
Lot 36 Montario Quarter, Shenton Park TIA

Transport Impact Assessment

Prepared for: Montario Project Pty Ltd

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For and on behalf of

Stantec Australia Pty Ltd

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Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

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1. Introduction

1.1 Background

Stantec has been engaged by Montario Project Pty Ltd (“the client”) to prepare a Transport Impact Assessment (TIA) for the proposed mixed use development (‘the Site’) located at Lot 36 Montario Quarter, Shenton Park within the City of Nedlands.

This report aims to assess the impact of the development upon the adjacent road network. The report will focus on access, public transport, pedestrian and cycle networks, circulation and car parking requirements.

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



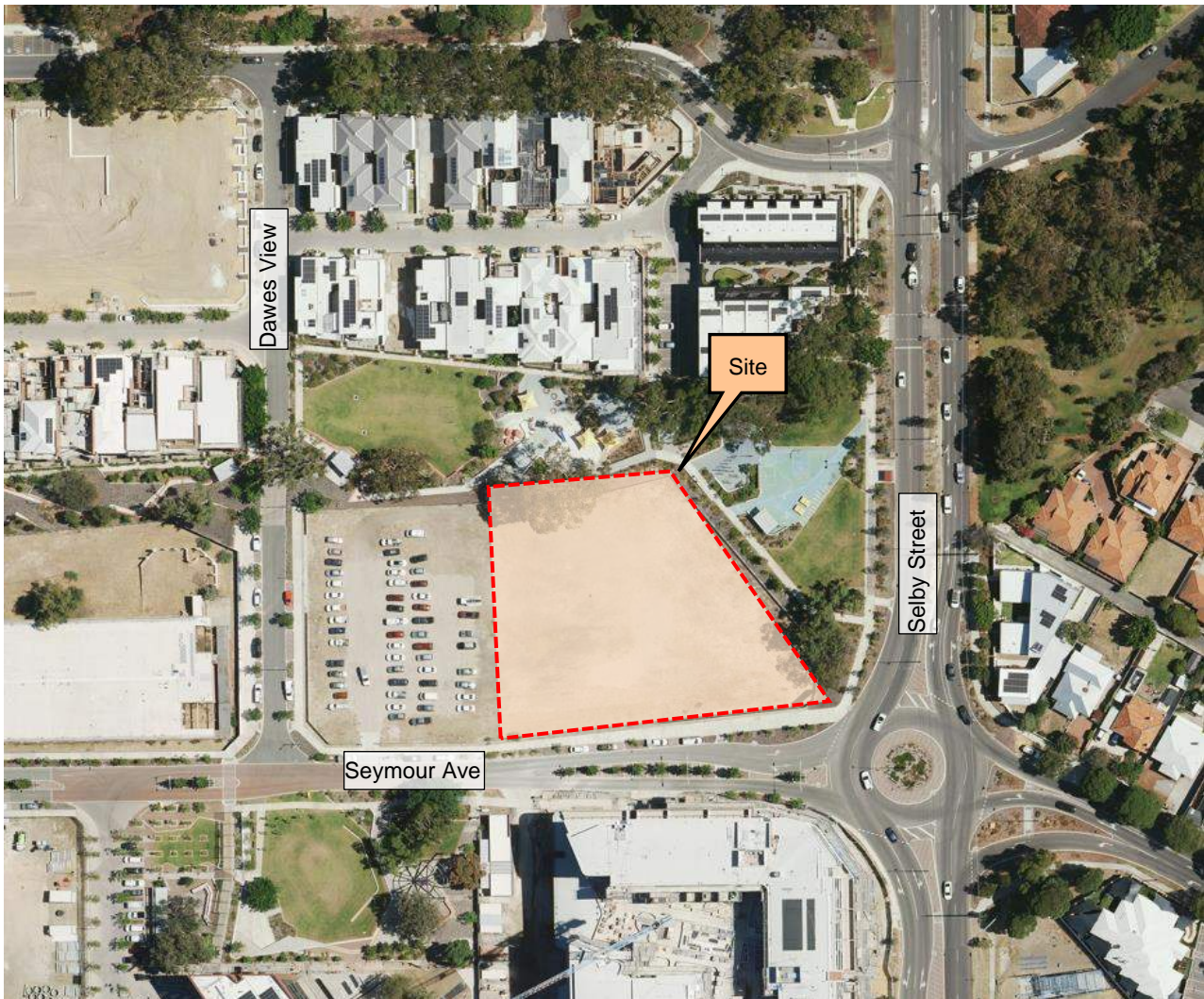
2. Existing Situation

2.1 Site Location and context

Montario Quarter is located approximately 5km west of the Perth Central Business District (CBD) within the suburb of Shenton Park, in the local government area of the City of Nedlands. The site is located in close proximity to the Shenton Park train station which forms part of the Perth to Fremantle passenger rail line. The Site is bounded by Seymour Avenue to the south and Selby Street to the east.

The location of the subject site and its surrounding environs is shown in **Figure 2-1**.

Figure 2-1 Aerial Overview of the Site

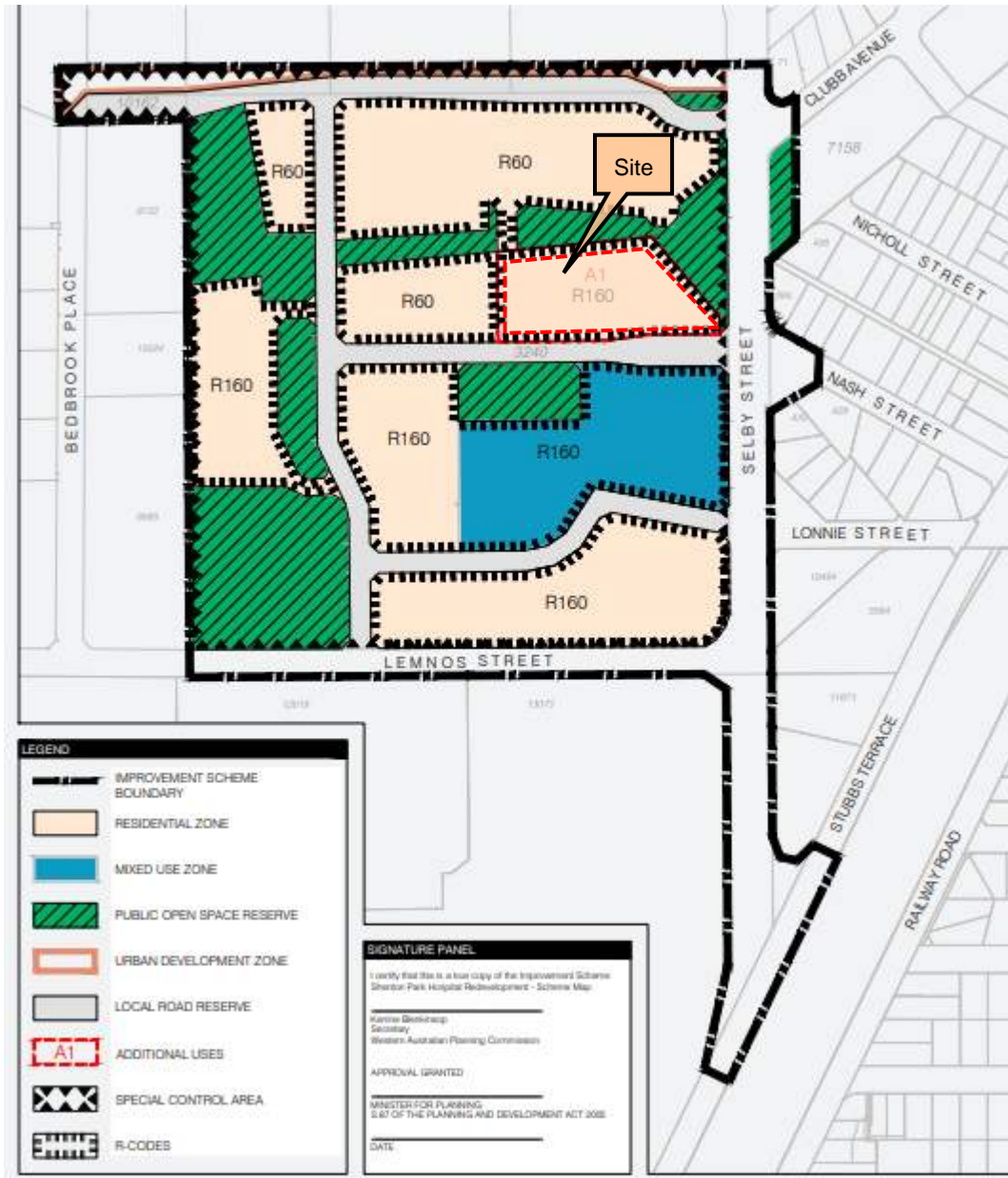


Source: Metromap

2.2 Land use

The proposed development falls within *The Shenton Park Hospital Redevelopment Structure Plan* area. **Figure 2-2** shows the *Scheme* map where the Site is zoned as residential.

Figure 2-2 Shenton Park Hospital Redevelopment Improvement Scheme



Source: *Shenton Park Hospital Redevelopment Improvement Scheme* (2017)

2.3 Existing development

There is currently no development on the subject Site and it is currently vacant land.

2.4 Existing Road Network

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

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

The surrounding road network is further described in **Table 2-1** and **Figure 2-3** shows the hierarchy as per the Main Roads WA Road Information Mapping System.

Table 2-1 Road Network Classification

Road Name	Road Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Road Width (m)	Posted Speed Limit (km/h)
Seymour Avenue	Access Road	Local Govt.	2	2	12m (including 4.3m median near Selby Street intersection and on street parking)	50km/h
Selby Street	Distributor A/B	Local Govt.	4	2	19m (including 4.5m median)	60km/hr (40km/hr during school peak)
Dawes View	Access Road	Local Govt.	2	2	5.9m and on-street parking on both sides	50km/h
Nash Street	Distributor B	Local Govt.	2	2	9.8m (including 1.2m median)	50km/h



Figure 2-3 Road Hierarchy



Source: MRWA Road Mapping Information System

2.5 Existing Traffic Volumes

The existing traffic volumes for the surrounding road network were sourced from Main Roads Traffic Map and traffic data provided by the City of Nedlands. The existing average Monday to Friday daily peak hour traffic volumes are summarised in **Table 2-2**.

Table 2-2 Existing Traffic Volumes

Road Name	Date	Daily Traffic Volume	AM Peak	PM Peak	HV %	Source
Selby Street (South of Nash St)	2019/2020	12,791	1,391	1,222	9.4	Traffic map
Lemnos St (West of Selby St)	2019/2020	5,597	588	562	12.5%	Traffic map
Lemnos St (Between Bedbrook PI & Selby St)	2018	5,986	625	534	-	City of Nedlands



2.6 Surrounding intersections

The following section describes the intersections in the proximity of the development:

2.6.1 Seymour Avenue/Selby Street/ Nash Street Intersection

Seymour Avenue/Selby Street/ Nash Street is located to the east of the development site. The intersection is a 4-legged roundabout as illustrated in **Figure 2-4**.

Figure 2-4 Seymour Avenue / Selby Street / Nash Street Intersection



Source: Metromap

2.6.2 Orton Road /Selby Street/ Clubb Ave Intersection

Orton Road /Selby Street/ Clubb Ave is located to the northeast of the development site. The intersection is a 4-legged priority-controlled intersection as illustrated in **Figure 2-5**.

Figure 2-5 Orton Road / Selby Street / Clubb Ave Intersection



Source: Metromap

2.6.3 Seymour Avenue / Dawes View Intersection

Seymour Avenue / Dawes View is located to the west of the development site. The intersection is a 4-legged priority-controlled intersection as illustrated in **Figure 2-6**.

Figure 2-6 Seymour Avenue / Dawes view Intersection



Source: Metromap

2.7 Crash Assessment

A review of crashes that have been reported within the 5-year period from 2018 – 2022 has been undertaken using the Main Roads WA Crash Analysis Reporting System. **Table 2-3 to Table 2-5** provides a summary of all crashes that occurred within the vicinity of the Site, with the location and severity of these crashes illustrated in **Figure 2-7**.

