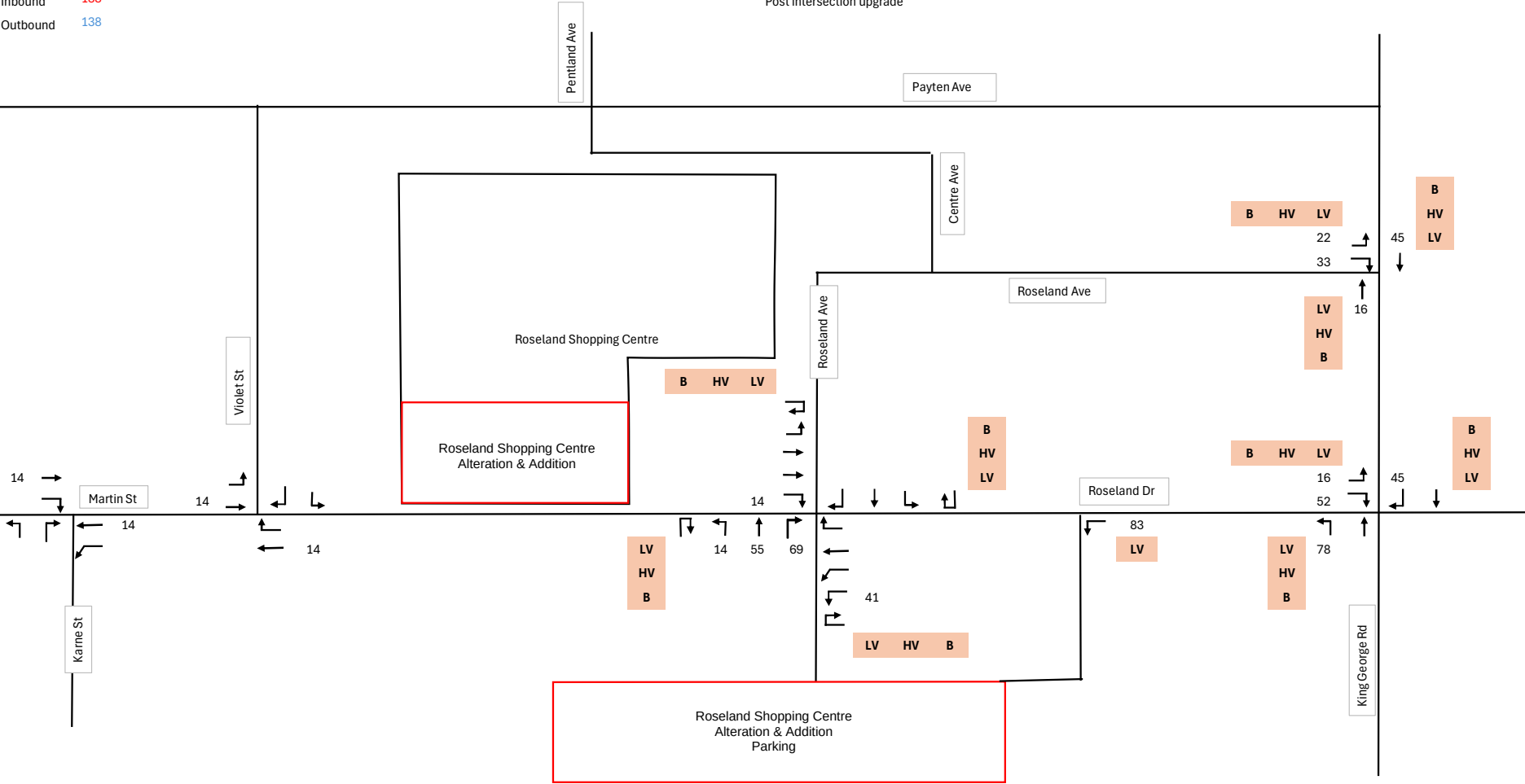
Development Volume
16:45 to 17:45 Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade



LEGEND

Inbound 138
Outbound 138

Development Volume
12:30 to 13:30 Weekend Peak Period
Year 2025 PM Traffic Volume
Post intersection upgrade



Appendix E Future Year Traffic Modelling

2030 Future Year Scenarios

Table 27: Summary of SIDRA Modelling Results

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
2030 Future Background Traffic (Existing Layout)					
King Georges Road & Roselands Avenue	AM	0.641	12.0	A	111.0
	PM	0.906	13.6	A	161.7
	Saturday	0.729	12.9	A	110
Roselands Drive & Roselands Avenue	AM	0.16	24	B	2.0
	PM	0.596	54.5	D	6.9
	Saturday	1.74	757	F	78.2
King Georges Road & Roselands Drive	AM	0.830	15.0	B	184.1
	PM	2.212	88.4	F	186.5
	Saturday	1.063	49.9	D	381.8
Violet Street & Martin Street	AM	0.258	9.4	A	1.8
	PM	0.367	9.8	A	5.1
	Saturday	0.380	9.8	A	5.4
Karne Street & Martin Street	AM	0.405	8.7	A	8.1
	PM	0.360	9.4	A	7.3
	Saturday	0.315	9	A	6
2030 Future Background Traffic + Development (post intersection upgrade)					
King Georges Road & Roselands Avenue	AM	0.642	12.3	A	111.3
	PM	1.060	18.4	B	212.9
	Saturday	0.944	16.4	B	107.2
Roselands Drive & Roselands Avenue	AM	0.358	10.7	A	6.3
	PM	0.493	12.2	A	9.7
	Saturday	0.766	17.2	B	29.5
King Georges Road & Roselands Drive	AM	0.832	16.5	B	196.3
	PM	2.420	108.5	F	197.9
	Saturday	1.072	59.8	E	408.1
	AM	0.258	9.5	A	1.8

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
Violet Street & Martin Street	PM	0.377	10.1	A	5.3
	Saturday	0.398	10.3	A	5.7
Karne Street & Martin Street	AM	0.411	8.7	A	8.3
	PM	0.368	9.4	A	7.5
	Saturday	0.334	9.2	A	6.5

The 2030 future + development traffic modelling key findings are detailed below:

- **King Georges Road / Roseland Avenue** – The increase in background traffic shows the intersection performs well. When compared with the + development traffic while there is a slight increase in LOS DOS the intersection has capacity and the intersection performance is considered acceptable.
- **Roseland Avenue / Roseland Drive** – The increase in background traffic shows the intersection performs at a, LOS D in the PM, and LOS F on Saturday. This is due to the 2% increase in background traffic. When compared with the + development traffic and intersection upgrade (single lane roundabout). There is a significant improvement to LOS this is considered a benefit for the wider road network.
King Georges Road / Roseland Drive – The increase in background traffic shows the intersection is at capacity by 2030 regardless of the proposed development. The largest queue is on the southern leg stretching back 381m.
- **Violet Street / Martin Street** – The intersection continues to operate satisfactorily under both 2030 future background and future background + development conditions, with LOS A maintained across all assessment periods. The proposed development results in only a negligible increase in DOS, delay and queue length, and therefore is not expected to materially affect the operation of the intersection.
- **Karne Street / Martin Street** – The intersection is expected to operate satisfactorily under both future background and future background + development conditions, maintaining LOS A across all assessment periods. The changes in DOS, delay and queue length associated with the proposed development are minor, indicating that the development is not expected to materially impact intersection performance.

2035 Future Year Scenarios

Table 28: Summary of SIDRA Modelling Results

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
2035 Future Background Traffic (Existing Layout)					
King Georges Road & Roselands Avenue	AM	0.696	13.0	A	130.3
	PM	1.028	16.8	B	213.5
	Saturday	1.110	20.9	B	140.3
Roselands Drive & Roselands Avenue	AM	0.2	28	B	2.5
	PM	0.8	88	F	11.0
	Saturday	2.328	1047	F	100
King Georges Road & Roselands Drive	AM	1.111	36.0	C	377.4
	PM	1.198	94.9	F	566.9
	Saturday	1.100	75.4	F	497.4
Violet Street & Martin Street	AM	0.282	10	A	2.1
	PM	0.421	10.7	A	6.4
	Saturday	0.432	10.1	A	6.6
Karne Street & Martin Street	AM	0.449	8.9	A	9.4
	PM	0.393	8.7	A	8.3
	Saturday	0.345	9.1	A	6.5
2035 Future Background Traffic + Development (post intersection upgrade)					
King Georges Road & Roselands Avenue	AM	0.716	13.3	A	127.2
	PM	1.160	23.9	B	276.0
	Saturday	1.256	30.5	C	146.7
Roselands Drive & Roselands Avenue	AM	0.392	10.9	A	7.1
	PM	0.541	12.5	A	11.5
	Saturday	0.842	20.2	B	41.6
King Georges Road & Roselands Drive	AM	1.069	38.8	C	389.3
	PM	2.743	127.3	F	224.6
	Saturday	1.143	94.1	F	552.2
Violet Street & Martin Street	AM	0.281	10.2	A	2.2
	PM	0.434	11.1	A	6.6

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
	Saturday	0.456	11.2	A	7.1
Karne Street & Martin Street	AM	0.455	8.9	A	9.6
	PM	0.398	9.7	A	8.4
	Saturday	0.360	9.3	A	7.1

The 2035 future + development traffic modelling key findings are detailed below:

- **King Georges Road / Roseland Avenue** – The increase in background traffic shows the intersection performs LOS A in Weekday AM, LOS B in Weekday PM, and LOS B on Saturday. When compared with the + development traffic there is minimal change in LOS DOS or delay. This is considered accurate as a maximum of 50 vehicles are existing via Roseland Avenue.
- **Roseland Avenue / Roseland Drive** – The increase in background traffic shows the existing intersection performs LOS C in Weekday AM, LOS F, in Weekday PM, and LOS F on Saturday. When compared with the + development traffic and proposed intersection upgrades (single-lane roundabout). There is a significant improvement in LOS DOS or delay this is a benefit for the wider road network.
- **King Georges Road / Roseland Drive** – The increase in background traffic shows the intersection performs LOS C in Weekday AM, LOS F in Weekday PM, and LOS F on Saturday. When compared with the + development traffic, the intersection is already saturated and therefore DOS or delay created by the development and majority of the impact is due to the increase traffic in the background.
- **Violet Street / Martin Street** – The intersection continues to operate satisfactorily under both 2035 future background and future background + development conditions, maintaining LOS A across all assessment periods. The changes in DOS, delay and queue length associated with the proposed development are minor, indicating that the development is not expected to materially affect the operation of the intersection.
- **Karne Street / Martin Street** – The intersection is expected to maintain LOS A across all assessment periods under both 2035 future background and future background + development conditions. The increases in DOS, delay and queue length are minor, indicating that the proposed development is not expected to materially impact the operation of the intersection.

Appendix F Modelling Result

MOVEMENT SUMMARY

 **Site: [7 (6)] Martin Street/ Karne Street** (2025 Baseline
(Saturday) + Dev (Pre upgrade))
Network: [3 (2)] Saturday (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	66	0.0	66	0.0	0.214	6.4	LOS A	0.5	3.4	0.44	0.63	50.8
3	R2	All MCs	155	0.7	155	0.7	0.214	8.9	LOS A	0.5	3.4	0.44	0.63	47.4
Approach			221	0.5	221	0.5	0.214	8.2	LOS A	0.5	3.4	0.44	0.63	48.9
East: Martin St														
4	L2	All MCs	162	2.6	157	2.5	0.296	4.4	LOS A	0.8	5.5	0.29	0.49	49.0
5	T1	All MCs	231	0.0	223	0.0	0.296	4.1	LOS A	0.8	5.5	0.29	0.49	49.9
Approach			393	1.1	380	1.0	0.296	4.2	LOS A	0.8	5.5	0.29	0.49	49.5
West: Martin St														
11	T1	All MCs	232	0.0	232	0.0	0.278	5.8	LOS A	0.7	4.9	0.41	0.56	48.9
12	R2	All MCs	79	0.0	79	0.0	0.278	8.5	LOS A	0.7	4.9	0.41	0.56	51.4
Approach			311	0.0	311	0.0	0.278	6.5	LOS A	0.7	4.9	0.41	0.56	49.9
All Vehicles			924	0.6	911	0.6	0.296	6.0	LOS A	0.8	5.5	0.37	0.55	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (5)] King Georges Road / Roseland Avenue (2025**
Baseline (Weekday AM) + Dev (Pre upgrade))

Network: [1 (2)] Weekday AM (2025 Baseline + Dev (Pre
Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2318	6.2	2318	6.2	*0.582	7.9	LOS A	12.6	93.2	0.51	0.47	50.4
Approach			2318	6.2	2318	6.2	0.582	7.9	LOS A	12.6	93.2	0.51	0.47	50.4
North: King Georges Road														
8	T1	All MCs	2026	9.0	2026	9.0	0.523	7.3	LOS A	10.3	77.6	0.47	0.43	48.5
Approach			2026	9.0	2026	9.0	0.523	7.3	LOS A	10.3	77.6	0.47	0.43	48.5
West: Roseland Avenue														
10	L2	All MCs	169	5.6	169	5.6	0.454	60.9	LOS E	3.0	21.8	0.98	0.77	21.5
12	R2	All MCs	219	7.2	219	7.2	*0.595	62.1	LOS E	3.9	29.1	1.00	1.01	4.6
Approach			388	6.5	388	6.5	0.595	61.6	LOS E	3.9	29.1	0.99	1.00	13.6
All Vehicles			4733	7.4	4733	7.4	0.595	12.0	LOS A	12.6	93.2	0.53	0.48	44.6

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY

▼ **Site: [3 (5)] Roseland Drive / Roseland Avenue** (2025 Baseline
(Weekday AM) + Dev (Pre upgrade))

Network: [1 (2)] Weekday AM (2025 Baseline + Dev (Pre
Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)

Weekday AM

7:30 - 8:30 AM Peak Period

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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
East: Roseland Drive														
4a	L1	All MCs	60	0.0	60	0.0	0.144	5.0	LOS A	0.0	0.0	0.00	0.17	0.00
5	T1	All MCs	218	1.0	218	1.0	0.144	0.3	LOS A	0.0	0.0	0.00	0.17	0.00
6	R2	All MCs	167	13.8	167	13.8	0.165	6.1	LOS A	0.3	2.1	0.38	0.59	0.38
Approach			445	5.7	445	5.7	0.165	3.1	NA	0.3	2.1	0.14	0.33	0.14
North: Roseland Avenue														
7	L2	All MCs	12	0.0	12	0.0	0.010	5.0	LOS A	0.0	0.1	0.22	0.50	0.22
9a	R1	All MCs	1	100.0	1	100.0	0.146	42.2	LOS C	0.2	1.8	0.78	0.89	0.78
9	R2	All MCs	25	41.7	25	41.7	0.146	23.3	LOS B	0.2	1.8	0.78	0.89	0.78
Approach			38	30.6	38	30.6	0.146	18.2	LOS B	0.2	1.8	0.61	0.77	0.61
West: Roseland Drive														
10	L2	All MCs	151	8.4	151	8.4	0.085	4.4	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	261	2.8	261	2.8	0.070	0.0	LOS A	0.0	0.1	0.01	0.00	0.01
12b	R3	All MCs	1	100.0	1	100.0	0.070	8.3	LOS A	0.0	0.1	0.01	0.01	0.01
Approach			413	5.1	413	5.1	0.085	1.7	NA	0.0	0.1	0.00	0.17	0.00
All Vehicles			896	6.5	896	6.5	0.165	3.1	NA	0.3	2.1	0.10	0.27	0.10

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 **Site: [1 (5)] King Georges Road / Roselands Drive** (2025 Baseline (Weekday AM) + Dev (Pre upgrade))

Network: [1 (2)] Weekday AM (2025 Baseline + Dev (Pre Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
1	L2	All MCs	273	3.9	273	3.9	0.697	5.8	LOS A	0.3	2.3	0.00	0.17	0.00
2	T1	All MCs	2303	6.0	2303	6.0	*0.697	13.6	LOS A	21.0	154.5	0.56	0.56	0.56
Approach			2576	5.8	2576	5.8	0.697	12.8	LOS A	21.0	154.5	0.50	0.52	0.50
North: King Georges Road														
8	T1	All MCs	2013	9.2	2013	9.2	0.514	7.4	LOS A	10.2	77.1	0.47	0.43	0.47
9	R2	All MCs	171	6.8	171	6.8	*0.688	50.8	LOS D	5.7	37.8	1.00	1.15	1.06
Approach			2183	9.0	2183	9.0	0.688	10.8	LOS A	10.2	77.1	0.51	0.49	0.52
West: Roselands Drive														
10	L2	All MCs	38	0.0	38	0.0	0.439	55.5	LOS D	4.5	32.0	0.94	0.79	0.94
12	R2	All MCs	240	3.9	240	3.9	*0.439	52.4	LOS D	4.6	33.3	0.94	0.79	0.94
Approach			278	3.4	278	3.4	0.439	52.8	LOS D	4.6	33.3	0.94	0.79	0.94
All Vehicles			5037	7.0	5037	7.0	0.697	14.1	LOS A	21.0	154.5	0.53	0.52	0.53

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Queued	Eff. Stop Rate	Travel Time	Travel Dist.
		ped/h	sec		[Ped]	[Dist]			sec	m
					ped	m				m/sec
North: King Georges Road										
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0
West: Roselands Drive										
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0

All Pedestrians	105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY


Site: [6 (4)] Martin Street/ Violet Street (2025 Baseline (Weekday AM) + Dev (Pre upgrade))
Network: [1 (2)] Weekday AM (2025 Baseline + Dev (Pre Upgrade))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	156	4.7	156	4.7	0.130	1.0	LOS A	0.2	1.4	0.28	0.32	53.0
6	R2	All MCs	43	22.0	43	22.0	0.130	8.1	LOS A	0.2	1.4	0.28	0.32	52.7
Approach			199	8.5	199	8.5	0.130	2.5	NA	0.2	1.4	0.28	0.32	52.9
North: Violet Street														
7	L2	All MCs	58	16.4	58	16.4	0.143	7.6	LOS A	0.2	1.6	0.49	0.73	47.5
9	R2	All MCs	58	1.8	58	1.8	0.143	8.8	LOS A	0.2	1.6	0.49	0.73	47.5
Approach			116	9.1	116	9.1	0.143	8.2	LOS A	0.2	1.6	0.49	0.73	47.5
West: Martin Street														
10	L2	All MCs	55	1.9	55	1.9	0.231	4.3	LOS A	0.0	0.0	0.00	0.07	54.7
11	T1	All MCs	388	1.6	388	1.6	0.231	0.0	LOS A	0.0	0.0	0.00	0.07	53.2
Approach			443	1.7	443	1.7	0.231	0.5	NA	0.0	0.0	0.00	0.07	54.0
All Vehicles			758	4.6	758	4.6	0.231	2.2	NA	0.2	1.6	0.15	0.24	51.4

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

MOVEMENT SUMMARY

 **Site: [7 (4)] Martin Street/ Karne Street** (2025 Baseline
(Weekday AM) + Dev (Pre upgrade))
Network: [1 (2)] Weekday AM (2025 Baseline + Dev (Pre
Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	63	5.0	63	5.0	0.185	5.9	LOS A	0.4	3.0	0.34	0.61	50.8
3	R2	All MCs	144	2.9	144	2.9	0.185	8.4	LOS A	0.4	3.0	0.34	0.61	47.8
Approach			207	3.6	207	3.6	0.185	7.6	LOS A	0.4	3.0	0.34	0.61	49.2
East: Martin St														
4	L2	All MCs	82	9.0	82	9.0	0.187	4.6	LOS A	0.4	3.1	0.32	0.50	48.4
5	T1	All MCs	133	0.8	133	0.8	0.187	4.3	LOS A	0.4	3.1	0.32	0.50	49.8
Approach			215	3.9	215	3.9	0.187	4.4	LOS A	0.4	3.1	0.32	0.50	49.2
West: Martin St														
11	T1	All MCs	304	2.4	304	2.4	0.363	5.9	LOS A	1.0	7.0	0.42	0.56	48.8
12	R2	All MCs	112	1.9	112	1.9	0.363	8.6	LOS A	1.0	7.0	0.42	0.56	51.3
Approach			416	2.3	416	2.3	0.363	6.6	LOS A	1.0	7.0	0.42	0.56	49.8
All Vehicles			838	3.0	838	3.0	0.363	6.3	LOS A	1.0	7.0	0.37	0.56	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (6)] King Georges Road / Roseland Avenue (2025**
Baseline (Weekday PM) + Dev (Pre upgrade))

Network: [2 (2)] Weekday PM (2025 Baseline + Dev (Pre
Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre Intersection upgrade)
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop 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: King Georges Road														
2	T1	All MCs	2305	5.5	2305	5.5	*0.576	7.8	LOS A	12.5	91.4	0.50	0.46	50.5
Approach			2305	5.5	2305	5.5	0.576	7.8	LOS A	12.5	91.4	0.50	0.46	50.5
North: King Georges Road														
8	T1	All MCs	1767	3.9	1767	3.9	0.434	6.6	LOS A	8.1	58.6	0.42	0.38	49.4
Approach			1767	3.9	1767	3.9	0.434	6.6	LOS A	8.1	58.6	0.42	0.38	49.4
West: Roseland Avenue														
10	L2	All MCs	183	8.0	183	8.0	0.500	61.4	LOS E	3.2	24.2	0.99	0.78	21.4
12	R2	All MCs	300	3.5	300	3.5	*0.789	66.7	LOS E	5.7	41.2	1.00	0.90	4.3
Approach			483	5.2	483	5.2	0.789	64.7	LOS E	5.7	41.2	1.00	0.86	12.1
All Vehicles			4556	4.9	4556	4.9	0.789	13.4	LOS A	12.5	91.4	0.52	0.47	43.2

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic Modelling\05.sipx

MOVEMENT SUMMARY

▼ Site: [3 (7)] Roseland Drive / Roseland Avenue (2025
Baseline (Weekday PM) + Dev (Pre upgrade))

Network: [2 (2)] Weekday PM (2025 Baseline + Dev (Pre
Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre Intersection upgrade)
Weekday PM
16:45 to 17:45 Peak Period
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
East: Roseland Drive														
4a	L1	All MCs	146	0.0	146	0.0	0.292	5.1	LOS A	0.0	0.0	0.00	0.20	0.00
5	T1	All MCs	415	1.5	415	1.5	0.292	0.3	LOS A	0.0	0.0	0.00	0.20	0.00
6	R2	All MCs	346	7.0	346	7.0	0.360	7.1	LOS A	0.8	5.6	0.49	0.69	0.54
Approach			907	3.4	907	3.4	0.360	3.7	NA	0.8	5.6	0.19	0.39	0.21
North: Roseland Avenue														
7	L2	All MCs	27	7.7	27	7.7	0.025	5.4	LOS A	0.0	0.3	0.27	0.52	0.27
9a	R1	All MCs	1 100.		1 100.		0.799	298.0	LOS F	1.2	9.7	0.98	1.25	1.85
			0		0									
9	R2	All MCs	56	18.9	56	18.9	0.799	99.5	LOS F	1.2	9.7	0.98	1.25	1.85
Approach			84	16.2	84	16.2	0.799	71.4	LOS F	1.2	9.7	0.75	1.01	1.34
West: Roseland Drive														
10	L2	All MCs	160	9.2	160	9.2	0.090	4.5	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	354	0.6	354	0.6	0.093	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1 100.		1 100.		0.093	11.9	LOS A	0.0	0.1	0.02	0.02	0.02
			0		0									
Approach			515	3.5	515	3.5	0.093	1.4	NA	0.0	0.1	0.01	0.15	0.01
All Vehicles			1506	4.1	1506	4.1	0.799	6.7	NA	1.2	9.7	0.16	0.34	0.20