Table 2-3 Total Crashes

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle	-	1	-	4	1	6
Hit Pedestrian	-	-	1	-	1	2
Hit Object	-	-	-	1	-	1
Right Turn Thru	-	-	-	2	1	3
Rear End	-	-	-	2	2	4
Sideswipe Same Direction	-	-	-	1	1	2
Total	-	1	1	10	6	18

Table 2-4 Intersection Crashes

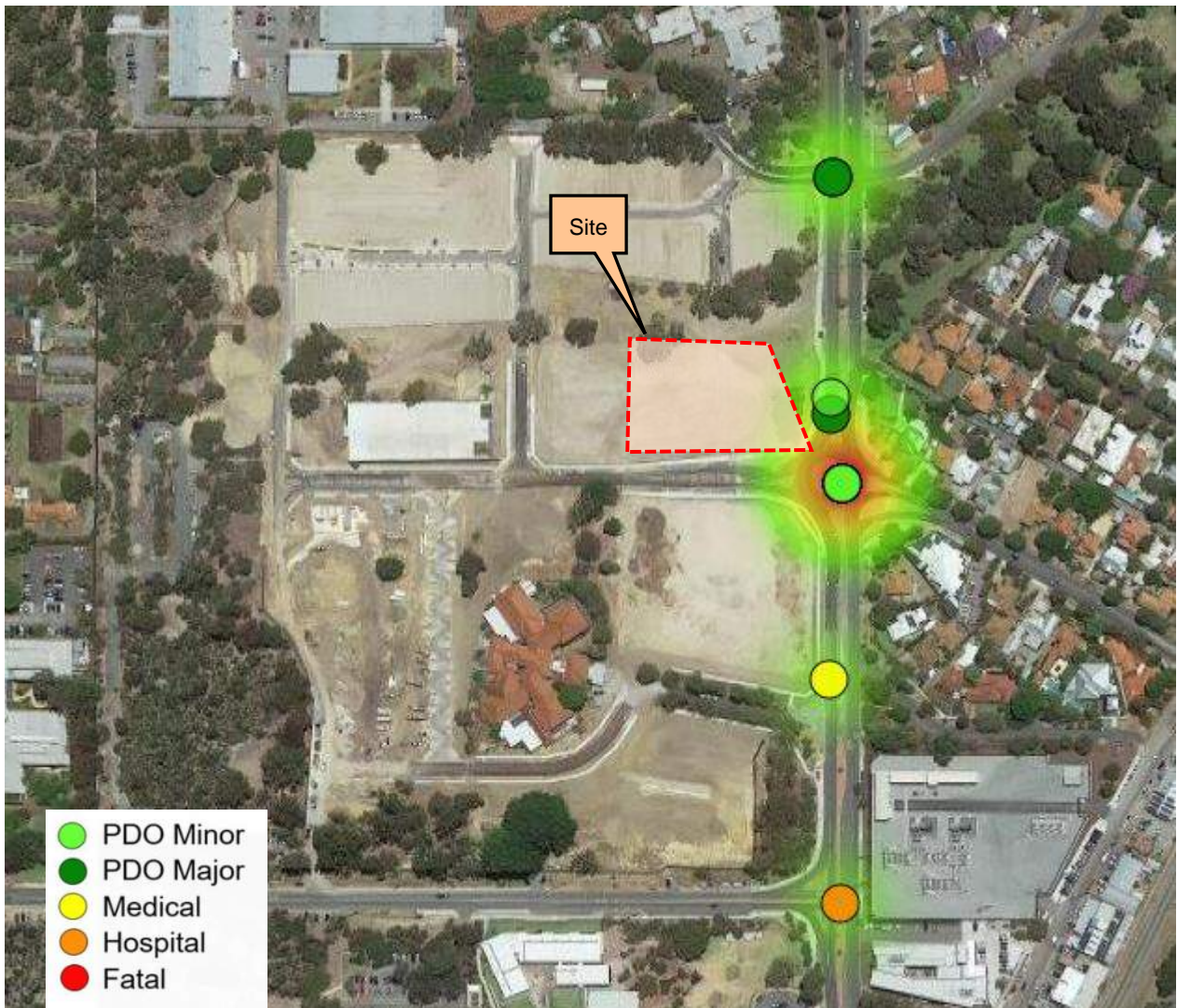
Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Selby St - Lemnos St	-	1	-	-	-	1
Selby St - Selby St & Nash St & Seymour Av	-	-	-	8	4	12
Selby St - Orton Rd & Selby St & Clubb Av	-	-	-	1	1	2
Total	-	1	-	9	5	15

Table 2-5 Mid Block Crashes

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Selby St	-	-	1	1	1	3
Total	-	-	1	1	1	3



Figure 2-7 Crash Locations



Source: Maps.co

The Crash data are summarised as follows:

- > A total of 18 crashes were recorded within the vicinity of the Site, with no fatal crashes recorded.
- > Most crashes that occurred within the surrounding area resulted in major property damage.
- > 1 crash resulted in hospitalisation and 1 required medical attention.
- > The majority of crashes occurred at the Selby St / Nash St & Seymour Ave intersection.

Overall, there is a moderately low volume of crashes within the area.

2.8 Existing Public Transport Facilities

Train and bus services that are located within close proximity of the Site are shown in the diagram in **Figure 2-8**. The Site is well serviced by public transport, with bus routes 998 and 999 operating along Selby Street providing excellent connections to various locations within greater Perth. Bus Route 27 travels along Lemnos Street via Selby Street as shown in **Figure 2-9**.

The Site is also within close walking distance (approx. 650m) to the Shenton Park train station, which provides quick and convenient access to the Perth CBD, via the Fremantle Line service. The frequencies of buses and trains are summarised in **Table 2-6** and **Table 2-7** respectively. Overall, the public transport amenity within the vicinity of the Site is excellent with a high frequency of bus and train services within walking distance.

Figure 2-8 Nearest Bus Stops



Source: Google Maps

Figure 2-9 Public Transport Routes



Source: TransPerth

Table 2-6 Bus Route and Frequencies

Bus Route	Route Description	Frequencies		
		Weekdays(peak)	Saturdays	Sundays and Public Holidays
998	Circle Route - Clockwise	10-12 mins	30 mins	30 mins
999	Circle Route – Anti - Clockwise	15 mins	30 mins	30 mins
27	East Perth - Claremont Stn via Bagot Rd & Lemnos St	10 mins	60 mins	60 mins

Table 2-7 Train Service Frequency

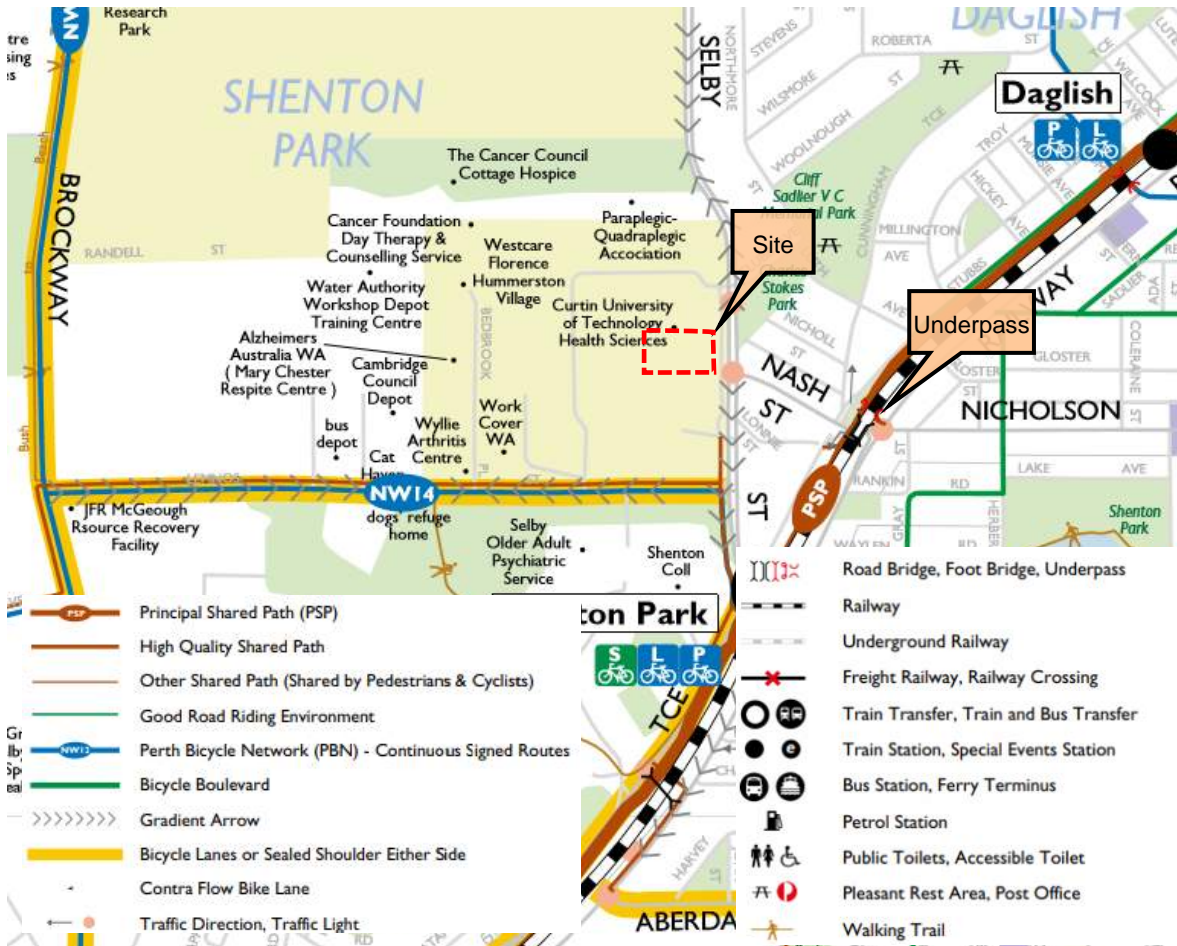
Bus Route	Route Description	Frequencies		
		Weekdays(peak)	Saturdays	Sundays and Public Holidays
Fremantle Line	6-8 mins	6-8 mins	15 -17 mins	15 -17 mins

2.9 Existing Pedestrian and Cycle Facilities

The existing pedestrian/cycle networks in the area surrounding the development site are illustrated in **Figure 2-10**. The site is located within close proximity to the Fremantle Railway Principal Shared Path (PSP). Footpaths and bicycle lanes are available on both sides of Seymour Avenue. Selby Street has footpaths available on both sides of the road including the section fronting the proposed development.

Convenient access across the railway line has also been provide through the existing underpass at Shenton Park Station. Overall, the Site has excellent access to the existing pedestrian and cycling network.

Figure 2-10 Existing Pedestrian Cycling Network



Source: Department of Transport

3. Development Proposal

3.1 Proposed Development

The proposal will comprise of mixed-use development consisting of the following:

- > 226 Residential Apartments, comprising of:
 - 24 – Studio apartments;
 - 103 – 1 B/R apartments;
 - 77 – 2 B/R apartments;
 - 22 – 3 B/R apartments;
- > Retail tenancy with a floor area of 192 sqm.
- > Café with a floor area of 154.4 sqm
- > 255 car parking bays
 - 242 – Residential
 - 9 – Visitor
 - 4 - Retail
- > 12 EV Bays (5 % of all car parking bays).
- > Bicycle Bays - 256
 - 226 – Residential
 - 28 – Visitor
 - 8 - Staff

The layout of the proposed development at the subject Site is shown in **Figure 3-1**. Detailed development plans are provided in **Appendix B**.



Figure 3-1 Site Plan



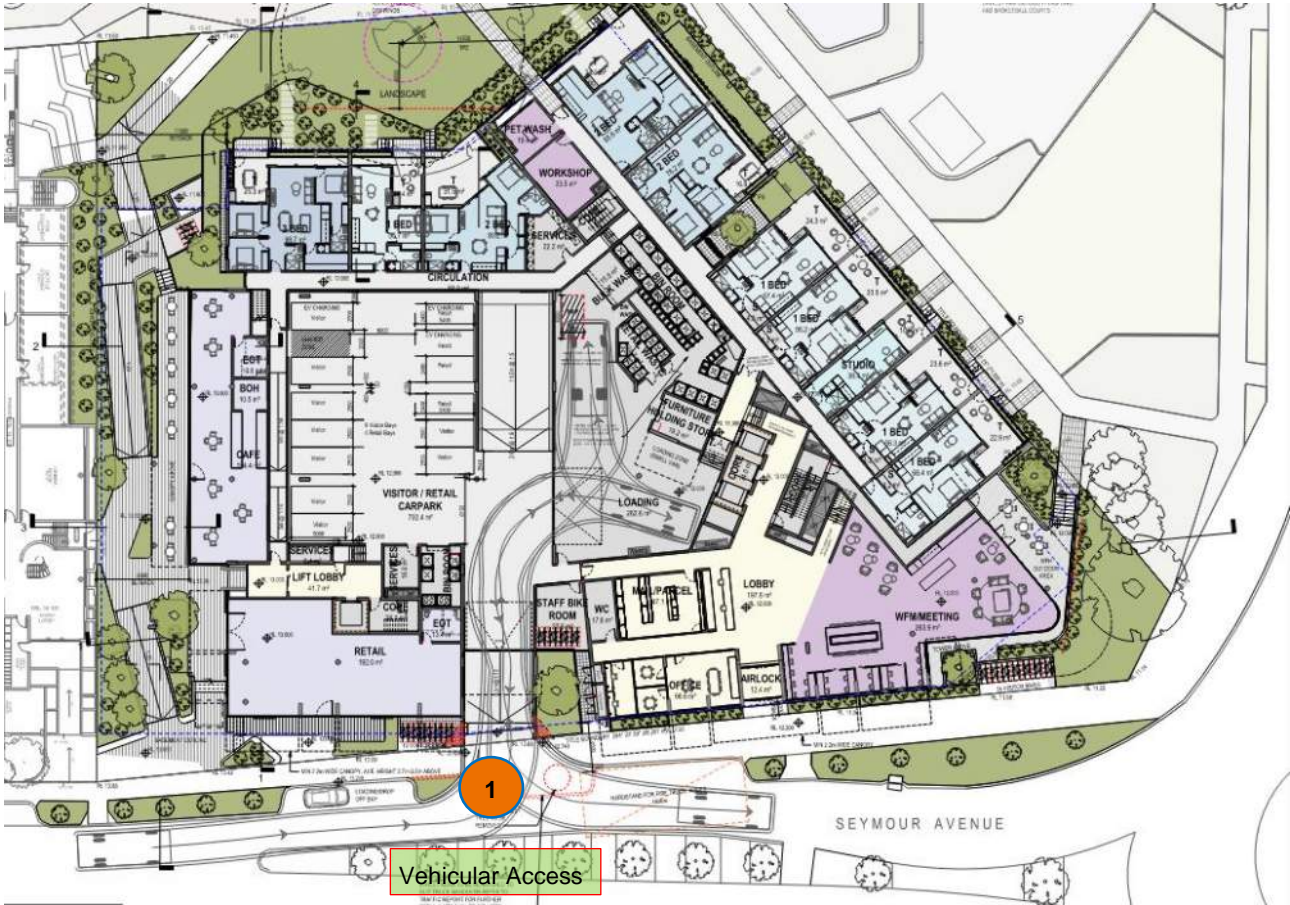
Source: rothelowman

3.2 Access arrangements

3.2.1 Site Access

Vehicle access for the overall site is via Access 1 located on Seymour Avenue as shown in **Figure 3-2**. Access 1 allows for left-in-left-out movements for cars and service vehicles.

Figure 3-2 Access Arrangements



3.2.2 Service and Waste Vehicles

Waste collection is proposed to occur on site near the bin enclosure as illustrated in **Figure 3-3**. A service area is provided on the ground floor near the proposed bin enclosure. A swept path analysis for a 8.5m waste vehicle was undertaken as illustrated in **Figure 3-4** and **Figure 3-5**. The swept path analysis shows that the City's waste truck is able to manoeuvre into the Site in a forward gear, collect the waste and then reverse within the loading area to exit in a forward gear.

Waste collections will be undertaken on-site by the City and are to be arranged to occur during off peak hours or after normal business hours to minimise disruption to traffic operations as well as minimise any impacts to staff and visitors

Figure 3-3 Waste Collection Area

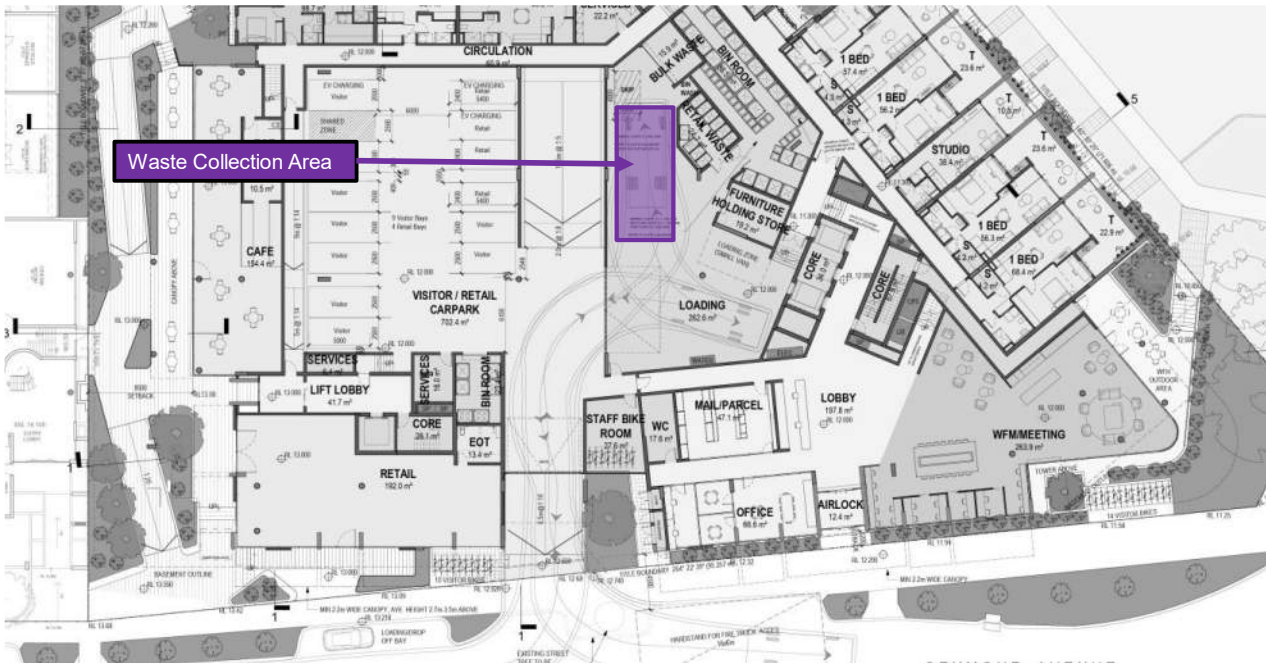


Figure 3-4 Waste Truck Swept Path – Entry

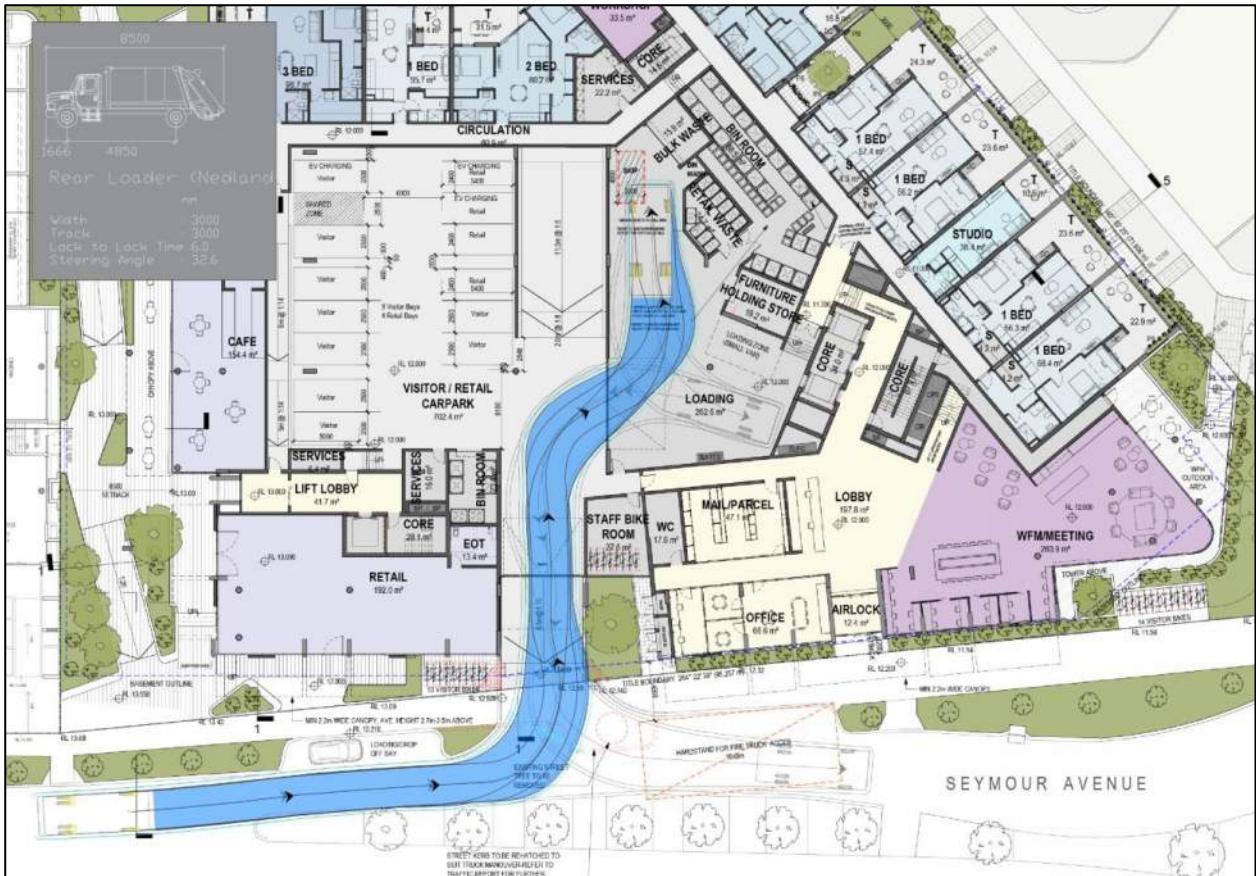


Figure 3-5 Waste Truck Swept Path – Exit



3.2.3 B85 & B99 Swept Paths

A swept path analysis was undertaken for B85/B99 passenger vehicles and is illustrated in **Figure 3-6** to **Figure 3-8**. Larger scaled plans are included in **Appendix C**.

Figure 3-6 Basement 1 Swept Path

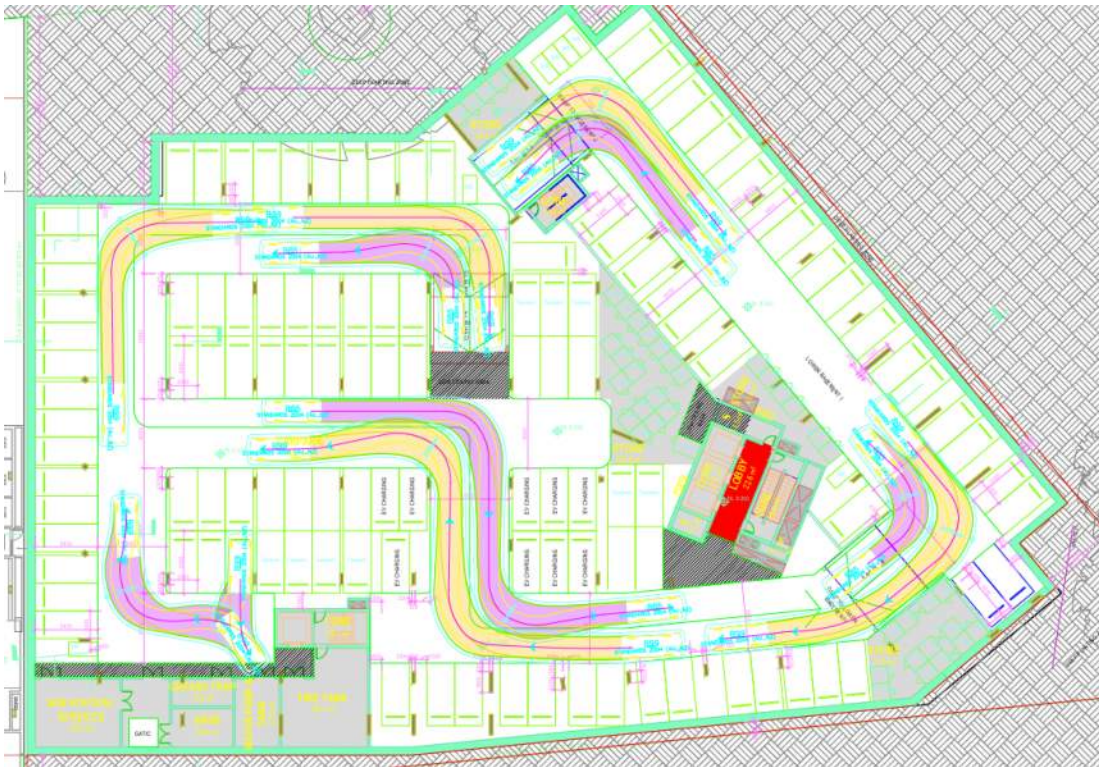
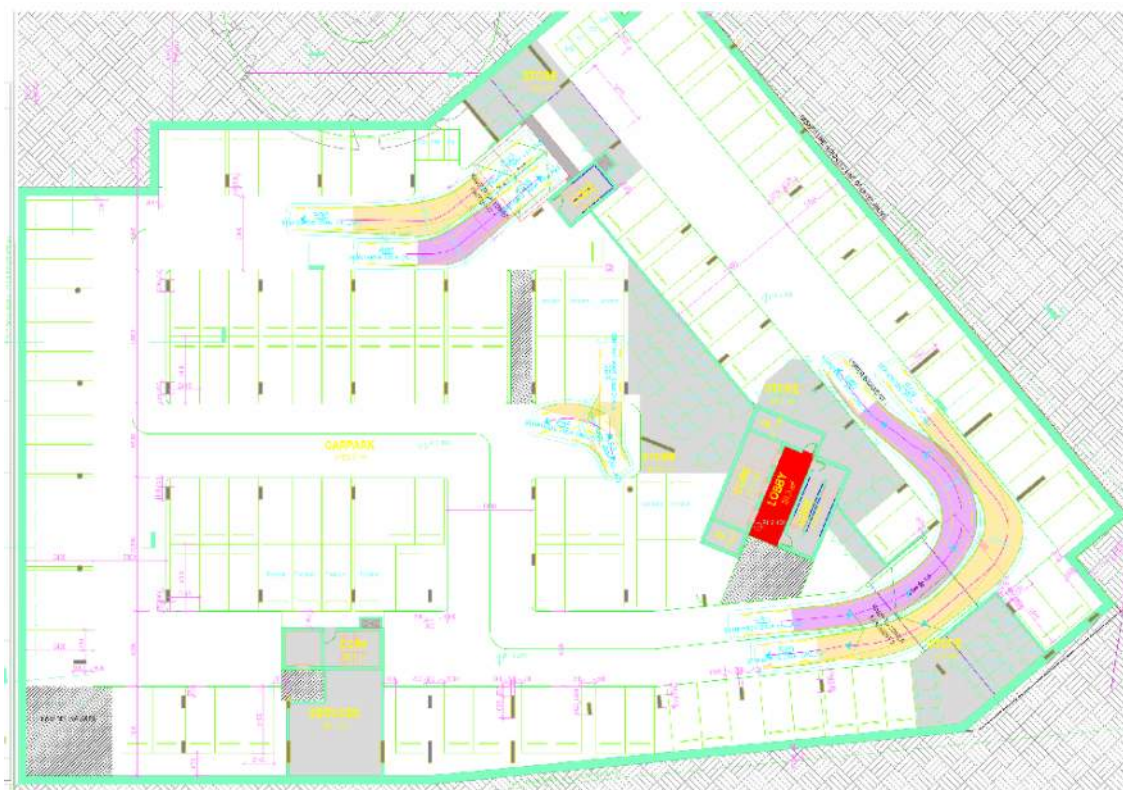


Figure 3-7 Basement 2 Swept Path



B99
Width : 1940 mm
Track : 1840 mm
Lock to Lock Time : 6.0
Steering Angle : 33.9

B85
Width : 1870 mm
Track : 1770 mm
Lock to Lock Time : 6.0
Steering Angle : 34.1

Figure 3-8 Ground Floor Swept Path



The swept path analysis shows that two vehicles are unable to pass each other simultaneously around corners in the basements. It should be noted that the parking bays are intended for residents and they are expected to experience a low parking turnover. Vehicles are expected to operate at low speeds in this car park and are anticipated to give way to each other and allow opposing vehicles to undertake a wider sweep while circulating in the car park.