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: [1 (6)] King Georges Road / Roselands Drive (2025 Baseline (Weekday PM) + Dev (Pre upgrade))

Network: [2 (2)] Weekday PM (2025 Baseline + Dev (Pre Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre Intersection upgrade)
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
South: King Georges Road														
1	L2	All MCs	559	3.2	559	3.2	0.880	4.8	LOS A	0.8	5.7	0.00	0.28	50.7
2	T1	All MCs	2244	5.5	2244	5.5	* 0.880	28.2	LOS B	31.6	231.3	0.79	0.82	31.1
Approach			2803	5.0	2803	5.0	0.880	23.5	LOS B	31.6	231.3	0.63	0.71	33.7
North: King Georges Road														
8	T1	All MCs	1639	4.1	1639	4.1	0.399	6.5	LOS A	7.3	53.0	0.41	0.37	51.9
9	R2	All MCs	351	3.6	351	3.6	* 0.881	65.0	LOS E	11.8	75.4	1.00	1.30	7.4
Approach			1989	4.0	1989	4.0	0.881	16.8	LOS B	11.8	75.4	0.52	0.54	38.6
West: Roselands Drive														
10	L2	All MCs	115	0.9	115	0.9	0.602	57.0	LOS E	6.1	43.2	0.98	0.81	17.0
12	R2	All MCs	265	0.8	265	0.8	* 0.602	54.0	LOS D	6.7	47.3	0.97	0.82	28.1
Approach			380	0.8	380	0.8	0.602	54.9	LOS D	6.7	47.3	0.98	0.82	25.4
All Vehicles			5173	4.3	5173	4.3	0.881	23.3	LOS B	31.6	231.3	0.61	0.65	34.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Queued	Eff. Stop Rate	Travel Time	Travel Dist.
					[Ped]	[Dist]				
		ped/h	sec		ped	m			sec	m
North: King Georges Road										
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0
West: Roselands Drive										
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0

All Pedestrians	105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY

Site: [6 (5)] Martin Street/ Violet Street (2025 Baseline (Weekday PM) + Dev (Pre upgrade))
Network: [2 (2)] Weekday PM (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	281	3.4	281	3.4	0.188	0.4	LOS A	0.2	1.3	0.16	0.18	56.0
6	R2	All MCs	41	23.1	41	23.1	0.188	7.5	LOS A	0.2	1.3	0.16	0.18	53.6
Approach			322	5.9	322	5.9	0.188	1.3	NA	0.2	1.3	0.16	0.18	55.3
North: Violet Street														
7	L2	All MCs	63	20.0	63	20.0	0.335	7.6	LOS A	0.6	4.4	0.55	0.79	46.3
9	R2	All MCs	193	0.0	193	0.0	0.335	9.7	LOS A	0.6	4.4	0.55	0.79	46.3
Approach			256	4.9	256	4.9	0.335	9.2	LOS A	0.6	4.4	0.55	0.79	46.3
West: Martin Street														
10	L2	All MCs	59	0.0	59	0.0	0.175	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	277	1.1	277	1.1	0.175	0.0	LOS A	0.0	0.0	0.00	0.10	50.8
Approach			336	0.9	336	0.9	0.175	0.8	NA	0.0	0.0	0.00	0.10	53.1
All Vehicles			914	3.8	914	3.8	0.335	3.3	NA	0.6	4.4	0.21	0.32	50.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (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: [7 (5)] Martin Street/ Karne Street** (2025 Baseline
(Weekday PM) + Dev (Pre upgrade))

Network: [2 (2)] Weekday PM (2025 Baseline + Dev (Pre
Upgrade))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site

Site Category: (None)

Roundabout

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	96	2.2	96	2.2	0.260	6.9	LOS A	0.6	4.3	0.51	0.64	50.6
3	R2	All MCs	156	3.4	156	3.4	0.260	9.4	LOS A	0.6	4.3	0.51	0.64	47.2
Approach			252	2.9	252	2.9	0.260	8.5	LOS A	0.6	4.3	0.51	0.64	49.0
East: Martin St														
4	L2	All MCs	202	3.6	202	3.6	0.369	4.5	LOS A	1.1	7.5	0.32	0.49	48.8
5	T1	All MCs	273	0.8	273	0.8	0.369	4.2	LOS A	1.1	7.5	0.32	0.49	49.8
Approach			475	2.0	475	2.0	0.369	4.3	LOS A	1.1	7.5	0.32	0.49	49.3
West: Martin St														
11	T1	All MCs	188	0.0	188	0.0	0.246	5.8	LOS A	0.6	4.2	0.40	0.57	48.7
12	R2	All MCs	82	0.0	82	0.0	0.246	8.5	LOS A	0.6	4.2	0.40	0.57	51.3
Approach			271	0.0	271	0.0	0.246	6.6	LOS A	0.6	4.2	0.40	0.57	49.9
All Vehicles			997	1.7	997	1.7	0.369	6.0	LOS A	1.1	7.5	0.39	0.55	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 **Site: [2 (7)] King Georges Road / Roseland Avenue (2025**
Baseline (Saturday) + Dev (Pre upgrade))
Network: [3 (2)] Saturday (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]		[Total HV]					[Veh.]					
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h	
South: King Georges Road															
2	T1	All MCs	2408	3.1	2408	3.1	* 0.588	7.9	LOS A	13.3	95.2	0.51	0.47	0.51	50.3
Approach			2408	3.1	2408	3.1	0.588	7.9	LOS A	13.3	95.2	0.51	0.47	0.51	50.3
North: King Georges Road															
8	T1	All MCs	2078	3.5	2078	3.5	0.509	7.2	LOS A	10.4	74.7	0.46	0.42	0.46	48.7
Approach			2078	3.5	2078	3.5	0.509	7.2	LOS A	10.4	74.7	0.46	0.42	0.46	48.7
West: Roseland Avenue															
10	L2	All MCs	219	2.9	219	2.9	0.575	61.8	LOS E	3.9	27.9	1.00	0.79	1.00	21.4
12	R2	All MCs	331	2.2	331	2.2	* 0.862	71.1	LOS F	6.6	47.0	1.00	0.96	1.30	4.0
Approach			549	2.5	549	2.5	0.862	67.4	LOS E	6.6	47.0	1.00	0.89	1.18	12.1
All Vehicles			5036	3.2	5036	3.2	0.862	14.1	LOS A	13.3	95.2	0.54	0.50	0.56	42.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY

▼ **Site: [3 (8)] Roseland Drive / Roseland Avenue (2025**
Baseline (Saturday) + Dev (Pre upgrade))
Network: [3 (2)] Saturday (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h
East: Roseland Drive														
4a	L1	All MCs	293	0.0	293	0.0	0.325	5.3	LOS A	0.0	0.0	0.00	0.34	0.00
5	T1	All MCs	335	0.0	335	0.0	0.325	0.6	LOS A	0.0	0.0	0.00	0.34	0.00
6	R2	All MCs	386	3.8	386	3.8	0.514	10.5	LOS A	1.4	9.9	0.66	0.96	1.01
Approach			1014	1.5	1014	1.5	0.514	5.7	NA	1.4	9.9	0.25	0.58	0.38
North: Roseland Avenue														
7	L2	All MCs	43	2.4	43	2.4	0.044	5.9	LOS A	0.1	0.4	0.36	0.57	0.36
9a	R1	All MCs	1 100.		1 100.		1.678	817.6	LOS F	8.6	68.4	1.00	2.63	6.80
			0		0									
9	R2	All MCs	74	14.3	74	14.3	1.678	710.1	LOS F	8.6	68.4	1.00	2.63	6.80
Approach			118	10.7	118	10.7	1.678	453.3	LOS F	8.6	68.4	0.76	1.88	4.44
West: Roseland Drive														
10	L2	All MCs	183	5.2	183	5.2	0.101	4.4	LOS A	0.0	0.0	0.00	0.47	0.00
11	T1	All MCs	580	0.5	580	0.5	0.151	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1 100.		1 100.		0.151	11.6	LOS A	0.0	0.1	0.01	0.01	0.01
			0		0									
Approach			764	1.8	764	1.8	0.151	1.1	NA	0.0	0.1	0.00	0.12	0.00
All Vehicles			1896	2.2	1896	2.2	1.678	31.7	NA	8.6	68.4	0.18	0.47	0.48

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [1 (7)] King Georges Road / Roselands Drive** (2025
Baseline (Saturday) + Dev (Pre upgrade))
Network: [3 (2)] Saturday (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Pre intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop. Qued		Eff. Stop 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: King Georges Road														
1	L2	All MCs	699	1.1	699	1.1	0.909	5.9	LOS A	1.1	7.8	0.00	0.36	53.6
2	T1	All MCs	2281	3.2	2281	3.2	* 0.909	33.3	LOS C	35.7	256.6	0.84	0.90	28.9
Approach			2980	2.7	2980	2.7	0.909	26.8	LOS B	35.7	256.6	0.64	0.77	32.4
North: King Georges Road														
8	T1	All MCs	1918	3.7	1918	3.7	0.475	7.8	LOS A	9.7	69.9	0.47	0.42	50.6
9	R2	All MCs	339	2.2	339	2.2	* 0.908	71.3	LOS F	12.0	85.6	1.00	1.31	7.1
Approach			2257	3.5	2257	3.5	0.908	17.3	LOS B	12.0	85.6	0.55	0.59	39.1
West: Roselands Drive														
10	L2	All MCs	149	1.4	149	1.4	0.908	73.0	LOS F	12.5	88.3	1.00	1.04	14.4
12	R2	All MCs	477	0.9	477	0.9	* 0.908	70.1	LOS E	13.5	95.3	1.00	1.04	24.6
Approach			626	1.0	626	1.0	0.908	70.8	LOS F	13.5	95.3	1.00	1.04	22.7
All Vehicles			5863	2.8	5863	2.8	0.909	27.9	LOS B	35.7	256.6	0.65	0.72	32.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

Site: [6 (6)] Martin Street/ Violet Street (2025 Baseline
(Saturday) + Dev (Pre upgrade))
Network: [3 (2)] Saturday (2025 Baseline + Dev (Pre Upgrade))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	193	1.6	180	1.6	0.127	0.5	LOS A	0.1	1.0	0.19	0.22	55.1
6	R2	All MCs	35	21.2	32	21.0	0.127	7.7	LOS A	0.1	1.0	0.19	0.22	53.5
Approach			227	4.6	212	4.6	0.127	1.6	NA	0.1	1.0	0.19	0.22	54.6
North: Violet Street														
7	L2	All MCs	65	14.5	65	14.5	0.331	7.6	LOS A	0.6	4.3	0.53	0.78	46.8
9	R2	All MCs	203	0.5	203	0.5	0.331	9.1	LOS A	0.6	4.3	0.53	0.78	46.8
Approach			268	3.9	268	3.9	0.331	8.7	LOS A	0.6	4.3	0.53	0.78	46.8
West: Martin Street														
10	L2	All MCs	85	0.0	85	0.0	0.202	4.3	LOS A	0.0	0.0	0.00	0.13	54.2
11	T1	All MCs	304	0.3	304	0.3	0.202	0.0	LOS A	0.0	0.0	0.00	0.13	49.0
Approach			389	0.3	389	0.3	0.202	1.0	NA	0.0	0.0	0.00	0.13	52.5
All Vehicles			885	2.5	870	2.5	0.331	3.5	NA	0.6	4.3	0.21	0.35	50.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7 (9)] Martin Street/ Karne Street** (2025 Baseline
(Saturday) + Dev (Post Upgrd))
Network: [4] Saturday (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. 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: Karne St														
1	L2	All MCs	66	0.0	66	0.0	0.216	6.5	LOS A	0.5	3.4	0.45	0.63	50.8
3	R2	All MCs	155	0.7	155	0.7	0.216	9.0	LOS A	0.5	3.4	0.45	0.63	47.3
Approach			221	0.5	221	0.5	0.216	8.2	LOS A	0.5	3.4	0.45	0.63	48.9
East: Martin St														
4	L2	All MCs	162	2.6	162	2.6	0.306	4.4	LOS A	0.8	5.7	0.29	0.49	49.0
5	T1	All MCs	231	0.0	231	0.0	0.306	4.1	LOS A	0.8	5.7	0.29	0.49	49.9
Approach			393	1.1	393	1.1	0.306	4.2	LOS A	0.8	5.7	0.29	0.49	49.5
West: Martin St														
11	T1	All MCs	246	0.0	246	0.0	0.290	5.8	LOS A	0.7	5.2	0.41	0.56	48.9
12	R2	All MCs	79	0.0	79	0.0	0.290	8.5	LOS A	0.7	5.2	0.41	0.56	51.4
Approach			325	0.0	325	0.0	0.290	6.5	LOS A	0.7	5.2	0.41	0.56	49.8
All Vehicles			939	0.6	939	0.6	0.306	6.0	LOS A	0.8	5.7	0.37	0.55	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [3 (25)] Roseland Drive / Roseland Avenue (2025**
Baseline (Weekday AM) + Dev (Post Upgrd))
Network: [5] Weekday AM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Roundabout
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	Aver. Back	Of Queue	Prop. Qued	Eff. Stop	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: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.053	4.8	LOS A	0.1	0.7	0.43	0.58	0.43	44.9
1	L2	All MCs	6	0.0	6	0.0	0.053	4.6	LOS A	0.1	0.7	0.43	0.58	0.43	42.3
2	T1	All MCs	24	0.0	24	0.0	0.053	4.5	LOS A	0.1	0.7	0.43	0.58	0.43	45.3
3	R2	All MCs	31	0.0	31	0.0	0.053	8.6	LOS A	0.1	0.7	0.43	0.58	0.43	42.3
Approach			62	0.0	62	0.0	0.053	6.5	LOS A	0.1	0.7	0.43	0.58	0.43	44.0
East: Roseland Drive															
4	L2	All MCs	18	0.0	18	0.0	0.265	3.3	LOS A	0.5	3.8	0.14	0.44	0.14	45.9
4a	L1	All MCs	60	0.0	60	0.0	0.265	2.9	LOS A	0.5	3.8	0.14	0.44	0.14	46.1
5	T1	All MCs	212	1.0	212	1.0	0.265	3.2	LOS A	0.5	3.8	0.14	0.44	0.14	43.1
6	R2	All MCs	114	20.4	114	20.4	0.265	7.5	LOS A	0.5	3.8	0.14	0.44	0.14	45.4
Approach			403	6.3	403	6.3	0.265	4.4	LOS A	0.5	3.8	0.14	0.44	0.14	44.8
North: Roseland Avenue															
7	L2	All MCs	12	0.0	12	0.0	0.042	4.3	LOS A	0.1	0.6	0.42	0.59	0.42	42.2
8	T1	All MCs	1	0.0	1	0.0	0.042	4.3	LOS A	0.1	0.6	0.42	0.59	0.42	45.2
9a	R1	All MCs	1	0.0	1	0.0	0.042	7.4	LOS A	0.1	0.6	0.42	0.59	0.42	44.7
9	R2	All MCs	25	41.7	25	41.7	0.042	9.1	LOS A	0.1	0.6	0.42	0.59	0.42	42.2
Approach			39	27.0	39	27.0	0.042	7.5	LOS A	0.1	0.6	0.42	0.59	0.42	42.5
West: Roseland Drive															
10	L2	All MCs	151	8.4	151	8.4	0.320	3.5	LOS A	0.7	5.4	0.35	0.43	0.35	45.4
11	T1	All MCs	261	2.8	261	2.8	0.320	4.0	LOS A	0.7	5.4	0.35	0.43	0.35	40.9
12	R2	All MCs	6	0.0	6	0.0	0.320	8.0	LOS A	0.7	5.4	0.35	0.43	0.35	44.9
12b	R3	All MCs	2	50.0	2	50.0	0.320	10.5	LOS A	0.7	5.4	0.35	0.43	0.35	46.4
Approach			420	5.0	420	5.0	0.320	3.9	LOS A	0.7	5.4	0.35	0.43	0.35	43.6
All Vehicles			924	6.2	924	6.2	0.320	4.5	LOS A	0.7	5.4	0.27	0.45	0.27	44.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

 **Site: [2 (8)] King Georges Road / Roseland Avenue (2025**
Baseline (Weekday AM) + Dev (Post Upgrd))
Network: [5] Weekday AM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Weekday AM
7:30 to 8:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
2	T1	All MCs	2322	6.2	2322	6.2	*0.583	7.9	LOS A	12.7	93.5	0.51	0.47	50.4
Approach			2322	6.2	2322	6.2	0.583	7.9	LOS A	12.7	93.5	0.51	0.47	50.4
North: King Georges Road														
8	T1	All MCs	2023	9.1	2023	9.1	0.522	7.3	LOS A	10.3	77.4	0.47	0.43	48.5
Approach			2023	9.1	2023	9.1	0.522	7.3	LOS A	10.3	77.4	0.47	0.43	48.5
West: Roseland Avenue														
10	L2	All MCs	156	6.1	156	6.1	0.419	60.7	LOS E	2.7	20.0	0.98	0.77	21.6
12	R2	All MCs	202	7.8	202	7.8	*0.552	61.7	LOS E	3.6	26.8	0.99	0.79	4.6
Approach			358	7.1	358	7.1	0.552	61.3	LOS E	3.6	26.8	0.99	0.78	13.6
All Vehicles			4703	7.5	4703	7.5	0.583	11.7	LOS A	12.7	93.5	0.53	0.47	44.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY

 **Site: [1 (8)] King Georges Road / Roselands Drive** (2025
Baseline (Weekday AM) + Dev (Post Upgrd))
Network: [5] Weekday AM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Weekday AM
7:30 to 8:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop. Qued			Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh]	Dist]				km/h
			veh/h	%	veh/h	%	v/c	sec			m				
South: King Georges Road															
1	L2	All MCs	269	3.9	269	3.9	0.694	5.9	LOS A	0.3	2.2	0.00	0.17	0.00	56.8
2	T1	All MCs	2293	5.6	2293	5.6	*0.694	13.7	LOS A	20.9	153.1	0.56	0.56	0.56	41.4
Approach			2562	5.4	2562	5.4	0.694	12.8	LOS A	20.9	153.1	0.50	0.52	0.50	42.7
North: King Georges Road															
8	T1	All MCs	2013	9.2	2013	9.2	0.514	7.4	LOS A	10.2	77.1	0.47	0.43	0.47	50.9
9	R2	All MCs	171	8.6	171	8.6	*0.688	50.8	LOS D	5.7	42.9	1.00	1.15	1.07	9.5
Approach			2183	9.1	2183	9.1	0.688	10.8	LOS A	10.2	77.1	0.51	0.49	0.52	46.2
West: Roselands Drive															
10	L2	All MCs	42	0.0	42	0.0	0.485	56.1	LOS D	5.0	35.7	0.95	0.80	0.95	17.7
12	R2	All MCs	266	3.6	266	3.6	*0.485	53.0	LOS D	5.1	37.2	0.95	0.80	0.95	28.4
Approach			308	3.1	308	3.1	0.485	53.4	LOS D	5.1	37.2	0.95	0.80	0.95	27.3
All Vehicles			5054	6.9	5054	6.9	0.694	14.4	LOS A	20.9	153.1	0.53	0.52	0.54	42.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	Dist]			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY


Site: [6 (7)] Martin Street/ Violet Street (2025 Baseline
 (Weekday AM) + Dev (Post Upgrd))
Network: [5] Weekday AM (2025 Baseline + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
East: Martin Street														
5	T1	All MCs	156	4.7	156	4.7	0.131	1.0	LOS A	0.2	1.4	0.28	0.32	53.0
6	R2	All MCs	43	22.0	43	22.0	0.131	8.2	LOS A	0.2	1.4	0.28	0.32	52.7
Approach			199	8.5	199	8.5	0.131	2.5	NA	0.2	1.4	0.28	0.32	52.8
North: Violet Street														
7	L2	All MCs	58	16.4	58	16.4	0.145	7.6	LOS A	0.2	1.6	0.49	0.73	47.4
9	R2	All MCs	58	1.8	58	1.8	0.145	8.9	LOS A	0.2	1.6	0.49	0.73	47.4
Approach			116	9.1	116	9.1	0.145	8.3	LOS A	0.2	1.6	0.49	0.73	47.4
West: Martin Street														
10	L2	All MCs	55	1.9	55	1.9	0.234	4.3	LOS A	0.0	0.0	0.00	0.07	54.7
11	T1	All MCs	395	1.6	395	1.6	0.234	0.0	LOS A	0.0	0.0	0.00	0.07	53.3
Approach			449	1.6	449	1.6	0.234	0.5	NA	0.0	0.0	0.00	0.07	54.0
All Vehicles			764	4.5	764	4.5	0.234	2.2	NA	0.2	1.6	0.15	0.24	51.4

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

MOVEMENT SUMMARY

 **Site:** [7 (7)] **Martin Street/ Karne Street** (2025 Baseline
(Weekday AM) + Dev (Post Upgrd))
Network: [5] **Weekday AM** (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	63	5.0	63	5.0	0.185	5.9	LOS A	0.4	3.0	0.34	0.61	50.8
3	R2	All MCs	144	2.9	144	2.9	0.185	8.4	LOS A	0.4	3.0	0.34	0.61	47.8
Approach			207	3.6	207	3.6	0.185	7.6	LOS A	0.4	3.0	0.34	0.61	49.2
East: Martin St														
4	L2	All MCs	82	9.0	82	9.0	0.187	4.6	LOS A	0.4	3.1	0.32	0.50	48.4
5	T1	All MCs	133	0.8	133	0.8	0.187	4.3	LOS A	0.4	3.1	0.32	0.50	49.8
Approach			215	3.9	215	3.9	0.187	4.4	LOS A	0.4	3.1	0.32	0.50	49.2
West: Martin St														
11	T1	All MCs	311	2.4	311	2.4	0.368	5.9	LOS A	1.0	7.1	0.42	0.56	48.8
12	R2	All MCs	112	1.9	112	1.9	0.368	8.6	LOS A	1.0	7.1	0.42	0.56	51.3
Approach			422	2.2	422	2.2	0.368	6.6	LOS A	1.0	7.1	0.42	0.56	49.8
All Vehicles			844	3.0	844	3.0	0.368	6.3	LOS A	1.0	7.1	0.38	0.56	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (9)] King Georges Road / Roseland Avenue** (2025
Baseline (Weekday PM) + Dev (Post Upgrd))
Network: [6] Weekday PM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
2	T1	All MCs	2323	5.4	2323	5.4	*0.580	7.8	LOS A	12.6	92.6	0.50	0.46	50.4
Approach			2323	5.4	2323	5.4	0.580	7.8	LOS A	12.6	92.6	0.50	0.46	50.4
North: King Georges Road														
8	T1	All MCs	1761	3.9	1761	3.9	0.433	6.6	LOS A	8.1	58.3	0.42	0.38	49.4
Approach			1761	3.9	1761	3.9	0.433	6.6	LOS A	8.1	58.3	0.42	0.38	49.4
West: Roseland Avenue														
10	L2	All MCs	161	9.2	161	9.2	0.444	61.0	LOS E	2.8	21.3	0.98	0.77	21.5
12	R2	All MCs	261	4.0	261	4.0	*0.689	63.7	LOS E	4.8	34.6	1.00	0.84	4.5
Approach			422	6.0	422	6.0	0.689	62.7	LOS E	4.8	34.6	0.99	0.82	12.5
All Vehicles			4506	4.9	4506	4.9	0.689	12.5	LOS A	12.6	92.6	0.52	0.47	44.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