Furthermore, it is expected that residential vehicle movements would primarily be tidal during the peak hour periods and the probability for two vehicles passing each other is expected to be low.

3.2.4 Compliance With Australian Standards

The compliance of the proposed car park has been reviewed in accordance with the requirements of AS 2890.1 and AS2890.6. The bays proposed in the basements are exclusively for residential tenancies which corresponds to a User Class 1 parking facility.

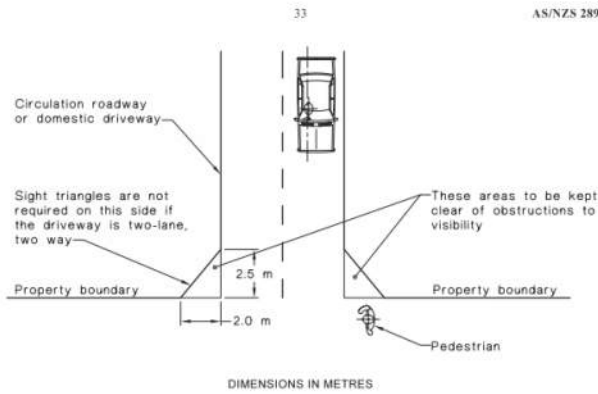
The residential visitor bays provided on the ground level are 2.5m wide and 5.4m length which meets the requirements for a User Class 2 facility.

The retail bays proposed on the ground floor are exclusively for staff and are 2.4m wide and 5.4m length which meets the requirements for a User Class 1A – employee parking.

3.2.5 Pedestrian Sightline Assessment

Figure 3-9 shows the sight distance requirements for pedestrian safety as per AS 2890.1.

Figure 3-9 AS2890.1 Minimum Sight Line Requirements for Pedestrian Safety



A 2.5 X 2m truncation has been provided on both sides of the vehicle access when exiting the site as shown in Figure 3-10.

Figure 3-10 Pedestrian Sight Lines



3.3 Car Parking Requirements

The statutory requirements as defined by the *Shenton Park Hospital Redevelopment Improvement Scheme No. 1* have been considered in the context of the proposed development and are summarised in **Table 3-1**.

Table 3-1 Car Parking Requirements

Land Use	Yield	Min. Parking Requirements	Min. Parking Permitted	Max. Parking Requirements	Max. Parking Permitted	Carpark provision
Multiple Dwellings (per dwellings)	226	0.75 bays per dwelling	170	2 bays per dwelling	438	242
Resi. Visitor Bays (per dwellings)	226	0.25 bays per dwelling, minimum 1 bay	1	maximum of 10 bays	10	9
Shop, Convenience Store	192	2 per 100 sqm NLA	4	4 bays / 100sqm NLA	8	4
Restaurant/Café	154	2 per 100sqm NLA	3	1 space per 4 seats (1 seat =5sqm)	9	0

A total of 170 car parking bays is required for the residential apartment units. A total of 242 car bays is proposed which meets the requirements for the residential tenant parking demand. A shortfall of 1 parking bay for residential visitor and 3 bays for commercial visitors is noted.

It is anticipated that the residential visitor parking on the ground Level would operate as reciprocal parking to mitigate against the shortfall in residential and commercial visitor parking bays since the demand for residential visitor parking is generally in the evening while that for retail parking is typically during the day.

There are no specific requirements for Motor Cycle bays as per *Shenton Park Hospital Redevelopment Improvement Scheme No. 1*, however 14 Motorcycle parking has also been provided on-site in the basement levels I.

3.4 Bicycle Parking Requirements

The statutory requirement of bicycle parking and end-of-trip facilities for residential developments as stipulated by the *Shenton Park Hospital Redevelopment Improvement Scheme No. 1* should be based on R codes which is summarised in **Table 3-2**. **Table 3-3** shows the requirements for commercial tenancies as per *Shenton Park Hospital Redevelopment Improvement Scheme No. 1*

Table 3-2 Residential Bicycle Parking Requirements and Provision

Development Classification	Proposed Land Use	Requirements	Yield	Parking Required	Parking Provided
Permanent Residential	Multiple Dwellings (Apartments)	0.5 space per dwelling	226	113	220
Residential Visitor		1 space per 10 dwellings		23	23 bays on Ground Level
Total				136	244



Table 3-3 Commercial Bicycle Parking Requirements and Provision

Land Use	Minimum Parking Requirements Long Term	Minimum Parking Requirements Short Term	Yield	Minimum Parking Required		Parking Provided
				Long	Short	
Commercial	1 space per 500m ² NLA (Minimum 4 spaces)	1 space per 300m ² NLA (Minimum 6 spaces)	346 sqm	4	6	13 (long term & short term)
Total				10		13

The development proposes to provide a total of 244 residential bicycle bays which exceeds the minimum required and 13 bicycle spaces for the commercial visitors which meets the requirements of *Shenton Park Hospital Redevelopment Improvement Scheme No. 1*.

Secure storage / repair workshop facilities are proposed for permanent residents including dedicated bike racks which are located on level 1.

For commercial tenants and visitors, bicycle racks have also been provided on the ground floor. Storage lockers and separate end-of-trip facilities are also proposed.

4. Changes To Surrounding Transport Network

4.1 Road Network

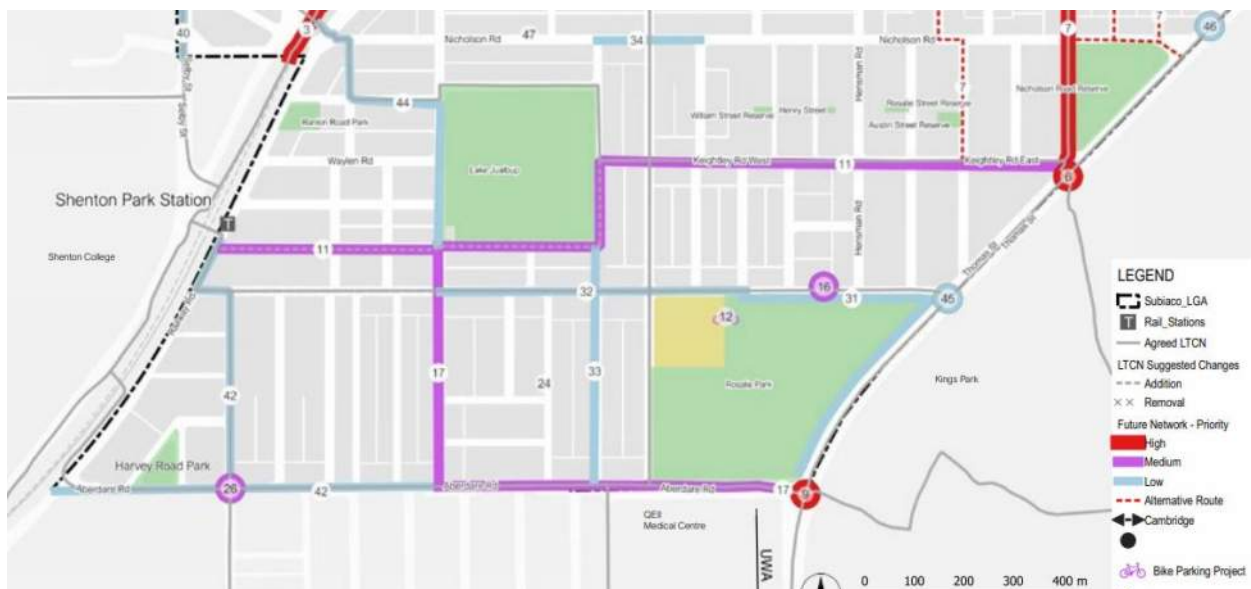
No new road projects are anticipated within the surrounding locality of the site in the short term.

4.2 Pedestrian/Cycle Networks

A Principal Shared Path was proposed by the Western Australian Bicycle Network Plan (2014-2031), at the nearby station of Shenton Park to Loch Street. This was completed in December 2015, with no further changes or additions planned to the network. The area is provided with bike paths and pedestrian walkways and no changes are anticipated during the construction of the project.

The *City of Subiaco Bike Plan 2021-2025* lists improving the conditions for cycling on Shenton Park as a high priority project. Developing Keightley Road as a Safe Active Street between Thomas Street and Shenton Park provides an important neighbourhood route between several key destinations including Shenton Park Station and Kings Park. **Figure 4-1** shows the proposed Bike Plan.

Figure 4-1 Shenton Park Proposed Projects Map



Source: *Bike Plan 2021 -2025 - City of Subiaco*

4.3 Public Transport Services

Stantec contacted PTA to confirm the public transport service change around the proposed site. Possible improvements and upgrades to Shenton Park station are under consideration including a bus interchange. As part of the upgrade, the existing car park (approx. 9 bays) may be removed to utilise the space for bus interchange. They are also seeking possibilities to increase bus service frequencies to and from the station including Queen Elizabeth Station.

However, it should be noted that the Station upgrades are still under planning and has not been finalised.



5. Integration with Surrounding Area

5.1 Surrounding Attractors and Generators

The major attractors/generators surrounding the development are shown in **Figure 5-1**. Key attractors/generators includes:

- > Shenton College
- > Shenton Park
- > Cliff Sadlier Park
- > Shenton Park Station
- > DalGLISH Station

Figure 5-1 Surrounding Attractors / Generators



Source: Metromap

5.2 Proposed Changes to Surrounding Land Uses

The *Shenton Park Hospital Redevelopment Improvement Scheme* aims to facilitate the redevelopment of the site and details of the planning framework for areas surrounding the Site. Proposed land uses within the surrounding area include residential development for the lots within the block of Seymour Avenue and Orton Road. **Figure 5-2** shows the proposed ultimate build out within the vicinity of the Site.

Figure 5-2 Montario Quarter Masterplan



Source: Development WA (2021)

6. Analysis of Transport Network

6.1 Analysis Overview

To identify the impact of the proposed development on the surrounding road network, the intersection performance for the following intersections have been analysed using the SIDRA analysis software tool:

- > Selby Street / Nash Street / Seymour Avenue Intersection
- > Selby Street / Orton Street / Clubb Ave Intersection
- > Orton Road / Dawes View Intersection
- > Dawes View / Seymour Ave Intersection
- > Seymour Avenue / Access 1 Intersection

Weekday traffic counts were conducted at the Selby / Nash St / Seymour Ave Int. & Selby St / Orton Rd / Clubb Ave Intersections on 18 October 2022 and the morning and afternoon peak hour periods on a normal weekday was identified to occur between 8:00AM to 9:00AM and 4:00PM to 5:00PM respectively.

The following modelled scenarios have been analysed as part of the assessment:

- > Scenario 1 – 2023 Base Scenario
- > Scenario 2 – Background 2025 (assumed opening year) + Development Traffic; and
- > Scenario 2 – Background 2035 (10-year horizon) + Development Traffic.

6.2 Transport Analysis Assumptions

The following provides a list of assumptions used in this assessment.

- > Opening year has been assumed to be 2025;
- > Main Roads traffic map historical counts showed little to no traffic growth on Selby Street during the peak periods. However, a future growth rate of 1.6% per annum has been applied for the opening year and the 5-year horizon analysis based on the historical traffic growth calculated from existing traffic counts and Main Roads Traffic map data;
- > Existing traffic volumes were calculated by applying a 1.6% growth rate to 2022 volumes;
- > The proportion of heavy vehicles was based on the Main Roads WA traffic map data and assumed to be the same for all scenarios.
- > Intersection layouts modelled for analysis is in accordance with Metromap aerial image;
- > The intersection assessment was modelled as a network model using SIDRA 9 software analysis tool in accordance with Main Roads WA Operational Modelling Guidelines.
- > The cycle time used for pedestrian signal was based on SCATS data;
- > Extra Bunching (Site Analysis) of 25% was applied for the North approach of the Selby Street / Nash Street / Seymour Avenue intersection due to the proximity to the pedestrian signal;
- > The approach and exit speeds were based on speed limits from Main Roads WA Road Information Mapping System.



6.3 Development Trip Generation

Trip generation has been calculated for the proposed development utilising trip generation rates from the *WAPC guidelines* and from the *Institute of Transportation Engineers (ITE) "Trip Generation" 10th Edition*. The following tables summarise the directional distribution and the estimated total trips to be generated by the proposed development.

Table 6-1 provides the trip generation rates during the AM and PM peak hour periods. **Table 6-2** outlines the directional distribution and **Table 6-3** summarises the total estimated trips to be generated by the proposed development.

Table 6-1 Trip Generation Rate

Land Use	ITE Code/Source	AM Peak	PM Peak
Residential	ITE 222	0.32 per dwelling	0.41 per dwelling
Retail	WAPC Vol 5	1.25 per 100 Sq.m	4.00 per 100 Sq.m
Cafe	WAPC Vol 5	2.50 per 100 Sq.m	10.00 per 100 Sq.m

Table 6-2 Directional Distribution

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Residential	27%	73%	60%	40%
Retail	80%	20%	50%	50%
Cafe	80%	20%	50%	50%

Table 6-3 Development Trip Generation

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Residential	20	53	56	37
Retail	2	0	4	4
Cafe	3	1	8	8
Total	25	54	67	49

The proposed development is expected to generate approximately 79 vehicles during the AM peak hour and 116 vehicles during the PM peak hour periods. It should be noted that the site is located in close proximity to excellent public transport services and cycling facilities and the estimated trips may potentially be reduced.

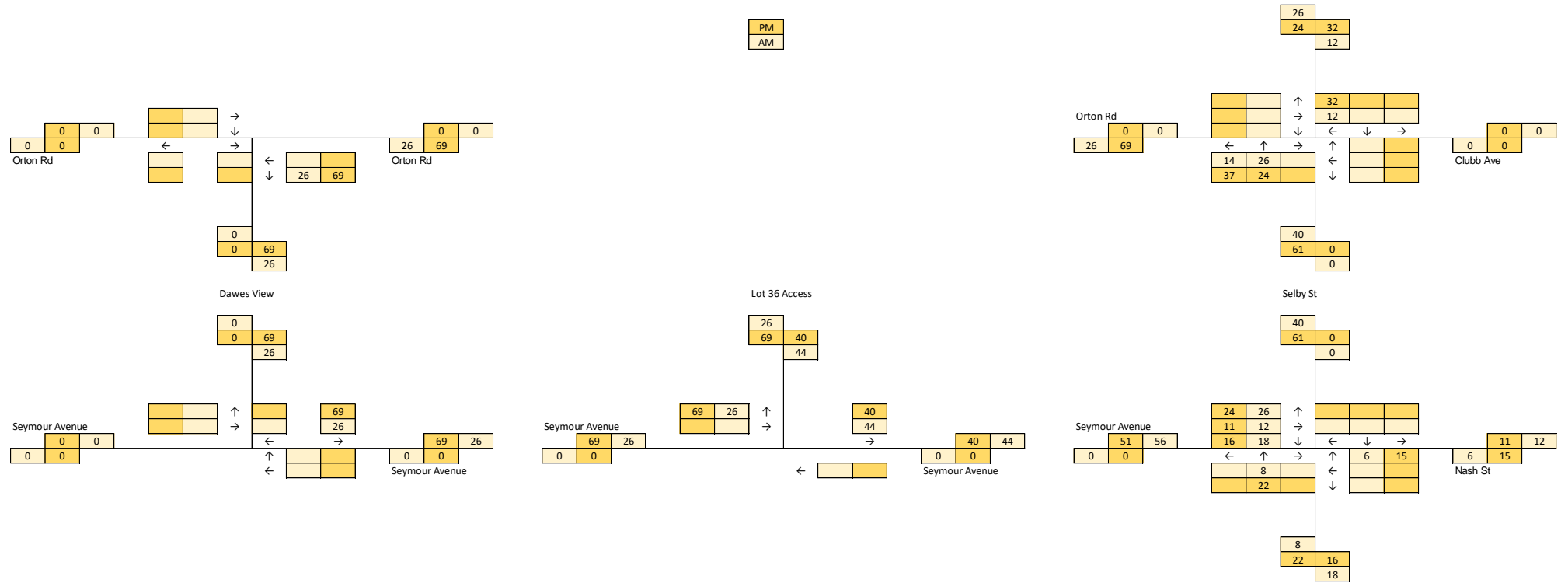
6.4 Development Traffic Distribution and Assignment

Development traffic distribution for the weekday AM and PM has been derived from the existing distribution flow of Selby Street, Lemnos Street and Nash Street as sourced from SCATS data and traffic counts. In addition, consideration has also been given to the expected origin and destination of each trip in the context of the surrounding area. **Figure 6-1** shows the assumed trip distribution for the site (inbound & outbound). Majority of traffic is expected to arrive from north along Selby Street. **Figure 6-2** shows net development trips.

Figure 6-1 Trip Distribution – (Inbound & Outbound)



Figure 6-2 Development Trips



6.5 Background and Development Traffic

To derive the background traffic volumes for the 2023 base year, a conservative 1.6% growth rate has been applied to the traffic count data collected in 2022. The same traffic growth assumption per annum has been adopted to derive future background traffic volume for 2025 and 2035. **Figure 6-3** shows the existing traffic volumes and **Figure 6-4** and **Figure 6-5** shows the opening year and the post development traffic volumes for the 2035 horizon.

Figure 6-3: Existing Traffic Volumes

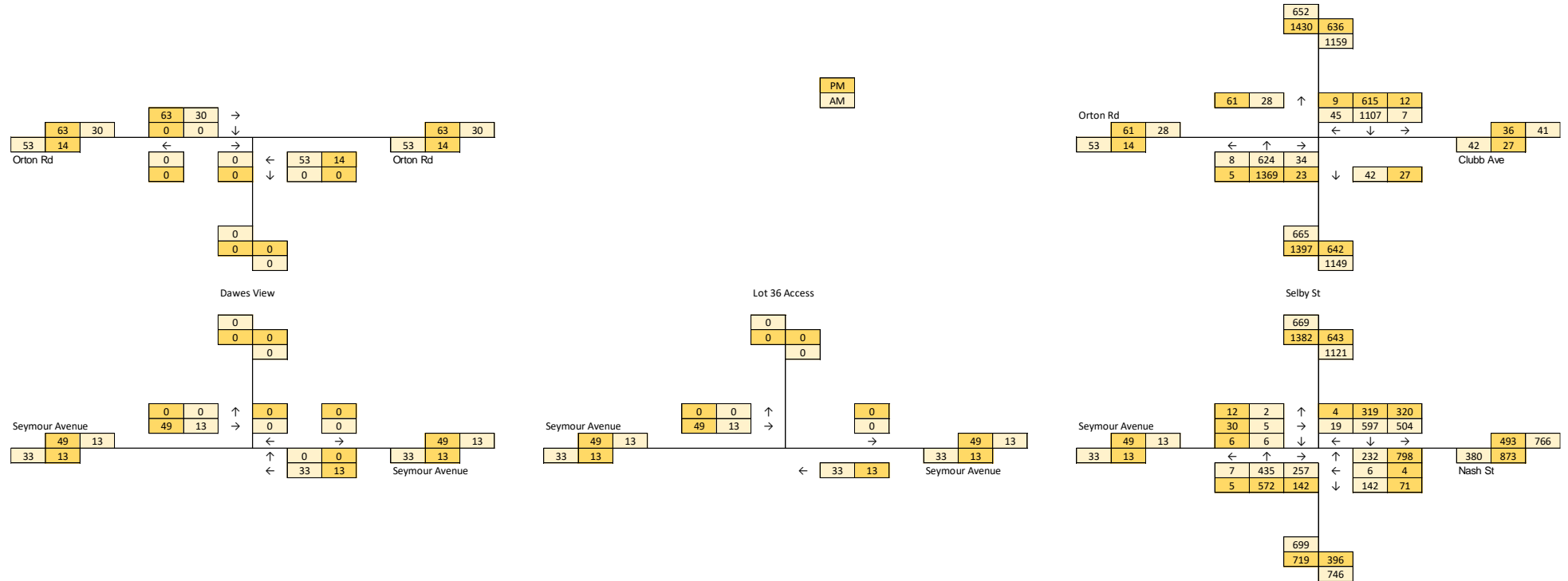


Figure 6-4: 2025 + Development Traffic

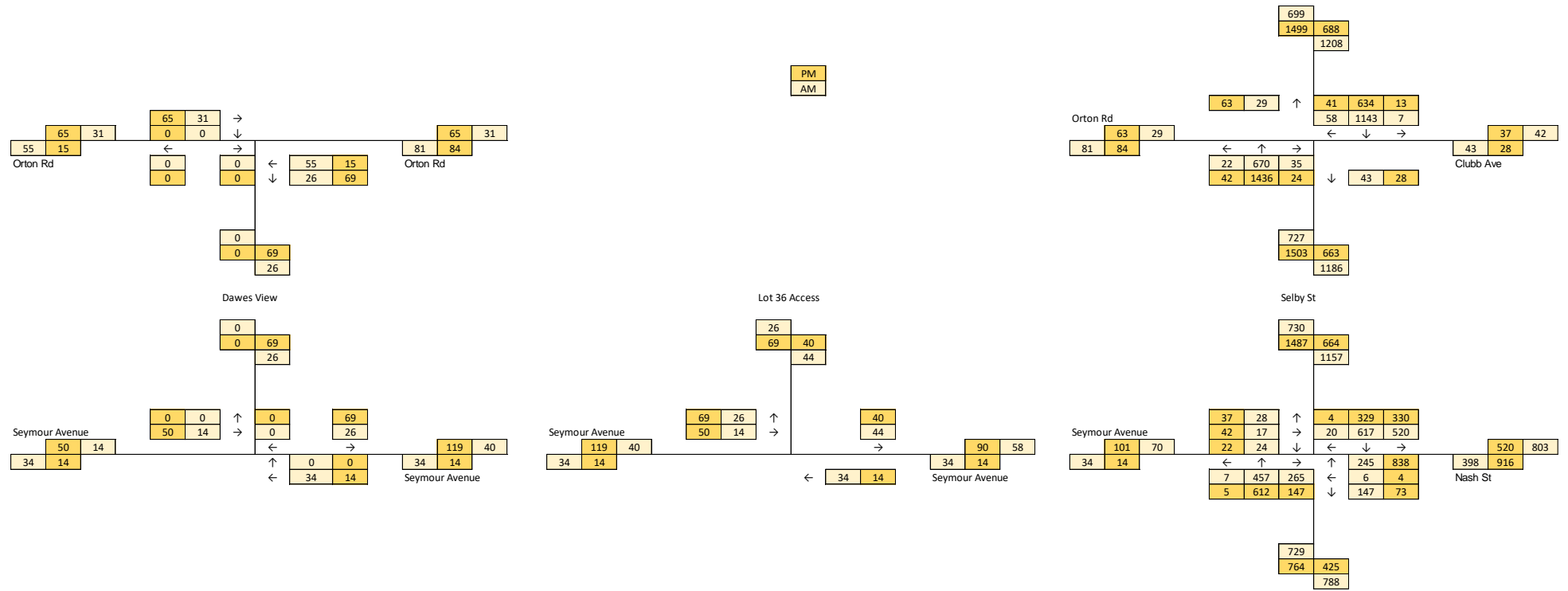
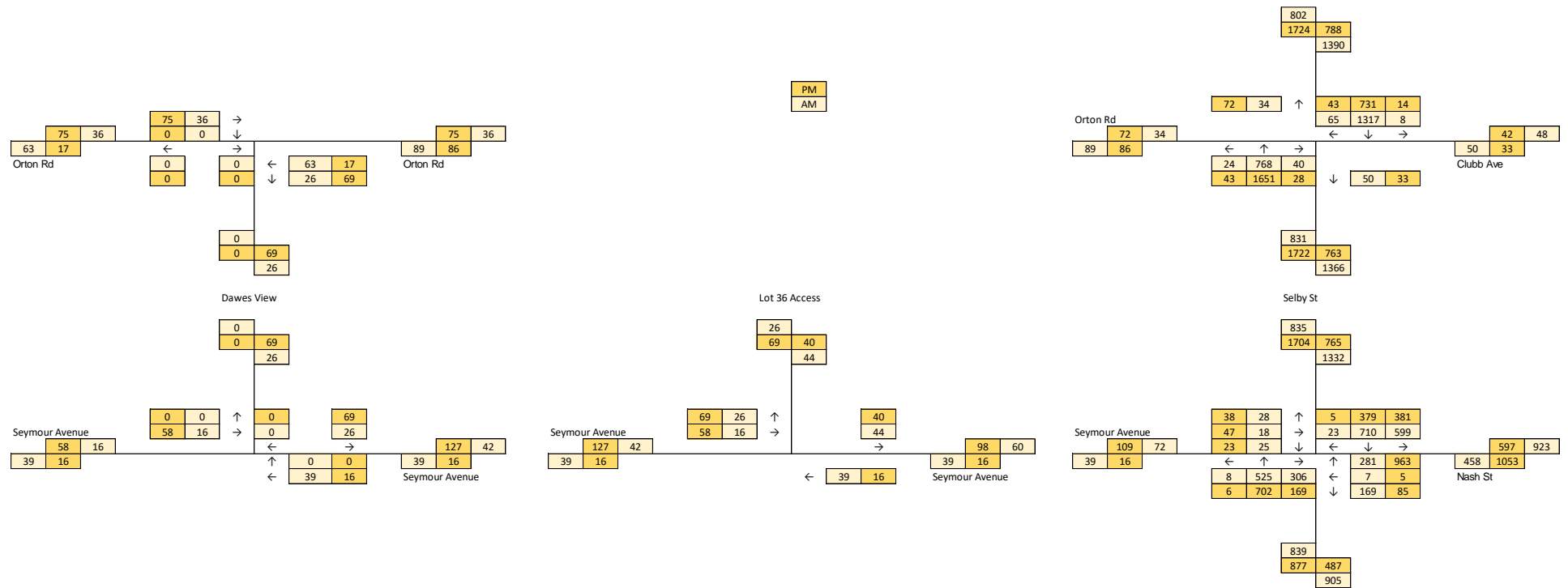


Figure 6-5: 2035 + Development Traffic



6.6 Intersection Performance

6.6.1 Parameters

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

- > Degree of Saturation (DOS): is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The DOS for an un-signalized intersection is considered critical where $DOS > 0.80$;
- > 95th percentile Queue: is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected;
- > Average Delay: is the average of all travel time delays for vehicles through the intersection; and
- > Level of Service (LOS): is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. The different levels of service can generally be described as shown in Table 6-4.