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MOVEMENT SUMMARY

 **Site: [3 (26)] Roseland Drive / Roseland Avenue (2025**
Baseline (Weekday PM) + Dev (Post Upgrd))
Network: [6] Weekday PM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]		[Total HV]					[Veh.]					
			veh/h	%	veh/h	%	v/c	sec		veh		m		km/h	
South: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.147	8.0	LOS A	0.4	2.7	0.74	0.69	0.74	43.4
1	L2	All MCs	13	0.0	13	0.0	0.147	7.8	LOS A	0.4	2.7	0.74	0.69	0.74	39.9
2	T1	All MCs	48	0.0	48	0.0	0.147	7.7	LOS A	0.4	2.7	0.74	0.69	0.74	43.8
3	R2	All MCs	61	0.0	61	0.0	0.147	11.8	LOS A	0.4	2.7	0.74	0.69	0.74	39.9
Approach			123	0.0	123	0.0	0.147	9.7	LOS A	0.4	2.7	0.74	0.69	0.74	42.0
East: Roseland Drive															
4	L2	All MCs	37	0.0	37	0.0	0.546	3.5	LOS A	1.6	11.6	0.29	0.45	0.29	45.3
4a	L1	All MCs	146	0.0	146	0.0	0.546	3.2	LOS A	1.6	11.6	0.29	0.45	0.29	45.6
5	T1	All MCs	402	1.6	402	1.6	0.546	3.5	LOS A	1.6	11.6	0.29	0.45	0.29	42.2
6	R2	All MCs	237	10.2	237	10.2	0.546	7.7	LOS A	1.6	11.6	0.29	0.45	0.29	45.0
Approach			822	3.7	822	3.7	0.546	4.7	LOS A	1.6	11.6	0.29	0.45	0.29	44.3
North: Roseland Avenue															
7	L2	All MCs	27	7.7	27	7.7	0.095	5.1	LOS A	0.2	1.5	0.53	0.64	0.53	41.5
8	T1	All MCs	1	0.0	1	0.0	0.095	4.9	LOS A	0.2	1.5	0.53	0.64	0.53	44.8
9a	R1	All MCs	1	0.0	1	0.0	0.095	8.1	LOS A	0.2	1.5	0.53	0.64	0.53	44.3
9	R2	All MCs	56	18.9	56	18.9	0.095	9.5	LOS A	0.2	1.5	0.53	0.64	0.53	41.5
Approach			85	14.8	85	14.8	0.095	8.0	LOS A	0.2	1.5	0.53	0.64	0.53	41.7
West: Roseland Drive															
10	L2	All MCs	161	9.8	161	9.8	0.461	4.6	LOS A	1.2	9.0	0.58	0.54	0.58	44.5
11	T1	All MCs	354	0.6	354	0.6	0.461	5.2	LOS A	1.2	9.0	0.58	0.54	0.58	39.1
12	R2	All MCs	13	0.0	13	0.0	0.461	9.2	LOS A	1.2	9.0	0.58	0.54	0.58	44.0
12b	R3	All MCs	2	50.0	2	50.0	0.461	12.3	LOS A	1.2	9.0	0.58	0.54	0.58	45.6
Approach			529	3.6	529	3.6	0.461	5.1	LOS A	1.2	9.0	0.58	0.54	0.58	42.0
All Vehicles			1560	4.0	1560	4.0	0.546	5.4	LOS A	1.6	11.6	0.43	0.51	0.43	43.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 **Site: [1 (9)] King Georges Road / Roselands Drive** (2025
Baseline (Weekday PM) + Dev (Post Upgrd))
Network: [6] Weekday PM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec						km/h	
South: King Georges Road															
1	L2	All MCs	554	3.2	554	3.2	0.874	6.0	LOS A	0.8	5.6	0.00	0.31	0.00	54.4
2	T1	All MCs	2244	5.5	2244	5.5	* 0.874	27.2	LOS B	31.0	227.3	0.78	0.82	0.83	31.8
Approach			2798	5.0	2798	5.0	0.874	23.0	LOS B	31.0	227.3	0.63	0.72	0.67	34.7
North: King Georges Road															
8	T1	All MCs	1639	4.1	1639	4.1	0.399	6.5	LOS A	7.3	53.0	0.41	0.37	0.41	51.9
9	R2	All MCs	344	3.7	344	3.7	* 0.875	65.5	LOS E	11.6	83.5	1.00	1.28	1.22	7.6
Approach			1983	4.0	1983	4.0	0.875	16.8	LOS B	11.6	83.5	0.51	0.53	0.55	39.1
West: Roselands Drive															
10	L2	All MCs	133	0.8	133	0.8	0.696	59.0	LOS E	7.3	51.6	1.00	0.85	1.04	16.9
12	R2	All MCs	307	0.7	307	0.7	* 0.696	55.9	LOS D	8.0	56.5	0.99	0.85	1.03	27.7
Approach			440	0.7	440	0.7	0.696	56.8	LOS E	8.0	56.5	0.99	0.85	1.03	25.1
All Vehicles			5221	4.3	5221	4.3	0.875	23.5	LOS B	31.0	227.3	0.62	0.66	0.65	34.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

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MOVEMENT SUMMARY


Site: [6 (8)] Martin Street/ Violet Street (2025 Baseline
 (Weekday PM) + Dev (Post Upgrd))
Network: [6] Weekday PM (2025 Baseline + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	281	3.4	281	3.4	0.189	0.4	LOS A	0.2	1.3	0.16	0.18	55.9
6	R2	All MCs	41	23.1	41	23.1	0.189	7.6	LOS A	0.2	1.3	0.16	0.18	53.6
Approach			322	5.9	322	5.9	0.189	1.3	NA	0.2	1.3	0.16	0.18	55.2
North: Violet Street														
7	L2	All MCs	63	20.0	63	20.0	0.339	7.7	LOS A	0.6	4.5	0.56	0.80	46.1
9	R2	All MCs	193	0.0	193	0.0	0.339	9.8	LOS A	0.6	4.5	0.56	0.80	46.1
Approach			256	4.9	256	4.9	0.339	9.3	LOS A	0.6	4.5	0.56	0.80	46.1
West: Martin Street														
10	L2	All MCs	59	0.0	59	0.0	0.181	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	289	1.1	289	1.1	0.181	0.0	LOS A	0.0	0.0	0.00	0.10	51.1
Approach			348	0.9	348	0.9	0.181	0.7	NA	0.0	0.0	0.00	0.10	53.2
All Vehicles			926	3.8	926	3.8	0.339	3.3	NA	0.6	4.5	0.21	0.32	50.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
 Vehicle movement LOS values are based on average delay per movement.
 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: [7 (8)] Martin Street/ Karne Street** (2025 Baseline
(Weekday PM) + Dev (Post Upgrd))
Network: [6] Weekday PM (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
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	Aver. Back Of Queue Prop.		Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	96	2.2	96	2.2	0.260	6.9	LOS A	0.6	4.3	0.51	0.64	50.6
3	R2	All MCs	156	3.4	156	3.4	0.260	9.4	LOS A	0.6	4.3	0.51	0.64	47.2
Approach			252	2.9	252	2.9	0.260	8.5	LOS A	0.6	4.3	0.51	0.64	49.0
East: Martin St														
4	L2	All MCs	202	3.6	202	3.6	0.369	4.5	LOS A	1.1	7.5	0.32	0.49	48.8
5	T1	All MCs	273	0.8	273	0.8	0.369	4.2	LOS A	1.1	7.5	0.32	0.49	49.8
Approach			475	2.0	475	2.0	0.369	4.3	LOS A	1.1	7.5	0.32	0.49	49.3
West: Martin St														
11	T1	All MCs	201	0.0	201	0.0	0.257	5.8	LOS A	0.6	4.5	0.41	0.57	48.8
12	R2	All MCs	82	0.0	82	0.0	0.257	8.5	LOS A	0.6	4.5	0.41	0.57	51.3
Approach			283	0.0	283	0.0	0.257	6.6	LOS A	0.6	4.5	0.41	0.57	49.9
All Vehicles			1009	1.7	1009	1.7	0.369	6.0	LOS A	1.1	7.5	0.39	0.55	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (4)] King Georges Road / Roseland Avenue (2025**
Baseline (Saturday) + Dev (Post Upgrd))
Network: [4] Saturday (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
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	Aver. Back	Of Queue	Prop. Qued	Eff. Stop	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]					
			veh/h	%	veh/h	%	v/c	sec		veh		m			km/h
South: King Georges Road															
2	T1	All MCs	2425	3.1	2425	3.1	* 0.592	8.0	LOS A	13.4	96.4	0.51	0.47	0.51	43.1
Approach			2425	3.1	2425	3.1	0.592	8.0	LOS A	13.4	96.4	0.51	0.47	0.51	43.1
North: King Georges Road															
8	T1	All MCs	2078	3.5	2078	3.5	0.509	7.2	LOS A	10.4	74.7	0.46	0.42	0.46	41.9
Approach			2078	3.5	2078	3.5	0.509	7.2	LOS A	10.4	74.7	0.46	0.42	0.46	41.9
West: Roseland Avenue															
10	L2	All MCs	191	3.3	191	3.3	0.502	61.0	LOS E	3.4	24.1	0.99	0.78	0.99	20.2
12	R2	All MCs	286	2.6	286	2.6	* 0.749	65.2	LOS E	5.4	38.3	1.00	0.89	1.14	4.3
Approach			477	2.9	477	2.9	0.749	63.5	LOS E	5.4	38.3	1.00	0.84	1.08	12.2
All Vehicles			4980	3.2	4980	3.2	0.749	13.0	LOS A	13.4	96.4	0.54	0.49	0.55	38.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	158	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: [3 (27)] Roseland Drive / Roseland Avenue (2025**
Baseline (Saturday) + Dev (Post Upgrd))
Network: [4] Saturday (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Roundabout
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop 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: Site Access														
1b	L3	All MCs	1	0.0	1	0.0	0.198	9.1	LOS A	0.5	3.8	0.81	0.73	42.9
1	L2	All MCs	15	0.0	15	0.0	0.198	8.8	LOS A	0.5	3.8	0.81	0.73	39.1
2	T1	All MCs	58	0.0	58	0.0	0.198	8.8	LOS A	0.5	3.8	0.81	0.73	43.3
3	R2	All MCs	73	0.0	73	0.0	0.198	12.8	LOS A	0.5	3.8	0.81	0.73	39.1
Approach			146	0.0	146	0.0	0.198	10.8	LOS A	0.5	3.8	0.81	0.73	41.3
East: Roseland Drive														
4	L2	All MCs	43	0.0	43	0.0	0.614	3.7	LOS A	2.1	15.2	0.39	0.47	45.1
4a	L1	All MCs	293	0.0	293	0.0	0.614	3.3	LOS A	2.1	15.2	0.39	0.47	45.4
5	T1	All MCs	320	0.0	320	0.0	0.614	3.7	LOS A	2.1	15.2	0.39	0.47	41.7
6	R2	All MCs	256	5.8	256	5.8	0.614	7.8	LOS A	2.1	15.2	0.39	0.47	44.7
Approach			912	1.6	912	1.6	0.614	4.7	LOS A	2.1	15.2	0.39	0.47	44.4
North: Roseland Avenue														
7	L2	All MCs	43	2.4	43	2.4	0.166	6.6	LOS A	0.4	3.0	0.72	0.71	40.3
8	T1	All MCs	1	0.0	1	0.0	0.166	6.5	LOS A	0.4	3.0	0.72	0.71	44.1
9a	R1	All MCs	1	0.0	1	0.0	0.166	9.7	LOS A	0.4	3.0	0.72	0.71	43.6
9	R2	All MCs	74	14.3	74	14.3	0.166	11.1	LOS A	0.4	3.0	0.72	0.71	40.3
Approach			119	9.7	119	9.7	0.166	9.5	LOS A	0.4	3.0	0.72	0.71	40.4
West: Roseland Drive														
10	L2	All MCs	183	5.2	183	5.2	0.684	6.5	LOS A	2.9	20.9	0.76	0.70	43.0
11	T1	All MCs	580	0.5	580	0.5	0.684	7.4	LOS A	2.9	20.9	0.76	0.70	36.1
12	R2	All MCs	15	0.0	15	0.0	0.684	11.4	LOS A	2.9	20.9	0.76	0.70	42.5
12b	R3	All MCs	2	50.0	2	50.0	0.684	15.0	LOS B	2.9	20.9	0.76	0.70	43.9
Approach			780	1.8	780	1.8	0.684	7.3	LOS A	2.9	20.9	0.76	0.70	39.1
All Vehicles			1957	2.0	1957	2.0	0.684	6.5	LOS A	2.9	20.9	0.59	0.60	42.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

 **Site: [1 (4)] King Georges Road / Roselands Drive (2025**
Baseline (Saturday) + Dev (Post Upgrd))
Network: [4] Saturday (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)
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	Aver. Back Of Queue Prop. Qued		Eff. Stop 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: King Georges Road														
1	L2	All MCs	683	1.1	683	1.1	0.902	6.0	LOS A	1.1	7.5	0.00	0.36	53.7
2	T1	All MCs	2281	3.2	2281	3.2	*0.902	31.9	LOS C	34.9	250.8	0.83	0.89	29.5
Approach			2964	2.7	2964	2.7	0.902	25.9	LOS B	34.9	250.8	0.64	0.76	33.0
North: King Georges Road														
8	T1	All MCs	1918	3.7	1918	3.7	0.482	8.3	LOS A	10.0	72.4	0.48	0.44	50.0
9	R2	All MCs	339	2.2	339	2.2	*0.962	87.9	LOS F	13.7	97.7	1.00	1.37	6.0
Approach			2257	3.5	2257	3.5	0.962	20.3	LOS B	13.7	97.7	0.56	0.58	37.2
West: Roselands Drive														
10	L2	All MCs	166	1.3	166	1.3	0.960	85.3	LOS F	15.4	108.7	1.00	1.12	12.8
12	R2	All MCs	532	0.8	532	0.8	*0.960	82.4	LOS F	16.6	117.1	1.00	1.13	22.5
Approach			698	0.9	698	0.9	0.960	83.1	LOS F	16.6	117.1	1.00	1.13	20.6
All Vehicles			5919	2.8	5919	2.8	0.962	30.5	LOS C	34.9	250.8	0.65	0.74	31.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

Site: [6 (9)] Martin Street/ Violet Street (2025 Baseline (Saturday) + Dev (Post Upgrd))
Network: [4] Saturday (2025 Baseline + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

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	Aver. 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
East: Martin Street														
5	T1	All MCs	193	1.6	193	1.6	0.137	0.6	LOS A	0.1	1.1	0.20	0.22	55.0
6	R2	All MCs	35	21.2	35	21.2	0.137	7.8	LOS A	0.1	1.1	0.20	0.22	53.4
Approach			227	4.6	227	4.6	0.137	1.7	NA	0.1	1.1	0.20	0.22	54.5
North: Violet Street														
7	L2	All MCs	65	14.5	65	14.5	0.342	7.7	LOS A	0.6	4.5	0.54	0.80	46.4
9	R2	All MCs	203	0.5	203	0.5	0.342	9.4	LOS A	0.6	4.5	0.54	0.80	46.4
Approach			268	3.9	268	3.9	0.342	9.0	LOS A	0.6	4.5	0.54	0.80	46.4
West: Martin Street														
10	L2	All MCs	85	0.0	85	0.0	0.210	4.3	LOS A	0.0	0.0	0.00	0.12	54.3
11	T1	All MCs	319	0.3	319	0.3	0.210	0.0	LOS A	0.0	0.0	0.00	0.12	49.3
Approach			404	0.3	404	0.3	0.210	0.9	NA	0.0	0.0	0.00	0.12	52.6
All Vehicles			900	2.5	900	2.5	0.342	3.5	NA	0.6	4.5	0.21	0.35	50.0

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

MOVEMENT SUMMARY

 **Site:** [7 (12)] Martin Street/ Karne Street (2030 Future (Saturday))
Network: [3 (4)] Saturday (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	73	0.0	73	0.0	0.237	6.5	LOS A	0.5	3.9	0.46	0.63	50.8
3	R2	All MCs	170	0.7	170	0.7	0.237	9.0	LOS A	0.5	3.9	0.46	0.63	47.3
Approach			243	0.5	243	0.5	0.237	8.3	LOS A	0.5	3.9	0.46	0.63	48.8
East: Martin St														
4	L2	All MCs	178	2.6	172	2.5	0.317	4.5	LOS A	0.9	6.0	0.31	0.49	48.9
5	T1	All MCs	237	0.0	230	0.0	0.317	4.2	LOS A	0.9	6.0	0.31	0.49	49.8
Approach			416	1.1	402	1.1	0.317	4.3	LOS A	0.9	6.0	0.31	0.49	49.4
West: Martin St														
11	T1	All MCs	255	0.0	255	0.0	0.310	6.0	LOS A	0.8	5.6	0.44	0.57	48.7
12	R2	All MCs	87	0.0	87	0.0	0.310	8.7	LOS A	0.8	5.6	0.44	0.57	51.3
Approach			342	0.0	342	0.0	0.310	6.6	LOS A	0.8	5.6	0.44	0.57	49.7
All Vehicles			1000	0.6	987	0.6	0.317	6.1	LOS A	0.9	6.0	0.39	0.55	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (16)] King Georges Road / Roseland Avenue** (2030 Future (Weekday AM))

Network: [1 (4)] Weekday AM (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Weekday AM

7:30 - 8:30 AM Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2550	6.2	2550	6.2	*0.641	8.5	LOS A	15.1	111.0	0.55	0.51	49.8
Approach			2550	6.2	2550	6.2	0.641	8.5	LOS A	15.1	111.0	0.55	0.51	49.8
North: King Georges Road														
8	T1	All MCs	2203	9.1	2203	9.1	0.570	7.8	LOS A	11.9	89.8	0.50	0.46	47.9
Approach			2203	9.1	2203	9.1	0.570	7.8	LOS A	11.9	89.8	0.50	0.46	47.9
West: Roseland Avenue														
10	L2	All MCs	160	6.5	160	6.5	0.433	60.9	LOS E ¹¹	2.8	20.6	0.98	0.77	21.5
12	R2	All MCs	207	8.4	207	8.4	*0.571	61.9	LOS E ¹¹	3.7	27.7	1.00	0.79	4.6
Approach			367	7.6	367	7.6	0.571	61.5	LOS E ¹¹	3.7	27.7	0.99	0.78	13.6
All Vehicles			5120	7.6	5120	7.6	0.641	12.0	LOS A	15.1	111.0	0.56	0.51	44.7

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [3 (17)] Roseland Drive / Roseland Avenue** (2030 Future
(Weekday AM))
Network: [1 (4)] Weekday AM (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
East: Roseland Drive														
4a	L1	All MCs	66	0.0	66	0.0	0.155	5.0	LOS A	0.0	0.0	0.00	0.17	0.00
5	T1	All MCs	233	1.0	233	1.0	0.155	0.3	LOS A	0.0	0.0	0.00	0.17	0.00
6	R2	All MCs	125	20.4	125	20.4	0.133	6.4	LOS A	0.2	1.7	0.39	0.60	0.39
Approach			424	6.6	424	6.6	0.155	2.8	NA	0.2	1.7	0.12	0.30	0.12
North: Roseland Avenue														
7	L2	All MCs	13	0.0	13	0.0	0.011	5.1	LOS A	0.0	0.1	0.23	0.51	0.23
9a	R1	All MCs	1	100.0	1	100.0	0.165	44.7	LOS D ¹¹	0.2	2.0	0.79	0.89	0.79
9	R2	All MCs	28	41.7	28	41.7	0.165	24.0	LOS B	0.2	2.0	0.79	0.89	0.79
Approach			42	30.6	42	30.6	0.165	18.8	LOS B	0.2	2.0	0.62	0.77	0.62
West: Roseland Drive														
10	L2	All MCs	166	8.4	166	8.4	0.093	4.4	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	287	2.8	287	2.8	0.077	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1	100.0	1	100.0	0.077	8.5	LOS A	0.0	0.1	0.01	0.01	0.01
Approach			454	5.1	454	5.1	0.093	1.7	NA	0.0	0.1	0.00	0.17	0.00
All Vehicles			919	6.9	919	6.9	0.165	3.0	NA	0.2	2.0	0.08	0.26	0.08

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [1 (16)] King Georges Road / Roselands Drive (2030 Future (Weekday AM))**

Network: [1 (4)] Weekday AM (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Weekday AM

7:30 - 8:30 AM Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]		[Total HV]					[Veh.]					
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: King Georges Road															
1	L2	All MCs	258	4.5	258	4.5	0.803	5.8	LOS A	0.3	2.1	0.00	0.15	0.00	57.2
2	T1	All MCs	2533	6.0	2533	6.0	*0.803	14.4	LOS A	25.0	184.1	0.61	0.60	0.61	40.9
Approach			2792	5.8	2792	5.8	0.803	13.6	LOS A	25.0	184.1	0.55	0.56	0.55	42.0
North: King Georges Road															
8	T1	All MCs	2214	9.2	2214	9.2	0.569	8.2	LOS A	12.2	91.8	0.51	0.47	0.51	50.2
9	R2	All MCs	162	7.9	162	7.9	*0.785	62.9	LOS E ¹¹	6.0	39.1	1.00	1.21	1.20	7.9
Approach			2376	9.1	2376	9.1	0.785	11.9	LOS A	12.2	91.8	0.54	0.52	0.56	45.3
West: Roselands Drive															
10	L2	All MCs	42	0.0	42	0.0	0.477	55.5	LOS D ¹¹	4.9	34.9	0.95	0.80	0.95	17.6
12	R2	All MCs	264	3.9	264	3.9	*0.477	52.4	LOS D ¹¹	5.1	37.2	0.94	0.80	0.94	28.5
Approach			306	3.4	306	3.4	0.477	52.8	LOS D ¹¹	5.1	37.2	0.95	0.80	0.95	27.4
All Vehicles			5473	7.1	5473	7.1	0.803	15.0	LOS B	25.0	184.1	0.57	0.55	0.58	41.7

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (10)] Martin Street/ Violet Street (2030 Future (Weekday AM))
Network: [1 (4)] Weekday AM (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart		km/h
East: Martin Street														
5	T1	All MCs	164	4.9	164	4.9	0.144	1.2	LOS A	0.2	1.6	0.31	0.31	52.1
6	R2	All MCs	47	22.0	47	22.0	0.144	8.6	LOS A	0.2	1.6	0.31	0.31	52.4
Approach			212	8.7	212	8.7	0.144	2.9	NA	0.2	1.6	0.31	0.31	52.2
North: Violet Street														
7	L2	All MCs	64	16.4	64	16.4	0.169	8.0	LOS A	0.2	1.8	0.52	0.52	46.9
9	R2	All MCs	64	1.8	64	1.8	0.169	9.4	LOS A	0.2	1.8	0.52	0.52	46.9
Approach			127	9.1	127	9.1	0.169	8.7	LOS A	0.2	1.8	0.52	0.52	46.9
West: Martin Street														
10	L2	All MCs	60	1.9	60	1.9	0.258	4.3	LOS A	0.0	0.0	0.00	0.00	54.7
11	T1	All MCs	432	2.7	432	2.7	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	53.2
Approach			492	2.6	492	2.6	0.258	0.5	NA	0.0	0.0	0.00	0.00	54.0
All Vehicles			831	5.2	831	5.2	0.258	2.4	NA	0.2	1.8	0.16	0.16	51.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site:** [7 (10)] Martin Street/ Karne Street (2030 Future (Weekday AM))
Network: [1 (4)] Weekday AM (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	69	5.0	69	5.0	0.205	6.0	LOS A	0.5	3.4	0.36	0.61	50.8
3	R2	All MCs	159	2.9	159	2.9	0.205	8.4	LOS A	0.5	3.4	0.36	0.61	47.7
Approach			228	3.6	228	3.6	0.205	7.7	LOS A	0.5	3.4	0.36	0.61	49.1
East: Martin St														
4	L2	All MCs	90	9.0	90	9.0	0.203	4.7	LOS A	0.5	3.5	0.34	0.50	48.3
5	T1	All MCs	139	0.8	139	0.8	0.203	4.4	LOS A	0.5	3.5	0.34	0.50	49.6
Approach			229	4.0	229	4.0	0.203	4.5	LOS A	0.5	3.5	0.34	0.50	49.1
West: Martin St														
11	T1	All MCs	335	2.4	335	2.4	0.405	6.1	LOS A	1.1	8.1	0.46	0.57	48.6
12	R2	All MCs	123	1.9	123	1.9	0.405	8.7	LOS A	1.1	8.1	0.46	0.57	51.1
Approach			457	2.3	457	2.3	0.405	6.8	LOS A	1.1	8.1	0.46	0.57	49.6
All Vehicles			915	3.0	915	3.0	0.405	6.4	LOS A	1.1	8.1	0.40	0.56	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (17)] King Georges Road / Roseland Avenue** (2030 Future (Weekday PM))

Network: [2 (4)] Weekday PM (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2536	5.5	2536	5.5	*0.634	8.4	LOS A	14.8	108.7	0.54	0.50	49.8
Approach			2536	5.5	2536	5.5	0.634	8.4	LOS A	14.8	108.7	0.54	0.50	49.8
North: King Georges Road														
8	T1	All MCs	1893	4.0	1893	4.0	0.560	7.7	LOS A	22.3	161.7	0.49	0.45	48.0
Approach			1893	4.0	1893	4.0	0.560	7.7	LOS A	22.3	161.7	0.49	0.45	48.0
West: Roseland Avenue														
10	L2	All MCs	157	10.3	157	10.3	0.440	61.0	LOS E ¹¹	2.8	21.0	0.98	0.77	21.5
12	R2	All MCs	254	4.6	254	4.6	*0.906	79.3	LOS F ¹¹	7.0	51.2	1.00	1.45	3.6
Approach			411	6.8	411	6.8	0.906	72.3	LOS F ¹¹	7.0	51.2	0.99	0.93	11.2
All Vehicles			4840	5.0	4840	5.0	0.906	13.6	LOS A	22.3	161.7	0.56	0.52	43.2

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ Site: [3 (18)] Roseland Drive / Roseland Avenue (2030 Future
(Weekday PM))

Network: [2 (4)] Weekday PM (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
East: Roseland Drive														
4a	L1	All MCs	161	0.0	127	0.0	0.249	5.1	LOS A	0.0	0.0	0.00	0.20	0.00
5	T1	All MCs	442	1.6	350	1.9	0.249	0.3	LOS A	0.0	0.0	0.00	0.20	0.00
6	R2	All MCs	261	10.2	204	9.5	0.226	6.9	LOS A	0.4	2.9	0.49	0.66	0.49
Approach			864	3.9	681	3.8	0.249	3.2	NA	0.4	2.9	0.15	0.34	0.15
North: Roseland Avenue														
7	L2	All MCs	30	7.7	30	7.7	0.029	5.5	LOS A	0.0	0.3	0.29	0.53	0.29
9a	R1	All MCs	1	100.0	1	100.0	0.596	167.3	LOS F ¹¹	0.8	6.9	0.94	1.12	1.42
9	R2	All MCs	61	18.9	61	18.9	0.596	54.6	LOS D ¹¹	0.8	6.9	0.94	1.12	1.42
Approach			93	16.2	93	16.2	0.596	40.0	LOS C	0.8	6.9	0.73	0.93	1.05
West: Roseland Drive														
10	L2	All MCs	176	9.2	176	9.2	0.099	4.5	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	389	0.6	389	0.6	0.102	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1	100.0	1	100.0	0.102	10.4	LOS A	0.0	0.1	0.02	0.02	0.02
Approach			566	3.5	566	3.5	0.102	1.4	NA	0.0	0.1	0.01	0.15	0.01
All Vehicles			1523	4.5	1340	5.1	0.596	5.0	NA	0.8	6.9	0.13	0.30	0.15

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [1 (17)] King Georges Road / Roselands Drive (2030 Future (Weekday PM))**

Network: [2 (4)] Weekday PM (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh]	[Dist]			km/h
			veh/h	%	veh/h	%	v/c	sec			m			
South: King Georges Road														
1	L2	All MCs	533	3.7	533	3.7	0.794	4.7	LOS A	0.7	5.4	0.00	0.25	51.0
2	T1	All MCs	2469	5.5	2469	5.5	*0.794	13.8	LOS A	25.4	186.5	0.64	0.64	40.8
Approach			3001	5.2	3001	5.2	0.794	12.2	LOS A	25.4	186.5	0.52	0.57	42.3
North: King Georges Road														
8	T1	All MCs	1803	4.1	1803	4.1	0.442	18.9	LOS B	8.5	61.9	0.44	0.40	51.3
9	R2	All MCs	335	4.2	335	4.2	*2.212	1187.8	LOS F ¹¹	27.7	174.0	1.00	2.63	1.1
Approach			2137	4.1	2137	4.1	2.212	201.9	LOS F ¹¹	27.7	174.0	0.53	0.75	14.0
West: Roselands Drive														
10	L2	All MCs	126	0.9	126	0.9	0.660	57.7	LOS E ¹¹	6.7	47.1	0.99	0.83	16.8
12	R2	All MCs	292	0.8	292	0.8	*0.660	54.4	LOS D ¹¹	7.6	53.9	0.98	0.83	28.0
Approach			418	0.8	418	0.8	0.660	55.4	LOS D ¹¹	7.6	53.9	0.99	0.83	25.3
All Vehicles			5557	4.4	5557	4.4	2.212	88.4	LOS F ¹¹	27.7	186.5	0.56	0.66	22.3

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (11)] Martin Street/ Violet Street (2030 Future
(Weekday PM))
Network: [2 (4)] Weekday PM (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	295	3.5	241	4.2	0.168	0.5	LOS A	0.2	1.3	0.18	0.20	55.6
6	R2	All MCs	45	23.1	38	26.6	0.168	7.8	LOS A	0.2	1.3	0.18	0.20	53.3
Approach			340	6.1	280	7.3	0.168	1.5	NA	0.2	1.3	0.18	0.20	54.9
North: Violet Street														
7	L2	All MCs	69	20.0	69	20.0	0.367	8.0	LOS A	0.7	5.1	0.56	0.82	46.0
9	R2	All MCs	212	0.0	212	0.0	0.367	9.8	LOS A	0.7	5.1	0.56	0.82	46.0
Approach			281	4.9	281	4.9	0.367	9.4	LOS A	0.7	5.1	0.56	0.82	46.0
West: Martin Street														
10	L2	All MCs	65	0.0	65	0.0	0.192	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	305	1.1	305	1.1	0.192	0.0	LOS A	0.0	0.0	0.00	0.10	50.8
Approach			369	0.9	369	0.9	0.192	0.8	NA	0.0	0.0	0.00	0.10	53.1
All Vehicles			991	3.9	930	4.1	0.367	3.6	NA	0.7	5.1	0.22	0.35	50.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site:** [7 (11)] Martin Street/ Karne Street (2030 Future (Weekday PM))
Network: [2 (4)] Weekday PM (2030 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	105	2.2	105	2.2	0.281	6.8	LOS A	0.7	4.8	0.50	0.64	50.6
3	R2	All MCs	171	3.4	171	3.4	0.281	9.4	LOS A	0.7	4.8	0.50	0.64	47.2
Approach			277	2.9	277	2.9	0.281	8.4	LOS A	0.7	4.8	0.50	0.64	49.0
East: Martin St														
4	L2	All MCs	222	3.6	199	4.0	0.360	4.5	LOS A	1.0	7.2	0.33	0.49	48.7
5	T1	All MCs	286	0.8	255	0.9	0.360	4.2	LOS A	1.0	7.2	0.33	0.49	49.7
Approach			508	2.1	454	2.3	0.360	4.4	LOS A	1.0	7.2	0.33	0.49	49.2
West: Martin St														
11	T1	All MCs	207	0.0	207	0.0	0.275	6.0	LOS A	0.7	4.8	0.43	0.57	48.6
12	R2	All MCs	90	0.0	90	0.0	0.275	8.6	LOS A	0.7	4.8	0.43	0.57	51.2
Approach			298	0.0	298	0.0	0.275	6.8	LOS A	0.7	4.8	0.43	0.57	49.8
All Vehicles			1083	1.7	1029	1.8	0.360	6.1	LOS A	1.0	7.2	0.41	0.55	49.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [1 (18)] King Georges Road / Roselands Drive (2030 Future (Saturday))**

Network: [3 (4)] Saturday (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	661	1.2	661	1.2	1.017	5.9	LOS A	1.0	7.2	0.00	0.32	54.4
2	T1	All MCs	2509	3.2	2509	3.2	* 1.017	67.7	LOS E ¹¹	53.1	381.8	0.81	1.16	18.9
Approach			3170	2.8	3170	2.8	1.017	54.8	LOS D ¹¹	53.1	381.8	0.64	0.98	21.9
North: King Georges Road														
8	T1	All MCs	2110	3.7	2110	3.7	0.518	7.9	LOS A	11.0	79.5	0.48	0.44	50.5
9	R2	All MCs	321	2.5	321	2.5	* 0.969	86.2	LOS F ¹¹	12.7	90.6	1.00	1.38	6.1
Approach			2430	3.6	2430	3.6	0.969	18.2	LOS B	12.7	90.6	0.55	0.61	38.9
West: Roselands Drive														
10	L2	All MCs	164	1.4	164	1.4	1.063	142.0	LOS F ¹¹	18.4	129.8	1.00	1.33	8.5
12	R2	All MCs	525	0.9	525	0.9	* 1.063	138.6	LOS F ¹¹	21.3	149.9	1.00	1.35	16.2
Approach			689	1.0	689	1.0	1.063	139.4	LOS F ¹¹	21.3	149.9	1.00	1.34	14.6
All Vehicles			6290	2.9	6290	2.9	1.063	49.9	LOS D ¹¹	53.1	381.8	0.65	0.86	24.5

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [2 (18)] King Georges Road / Roseland Avenue** (2030 Future (Saturday))

Network: [3 (4)] Saturday (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2649	3.1	2649	3.1	*0.648	8.7	LOS A	15.8	113.9	0.56	0.51	49.6
Approach			2649	3.1	2649	3.1	0.648	8.7	LOS A	15.8	113.9	0.56	0.51	49.6
North: King Georges Road														
8	T1	All MCs	2234	3.6	2234	3.6	0.548	7.6	LOS A	11.7	84.6	0.49	0.45	48.2
Approach			2234	3.6	2234	3.6	0.548	7.6	LOS A	11.7	84.6	0.49	0.45	48.2
West: Roseland Avenue														
10	L2	All MCs	184	3.8	184	3.8	0.489	61.2	LOS E ¹¹	3.2	23.4	0.99	0.78	21.5
12	R2	All MCs	277	2.9	277	2.9	*0.729	64.8	LOS E ¹¹	5.1	36.9	1.00	1.12	4.4
Approach			461	3.3	461	3.3	0.729	63.4	LOS E ¹¹	5.1	36.9	0.99	1.06	12.7
All Vehicles			5344	3.3	5344	3.3	0.729	12.9	LOS A	15.8	113.9	0.56	0.51	43.7

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ Site: [3 (19)] Roseland Drive / Roseland Avenue (2030 Future (Saturday))

Network: [3 (4)] Saturday (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
East: Roseland Drive														
4a	L1	All MCs	322	0.0	322	0.0	0.349	5.3	LOS A	0.0	0.0	0.00	0.35	0.00
5	T1	All MCs	352	0.0	352	0.0	0.349	0.6	LOS A	0.0	0.0	0.00	0.35	0.00
6	R2	All MCs	281	5.8	281	5.8	0.412	10.3	LOS A	0.9	6.5	0.64	0.91	0.87
Approach			955	1.7	955	1.7	0.412	5.0	NA	0.9	6.5	0.19	0.52	0.26
North: Roseland Avenue														
7	L2	All MCs	47	2.4	47	2.4	0.050	6.0	LOS A	0.1	0.5	0.38	0.59	0.38
9a	R1	All MCs	1 100.		1 100.		1.741	853.5	LOS F ¹¹	9.8	78.0	1.00	2.78	7.29
			0		0									
9	R2	All MCs	81	14.3	81	14.3	1.741	757.3	LOS F ¹¹	9.8	78.0	1.00	2.78	7.29
Approach			130	10.7	130	10.7	1.741	483.1	LOS F ¹¹	9.8	78.0	0.77	1.98	4.76
West: Roseland Drive														
10	L2	All MCs	201	5.2	201	5.2	0.111	4.4	LOS A	0.0	0.0	0.00	0.47	0.00
11	T1	All MCs	638	0.5	638	0.5	0.166	0.1	LOS A	0.0	0.2	0.01	0.01	0.01
12b	R3	All MCs	1 100.		1 100.		0.166	12.8	LOS A	0.0	0.2	0.01	0.01	0.01
			0		0									
Approach			841	1.8	841	1.8	0.166	1.1	NA	0.0	0.2	0.01	0.12	0.01
All Vehicles			1926	2.3	1926	2.3	1.741	35.5	NA	9.8	78.0	0.15	0.44	0.45

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (12)] Martin Street/ Violet Street (2030 Future
(Saturday))

Network: [3 (4)] Saturday (2030 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	196	1.8	182	1.7	0.133	0.7	LOS A	0.2	1.1	0.22	0.24	54.6
6	R2	All MCs	38	21.2	35	20.9	0.133	8.0	LOS A	0.2	1.1	0.22	0.24	53.3
Approach			234	5.0	217	4.9	0.133	1.9	NA	0.2	1.1	0.22	0.24	54.2
North: Violet Street														
7	L2	All MCs	72	14.5	72	14.5	0.381	8.1	LOS A	0.7	5.4	0.56	0.83	46.0
9	R2	All MCs	223	0.5	223	0.5	0.381	9.8	LOS A	0.7	5.4	0.56	0.83	46.0
Approach			295	3.9	295	3.9	0.381	9.4	LOS A	0.7	5.4	0.56	0.83	46.0
West: Martin Street														
10	L2	All MCs	94	0.0	94	0.0	0.222	4.3	LOS A	0.0	0.0	0.00	0.13	54.2
11	T1	All MCs	335	0.3	335	0.3	0.222	0.0	LOS A	0.0	0.0	0.00	0.13	49.0
Approach			428	0.3	428	0.3	0.222	1.0	NA	0.0	0.0	0.00	0.13	52.5
All Vehicles			958	2.5	941	2.6	0.381	3.8	NA	0.7	5.4	0.23	0.37	49.5

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

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

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:** [7 (15)] Martin Street/ Karne Street (2030 Future
(Saturday) + Dev (Post Upgrd))
Network: [4 (3)] Saturday (2030 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	73	0.0	73	0.0	0.241	6.7	LOS A	0.6	3.9	0.48	0.64	50.7
3	R2	All MCs	170	0.7	170	0.7	0.241	9.2	LOS A	0.6	3.9	0.48	0.64	47.2
Approach			243	0.5	243	0.5	0.241	8.4	LOS A	0.6	3.9	0.48	0.64	48.7
East: Martin St														
4	L2	All MCs	178	2.6	175	2.6	0.334	4.5	LOS A	0.9	6.5	0.32	0.49	48.8
5	T1	All MCs	254	0.0	249	0.0	0.334	4.2	LOS A	0.9	6.5	0.32	0.49	49.8
Approach			432	1.1	424	1.1	0.334	4.3	LOS A	0.9	6.5	0.32	0.49	49.4
West: Martin St														
11	T1	All MCs	271	0.0	271	0.0	0.324	6.0	LOS A	0.9	6.0	0.45	0.57	48.7
12	R2	All MCs	87	0.0	87	0.0	0.324	8.7	LOS A	0.9	6.0	0.45	0.57	51.3
Approach			358	0.0	358	0.0	0.324	6.6	LOS A	0.9	6.0	0.45	0.57	49.7
All Vehicles			1033	0.6	1025	0.6	0.334	6.1	LOS A	0.9	6.5	0.40	0.55	49.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (19)] King Georges Road / Roseland Avenue** (2030

Future (Weekday AM) + Dev (Post Upgrd))

Network: [5 (3)] Weekday AM (2030 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future + Development (Post intersection upgrade)

Weekday AM

7:30 to 8:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2554	6.2	2554	6.2	*0.642	8.5	LOS A	15.1	111.3	0.55	0.51	49.7
Approach			2554	6.2	2554	6.2	0.642	8.5	LOS A	15.1	111.3	0.55	0.51	49.7
North: King Georges Road														
8	T1	All MCs	2225	9.1	2225	9.1	0.575	7.9	LOS A	12.1	91.2	0.50	0.46	47.8
Approach			2225	9.1	2225	9.1	0.575	7.9	LOS A	12.1	91.2	0.50	0.46	47.8
West: Roseland Avenue														
10	L2	All MCs	171	6.1	171	6.1	0.463	62.1	LOS E ¹¹	3.0	22.1	0.98	0.78	29.3
12	R2	All MCs	222	7.8	222	7.8	*0.610	63.5	LOS E ¹¹	4.0	29.8	1.00	0.80	19.7
Approach			394	7.1	394	7.1	0.610	62.9	LOS E ¹¹	4.0	29.8	0.99	0.79	24.6
All Vehicles			5173	7.5	5173	7.5	0.642	12.4	LOS A	15.1	111.3	0.56	0.51	44.9

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

P4B Slip/ Bypass	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (28)] Roseland Drive / Roseland Avenue** (2030 Future (Weekday AM) + Dev (Post Upgrd))

Network: [5 (3)] Weekday AM (2030 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.060	5.0	LOS A	0.1	0.8	0.46	0.59	0.46	44.8
1	L2	All MCs	7	0.0	7	0.0	0.060	4.8	LOS A	0.1	0.8	0.46	0.59	0.46	42.2
2	T1	All MCs	27	0.0	27	0.0	0.060	4.7	LOS A	0.1	0.8	0.46	0.59	0.46	45.2
3	R2	All MCs	34	0.0	34	0.0	0.060	8.8	LOS A	0.1	0.8	0.46	0.59	0.46	42.2
Approach			68	0.0	68	0.0	0.060	6.7	LOS A	0.1	0.8	0.46	0.59	0.46	43.8
East: Roseland Drive															
4	L2	All MCs	20	0.0	20	0.0	0.292	3.3	LOS A	0.6	4.4	0.15	0.44	0.15	45.8
4a	L1	All MCs	66	0.0	66	0.0	0.292	2.9	LOS A	0.6	4.4	0.15	0.44	0.15	46.1
5	T1	All MCs	233	1.0	233	1.0	0.292	3.3	LOS A	0.6	4.4	0.15	0.44	0.15	43.1
6	R2	All MCs	125	20.4	125	20.4	0.292	7.5	LOS A	0.6	4.4	0.15	0.44	0.15	45.4
Approach			443	6.3	443	6.3	0.292	4.4	LOS A	0.6	4.4	0.15	0.44	0.15	44.7
North: Roseland Avenue															
7	L2	All MCs	14	8.3	14	8.3	0.049	4.6	LOS A	0.1	0.8	0.45	0.61	0.45	42.1
8	T1	All MCs	1	0.0	1	0.0	0.049	4.4	LOS A	0.1	0.8	0.45	0.61	0.45	45.2
9a	R1	All MCs	1	0.0	1	0.0	0.049	7.6	LOS A	0.1	0.8	0.45	0.61	0.45	44.7
9	R2	All MCs	28	41.7	28	41.7	0.049	9.3	LOS A	0.1	0.8	0.45	0.61	0.45	42.1
Approach			44	28.9	44	28.9	0.049	7.7	LOS A	0.1	0.8	0.45	0.61	0.45	42.4
West: Roseland Drive															
10	L2	All MCs	167	9.0	167	9.0	0.358	3.7	LOS A	0.9	6.3	0.39	0.44	0.39	45.3
11	T1	All MCs	287	2.8	287	2.8	0.358	4.1	LOS A	0.9	6.3	0.39	0.44	0.39	40.7
12	R2	All MCs	7	0.0	7	0.0	0.358	8.1	LOS A	0.9	6.3	0.39	0.44	0.39	44.8
12b	R3	All MCs	2	50.0	2	50.0	0.358	10.7	LOS A	0.9	6.3	0.39	0.44	0.39	46.3
Approach			463	5.3	463	5.2	0.358	4.0	LOS A	0.9	6.3	0.39	0.44	0.39	43.4
All Vehicles			1019	6.4	1019	6.4	0.358	4.5	LOS A	0.9	6.3	0.29	0.46	0.29	44.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Constraint effects.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											

P4 Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [6 (13)] Martin Street/ Violet Street** (2030 Future
(Weekday AM) + Dev (Post Upgrd))
Network: [5 (3)] Weekday AM (2030 Future + Dev (Post
Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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						
East: Martin Street														
5	T1	All MCs	171	4.7	171	4.7	0.147	1.2	LOS A	0.2	1.7	0.30	0.35	52.3
6	R2	All MCs	47	22.0	47	22.0	0.147	8.6	LOS A	0.2	1.7	0.30	0.35	52.4
Approach			219	8.5	219	8.5	0.147	2.8	NA	0.2	1.7	0.30	0.35	52.4
North: Violet Street														
7	L2	All MCs	64	16.4	64	16.4	0.170	8.0	LOS A	0.2	1.8	0.52	0.76	46.9
9	R2	All MCs	64	1.8	64	1.8	0.170	9.5	LOS A	0.2	1.8	0.52	0.76	46.9
Approach			127	9.1	127	9.1	0.170	8.7	LOS A	0.2	1.8	0.52	0.76	46.9
West: Martin Street														
10	L2	All MCs	60	1.9	60	1.9	0.258	4.3	LOS A	0.0	0.0	0.00	0.07	54.7
11	T1	All MCs	434	1.6	434	1.6	0.258	0.0	LOS A	0.0	0.0	0.00	0.07	53.3
Approach			494	1.6	494	1.6	0.258	0.5	NA	0.0	0.0	0.00	0.07	54.0
All Vehicles			841	4.5	841	4.5	0.258	2.4	NA	0.2	1.8	0.16	0.25	51.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7 (13)] Martin Street/ Karne Street** (2030 Future
(Weekday AM) + Dev (Post Upgrd))