Table 6-4 Level of Service (LOS) Performance Criteria

LOS	Description	Signalised Intersection	Unsignalised Intersection
A	Free-flow operations (best condition)	≤10 sec	≤10 sec
B	Reasonable free-flow operations	10 – 20 seconds	10 – 15 seconds
C	At or near free-flow operations	20 – 35 seconds	15 – 25 seconds
D	Decreasing free-flow levels	35 – 55 seconds	25 – 35 seconds
E	Operations at capacity	55 – 80 seconds	35 – 50 seconds
F	A breakdown in vehicular flow (worst condition)	≥80 sec	≥50 sec



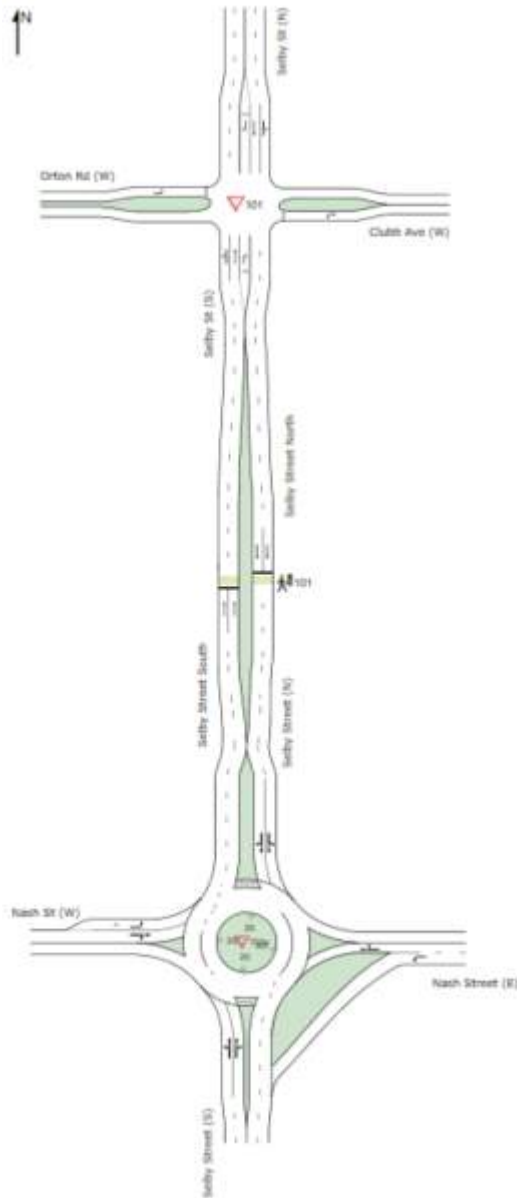
6.7 TRAFFIC ANALYSIS

Analysis has been undertaken using the SIDRA traffic analysis software. Details of the results are presented in **Appendix D**.

6.7.1 Scenario 1: Existing Year Analysis

Figure 6-6 illustrates the SIDRA network model for all the intersections analysed.

Figure 6-6 Sidra Network Layout (Existing Scenario)



6.7.2 Selby Street / Nash Street / Seymour Avenue Intersection

The SIDRA layouts of the Selby Street / Nash Street / Seymour Avenue intersection are shown in **Figure 6-7**. The pedestrian signal to the north of Selby Street has also been included as part of the network. The analysis results for intersection are presented in **Table 6-5**.

Figure 6-7 Selby St / Nash St / Seymour Ave

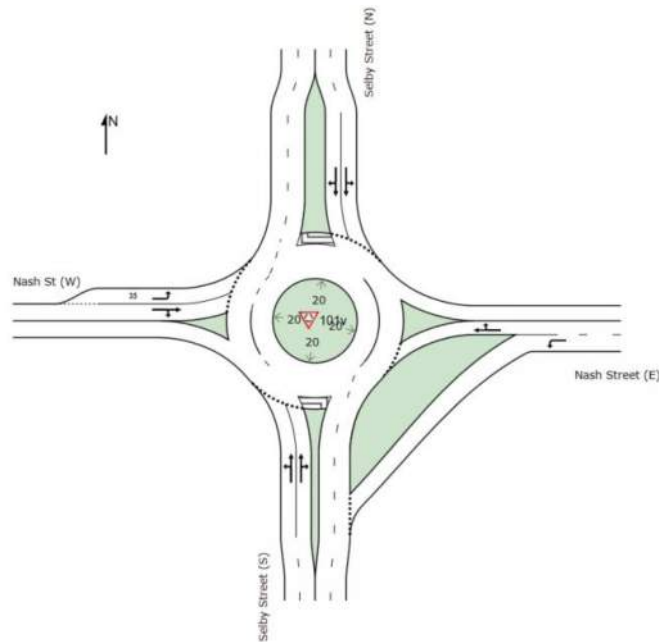


Table 6-5 SIDRA Results: Selby St / Nash St / Seymour Ave – Existing (2023)

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby Street (S)	L2	0.324	5.7	A	18.5	0.898	35.8	D	106.2
	T1	0.324	5.8	A	18.5	0.898	37.8	D	106.2
	R2	0.324	10.7	B	17.8	0.898	46.3	D	102.1
East: Nash Street (E)	L	0.157	5.2	A	7.2	0.066	4.0	A	2.8
	T	0.266	5.7	A	13.2	0.930	17.0	B	166.0
	R	0.266	10.2	B	13.2	0.930	21.5	C	166.0
North: Selby Street (N)	L2	0.515	6.0	A	30.4	0.276	5.1	A	13.4
	T1	0.515	6.4	A	30.4	0.276	5.3	A	13.4
	R2	0.515	11.1	B	28.7	0.276	9.9	A	12.8
West: Nash St (W)	L2	0.004	7.3	A	0.1	0.048	12.1	B	1.3
	T1	0.014	5.1	A	0.4	0.076	9.5	A	3.2
	R2	0.014	9.6	A	0.4	0.076	14.0	B	3.2
All vehicles		0.515	7.0	A	30.4	0.930	21.8	C	166.0

The SIDRA analysis indicates that the intersection of Selby St / Nash St / Seymour Ave is currently operating at satisfactory capacity with an overall level of service of 'A' during AM peak. It should be noted that the degree of saturation is already operating at about 93% capacity during the PM peak hour, and hence is reaching near capacity.

6.7.3 Selby Street / Clubb Ave / Orton Road Intersection

The SIDRA layout of Selby Street / Clubb Ave / Orton Road Intersection is shown in **Figure 6-8**. The analysis results for intersection are presented in **Table 6-6**.

Figure 6-8 Selby Street / Clubb Ave / Orton Road

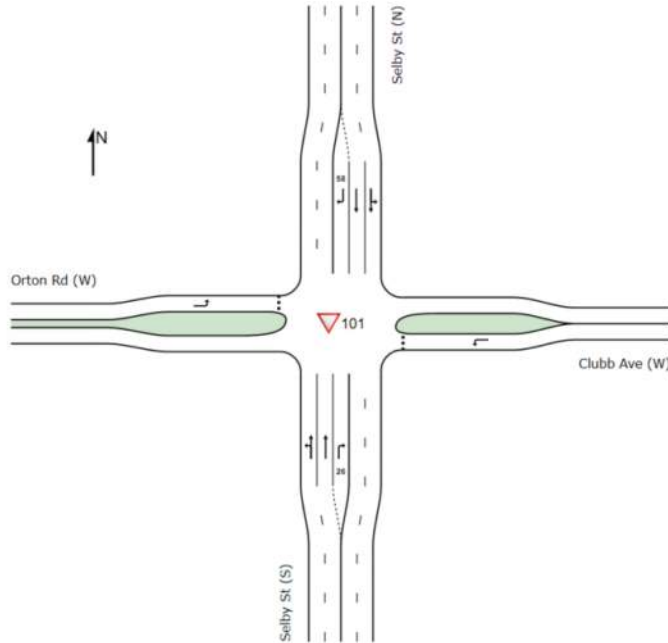


Table 6-6 SIDRA Results - Selby Street / Clubb Ave / Orton Road– Existing (2023)

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby St (S)	L2	0.179	3.3	A	0.0	0.389	3.3	A	0.0
	T1	0.179	0.0	A	0.0	0.389	0.0	A	0.0
	R2	0.112	14.0	B	2.3	0.035	6.8	A	0.9
East: Clubb Ave (W)	L	0.129	8.0	A	3.1	0.036	5.9	A	0.8
North: Selby St (N)	T1	0.316	5.6	A	42.1	0.216	5.6	A	0.0
	R2	0.316	0.1	A	45.3	0.048	0.1	C	1.1
	0	0.059	8.5	A	1.8	0.216	23.2	A	1.1
West: Orton Rd (W)	0	0.030	5.9	A	0.9	0.116	9.5	A	2.9
All vehicles		0.316	0.8	NA	45.3	0.389	0.6	NA	2.9

The SIDRA analysis indicates that the intersection of Selby Street / Clubb Ave / Orton Road intersection is currently operating satisfactorily during AM and PM peak hour periods.



6.7.4 Scenario 2 & 3: 2025 Opening Year & 2035 Horizon Year

Figure 6-9 illustrates the SIDRA network model for all the intersections analysed. Table 6-7 to Table 6-10 shows the analysis summary.

Figure 6-9 SIDRA Network Layout (Opening & Horizon Year)



Table 6-7 SIDRA Results: Selby St / Nash St / Seymour Ave – 2025 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby Street (S)	L2	0.344	5.8	A	20.0	0.987	50.5	E	136.9
	T1	0.344	5.9	A	20.0	0.987	52.8	E	136.9
	R2	0.344	10.8	B	19.2	0.987	61.8	E	132.8
East: Nash Street (E)	L	0.168	5.4	A	7.8	0.069	4.1	A	2.9
	T	0.168	5.9	A	14.6	1.081	90.3	F	491.0
	R	0.291	10.4	B	14.6	1.081	94.9	F	491.0
North: Selby Street (N)	L2	0.291	6.4	A	33.3	0.292	5.3	A	14.0
	T1	0.553	7.0	A	33.3	0.292	5.5	A	14.0
	R2	0.553	11.7	B	32.4	0.292	10.1	B	13.5
West: Nash St (W)	L2	0.045	5.5	A	1.4	0.147	11.2	B	4.0
	T1	0.052	4.6	A	1.7	0.133	9.1	A	5.7
	R2	0.052	8.8	A	1.7	0.133	13.3	B	5.7
All vehicles		0.553	7.3	A	33.3	1.081	51.8	E	491.0

Table 6-8 SIDRA Results: Selby St / Nash St / Seymour Ave – 2035 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby Street (S)	L2	0.415	6.2	A	10.4	1.076	102.8	F	113.7
	T1	0.415	6.3	A	10.4	1.076	105.0	F	113.7
	R2	0.415	11.3	B	9.9	1.076	113.6	F	108.2
East: Nash Street (E)	L	0.209	5.9	A	4.1	0.083	4.4	A	1.4
	T	0.363	6.6	A	7.7	1.349	324.7	F	553.1
	R	0.363	11.1	B	7.7	1.349	329.2	F	553.1
North: Selby Street (N)	L2	0.668	8.0	A	21.4	0.343	5.4	A	6.9
	T1	0.668	8.9	A	21.4	0.343	5.7	A	6.9
	R2	0.668	13.7	B	20.5	0.343	10.3	B	6.6
West: Nash St (W)	L2	0.051	6.1	A	0.7	0.160	10.7	B	1.6
	T1	0.061	5.1	A	0.9	0.145	8.7	A	2.4
	R2	0.061	9.2	A	0.9	0.145	12.8	B	2.4
All vehicles		0.668	8.5	A	21.4	1.349	149.1	F	553.1

The intersection of Selby St / Nash St / Seymour Ave intersection operates satisfactorily during AM peak hour period however, the intersection is expected to operate with a DOS above 1.0 during the PM peak hour since the southern and eastern approaches are expected to reach capacity during either the 2025 or 2035 design years. This high saturation levels is attributed to the high right-turning movements from Nash Street and the pedestrian signal to the north of the roundabout (demand activated and does not run every cycle) which has a significant impact on the intersection's overall performance.

Table 6-9 SIDRA Results - Selby Street / Clubb Ave / Orton Road– 2025 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby St (S)	L2	0.196	3.3	A	0.0	0.403	3.3	A	0.0
	T1	0.196	0.0	A	0.0	0.403	0.0	A	0.0
	R2	0.123	14.9	B	3.0	0.036	7.0	A	1.0
East: Clubb Ave (W)	L	0.136	8.2	A	2.5	0.040	6.0	A	0.8
North: Selby St (N)	L2	0.326	0.1	A	38.1	0.235	0.1	A	0.0
	T1	0.326	9.8	A	2.6	0.244	28.1	D	5.9
	R2	0.095	0.6	A	38.1	0.244	1.9	A	5.9
West: Orton Rd (W)	L2	0.032	6.1	A	0.8	0.117	9.4	A	2.9
All vehicles		0.326	0.9	NA	38.1	0.403	1.1	NA	5.9

Table 6-10 SIDRA Results - Selby Street / Clubb Ave / Orton Road– 2035 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
South: Selby St (S)	L2	0.224	3.3	A	0.0	0.400	3.3	A	0.0
	T1	0.224	0.0	A	0.0	0.400	0.0	A	0.0
	R2	0.199	21.2	C	1.9	0.042	8.0	A	0.4
East: Clubb Ave (W)	L	0.182	9.4	A	2.8	0.067	6.4	A	0.4
North: Selby St (N)	T	0.376	0.1	A	42.1	0.362	0.2	A	0.0
	R	0.376	11.0	B	1.3	0.250	27.8	D	2.4
	L2	0.123	0.7	A	42.1	0.362	1.8	A	2.4
West: Orton Rd (W)	T1	0.040	6.4	A	0.4	0.134	9.4	A	1.4
All vehicles	R2	0.376	1.1	NA	42.1	0.400	1.1	NA	2.4

The SIDRA analysis indicates that the intersection of Selby Street / Clubb Ave / Orton Road will operate satisfactorily during AM and PM peak hour periods during the 2025 opening year and 2035 design year.



6.7.5 Seymour Avenue / Access 1 Intersection

The SIDRA layout of Seymour Avenue / Access 1 Intersection is shown in **Figure 6-10**. The analysis results for intersection are presented in **Table 6-11** and **Table 6-12**.