Network: [5 (3)] Weekday AM (2030 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	69	5.0	69	5.0	0.207	6.0	LOS A	0.5	3.4	0.36	0.61	50.8
3	R2	All MCs	159	2.9	159	2.9	0.207	8.5	LOS A	0.5	3.4	0.36	0.61	47.7
Approach			228	3.6	228	3.6	0.207	7.7	LOS A	0.5	3.4	0.36	0.61	49.1
East: Martin St														
4	L2	All MCs	90	9.0	90	9.0	0.208	4.7	LOS A	0.5	3.6	0.34	0.50	48.3
5	T1	All MCs	146	0.8	146	0.8	0.208	4.4	LOS A	0.5	3.6	0.34	0.50	49.6
Approach			236	3.9	236	3.9	0.208	4.5	LOS A	0.5	3.6	0.34	0.50	49.1
West: Martin St														
11	T1	All MCs	342	2.4	342	2.4	0.411	6.1	LOS A	1.2	8.3	0.46	0.57	48.6
12	R2	All MCs	123	1.9	123	1.9	0.411	8.7	LOS A	1.2	8.3	0.46	0.57	51.1
Approach			464	2.2	464	2.2	0.411	6.8	LOS A	1.2	8.3	0.46	0.57	49.6
All Vehicles			929	3.0	929	3.0	0.411	6.4	LOS A	1.2	8.3	0.41	0.56	49.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (20)] King Georges Road / Roseland Avenue** (2030

Future (Weekday PM) + Dev (Post Upgrd))

Network: [6 (3)] Weekday PM (2030 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future + Development (Post intersection upgrade)

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh.]	[Dist]			km/h
			veh/h	%	veh/h	%				veh	m			
South: King Georges Road														
2	T1	All MCs	2555	5.4	2555	5.4	*0.639	8.5	LOS A	15.0	110.2	0.55	0.50	49.8
Approach			2555	5.4	2555	5.4	0.639	8.5	LOS A	15.0	110.2	0.55	0.50	49.8
North: King Georges Road														
8	T1	All MCs	1937	3.9	1937	3.9	0.572	7.9	LOS A	29.4	212.9	0.50	0.46	47.8
Approach			1937	3.9	1937	3.9	0.572	7.9	LOS A	29.4	212.9	0.50	0.46	47.8
West: Roseland Avenue														
10	L2	All MCs	177	9.2	177	9.2	0.491	62.7	LOS E ¹¹	3.1	23.6	0.99	0.78	21.4
12	R2	All MCs	287	4.0	287	4.0	*1.060	149.7	LOS F ¹¹	10.6	76.8	1.00	1.25	2.1
Approach			464	6.0	464	6.0	1.060	116.5	LOS F ¹¹	10.6	76.8	0.99	1.07	7.5
All Vehicles			4957	4.9	4957	4.9	1.060	18.4	LOS B	29.4	212.9	0.57	0.54	39.3

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

P4B Slip/ Bypass	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (29)] Roseland Drive / Roseland Avenue** (2030 Future
(Weekday PM) + Dev (Post Upgrd))

Network: [6 (3)] Weekday PM (2030 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Site Access														
1b	L3	All MCs	1	0.0	1	0.0	0.148	6.8	LOS A	0.3	2.4	0.66	0.68	44.0
1	L2	All MCs	14	0.0	14	0.0	0.148	6.5	LOS A	0.3	2.4	0.66	0.68	40.8
2	T1	All MCs	53	0.0	53	0.0	0.148	6.5	LOS A	0.3	2.4	0.66	0.68	44.4
3	R2	All MCs	67	0.0	67	0.0	0.148	10.5	LOS A	0.3	2.4	0.66	0.68	40.8
Approach			135	0.0	135	0.0	0.148	8.5	LOS A	0.3	2.4	0.66	0.68	42.8
East: Roseland Drive														
4	L2	All MCs	41	0.0	32	0.0	0.479	3.5	LOS A	1.3	9.6	0.30	0.45	45.3
4a	L1	All MCs	161	0.0	126	0.0	0.479	3.2	LOS A	1.3	9.6	0.30	0.45	45.6
5	T1	All MCs	442	1.6	348	1.9	0.479	3.5	LOS A	1.3	9.6	0.30	0.45	42.1
6	R2	All MCs	261	10.2	202	9.3	0.479	7.7	LOS A	1.3	9.6	0.30	0.45	44.9
Approach			904	3.7	708	3.6	0.479	4.6	LOS A	1.3	9.6	0.30	0.45	44.2
North: Roseland Avenue														
7	L2	All MCs	30	7.7	30	7.7	0.111	5.4	LOS A	0.2	1.8	0.56	0.66	41.3
8	T1	All MCs	1	0.0	1	0.0	0.111	5.2	LOS A	0.2	1.8	0.56	0.66	44.7
9a	R1	All MCs	1	0.0	1	0.0	0.111	8.4	LOS A	0.2	1.8	0.56	0.66	44.2
9	R2	All MCs	63	20.4	63	20.4	0.111	9.8	LOS A	0.2	1.8	0.56	0.66	41.3
Approach			95	15.9	95	15.9	0.111	8.3	LOS A	0.2	1.8	0.56	0.66	41.4
West: Roseland Drive														
10	L2	All MCs	176	9.2	176	9.2	0.493	4.4	LOS A	1.4	9.7	0.57	0.54	44.5
11	T1	All MCs	389	0.6	389	0.6	0.493	5.0	LOS A	1.4	9.7	0.57	0.54	39.2
12	R2	All MCs	14	0.0	14	0.0	0.493	9.1	LOS A	1.4	9.7	0.57	0.54	44.1
12b	R3	All MCs	2	50.0	2	50.0	0.493	12.2	LOS A	1.4	9.7	0.57	0.54	45.6
Approach			581	3.4	581	3.4	0.493	5.0	LOS A	1.4	9.7	0.57	0.54	42.0
All Vehicles			1716	4.0	1519	4.5	0.493	5.3	LOS A	1.4	9.7	0.45	0.52	43.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Constraint effects.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											

P4 Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (14)] Martin Street/ Violet Street (2030 Future
(Weekday PM) + Dev (Post Upgrd))

Network: [6 (3)] Weekday PM (2030 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	309	3.4	253	4.0	0.175	0.5	LOS A	0.2	1.3	0.18	0.20	55.7
6	R2	All MCs	45	23.1	38	26.6	0.175	7.9	LOS A	0.2	1.3	0.18	0.20	53.3
Approach			354	5.9	291	7.0	0.175	1.5	NA	0.2	1.3	0.18	0.20	55.0
North: Violet Street														
7	L2	All MCs	69	20.0	69	20.0	0.377	8.2	LOS A	0.7	5.3	0.57	0.83	45.7
9	R2	All MCs	212	0.0	212	0.0	0.377	10.1	LOS A	0.7	5.3	0.57	0.83	45.7
Approach			281	4.9	281	4.9	0.377	9.6	LOS A	0.7	5.3	0.57	0.83	45.7
West: Martin Street														
10	L2	All MCs	65	0.0	65	0.0	0.199	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	318	1.1	318	1.1	0.199	0.0	LOS A	0.0	0.0	0.00	0.10	51.1
Approach			383	0.9	383	0.9	0.199	0.7	NA	0.0	0.0	0.00	0.10	53.2
All Vehicles			1019	3.8	956	4.0	0.377	3.6	NA	0.7	5.3	0.22	0.35	49.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7 (14)] Martin Street/ Karne Street** (2030 Future
(Weekday PM) + Dev (Post Upgrd))
Network: [6 (3)] Weekday PM (2030 Future + Dev (Post
Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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: Karne St														
1	L2	All MCs	105	2.2	105	2.2	0.284	6.9	LOS A	0.7	4.9	0.51	0.64	50.6
3	R2	All MCs	171	3.4	171	3.4	0.284	9.4	LOS A	0.7	4.9	0.51	0.64	47.1
Approach			277	2.9	277	2.9	0.284	8.5	LOS A	0.7	4.9	0.51	0.64	49.0
East: Martin St														
4	L2	All MCs	222	3.6	199	4.0	0.368	4.5	LOS A	1.1	7.5	0.34	0.49	48.7
5	T1	All MCs	300	0.8	267	0.9	0.368	4.3	LOS A	1.1	7.5	0.34	0.49	49.7
Approach			522	2.0	466	2.2	0.368	4.4	LOS A	1.1	7.5	0.34	0.49	49.2
West: Martin St														
11	T1	All MCs	221	0.0	221	0.0	0.287	6.0	LOS A	0.7	5.1	0.44	0.57	48.6
12	R2	All MCs	90	0.0	90	0.0	0.287	8.7	LOS A	0.7	5.1	0.44	0.57	51.2
Approach			311	0.0	311	0.0	0.287	6.7	LOS A	0.7	5.1	0.44	0.57	49.8
All Vehicles			1110	1.7	1054	1.8	0.368	6.2	LOS A	1.1	7.5	0.41	0.55	49.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (21)] King Georges Road / Roseland Avenue (2030**
Future (Saturday) + Dev (Post Upgrd))
Network: [4 (3)] Saturday (2030 Future + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2668	3.1	2566	3.1	* 0.627	8.4	LOS A	14.9	107.2	0.54	0.50	42.8
Approach			2668	3.1	2566	3.1	0.627	8.4	LOS A	14.9	107.2	0.54	0.50	42.8
North: King Georges Road														
8	T1	All MCs	2286	3.5	2286	3.5	0.619	8.4	LOS A	14.5	104.7	0.53	0.49	40.8
Approach			2286	3.5	2286	3.5	0.619	8.4	LOS A	14.5	104.7	0.53	0.49	40.8
West: Roseland Avenue														
10	L2	All MCs	210	3.3	210	3.3	0.555	61.5	LOS E ¹¹	3.7	26.7	1.00	0.79	20.1
12	R2	All MCs	315	2.6	315	2.6	* 1.001	109.6	LOS F ¹¹	9.0	64.2	1.00	1.21	2.7
Approach			525	2.9	525	2.9	1.001	90.4	LOS F ¹¹	9.0	64.2	1.00	1.04	9.3
All Vehicles			5478	3.2	5376	3.3	1.001	16.4	LOS B	14.9	107.2	0.58	0.55	35.8

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	174	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (30)] Roseland Drive / Roseland Avenue** (2030
Future (Saturday) + Dev (Post Upgrd))
Network: [4 (3)] Saturday (2030 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec		veh	m			km/h	
South: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.236	9.9	LOS A	0.7	4.7	0.86	0.75	0.86	42.5
1	L2	All MCs	16	0.0	16	0.0	0.236	9.6	LOS A	0.7	4.7	0.86	0.75	0.86	38.4
2	T1	All MCs	64	0.0	64	0.0	0.236	9.6	LOS A	0.7	4.7	0.86	0.75	0.86	42.9
3	R2	All MCs	80	0.0	80	0.0	0.236	13.6	LOS A	0.7	4.7	0.86	0.75	0.86	38.4
Approach			161	0.0	161	0.0	0.236	11.6	LOS A	0.7	4.7	0.86	0.75	0.86	40.8
East: Roseland Drive															
4	L2	All MCs	47	0.0	45	0.0	0.651	3.8	LOS A	2.4	17.4	0.44	0.48	0.44	45.0
4a	L1	All MCs	322	0.0	307	0.0	0.651	3.4	LOS A	2.4	17.4	0.44	0.48	0.44	45.2
5	T1	All MCs	352	0.0	336	0.0	0.651	3.8	LOS A	2.4	17.4	0.44	0.48	0.44	41.4
6	R2	All MCs	281	5.8	268	5.7	0.651	7.9	LOS A	2.4	17.4	0.44	0.48	0.44	44.6
Approach			1003	1.6	956	1.6	0.651	4.8	LOS A	2.4	17.4	0.44	0.48	0.44	44.2
North: Roseland Avenue															
7	L2	All MCs	47	2.4	47	2.4	0.203	7.3	LOS A	0.5	3.9	0.78	0.74	0.78	39.7
8	T1	All MCs	1	0.0	1	0.0	0.203	7.2	LOS A	0.5	3.9	0.78	0.74	0.78	43.7
9a	R1	All MCs	1	0.0	1	0.0	0.203	10.3	LOS A	0.5	3.9	0.78	0.74	0.78	43.2
9	R2	All MCs	81	14.3	81	14.3	0.203	11.8	LOS A	0.5	3.9	0.78	0.74	0.78	39.7
Approach			131	9.7	131	9.7	0.203	10.1	LOS A	0.5	3.9	0.78	0.74	0.78	39.8
West: Roseland Drive															
10	L2	All MCs	201	5.2	201	5.2	0.766	8.4	LOS A	4.1	29.5	0.86	0.82	1.10	41.8
11	T1	All MCs	638	0.5	638	0.5	0.766	9.4	LOS A	4.1	29.5	0.86	0.82	1.10	34.0
12	R2	All MCs	16	0.0	16	0.0	0.766	13.4	LOS A	4.1	29.5	0.86	0.82	1.10	41.4
12b	R3	All MCs	2	50.0	2	50.0	0.766	17.2	LOS B	4.1	29.5	0.86	0.82	1.10	42.7
Approach			858	1.8	858	1.8	0.766	9.2	LOS A	4.1	29.5	0.86	0.82	1.10	37.3
All Vehicles			2153	2.0	2106	2.1	0.766	7.5	LOS A	4.1	29.5	0.66	0.66	0.76	41.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

 **Site: [1 (21)] King Georges Road / Roselands Drive** (2030 Future (Saturday) + Dev (Post Upgrd))
Network: [4 (3)] Saturday (2030 Future + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2030 Future + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 5 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	751	1.1	751	1.1	1.038	6.1	LOS A	1.3	8.9	0.00	0.35	53.8
2	T1	All MCs	2509	3.2	2509	3.2	* 1.038	80.6	LOS F ¹¹	56.7	408.1	0.83	1.25	16.7
Approach			3261	2.7	3261	2.7	1.038	63.4	LOS E ¹¹	56.7	408.1	0.64	1.04	19.9
North: King Georges Road														
8	T1	All MCs	2110	3.7	2109	3.7	0.530	8.8	LOS A	11.7	84.2	0.51	0.47	49.5
9	R2	All MCs	373	2.2	373	2.2	* 1.072	145.1	LOS F ¹¹	19.4	138.0	1.00	1.52	2.0
Approach			2483	3.5	2482	3.5	1.072	29.3	LOS C	19.4	138.0	0.58	0.63	23.2
West: Roselands Drive														
10	L2	All MCs	183	1.3	183	1.3	1.069	145.0	LOS F ¹¹	21.2	149.6	1.00	1.31	8.5
12	R2	All MCs	585	0.8	585	0.8	* 1.069	143.1	LOS F ¹¹	23.6	166.1	1.00	1.31	16.2
Approach			768	0.9	768	0.9	1.069	143.5	LOS F ¹¹	23.6	166.1	1.00	1.31	14.6
All Vehicles			6511	2.8	6511	2.8	1.072	59.8	LOS E ¹¹	56.7	408.1	0.66	0.91	19.9

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	58	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	116	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [6 (15)] Martin Street/ Violet Street** (2030 Future
(Saturday) + Dev (Post Upgrd))
Network: [4 (3)] Saturday (2030 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	212	1.6	204	1.7	0.147	0.7	LOS A	0.2	1.2	0.21	0.24	54.8
6	R2	All MCs	38	21.2	37	21.9	0.147	8.2	LOS A	0.2	1.2	0.21	0.24	53.3
Approach			250	4.6	241	4.8	0.147	1.8	NA	0.2	1.2	0.21	0.24	54.3
North: Violet Street														
7	L2	All MCs	72	14.5	72	14.5	0.398	8.3	LOS A	0.8	5.7	0.58	0.86	45.5
9	R2	All MCs	223	0.5	223	0.5	0.398	10.3	LOS A	0.8	5.7	0.58	0.86	45.5
Approach			295	3.9	295	3.9	0.398	9.8	LOS A	0.8	5.7	0.58	0.86	45.5
West: Martin Street														
10	L2	All MCs	94	0.0	94	0.0	0.231	4.3	LOS A	0.0	0.0	0.00	0.12	54.3
11	T1	All MCs	351	0.3	351	0.3	0.231	0.0	LOS A	0.0	0.0	0.00	0.12	49.3
Approach			445	0.3	445	0.3	0.231	0.9	NA	0.0	0.0	0.00	0.12	52.6
All Vehicles			990	2.5	981	2.5	0.398	3.8	NA	0.8	5.7	0.23	0.37	49.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site:** [7 (18)] Martin Street/ Karne Street (2035 Future (Saturday))
Network: [3 (3)] Saturday (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	80	0.0	80	0.0	0.263	6.6	LOS A	0.6	4.4	0.48	0.64	50.7
3	R2	All MCs	187	1.4	187	1.4	0.263	9.1	LOS A	0.6	4.4	0.48	0.64	47.2
Approach			267	0.9	267	0.9	0.263	8.4	LOS A	0.6	4.4	0.48	0.64	48.7
East: Martin St														
4	L2	All MCs	195	2.6	178	2.6	0.331	4.5	LOS A	0.9	6.4	0.33	0.49	48.8
5	T1	All MCs	259	0.0	237	0.0	0.331	4.3	LOS A	0.9	6.4	0.33	0.49	49.7
Approach			453	1.1	414	1.1	0.331	4.4	LOS A	0.9	6.4	0.33	0.49	49.3
West: Martin St														
11	T1	All MCs	278	0.0	278	0.0	0.345	6.1	LOS A	0.9	6.4	0.47	0.58	48.5
12	R2	All MCs	95	0.0	95	0.0	0.345	8.8	LOS A	0.9	6.4	0.47	0.58	51.2
Approach			373	0.0	373	0.0	0.345	6.8	LOS A	0.9	6.4	0.47	0.58	49.5
All Vehicles			1093	0.7	1053	0.7	0.345	6.2	LOS A	0.9	6.4	0.42	0.56	49.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (11)] King Georges Road / Roseland Avenue (2035 Future (Weekday AM))**
Network: [1 (3)] Weekday AM (2035 Future)
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future
 Weekday AM
 7:30 - 8:30 AM Peak Period
 Site Category: (None)
 Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)
 Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]			km/h
South: King Georges Road														
2	T1	All MCs	2781	6.2	2764	6.2	*0.696	9.2	LOS A	17.7	130.3	0.59	0.55	49.1
Approach			2781	6.2	2764	6.2	0.696	9.2	LOS A	17.7	130.3	0.59	0.55	49.1
North: King Georges Road														
8	T1	All MCs	2404	9.1	2404	9.1	0.666	9.0	LOS A	14.8	112.0	0.57	0.52	46.5
Approach			2404	9.1	2404	9.1	0.666	9.0	LOS A	14.8	112.0	0.57	0.52	46.5
West: Roseland Avenue														
10	L2	All MCs	174	6.5	174	6.5	0.475	61.3	LOS E ¹¹	3.1	22.6	0.98	0.78	21.5
12	R2	All MCs	226	8.4	226	8.4	*0.670	63.9	LOS E ¹¹	4.2	31.2	1.00	0.84	4.4
Approach			400	7.6	400	7.6	0.670	62.8	LOS E ¹¹	4.2	31.2	0.99	0.81	13.4
All Vehicles			5586	7.6	5569	7.6	0.696	13.0	LOS A	17.7	130.3	0.61	0.56	43.8

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ Site: [3 (12)] Roseland Drive / Roseland Avenue (2035 Future
(Weekday AM))

Network: [1 (3)] Weekday AM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future
Weekday AM
7:30 - 8:30 AM Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	Dist] m			km/h
East: Roseland Drive														
4a	L1	All MCs	72	0.0	69	0.0	0.162	5.0	LOS A	0.0	0.0	0.00	0.17	0.00
5	T1	All MCs	254	1.0	243	1.0	0.162	0.3	LOS A	0.0	0.0	0.00	0.17	0.00
6	R2	All MCs	136	20.4	130	20.2	0.142	6.6	LOS A	0.2	1.9	0.42	0.61	0.42
Approach			462	6.6	442	6.5	0.162	2.9	NA	0.2	1.9	0.12	0.30	0.12
North: Roseland Avenue														
7	L2	All MCs	14	0.0	14	0.0	0.012	5.1	LOS A	0.0	0.1	0.25	0.51	0.25
9a	R1	All MCs	1	100.0	1	100.0	0.205	53.2	LOS D ¹¹	0.3	2.5	0.82	0.93	0.87
9	R2	All MCs	30	41.7	30	41.7	0.205	28.1	LOS B	0.3	2.5	0.82	0.93	0.87
Approach			45	30.6	45	30.6	0.205	21.8	LOS B	0.3	2.5	0.64	0.80	0.68
West: Roseland Drive														
10	L2	All MCs	181	8.4	181	8.4	0.101	4.4	LOS A	0.0	0.0	0.00	0.46	0.00
11	T1	All MCs	313	2.8	313	2.8	0.084	0.0	LOS A	0.0	0.1	0.01	0.01	0.01
12b	R3	All MCs	1	100.0	1	100.0	0.084	8.6	LOS A	0.0	0.1	0.01	0.01	0.01
Approach			495	5.1	495	5.1	0.101	1.7	NA	0.0	0.1	0.00	0.17	0.00
All Vehicles			1003	6.9	983	7.1	0.205	3.1	NA	0.3	2.5	0.09	0.26	0.09

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [1 (11)] King Georges Road / Roselands Drive** (2035 Future (Weekday AM))

Network: [1 (3)] Weekday AM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future

Weekday AM

7:30 - 8:30 AM Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	282	4.5	282	4.5	1.001	5.9	LOS A	0.3	2.4	0.00	0.15	57.3
2	T1	All MCs	2764	6.0	2764	6.0	* 1.001	51.6	LOS D ¹¹	51.3	377.4	0.72	0.98	22.6
Approach			3045	5.8	3045	5.8	1.001	47.3	LOS D ¹¹	51.3	377.4	0.65	0.90	23.9
North: King Georges Road														
8	T1	All MCs	2415	9.2	2415	9.2	0.624	9.0	LOS A	14.4	108.5	0.55	0.51	49.4
9	R2	All MCs	177	7.9	177	7.9	* 1.111	176.6	LOS F ¹¹	10.5	68.5	1.00	1.52	2.5
Approach			2592	9.1	2592	9.1	1.111	20.4	LOS B	14.4	108.5	0.58	0.58	35.8
West: Roselands Drive														
10	L2	All MCs	45	0.0	45	0.0	0.524	55.8	LOS D ¹¹	5.2	37.3	0.96	0.80	17.5
12	R2	All MCs	288	3.9	288	3.9	* 0.524	52.5	LOS D ¹¹	5.8	42.0	0.95	0.81	28.4
Approach			333	3.4	333	3.4	0.524	53.0	LOS D ¹¹	5.8	42.0	0.95	0.80	27.3
All Vehicles			5971	7.1	5971	7.1	1.111	36.0	LOS C	51.3	377.4	0.64	0.75	28.8

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped]	Dist]			sec	m	m/sec
					ped	m					
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [6 (16)] Martin Street/ Violet Street** (2035 Future
(Weekday AM))
Network: [1 (3)] Weekday AM (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart		km/h
East: Martin Street														
5	T1	All MCs	179	4.9	172	5.1	0.156	1.5	LOS A	0.2	1.9	0.33	0.38	51.4
6	R2	All MCs	52	22.0	50	22.6	0.156	9.1	LOS A	0.2	1.9	0.33	0.38	52.0
Approach			231	8.7	223	9.1	0.156	3.2	NA	0.2	1.9	0.33	0.38	51.7
North: Violet Street														
7	L2	All MCs	69	16.4	69	16.4	0.197	8.3	LOS A	0.3	2.1	0.55	0.79	46.3
9	R2	All MCs	69	1.8	69	1.8	0.197	10.1	LOS A	0.3	2.1	0.55	0.79	46.3
Approach			139	9.1	139	9.1	0.197	9.2	LOS A	0.3	2.1	0.55	0.79	46.3
West: Martin Street														
10	L2	All MCs	66	1.9	66	1.9	0.282	4.3	LOS A	0.0	0.0	0.00	0.07	54.6
11	T1	All MCs	471	2.7	471	2.7	0.282	0.0	LOS A	0.0	0.0	0.00	0.07	53.2
Approach			537	2.6	537	2.6	0.282	0.5	NA	0.0	0.0	0.00	0.07	53.9
All Vehicles			907	5.2	898	5.2	0.282	2.5	NA	0.3	2.1	0.17	0.26	50.5

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

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

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: [7 (16)] Martin Street/ Karne Street (2035 Future**
(Weekday AM))

Network: [1 (3)] Weekday AM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	76	5.0	76	5.0	0.225	6.1	LOS A	0.5	3.8	0.37	0.61	50.8
3	R2	All MCs	173	2.9	173	2.9	0.225	8.5	LOS A	0.5	3.8	0.37	0.61	47.7
Approach			249	3.6	249	3.6	0.225	7.8	LOS A	0.5	3.8	0.37	0.61	49.0
East: Martin St														
4	L2	All MCs	99	9.0	96	9.2	0.218	4.8	LOS A	0.5	3.8	0.37	0.51	48.2
5	T1	All MCs	152	0.8	147	0.9	0.218	4.5	LOS A	0.5	3.8	0.37	0.51	49.5
Approach			250	4.0	243	4.1	0.218	4.6	LOS A	0.5	3.8	0.37	0.51	49.0
West: Martin St														
11	T1	All MCs	365	2.4	365	2.4	0.449	6.2	LOS A	1.3	9.4	0.50	0.58	48.3
12	R2	All MCs	134	1.9	134	1.9	0.449	8.9	LOS A	1.3	9.4	0.50	0.58	51.0
Approach			499	2.3	499	2.3	0.449	7.0	LOS A	1.3	9.4	0.50	0.58	49.4
All Vehicles			998	3.0	991	3.1	0.449	6.6	LOS A	1.3	9.4	0.44	0.57	49.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (12)] King Georges Road / Roseland Avenue (2035 Future (Weekday PM))**

Network: [2 (3)] Weekday PM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2766	5.5	2766	5.5	* 0.693	9.2	LOS A	17.6	129.0	0.59	0.55	49.1
Approach			2766	5.5	2766	5.5	0.693	9.2	LOS A	17.6	129.0	0.59	0.55	49.1
North: King Georges Road														
8	T1	All MCs	2065	4.0	2065	4.0	0.611	8.3	LOS A	29.5	213.5	0.53	0.49	47.3
Approach			2065	4.0	2065	4.0	0.611	8.3	LOS A	29.5	213.5	0.53	0.49	47.3
West: Roseland Avenue														
10	L2	All MCs	172	10.3	172	10.3	0.482	61.7	LOS E ¹¹	3.0	23.1	0.99	0.78	21.4
12	R2	All MCs	277	4.6	277	4.6	* 1.028	127.8	LOS F ¹¹	9.6	69.5	1.00	1.20	2.4
Approach			448	6.8	448	6.8	1.028	102.4	LOS F ¹¹	9.6	69.5	0.99	1.04	8.4
All Vehicles			5280	5.0	5280	5.0	1.028	16.8	LOS B	29.5	213.5	0.60	0.56	40.6

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ Site: [3 (13)] Roseland Drive / Roseland Avenue (2035 Future
(Weekday PM))

Network: [2 (3)] Weekday PM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future
Weekday PM
16:45 to 17:45 Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh]	[Dist] m			km/h
East: Roseland Drive														
4a	L1	All MCs	176	0.0	135	0.0	0.265	5.1	LOS A	0.0	0.0	0.00	0.20	48.9
5	T1	All MCs	483	1.6	372	1.9	0.265	0.3	LOS A	0.0	0.0	0.00	0.20	49.4
6	R2	All MCs	284	10.2	216	9.4	0.250	7.2	LOS A	0.4	3.3	0.52	0.68	43.9
Approach			942	3.9	723	3.8	0.265	3.3	NA	0.4	3.3	0.15	0.35	46.8
North: Roseland Avenue														
7	L2	All MCs	33	7.7	33	7.7	0.032	5.6	LOS A	0.0	0.3	0.30	0.54	43.2
9a	R1	All MCs	1	100.0	1	100.0	0.806	245.9	LOS F ¹¹	1.3	10.7	0.98	1.28	22.9
9	R2	All MCs	67	18.9	67	18.9	0.806	88.1	LOS F ¹¹	1.3	10.7	0.98	1.28	14.6
Approach			101	16.2	101	16.2	0.806	63.2	LOS E ¹¹	1.3	10.7	0.76	1.04	18.8
West: Roseland Drive														
10	L2	All MCs	192	9.2	192	9.2	0.108	4.5	LOS A	0.0	0.0	0.00	0.46	45.6
11	T1	All MCs	424	0.6	424	0.6	0.111	0.0	LOS A	0.0	0.1	0.01	0.01	49.9
12b	R3	All MCs	1	100.0	1	100.0	0.111	11.0	LOS A	0.0	0.1	0.02	0.02	47.4
Approach			618	3.5	618	3.5	0.111	1.4	NA	0.0	0.1	0.01	0.15	47.4
All Vehicles			1661	4.5	1442	5.2	0.806	6.7	NA	1.3	10.7	0.13	0.31	42.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

Gap-Acceptance Capacity Formula: SIDRA Standard (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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [1 (12)] King Georges Road / Roselands Drive (2035**
Future (Weekday PM))

Network: [2 (3)] Weekday PM (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	581	3.7	581	3.7	1.186	4.7	LOS A	0.8	6.1	0.00	0.23	51.4
2	T1	All MCs	2693	5.5	2693	5.5	* 1.186	163.7	LOS F ¹¹	77.3	566.9	0.77	1.61	10.3
Approach			3274	5.2	3274	5.2	1.186	135.4	LOS F ¹¹	77.3	566.9	0.63	1.37	12.0
North: King Georges Road														
8	T1	All MCs	1967	4.1	1960	4.1	0.483	7.6	LOS A	9.8	71.2	0.46	0.42	50.8
9	R2	All MCs	365	4.2	364	4.1	* 1.198	246.9	LOS F ¹¹	25.3	159.3	1.00	1.81	1.7
Approach			2332	4.1	2324	4.1	1.198	45.0	LOS D ¹¹	25.3	159.3	0.55	0.64	20.8
West: Roselands Drive														
10	L2	All MCs	138	0.9	138	0.9	0.753	61.0	LOS E ¹¹	7.1	50.0	1.00	0.89	16.2
12	R2	All MCs	318	0.8	318	0.8	* 0.753	57.1	LOS E ¹¹	9.3	65.8	1.00	0.88	27.4
Approach			456	0.8	456	0.8	0.753	58.2	LOS E ¹¹	9.3	65.8	1.00	0.89	24.6
All Vehicles			6062	4.4	6054	4.4	1.198	94.9	LOS F ¹¹	77.3	566.9	0.63	1.05	15.5

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site:** [6 (17)] **Martin Street/ Violet Street** (2035 Future
(Weekday PM))
Network: [2 (3)] **Weekday PM** (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	322	3.5	257	4.3	0.181	0.6	LOS A	0.2	1.4	0.19	0.21	55.4
6	R2	All MCs	49	23.1	41	27.1	0.181	8.1	LOS A	0.2	1.4	0.19	0.21	53.2
Approach			371	6.1	298	7.5	0.181	1.6	NA	0.2	1.4	0.19	0.21	54.7
North: Violet Street														
7	L2	All MCs	76	20.0	76	20.0	0.420	8.5	LOS A	0.9	6.4	0.60	0.87	45.2
9	R2	All MCs	231	0.0	231	0.0	0.420	10.7	LOS A	0.9	6.4	0.60	0.87	45.2
Approach			307	4.9	307	4.9	0.420	10.1	LOS A	0.9	6.4	0.60	0.87	45.2
West: Martin Street														
10	L2	All MCs	71	0.0	71	0.0	0.207	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	328	0.0	328	0.0	0.207	0.0	LOS A	0.0	0.0	0.00	0.10	50.8
Approach			399	0.0	399	0.0	0.207	0.8	NA	0.0	0.0	0.00	0.10	53.1
All Vehicles			1077	3.5	1004	3.8	0.420	3.9	NA	0.9	6.4	0.24	0.37	49.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7 (17)] Martin Street/ Karne Street** (2035 Future
(Weekday PM))
Network: [2 (3)] Weekday PM (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	117	4.3	117	4.3	0.321	7.1	LOS A	0.8	5.8	0.54	0.65	50.4
3	R2	All MCs	189	4.7	189	4.7	0.321	9.6	LOS A	0.8	5.8	0.54	0.65	47.0
Approach			307	4.5	307	4.5	0.321	8.7	LOS A	0.8	5.8	0.54	0.65	48.8
East: Martin St														
4	L2	All MCs	243	3.6	215	4.0	0.392	4.6	LOS A	1.2	8.2	0.36	0.49	48.6
5	T1	All MCs	312	0.8	275	0.9	0.392	4.3	LOS A	1.2	8.2	0.36	0.49	49.6
Approach			555	2.1	490	2.3	0.392	4.5	LOS A	1.2	8.2	0.36	0.49	49.1
West: Martin St														
11	T1	All MCs	226	0.0	226	0.0	0.307	6.1	LOS A	0.8	5.6	0.47	0.58	48.4
12	R2	All MCs	99	0.0	99	0.0	0.307	8.8	LOS A	0.8	5.6	0.47	0.58	51.1
Approach			325	0.0	325	0.0	0.307	6.9	LOS A	0.8	5.6	0.47	0.58	49.6
All Vehicles			1186	2.1	1121	2.3	0.392	6.3	LOS A	1.2	8.2	0.44	0.56	49.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (13)] King Georges Road / Roseland Avenue (2035 Future (Saturday))**

Network: [3 (3)] Saturday (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				
			veh/h		veh/h					veh	m			km/h	
South: King Georges Road															
2	T1	All MCs	2890	3.1	2762	3.1	0.676	9.1	LOS A	17.2	123.9	0.58	0.53	0.58	49.2
Approach			2890	3.1	2762	3.1	0.676	9.1	LOS A	17.2	123.9	0.58	0.53	0.58	49.2
North: King Georges Road															
8	T1	All MCs	2437	3.6	2437	3.6	* 0.719	9.7	LOS A	19.5	140.3	0.62	0.57	0.62	45.7
Approach			2437	3.6	2437	3.6	0.719	9.7	LOS A	19.5	140.3	0.62	0.57	0.62	45.7
West: Roseland Avenue															
10	L2	All MCs	201	3.8	201	3.8	0.536	64.2	LOS E ¹¹	3.6	25.7	0.99	0.78	0.99	21.4
12	R2	All MCs	302	2.9	302	2.9	* 1.110	189.6	LOS F ¹¹	12.5	89.6	1.00	1.33	2.16	1.7
Approach			503	3.3	503	3.3	1.110	139.5	LOS F ¹¹	12.5	89.6	1.00	1.11	1.70	6.7
All Vehicles			5829	3.3	5701	3.4	1.110	20.9	LOS B	19.5	140.3	0.63	0.60	0.69	37.7

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [3 (14)] Roseland Drive / Roseland Avenue** (2035 Future
(Saturday))
Network: [3 (3)] Saturday (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
East: Roseland Drive															
4a	L1	All MCs	351	0.0	308	0.0	0.334	5.3	LOS A	0.0	0.0	0.00	0.35	0.00	49.6
5	T1	All MCs	384	0.0	337	0.0	0.334	0.6	LOS A	0.0	0.0	0.00	0.35	0.00	49.0
6	R2	All MCs	307	5.8	269	5.5	0.425	11.1	LOS A	0.9	6.6	0.67	0.94	0.93	41.7
Approach			1042	1.7	915	1.6	0.425	5.3	NA	0.9	6.6	0.20	0.52	0.27	46.2
North: Roseland Avenue															
7	L2	All MCs	52	2.4	52	2.4	0.056	6.2	LOS A	0.1	0.6	0.40	0.61	0.40	42.9
9a	R1	All MCs	1	100.0	1	100.0	2.063	1128.1	LOS F ¹¹	12.6	99.8	1.00	2.99	8.10	6.2
9	R2	All MCs	88	14.3	88	14.3	2.063	1047.9	LOS F ¹¹	12.6	99.8	1.00	2.99	8.10	3.3
Approach			141	10.7	141	10.7	2.063	667.3	LOS F ¹¹	12.6	99.8	0.78	2.12	5.28	5.0
West: Roseland Drive															
10	L2	All MCs	220	5.2	220	5.2	0.121	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	45.6
11	T1	All MCs	696	0.5	696	0.5	0.181	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	49.9
12b	R3	All MCs	1	100.0	1	100.0	0.181	12.1	LOS A	0.0	0.2	0.01	0.01	0.01	47.4
Approach			917	1.8	917	1.8	0.181	1.1	NA	0.0	0.2	0.00	0.12	0.00	47.8
All Vehicles			2101	2.3	1973	2.5	2.063	50.8	NA	12.6	99.8	0.15	0.45	0.51	30.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [1 (13)] King Georges Road / Roselands Drive (2035 Future (Saturday))**

Network: [3 (3)] Saturday (2035 Future)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	721	1.2	721	1.2	1.100	5.9	LOS A	1.2	8.4	0.00	0.32	54.3
2	T1	All MCs	2737	3.2	2737	3.2	* 1.100	113.9	LOS F ¹¹	69.2	497.4	0.81	1.41	13.0
Approach			3459	2.8	3459	2.8	1.100	91.4	LOS F ¹¹	69.2	497.4	0.64	1.18	15.5
North: King Georges Road														
8	T1	All MCs	2301	3.7	2277	3.7	0.567	8.8	LOS A	12.9	93.3	0.53	0.48	49.5
9	R2	All MCs	350	2.5	346	2.5	* 1.090	158.7	LOS F ¹¹	18.8	134.1	1.00	1.55	2.0
Approach			2651	3.6	2623	3.6	1.090	28.6	LOS C	18.8	134.1	0.59	0.62	25.0
West: Roselands Drive														
10	L2	All MCs	179	1.4	179	1.4	1.098	167.4	LOS F ¹¹	21.7	153.7	1.00	1.41	7.6
12	R2	All MCs	572	0.9	572	0.9	* 1.098	164.1	LOS F ¹¹	24.9	175.7	1.00	1.43	14.7
Approach			752	1.0	752	1.0	1.098	164.9	LOS F ¹¹	24.9	175.7	1.00	1.42	13.2
All Vehicles			6861	2.9	6833	2.9	1.100	75.4	LOS F ¹¹	69.2	497.4	0.66	1.00	17.8

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.
		ped/h	sec		[Ped]	Dist]			sec	m
					ped	m				m/sec
North: King Georges Road										
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0
West: Roselands Drive										
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0

All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (18)] Martin Street/ Violet Street (2035 Future
(Saturday))
Network: [3 (3)] Saturday (2035 Future)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m	Rate to Depart		km/h
East: Martin Street														
5	T1	All MCs	213	1.8	174	2.0	0.131	0.8	LOS A	0.2	1.2	0.24	0.27	54.2
6	R2	All MCs	42	21.2	35	22.9	0.131	8.3	LOS A	0.2	1.2	0.24	0.27	53.1
Approach			255	5.0	209	5.4	0.131	2.1	NA	0.2	1.2	0.24	0.27	53.8
North: Violet Street														
7	L2	All MCs	78	14.5	78	14.5	0.431	8.6	LOS A	0.9	6.6	0.59	0.88	45.3
9	R2	All MCs	244	0.5	244	0.5	0.431	10.5	LOS A	0.9	6.6	0.59	0.88	45.3
Approach			322	3.9	322	3.9	0.431	10.0	LOS A	0.9	6.6	0.59	0.88	45.3
West: Martin Street														
10	L2	All MCs	102	0.0	102	0.0	0.243	4.3	LOS A	0.0	0.0	0.00	0.13	54.2
11	T1	All MCs	365	0.3	365	0.3	0.243	0.0	LOS A	0.0	0.0	0.00	0.13	49.0
Approach			467	0.3	467	0.3	0.243	1.0	NA	0.0	0.0	0.00	0.13	52.5
All Vehicles			1045	2.5	998	2.7	0.431	4.1	NA	0.9	6.6	0.24	0.40	48.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site:** [7 (21)] **Martin Street/ Karne Street** (2035 Future
(Saturday) + Dev (Post Upgrd))
Network: [4 (2)] **Saturday** (2035 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h
South: Karne St														
1	L2	All MCs	80	0.0	80	0.0	0.269	6.8	LOS A	0.6	4.5	0.50	0.64	50.6
3	R2	All MCs	187	1.4	187	1.4	0.269	9.3	LOS A	0.6	4.5	0.50	0.64	47.0
Approach			267	0.9	267	0.9	0.269	8.6	LOS A	0.6	4.5	0.50	0.64	48.6
East: Martin St														
4	L2	All MCs	195	2.6	185	2.7	0.356	4.6	LOS A	1.0	7.1	0.34	0.49	48.7
5	T1	All MCs	277	0.0	263	0.0	0.356	4.3	LOS A	1.0	7.1	0.34	0.49	49.7
Approach			471	1.1	448	1.1	0.356	4.4	LOS A	1.0	7.1	0.34	0.49	49.3
West: Martin St														
11	T1	All MCs	296	0.0	296	0.0	0.360	6.1	LOS A	1.0	6.9	0.48	0.58	48.5
12	R2	All MCs	95	0.0	95	0.0	0.360	8.8	LOS A	1.0	6.9	0.48	0.58	51.2
Approach			390	0.0	390	0.0	0.360	6.8	LOS A	1.0	6.9	0.48	0.58	49.5
All Vehicles			1128	0.7	1105	0.7	0.360	6.2	LOS A	1.0	7.1	0.43	0.56	49.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (10)] King Georges Road / Roseland Avenue (2035**

Future (Weekday AM) + Dev (Post Upgrd))

Network: [5 (2)] Weekday AM (2035 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future + Development (Post intersection upgrade)

Weekday AM

7:30 to 8:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycles	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2787	6.2	2732	6.2	*0.688	9.1	LOS A	17.3	127.2	0.59	0.54	49.2
Approach			2787	6.2	2732	6.2	0.688	9.1	LOS A	17.3	127.2	0.59	0.54	49.2
North: King Georges Road														
8	T1	All MCs	2428	9.1	2428	9.1	0.673	9.1	LOS A	15.1	114.1	0.58	0.53	46.4
Approach			2428	9.1	2428	9.1	0.673	9.1	LOS A	15.1	114.1	0.58	0.53	46.4
West: Roseland Avenue														
10	L2	All MCs	187	6.1	187	6.1	0.507	61.5	LOS E ¹¹	3.3	24.3	0.99	0.78	21.4
12	R2	All MCs	243	7.8	243	7.8	*0.716	65.0	LOS E ¹¹	4.5	33.8	1.00	0.86	4.4
Approach			429	7.1	429	7.1	0.716	63.5	LOS E ¹¹	4.5	33.8	1.00	0.83	13.3
All Vehicles			5644	7.5	5589	7.5	0.716	13.3	LOS A	17.3	127.2	0.61	0.56	43.5

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

P4B Slip/ Bypass	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (31)] Roseland Drive / Roseland Avenue** (2035 Future
(Weekday AM) + Dev (Post Upgrd))

Network: [5 (2)] Weekday AM (2035 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
Saturday
12:30 to 13:30 Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back	Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.067	5.2	LOS A	0.1	0.9	0.48	0.60	0.48	44.7
1	L2	All MCs	8	0.0	8	0.0	0.067	4.9	LOS A	0.1	0.9	0.48	0.60	0.48	42.1
2	T1	All MCs	29	0.0	29	0.0	0.067	4.9	LOS A	0.1	0.9	0.48	0.60	0.48	45.1
3	R2	All MCs	37	0.0	37	0.0	0.067	8.9	LOS A	0.1	0.9	0.48	0.60	0.48	42.1
Approach			75	0.0	75	0.0	0.067	6.9	LOS A	0.1	0.9	0.48	0.60	0.48	43.7
East: Roseland Drive															
4	L2	All MCs	21	0.0	21	0.0	0.312	3.3	LOS A	0.7	4.8	0.16	0.44	0.16	45.8
4a	L1	All MCs	72	0.0	70	0.0	0.312	3.0	LOS A	0.7	4.8	0.16	0.44	0.16	46.1
5	T1	All MCs	254	1.0	248	1.0	0.312	3.3	LOS A	0.7	4.8	0.16	0.44	0.16	43.0
6	R2	All MCs	136	20.4	133	20.3	0.312	7.5	LOS A	0.7	4.8	0.16	0.44	0.16	45.3
Approach			484	6.3	472	6.3	0.312	4.4	LOS A	0.7	4.8	0.16	0.44	0.16	44.7
North: Roseland Avenue															
7	L2	All MCs	14	0.0	14	0.0	0.053	4.6	LOS A	0.1	0.8	0.47	0.62	0.47	42.0
8	T1	All MCs	1	0.0	1	0.0	0.053	4.5	LOS A	0.1	0.8	0.47	0.62	0.47	45.1
9a	R1	All MCs	1	0.0	1	0.0	0.053	7.7	LOS A	0.1	0.8	0.47	0.62	0.47	44.6
9	R2	All MCs	30	41.7	30	41.7	0.053	9.5	LOS A	0.1	0.8	0.47	0.62	0.47	42.0
Approach			47	27.0	47	27.0	0.053	7.9	LOS A	0.1	0.8	0.47	0.62	0.47	42.3
West: Roseland Drive															
10	L2	All MCs	181	8.4	181	8.4	0.392	3.7	LOS A	1.0	7.1	0.41	0.45	0.41	45.2
11	T1	All MCs	313	2.8	313	2.8	0.392	4.2	LOS A	1.0	7.1	0.41	0.45	0.41	40.5
12	R2	All MCs	8	0.0	8	0.0	0.392	8.2	LOS A	1.0	7.1	0.41	0.45	0.41	44.7
12b	R3	All MCs	3	50.0	3	50.0	0.392	10.9	LOS A	1.0	7.1	0.41	0.45	0.41	46.2
Approach			504	5.0	504	5.0	0.392	4.1	LOS A	1.0	7.1	0.41	0.45	0.41	43.2
All Vehicles			1109	6.2	1097	6.2	0.392	4.6	LOS A	1.0	7.1	0.31	0.46	0.31	43.9

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Constraint effects.