Figure 6-10 SIDRA Results – Seymour Avenue / Access 1 Intersection– 2025 With Development

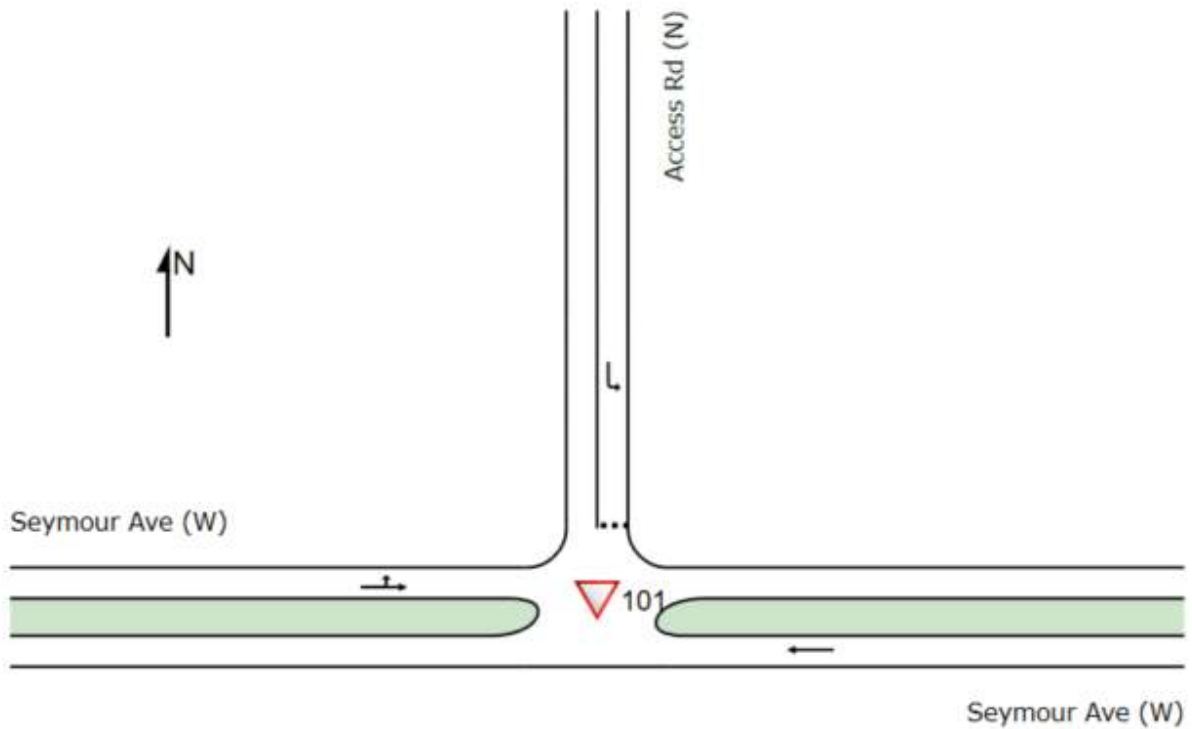


Table 6-11 SIDRA Results – Seymour Ave / Access 1- 2025 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
East: Seymour Ave (W)	T1	0.018	0.0	A	0.0	0.007	0.0	A	0.0
North: Access Rd (N)	L	0.029	4.6	A	0.8	0.027	4.7	A	0.8
West: Seymour Ave (W)	T1	0.022	4.6	A	0.0	0.066	4.6	A	0.0
	0	0.022	0.0	A	0.0	0.066	0.0	A	0.0
All vehicles		0.029	2.7	NA	0.8	0.066	2.9	NA	0.8

Table 6-12 SIDRA Results – Seymour Ave / Access 1- 2035 With Development

Intersection Approach		AM peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
East: Seymour Ave (W)	T1	0.021	0.0	A	0.0	0.008	0.0	A	0.0
	L	0.029	4.6	A	0.3	0.027	4.7	A	0.3
West: Seymour Ave (W)	T1	0.023	4.6	A	0.0	0.070	4.6	A	0.0
	0	0.023	0.0	A	0.0	0.070	0.0	A	0.0
All vehicles		0.029	2.6	NA	0.3	0.070	2.8	NA	0.3

The access intersection is expected to operate at a good capacity during the opening year and 2035 horizon year.

6.7.6 SIDRA ANALYSIS RESULTS – 2025 WITHOUT DEVELOPMENT TRAFFIC

A further analysis was undertaken for the “without development” traffic for the Selby St / Nash St / Seymour Ave Intersection. The SIDRA results for the “without” development traffic is summarised in **Table 6-13**.

Table 6-13 SIDRA Results: Selby St / Nash St / Seymour Ave – 2025 Without Development

Intersection Approach		PM peak			
		DOS	Delay (s)	LOS	95% Queue (m)
South: Selby Street (S)	L2	0.984	58.9	E	63.7
	T1	0.984	61.5	E	63.7
	R2	0.984	71.1	F	61.3
East: Nash Street (E)	L	0.069	4.1	A	1.2
	T	1.025	49.5	D	135.7
	R	1.025	54.0	E	135.7
North: Selby Street (N)	L2	0.286	5.1	A	5.6
	T1	0.286	5.3	A	5.6
	R2	0.286	9.9	A	5.4
West: Nash St (W)	L2	0.055	12.4	B	0.6
	T1	0.079	9.8	A	1.4
	R2	0.079	14.3	B	1.4
All vehicles		1.025	40.8	D	135.7

A comparison of the SIDRA results for the “with” and “without” development traffic scenario for the worst peak hour (PM peak) for the opening year is summarised in **Table 6-14**.

Table 6-14 Comparison of Results

	Weekday PM Peak			
	DOS	Delay (s)	LOS	95% Back of Queue (m)
Existing Year	0.930	21.8	C	166.0
2025 without development traffic	1.025	40.8	D	135.7
2025 with development traffic	1.081	51.8	E	491.0

Based on **Table 6-14**, the degree of saturation for Selby St / Nash St / Seymour Ave is reaching capacity for the PM peak hour period and suggesting that improvement measures are to be considered. The analysis for the “with” and “without” development scenario for the opening year, indicates that an increase in delay of around 10 sec is expected with the level of service deteriorating from LOS D to LOS E which is considered to be acceptable. It should be noted that this intersection is anticipated to be operating over capacity without any development traffic during the 2025 opening year. The degree of saturation results between the “with” and “without” development scenario is very similar with a marginal deterioration.

Hence, it is concluded that the poor performance of the Selby St / Nash St / Seymour Ave intersection can be primarily attributed to the background traffic growth and not due to the traffic associated with the proposed development.

6.7.7 SIDRA Network Summary

The network analysis indicates that the proposed development traffic would have minimal impact on the intersections and the deterioration of the Selby S / Nash St /Seymour Ave Intersection's performance can be mainly attributed to the background traffic growth on the surrounding road network.

It should be noted that for the existing year the Selby St roundabout is nearing capacity during the PM peak hour and further investigation the signalised pedestrian crossing located to the north of this roundabout is a contributory factor for the poor performance at this intersection during the opening year and 2035 horizon.



7. Summary and Conclusions

This Transport Impact Assessment outlines the transport aspects of the proposed development focusing on traffic operations, access and provision of car parking. Included are discussions regarding pedestrian, cycle, and public transport considerations.

This assessment has been prepared in accordance with the *WAPC Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)*.

The following is concluded for the proposed development:

- The proposed development comprise of:
 - 24 – Studio apartments;
 - 103 – 1 B/R apartments;
 - 77 – 2 B/R apartments;
 - 22 – 3 B/R apartments;
 - 255 car parking bays (242 Residential + 9 visitor + 4 retail)
 - 12 EV Bays (5 % of all car parking bays.
 - Retail tenancy with a floor area of 192 sqm.
 - Café with a floor area of 154.4 sqm.
- The B85/B99 design vehicles and service vehicles swept paths illustrate that the design vehicles would appear to be able to adequately manoeuvre through the proposed car park and parking bays.
- The proposed development is expected to generate approximately 79 trips during the AM Peak hour and 116 trips during the PM Peak hour period.
- The swept path analysis showed that the City of Nedlands waste truck is able to enter and exit the waste collection area located within the site in forward gear;
- The traffic analysis showed that most of the intersections, except for the Selby St / Nash St / Seymour Ave Intersection, are currently operating at a good capacity and level of service. It is expected that these intersections will continue to operate at satisfactory capacity levels during the opening year and the 2035 horizon year.
- The intersection of Selby St / Nash St / Seymour Ave is anticipated to operate satisfactorily during the AM peak hour periods for the 2025 opening year and 2035 horizon year. The poor performance of this intersection during the PM peak hour period for the 2025 opening year and 2035 horizon year is concluded to be primarily attributed to the high volumes of right turn movements from the eastern approach. The current location of the signalised pedestrian crossing, north of Selby St / Nash St / Seymour Ave intersection, is considered to be another contributory factor leading to the poor performance of the Selby St / Nash St / Seymour Ave roundabout. It is concluded that the poor performance of the Selby St / Nash St / Seymour Ave intersection can be primarily attributed to the background traffic growth and not due to the traffic associated with the proposed development.

Overall, it is considered unlikely that the development will result in any material impact to the surrounding road network.



Appendix A. WAPC CHECKLIST

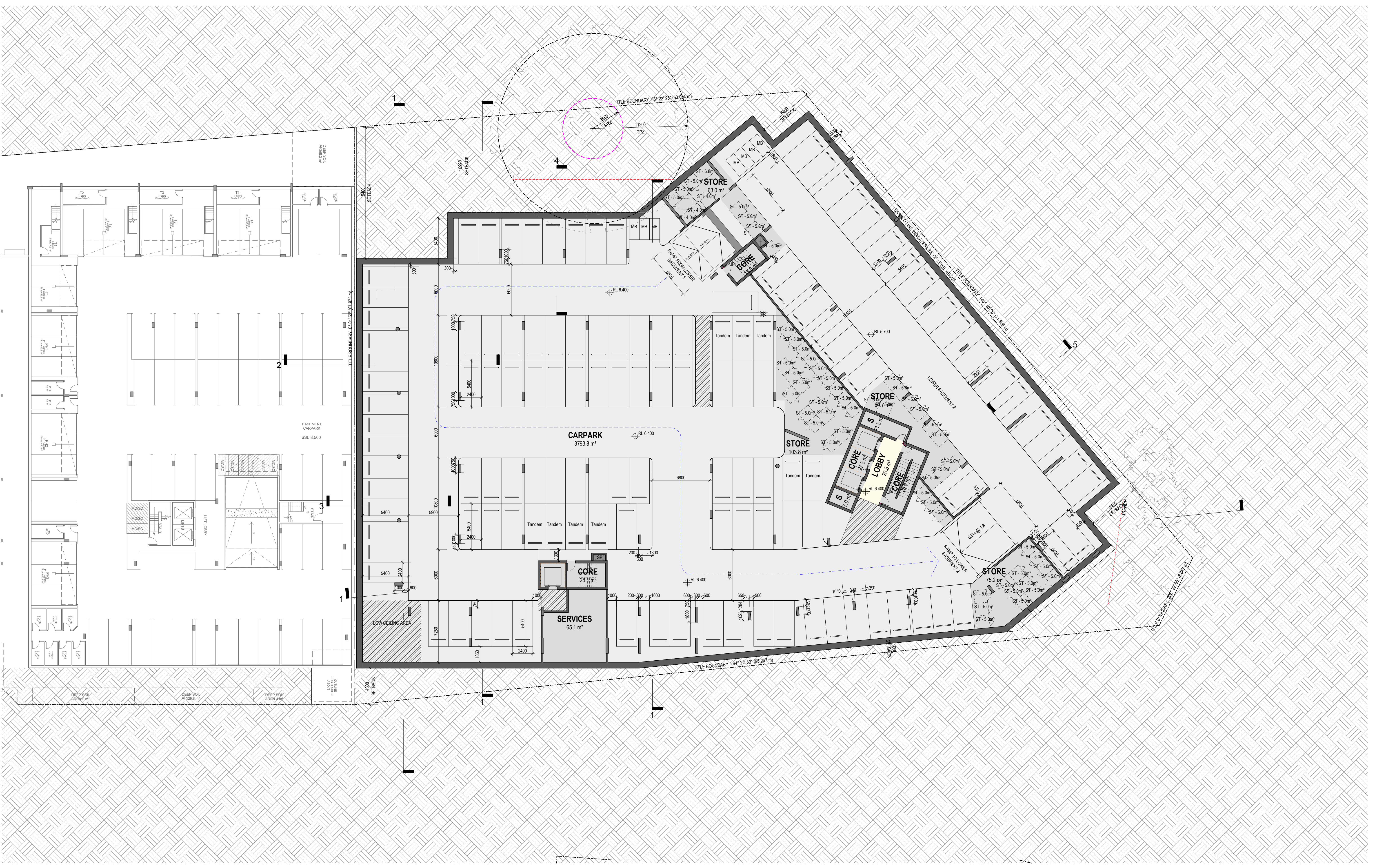
Item	Provided	Comments/Proposals
Summary		
Introduction/Background		
name of applicant and consultant	Section 1	
development location and context	Section 2	
brief description of development proposal	Section 2	
key issues	Section 2	
Background information	Section 2	
Existing situation		
existing site uses (if any)	Section 2	
existing parking and demand (if appropriate)	Section 2	
existing access arrangements	Section 2	
existing site traffic	Section 2	
surrounding land uses	Section 2	
surrounding road network	Section 2	
traffic management on frontage roads	NA	
traffic flows on surrounding roads (usually am and pm peak hours)	Section 2	
traffic flows at major intersections (usually am and pm peak hours)	Section 2	
operation of surrounding intersections	Section 6	
existing pedestrian/cycle networks	Section 2	
existing public transport services surrounding the development	Section 2	
Crash data	Section 2	
Development proposal		
proposed land uses	Section 3	
table of land uses and quantities	Section 3	
access arrangements	Section 3	
parking provision	Section 3	
end of trip facilities	Section 3	



any specific issues	Section 2	
road network	Section 2	
intersection layouts and controls	Section 2	
pedestrian/cycle networks and crossing facilities	Section 2,4	
public transport services	Section 2	
Integration with surrounding area	Section 5	
surrounding major attractors/generators	Section 5	
committed developments and transport proposals	N/A	
proposed changes to land uses within 1200 metres	Section 4	
travel desire lines from development to these attractors/generators	N/A	
adequacy of existing transport networks	Section 2	
deficiencies in existing transport networks	N/A	
remedial measures to address deficiencies	N/A	
Analysis of transport networks		
assessment years	Section 6	
time periods	Section 6	
development generated traffic	Section 6	
distribution of generated traffic	Section 6	
parking supply & demand	Section 3	
base and "with development" traffic flows	Section 6	
analysis of development accesses	Section 6	
impact on surrounding roads	Section 6	
impact on intersections	Section 6	
impact on neighbouring areas	Section 6	
traffic noise and vibration	N/A	
road safety	N/A	
public transport access	Section 2	
pedestrian access / amenity	Section 2,4	
cycle access / amenity	Section 2,4	
analysis of pedestrian / cycle networks	Section 2,4	
safe walk/cycle to school (for residential and school site developments only)	N/A	
Traffic management plan (where appropriate)	N/A	