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Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											

P4 Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ **Site: [6 (19)] Martin Street/ Violet Street** (2035 Future
(Weekday AM) + Dev (Post Upgrd))
Network: [5 (2)] Weekday AM (2035 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m	Rate to Depart		km/h
East: Martin Street														
5	T1	All MCs	187	4.7	183	4.8	0.162	1.4	LOS A	0.3	1.9	0.32	0.37	51.6
6	R2	All MCs	52	22.0	51	22.3	0.162	9.1	LOS A	0.3	1.9	0.32	0.37	52.1
Approach			239	8.5	234	8.6	0.162	3.1	NA	0.3	1.9	0.32	0.37	51.8
North: Violet Street														
7	L2	All MCs	69	16.4	69	16.4	0.199	8.3	LOS A	0.3	2.2	0.55	0.79	46.3
9	R2	All MCs	69	1.8	69	1.8	0.199	10.2	LOS A	0.3	2.2	0.55	0.79	46.3
Approach			139	9.1	139	9.1	0.199	9.2	LOS A	0.3	2.2	0.55	0.79	46.3
West: Martin Street														
10	L2	All MCs	66	1.9	66	1.9	0.281	4.3	LOS A	0.0	0.0	0.00	0.07	54.7
11	T1	All MCs	474	1.6	474	1.6	0.281	0.0	LOS A	0.0	0.0	0.00	0.07	53.3
Approach			539	1.6	539	1.6	0.281	0.5	NA	0.0	0.0	0.00	0.07	54.0
All Vehicles			917	4.5	912	4.6	0.281	2.5	NA	0.3	2.2	0.17	0.26	50.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

Gap-Acceptance Capacity Formula: SIDRA Standard (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: [7 (19)] Martin Street/ Karne Street** (2035 Future
(Weekday AM) + Dev (Post Upgrd))
Network: [5 (2)] Weekday AM (2035 Future + Dev (Post
Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycle	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m	Rate to Depart		km/h
South: Karne St														
1	L2	All MCs	76	5.0	76	5.0	0.228	6.1	LOS A	0.5	3.8	0.39	0.39	50.7
3	R2	All MCs	173	2.9	173	2.9	0.228	8.6	LOS A	0.5	3.8	0.39	0.39	47.6
Approach			249	3.6	249	3.6	0.228	7.8	LOS A	0.5	3.8	0.39	0.39	49.0
East: Martin St														
4	L2	All MCs	99	9.0	97	9.1	0.227	4.8	LOS A	0.5	4.0	0.37	0.37	48.2
5	T1	All MCs	159	0.8	157	0.8	0.227	4.5	LOS A	0.5	4.0	0.37	0.37	49.5
Approach			258	3.9	254	4.0	0.227	4.6	LOS A	0.5	4.0	0.37	0.37	49.0
West: Martin St														
11	T1	All MCs	373	2.4	373	2.4	0.455	6.2	LOS A	1.4	9.6	0.51	0.51	48.3
12	R2	All MCs	134	1.9	134	1.9	0.455	8.9	LOS A	1.4	9.6	0.51	0.51	51.0
Approach			507	2.2	507	2.2	0.455	7.0	LOS A	1.4	9.6	0.51	0.51	49.4
All Vehicles			1013	3.0	1009	3.0	0.455	6.6	LOS A	1.4	9.6	0.44	0.44	49.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (14)] King Georges Road / Roseland Avenue (2035**

Future (Weekday PM) + Dev (Post Upgrd))

Network: [6 (2)] Weekday PM (2035 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future + Development (Post intersection upgrade)

Weekday PM

16:45 to 17:45 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop of Cycles	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2788	5.4	2788	5.4	* 0.698	9.3	LOS A	17.9	131.0	0.60	0.55	49.0
Approach			2788	5.4	2788	5.4	0.698	9.3	LOS A	17.9	131.0	0.60	0.55	49.0
North: King Georges Road														
8	T1	All MCs	2113	3.9	2113	3.9	0.625	8.5	LOS A	38.1	276.0	0.54	0.49	47.1
Approach			2113	3.9	2113	3.9	0.625	8.5	LOS A	38.1	276.0	0.54	0.49	47.1
West: Roseland Avenue														
10	L2	All MCs	193	9.2	193	9.2	0.538	65.5	LOS E ¹¹	3.4	25.9	0.99	0.78	21.3
12	R2	All MCs	313	4.0	313	4.0	* 1.160	232.8	LOS F ¹¹	14.4	104.1	1.00	1.41	1.4
Approach			507	6.0	507	6.0	1.160	169.0	LOS F ¹¹	14.4	104.1	1.00	1.17	5.7
All Vehicles			5408	4.9	5408	4.9	1.160	23.9	LOS B	38.1	276.0	0.61	0.59	36.1

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

P4B Slip/ Bypass	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (32)] Roseland Drive / Roseland Avenue** (2035 Future (Weekday PM) + Dev (Post Upgrd))

Network: [6 (2)] Weekday PM (2035 Future + Dev (Post Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Site Access															
1b	L3	All MCs	1	0.0	1	0.0	0.166	7.3	LOS A	0.4	2.9	0.70	0.68	0.70	43.8
1	L2	All MCs	15	0.0	15	0.0	0.166	7.1	LOS A	0.4	2.9	0.70	0.68	0.70	40.5
2	T1	All MCs	58	0.0	58	0.0	0.166	7.0	LOS A	0.4	2.9	0.70	0.68	0.70	44.2
3	R2	All MCs	73	0.0	73	0.0	0.166	11.1	LOS A	0.4	2.9	0.70	0.68	0.70	40.5
Approach			148	0.0	148	0.0	0.166	9.0	LOS A	0.4	2.9	0.70	0.68	0.70	42.5
East: Roseland Drive															
4	L2	All MCs	44	0.0	33	0.0	0.502	3.6	LOS A	1.4	10.0	0.30	0.46	0.30	45.3
4a	L1	All MCs	176	0.0	131	0.0	0.502	3.2	LOS A	1.4	10.0	0.30	0.46	0.30	45.6
5	T1	All MCs	483	1.6	362	2.0	0.502	3.6	LOS A	1.4	10.0	0.30	0.46	0.30	42.1
6	R2	All MCs	284	10.2	210	9.3	0.502	7.7	LOS A	1.4	10.0	0.30	0.46	0.30	44.9
Approach			987	3.7	737	3.6	0.502	4.7	LOS A	1.4	10.0	0.30	0.46	0.30	44.2
North: Roseland Avenue															
7	L2	All MCs	33	7.7	33	7.7	0.123	5.7	LOS A	0.3	2.1	0.59	0.67	0.59	41.1
8	T1	All MCs	1	0.0	1	0.0	0.123	5.4	LOS A	0.3	2.1	0.59	0.67	0.59	44.5
9a	R1	All MCs	1	0.0	1	0.0	0.123	8.6	LOS A	0.3	2.1	0.59	0.67	0.59	44.0
9	R2	All MCs	67	18.9	67	18.9	0.123	10.0	LOS A	0.3	2.1	0.59	0.67	0.59	41.1
Approach			102	14.8	102	14.8	0.123	8.6	LOS A	0.3	2.1	0.59	0.67	0.59	41.2
West: Roseland Drive															
10	L2	All MCs	193	9.8	193	9.8	0.541	4.6	LOS A	1.6	11.5	0.62	0.56	0.62	44.4
11	T1	All MCs	422	0.0	422	0.0	0.541	5.3	LOS A	1.6	11.5	0.62	0.56	0.62	38.9
12	R2	All MCs	15	0.0	15	0.0	0.541	9.4	LOS A	1.6	11.5	0.62	0.56	0.62	43.9
12b	R3	All MCs	3	50.0	3	50.0	0.541	12.5	LOS A	1.6	11.5	0.62	0.56	0.62	45.4
Approach			633	3.2	633	3.2	0.541	5.2	LOS A	1.6	11.5	0.62	0.56	0.62	41.8
All Vehicles			1869	3.9	1620	4.4	0.541	5.5	LOS A	1.6	11.5	0.48	0.53	0.48	43.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Constraint effects.

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Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											

P4 Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: [6 (20)] Martin Street/ Violet Street (2035 Future (Weekday PM) + Dev (Post Upgrd))
Network: [6 (2)] Weekday PM (2035 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. 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
East: Martin Street														
5	T1	All MCs	337	3.4	265	4.2	0.186	0.6	LOS A	0.2	1.4	0.19	0.21	55.5
6	R2	All MCs	49	23.1	41	27.3	0.186	8.3	LOS A	0.2	1.4	0.19	0.21	53.2
Approach			387	5.9	306	7.3	0.186	1.6	NA	0.2	1.4	0.19	0.21	54.8
North: Violet Street														
7	L2	All MCs	76	20.0	76	20.0	0.434	8.8	LOS A	0.9	6.6	0.61	0.89	44.7
9	R2	All MCs	231	0.0	231	0.0	0.434	11.1	LOS A	0.9	6.6	0.61	0.89	44.7
Approach			307	4.9	307	4.9	0.434	10.5	LOS A	0.9	6.6	0.61	0.89	44.7
West: Martin Street														
10	L2	All MCs	71	0.0	71	0.0	0.217	4.3	LOS A	0.0	0.0	0.00	0.10	54.5
11	T1	All MCs	347	1.1	347	1.1	0.217	0.0	LOS A	0.0	0.0	0.00	0.10	51.0
Approach			418	0.9	418	0.9	0.217	0.7	NA	0.0	0.0	0.00	0.10	53.2
All Vehicles			1112	3.8	1031	4.0	0.434	3.9	NA	0.9	6.6	0.24	0.37	49.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [7 (20)] Martin Street/ Karne Street** (2035 Future
(Weekday PM) + Dev (Post Upgrd))

Network: [6 (2)] Weekday PM (2035 Future + Dev (Post
Upgrd))

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years
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	Aver. 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: Karne St														
1	L2	All MCs	117	4.3	117	4.3	0.325	7.2	LOS A	0.8	5.8	0.55	0.65	50.3
3	R2	All MCs	189	4.7	189	4.7	0.325	9.7	LOS A	0.8	5.8	0.55	0.65	46.9
Approach			307	4.5	307	4.5	0.325	8.7	LOS A	0.8	5.8	0.55	0.65	48.7
East: Martin St														
4	L2	All MCs	243	3.6	212	4.1	0.398	4.6	LOS A	1.2	8.4	0.37	0.49	48.5
5	T1	All MCs	327	0.8	285	0.9	0.398	4.3	LOS A	1.2	8.4	0.37	0.49	49.5
Approach			570	2.0	498	2.2	0.398	4.5	LOS A	1.2	8.4	0.37	0.49	49.1
West: Martin St														
11	T1	All MCs	241	0.0	241	0.0	0.320	6.1	LOS A	0.8	5.9	0.48	0.58	48.4
12	R2	All MCs	99	0.0	99	0.0	0.320	8.8	LOS A	0.8	5.9	0.48	0.58	51.1
Approach			340	0.0	340	0.0	0.320	6.9	LOS A	0.8	5.9	0.48	0.58	49.6
All Vehicles			1216	2.1	1144	2.2	0.398	6.3	LOS A	1.2	8.4	0.45	0.56	49.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: [2 (15)] King Georges Road / Roseland Avenue (2035**
 Future (Saturday) + Dev (Post Upgrd))
Network: [4 (2)] Saturday (2035 Future + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist] m			km/h
South: King Georges Road														
2	T1	All MCs	2910	3.1	2557	3.1	0.626	8.5	LOS A	14.9	106.9	0.54	0.50	42.7
Approach			2910	3.1	2557	3.1	0.626	8.5	LOS A	14.9	106.9	0.54	0.50	42.7
North: King Georges Road														
8	T1	All MCs	2493	3.5	2493	3.5	*0.734	9.9	LOS A	20.3	146.7	0.63	0.58	39.4
Approach			2493	3.5	2493	3.5	0.734	9.9	LOS A	20.3	146.7	0.63	0.58	39.4
West: Roseland Avenue														
10	L2	All MCs	229	3.3	229	3.3	0.608	67.9	LOS E ¹¹	4.1	29.5	1.00	0.80	20.0
12	R2	All MCs	344	2.6	344	2.6	*1.256	318.5	LOS F ¹¹	18.6	132.8	1.00	1.69	1.1
Approach			572	2.9	572	2.9	1.256	218.4	LOS F ¹¹	18.6	132.8	1.00	1.33	4.8
All Vehicles			5976	3.2	5623	3.4	1.256	30.5	LOS C	20.3	146.7	0.63	0.62	29.7

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roseland Avenue											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P4B	Slip/	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Bypass										
All Pedestrians	189	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 **Site: [3 (33)] Roseland Drive / Roseland Avenue (2035**
Future (Saturday) + Dev (Post Upgrd))
Network: [4 (2)] Saturday (2035 Future + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2025 Baseline + Development (Post intersection upgrade)
 Saturday
 12:30 to 13:30 Peak Period
 Site Category: (None)
 Roundabout
 Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
South: Site Access														
1b	L3	All MCs	1	0.0	1	0.0	0.262	10.0	LOS A	0.8	5.3	0.87	0.76	42.5
1	L2	All MCs	18	0.0	18	0.0	0.262	9.8	LOS A	0.8	5.3	0.87	0.76	38.3
2	T1	All MCs	69	0.0	69	0.0	0.262	9.7	LOS A	0.8	5.3	0.87	0.76	42.8
3	R2	All MCs	87	0.0	87	0.0	0.262	13.8	LOS A	0.8	5.3	0.87	0.76	38.3
Approach			176	0.0	176	0.0	0.262	11.7	LOS A	0.8	5.3	0.87	0.76	40.7
East: Roseland Drive														
4	L2	All MCs	52	0.0	44	0.0	0.657	3.9	LOS A	2.5	17.8	0.47	0.49	44.9
4a	L1	All MCs	351	0.0	306	0.0	0.657	3.5	LOS A	2.5	17.8	0.47	0.49	45.1
5	T1	All MCs	384	0.0	335	0.0	0.657	3.8	LOS A	2.5	17.8	0.47	0.49	41.2
6	R2	All MCs	307	5.8	267	5.7	0.657	8.0	LOS A	2.5	17.8	0.47	0.49	44.5
Approach			1094	1.6	952	1.6	0.657	4.9	LOS A	2.5	17.8	0.47	0.49	44.1
North: Roseland Avenue														
7	L2	All MCs	52	2.4	52	2.4	0.248	8.0	LOS A	0.7	5.1	0.85	0.77	39.1
8	T1	All MCs	1	0.0	1	0.0	0.248	7.9	LOS A	0.7	5.1	0.85	0.77	43.3
9a	R1	All MCs	1	0.0	1	0.0	0.248	11.1	LOS A	0.7	5.1	0.85	0.77	42.9
9	R2	All MCs	88	14.3	88	14.3	0.248	12.6	LOS A	0.7	5.1	0.85	0.77	39.1
Approach			143	9.7	143	9.7	0.248	10.9	LOS A	0.7	5.1	0.85	0.77	39.2
West: Roseland Drive														
10	L2	All MCs	220	5.2	220	5.2	0.842	10.9	LOS A	5.9	41.6	0.95	0.97	40.2
11	T1	All MCs	696	0.5	696	0.5	0.842	12.1	LOS A	5.9	41.6	0.95	0.97	31.4
12	R2	All MCs	18	0.0	18	0.0	0.842	16.1	LOS B	5.9	41.6	0.95	0.97	39.8
12b	R3	All MCs	3	50.0	3	50.0	0.842	20.2	LOS B	5.9	41.6	0.95	0.97	41.0
Approach			936	1.8	936	1.8	0.842	11.9	LOS A	5.9	41.6	0.95	0.97	35.0
All Vehicles			2348	2.0	2206	2.2	0.842	8.8	LOS A	5.9	41.6	0.73	0.73	40.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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Organisation: TTW (NSW) PTY LTD | Licence: NETWORK / 1PC | Processed: Friday, 14 August 2026 11:20:37 AM

Project: P:\2024\2417\241764\Reports\TTW\Traffic\Traffic Modelling\260730 Roseland Shopping Centre Traffic ModellingV05.sipx

MOVEMENT SUMMARY

 **Site: [1 (15)] King Georges Road / Roselands Drive** (2035 Future (Saturday) + Dev (Post Upgrd))
Network: [4 (2)] Saturday (2035 Future + Dev (Post Upgrd))
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

2035 Future + Development (Post intersection upgrade)

Saturday

12:30 to 13:30 Peak Period

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Network User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]				
			veh/h	%	veh/h	%	v/c	sec		veh	Dist]			km/h
South: King Georges Road														
1	L2	All MCs	820	1.1	820	1.1	1.138	4.9	LOS A	1.5	10.5	0.00	0.31	46.5
2	T1	All MCs	2737	3.2	2737	3.2	* 1.138	143.9	LOS F ¹¹	76.8	552.2	0.83	1.57	10.7
Approach			3557	2.7	3557	2.7	1.138	111.8	LOS F ¹¹	76.8	552.2	0.64	1.28	13.1
North: King Georges Road														
8	T1	All MCs	2301	3.7	2250	3.8	0.570	9.5	LOS A	13.2	95.2	0.54	0.50	42.0
9	R2	All MCs	407	2.2	394	2.1	* 1.143	199.6	LOS F ¹¹	24.3	173.3	1.00	1.73	1.8
Approach			2708	3.5	2644	3.5	1.143	37.8	LOS C	24.3	173.3	0.61	0.68	20.3
West: Roselands Drive														
10	L2	All MCs	200	1.3	200	1.3	1.139	199.0	LOS F ¹¹	26.8	189.1	1.00	1.50	6.7
12	R2	All MCs	638	0.8	638	0.8	* 1.139	195.9	LOS F ¹¹	29.8	209.9	1.00	1.52	12.9
Approach			837	0.9	837	0.9	1.139	196.6	LOS F ¹¹	29.8	209.9	1.00	1.52	11.6
All Vehicles			7103	2.8	7038	2.8	1.143	94.1	LOS F ¹¹	76.8	552.2	0.67	1.08	14.9

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

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

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

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: King Georges Road											
P3	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Roselands Drive											
P4	Full	63	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96

All Pedestrians	126	54.3	LOS E ¹²	0.2	0.2	0.95	0.95	208.1	200.0	0.96
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Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

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

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

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▼ Site: [6 (21)] Martin Street/ Violet (2035 Future (Saturday) + Dev (Post Upgrd))
Network: [4 (2)] Saturday (2035 Future + Dev (Post Upgrd))
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years
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	Aver. Back Of Queue	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h
East: Martin Street														
5	T1	All MCs	231	1.6	208	1.8	0.154	0.8	LOS A	0.2	1.4	0.23	0.26	54.3
6	R2	All MCs	42	21.2	38	23.1	0.154	8.6	LOS A	0.2	1.4	0.23	0.26	53.1
Approach			273	4.6	246	5.1	0.154	2.0	NA	0.2	1.4	0.23	0.26	53.9
North: Violet Street														
7	L2	All MCs	78	14.5	78	14.5	0.456	9.0	LOS A	1.0	7.1	0.62	0.91	44.5
9	R2	All MCs	244	0.5	244	0.5	0.456	11.2	LOS A	1.0	7.1	0.62	0.91	44.5
Approach			322	3.9	322	3.9	0.456	10.7	LOS A	1.0	7.1	0.62	0.91	44.5
West: Martin Street														
10	L2	All MCs	102	0.0	102	0.0	0.252	4.3	LOS A	0.0	0.0	0.00	0.12	54.3
11	T1	All MCs	383	0.3	383	0.3	0.252	0.0	LOS A	0.0	0.0	0.00	0.12	49.3
Approach			485	0.3	485	0.3	0.252	0.9	NA	0.0	0.0	0.00	0.12	52.6
All Vehicles			1080	2.5	1053	2.5	0.456	4.2	NA	1.0	7.1	0.24	0.40	48.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

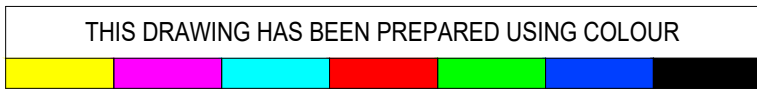
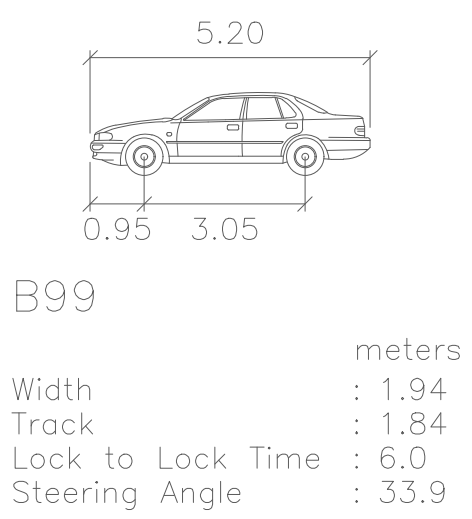
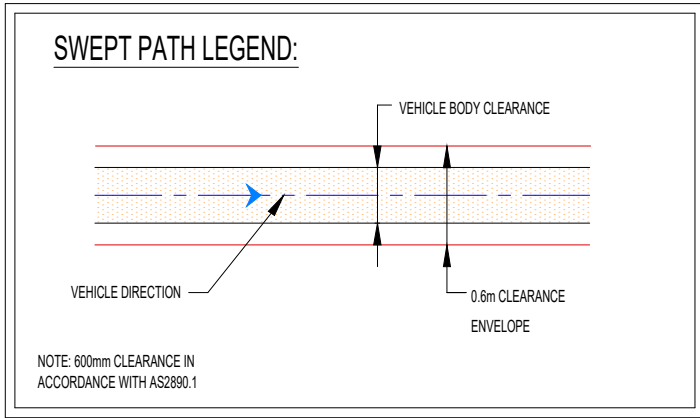
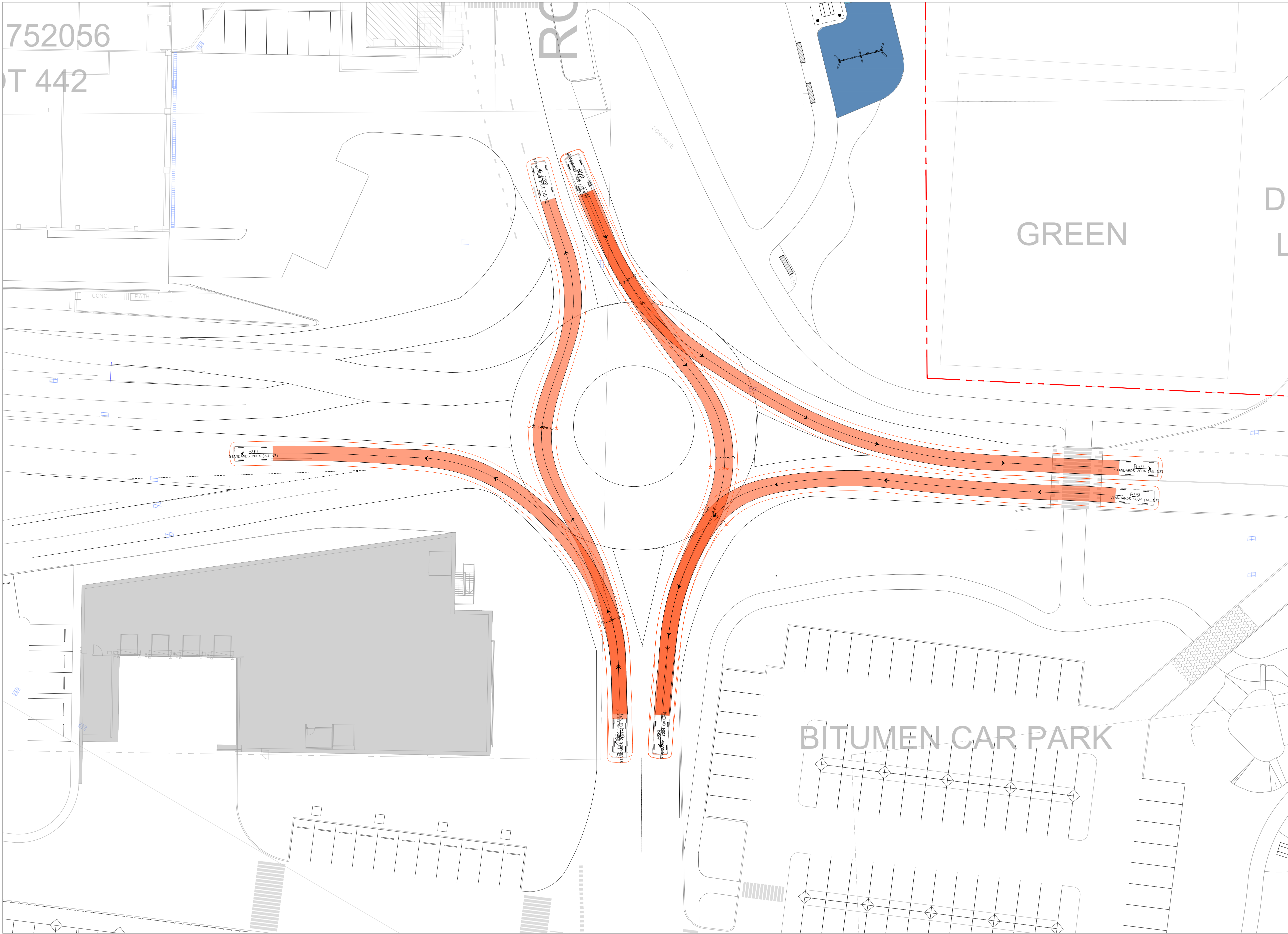
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

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

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

Appendix G Vehicle Swept Path Analysis

File Name: 241764-TTW-00-DR-0001-P2 - ROUNDABOUT B99 SWEEP PATH.dwg - USER: rathandla - Plot File Created: Aug 18, 2026 - 3:45pm



Rev				Description				Eng				Draft				Date			
P2	PRELIMINARY	MP	MP	18.08.2026															
P1	PRELIMINARY	MP	MP	28.05.2026															

Architect
GROUP GSA
Level 7/80 William St
Woolloomooloo NSW 2011

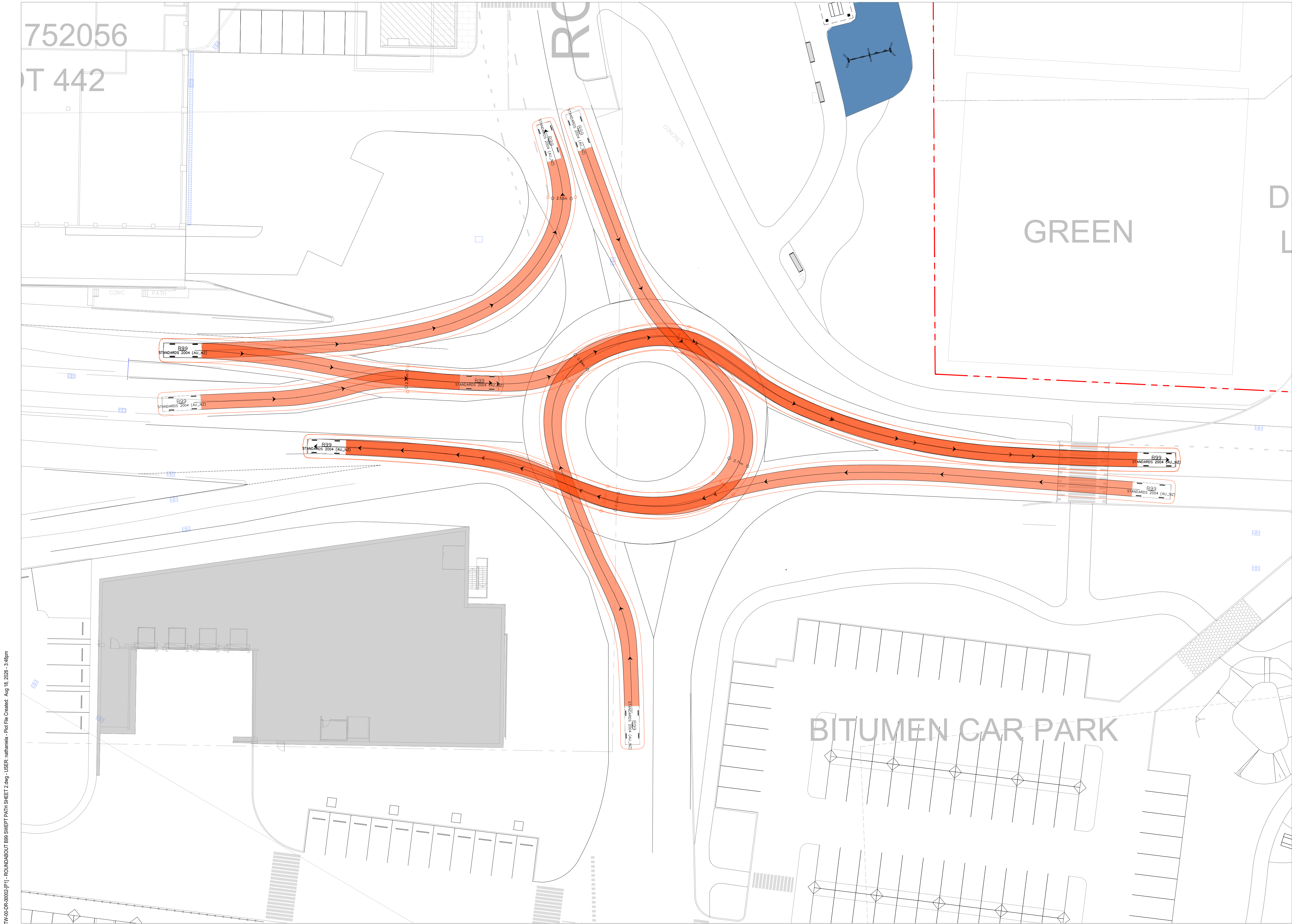
Engineer



Project
ROSELAND SHOPPING CENTRE
24 Roselands Ave
Roselands NSW 2196

Sheet Subject
**B99 ENTRY & EXIT
SWEPT PATH
ROUNDABOUT**

Scale : A1 1:250	Drawn MP	Authorised MM
Job No 241764	Drawing No TTW-00-DR-TR-00001 P2	Revision
Plot File Created: Aug 18, 2026 - 3:45pm		



SWEPT PATH LEGEND:

NOTE: 800mm CLEARANCE IN ACCORDANCE WITH AS886.1

B99

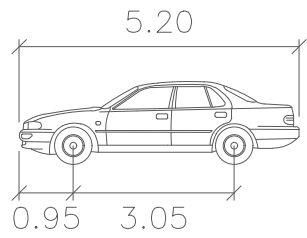
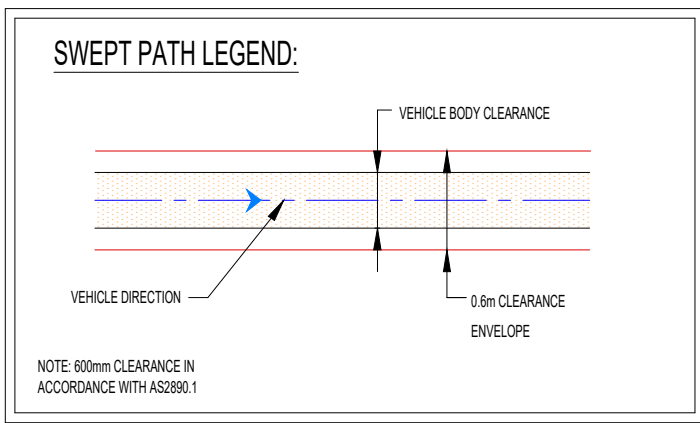
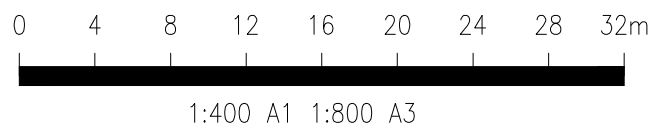
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File Name: 241764-TTW-00-DR-00002-0P1 - ROUNDABOUT B99 SWEPT PATH SHEET 2.dwg USER: rathnashale - Plot File Created: Aug 18, 2026 - 3:48pm

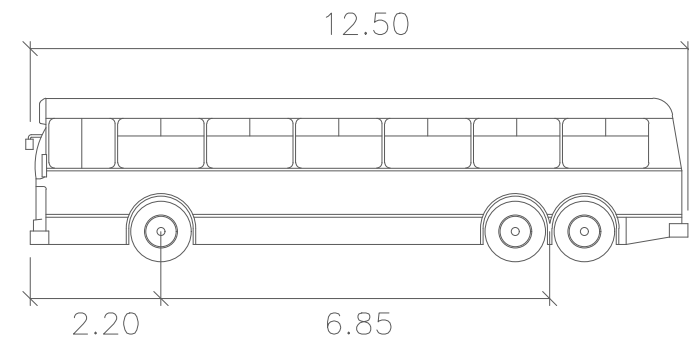
THIS DRAWING HAS BEEN PREPARED USING COLOUR

				Architect				Engineer				Project				Sheet Subject				Scale : A1				Drawn				Authorised			
				GROUP GSA								ROSELAND SHOPPING CENTRE				B99 ENTRY & EXIT				1:250				MP				MM			
				Level 7/80 William St								24 Roselands Ave				SWEPT PATH															
				Woolloomooloo NSW 2011								Roselands NSW 2196				ROUNDABOUT															
P2	PRELIMINARY	MP	MP	18.08.2026																Job No	Drawing No		Revision								
P1	PRELIMINARY	MP	MP	28.05.2026																241764	TTW-00-DR-TR-00002 P2										
Rev Description				Eng	Draft	Date	Rev Description				Eng	Draft	Date	Rev Description				Eng	Draft	Date	Plot File Created: Aug 18, 2026 - 3:48pm										

File Name: 241764-TTW-00-DR-0003-P2 - ROUNDABOUT BUS SWEEP PATH.dwg - USER: natashalee - Plot File Created: Aug 18, 2026 - 3:56pm



B99	metres
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



BUS	metres
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

THIS DRAWING HAS BEEN PREPARED USING COLOUR



Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date
P2	PRELIMINARY	MP	MP	18.08.2026										
P1	PRELIMINARY	MP	MP	28.05.2026										

Architect
GROUP GSA
Level 7/80 William St
Woolloomooloo NSW 2011

Engineer



Project
ROSELAND SHOPPING CENTRE
24 Roselands Ave
Roselands NSW 2196

Sheet Subject
**BUS ENTRY & EXIT
SWEEP PATH
ROUNDABOUT**

Scale : A1
1:400

Drawn
MP

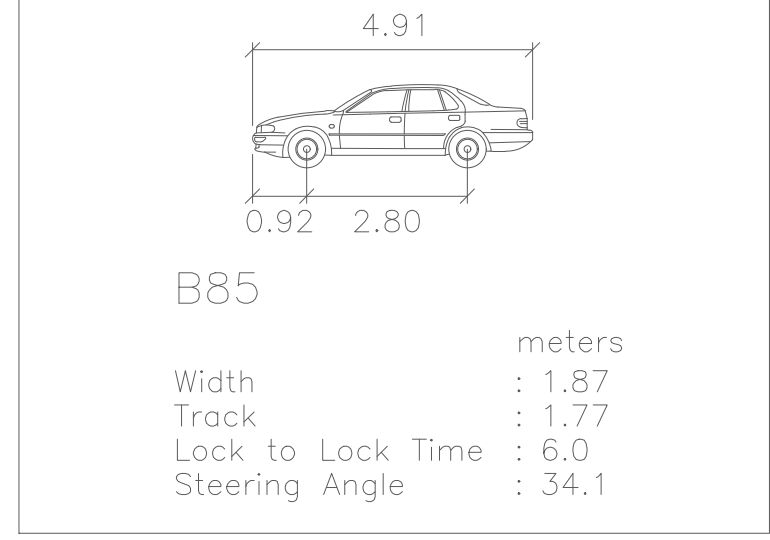
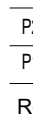
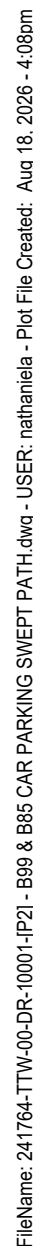
Authorised
MM

Job No
241764

Drawing No
TTW-00-DR-TR-00003 P2

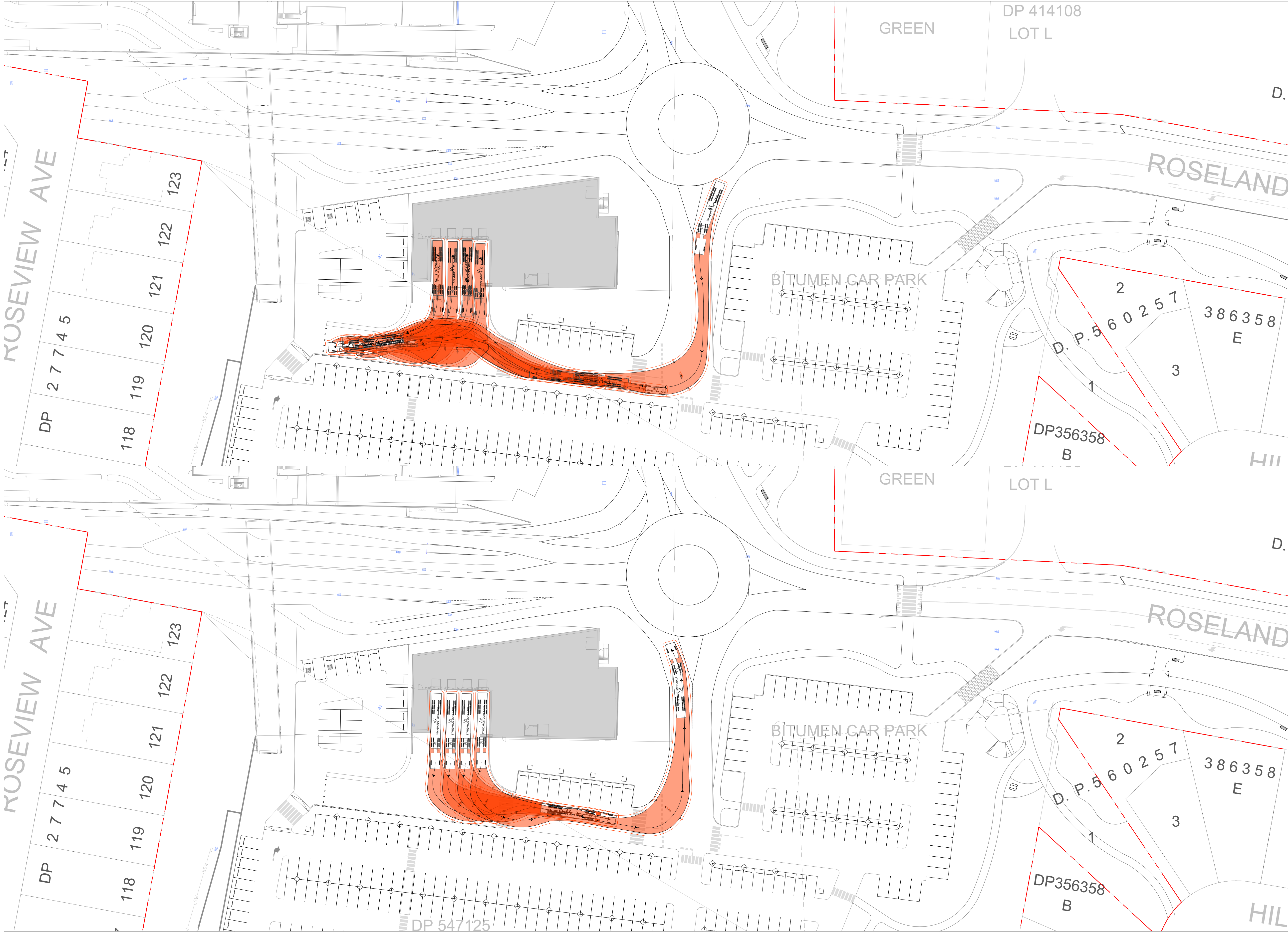
Revision

Plot File Created: Aug 18, 2026 - 3:56pm



THIS DRAWING HAS BEEN PREPARED USING COLOUR

Filename: 241764-TTW-00-DR-10002-P2 - 20m AV ENTRY PROPOSED LOADING DOCK SWEEP PATH.dwg - USER: natasha - Plot File Created: Aug 18, 2026 - 4:11pm



SWEPT PATH LEGEND:

NOTE: 800mm CLEARANCE IN ACCORDANCE WITH AS886.1

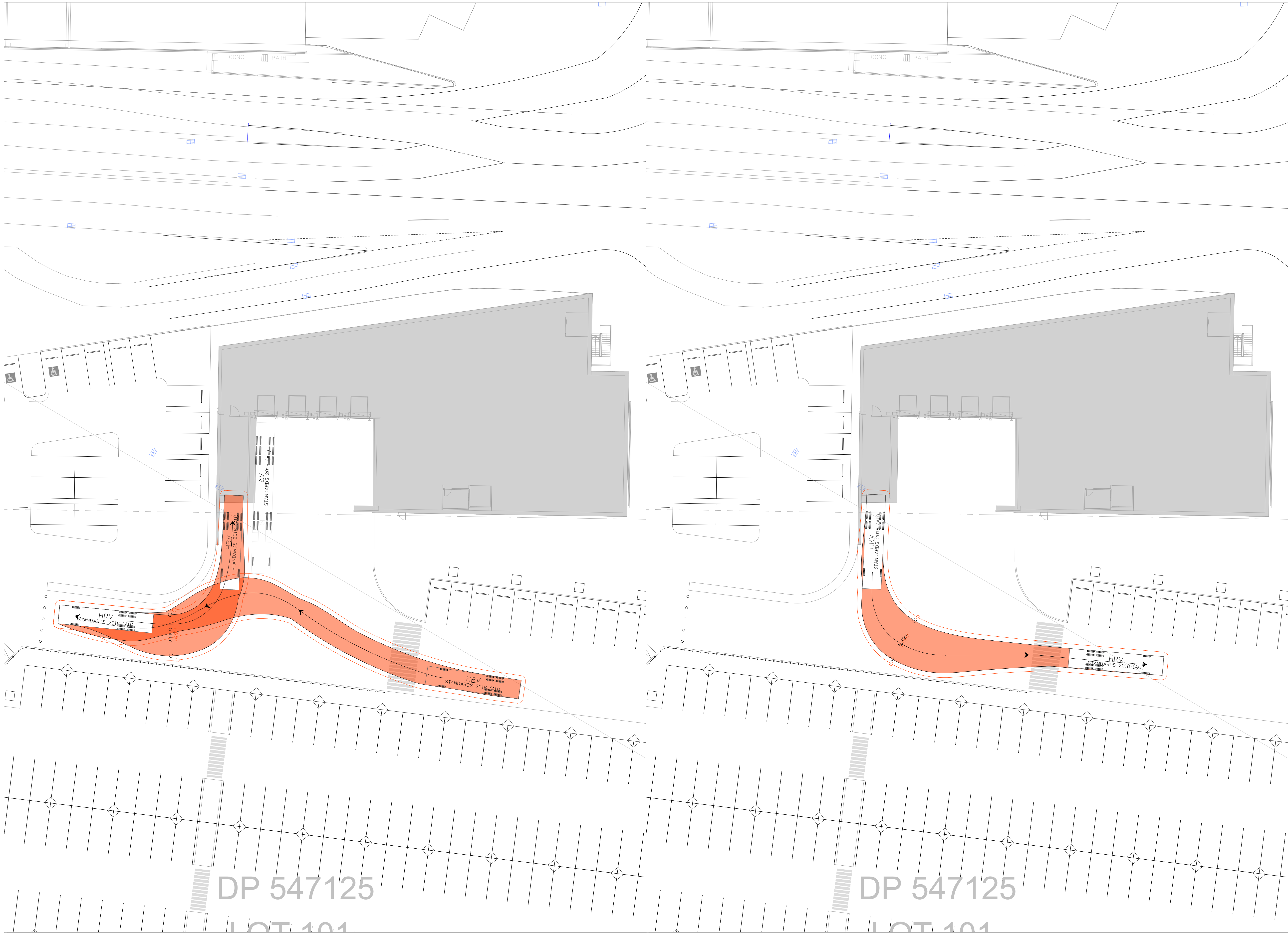
AV

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

										Architect										Engineer										Project										Sheet Subject										Scale : 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Filename: 241764-TTW-00-DR-10003-P2 - 1m WASTE TRUCK ENTRY EXIT PROPOSED LOADING DOCK SWEEP PATH.dwg USER: nathanhalea - Plot File Created: Aug 18, 2026 - 4:13pm



SWEPT PATH LEGEND:

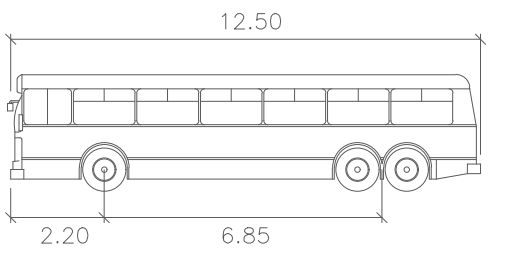
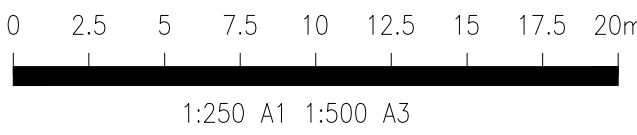
NOTE: 800mm CLEARANCE IN ACCORDANCE WITH AS2886.1

HRV

Width	: 2.50	meters
Track	: 2.50	
Lock to Lock Time	: 6.0	
Steering Angle	: 36.7	

THIS DRAWING HAS BEEN PREPARED USING COLOUR

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Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

THIS DRAWING HAS BEEN PREPARED USING COLOUR

[illegible]