Appendix B. SITE PLANS



PRELIMINARY

Revisions / 2023.10.13 DA Issue

Project / **CELSIUS BiR**

Drawing / **Basement 2**

Project No. / **222098** Date / **09/27/23**

Author / **RL**

Scale: @ A1 / **1 : 200**

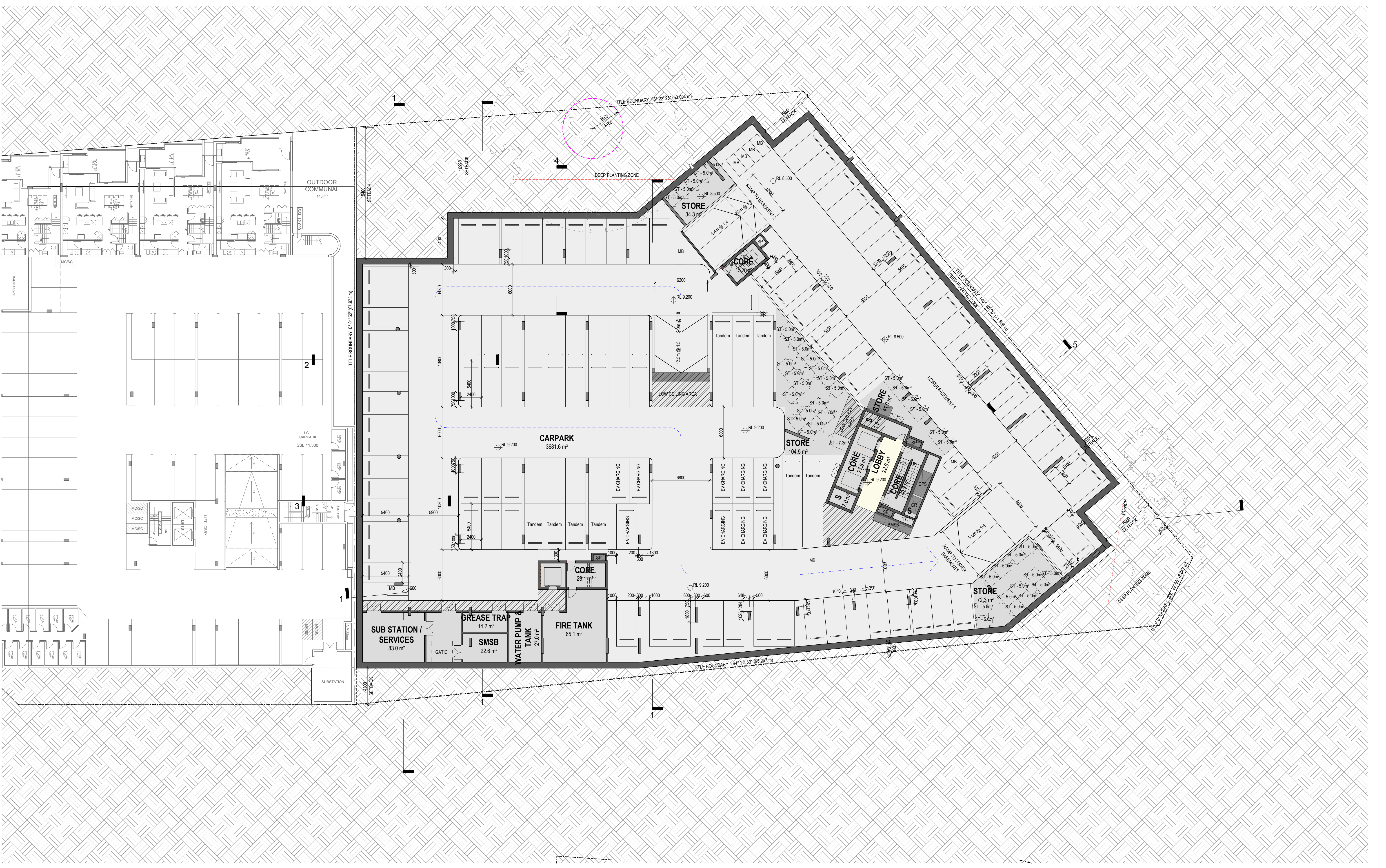
Drawing No. / **TP01.00 -**

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PRELIMINARY

Revisions / 2023.10.13 DA Issue

Project / **CELSIUS Btr**

Drawing / **Basement 1**

Project No / **222098** Date / **09/27/23**

Author / **RL**

Scale: @ A1 / **1 : 200**

Drawing No. / **TP01.01 -**

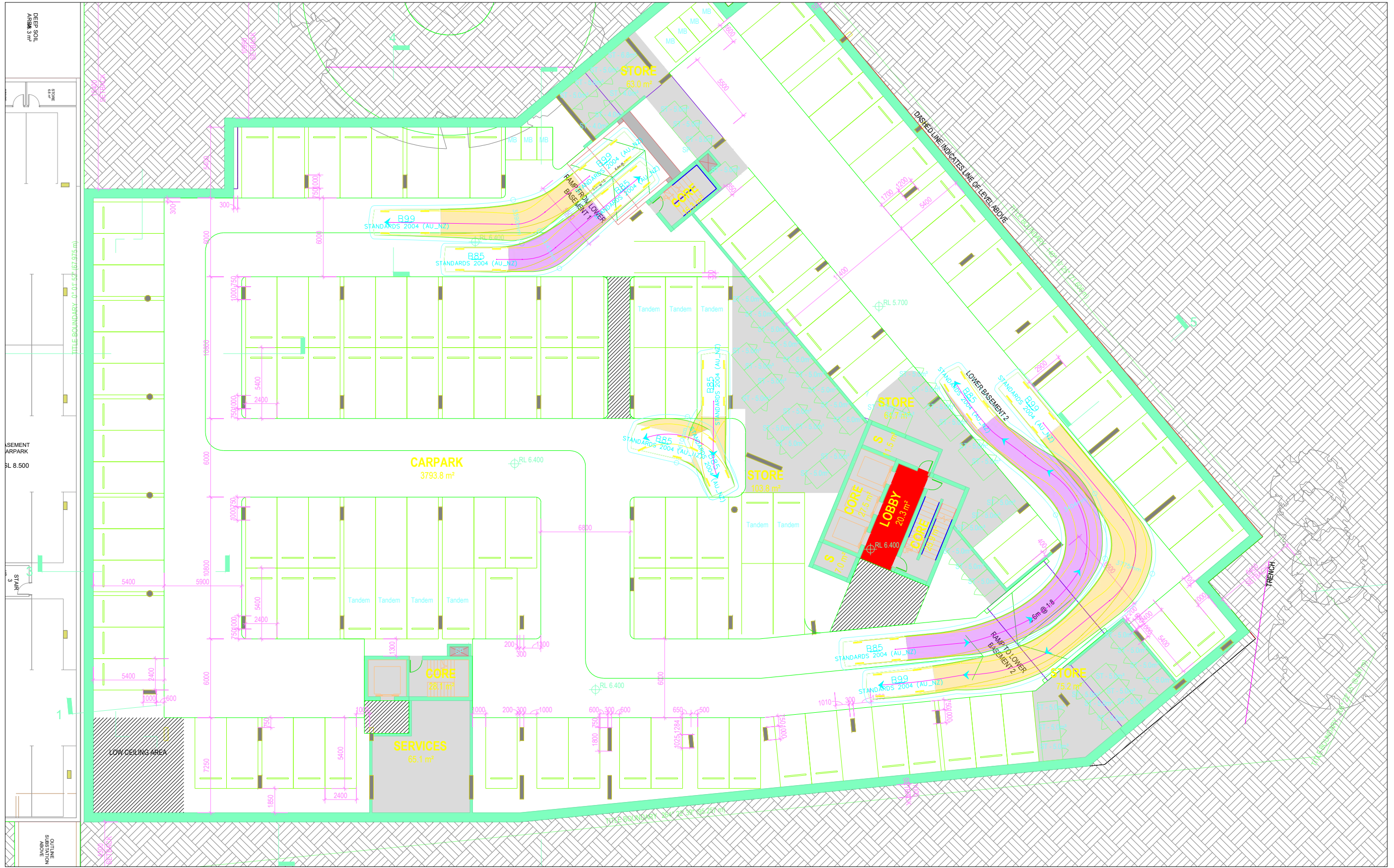
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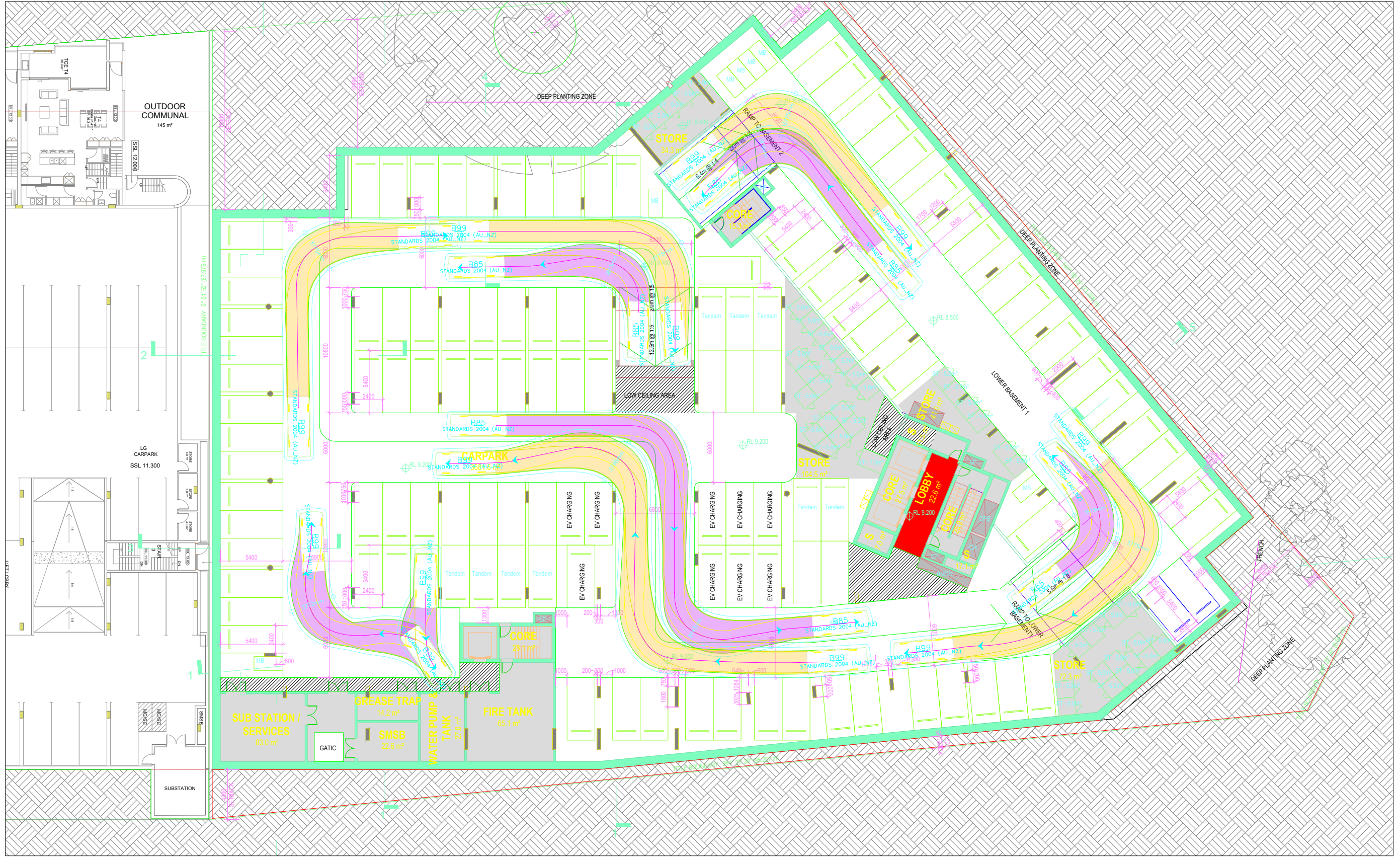
Appendix C. SWEPT PATHS



CEMENT
CARPARK
SL 8.500

6
RIVETS

BRIDGE
MEASUREMENTS
IN METERS



OUTDOOR COMMUNAL
145 m²

LG CARPARK
SSL 11.300

SUB STATION / SERVICES
83.0 m²

GATIC

SMSB
22.6 m²

WATER PUMP & TANK
27.0 m²

FIRE TANK
65.1 m²

CORE
28.11 m²

STORE
104.5 m²

LOBBY
22.6 m²

STORE
72.3 m²

STORE
34.3 m²

CORE
11.3 m²

CORE
11.6 m²

TILE BOUNDARY 0' 01' 52" (67.975 m)

DEEP PLANTING ZONE

DEEP PLANTING ZONE

DEEP PLANTING ZONE

SUBSTATION

EV CHARGING

EV CHARGING

EV CHARGING

EV CHARGING

EV CHARGING

EV CHARGING

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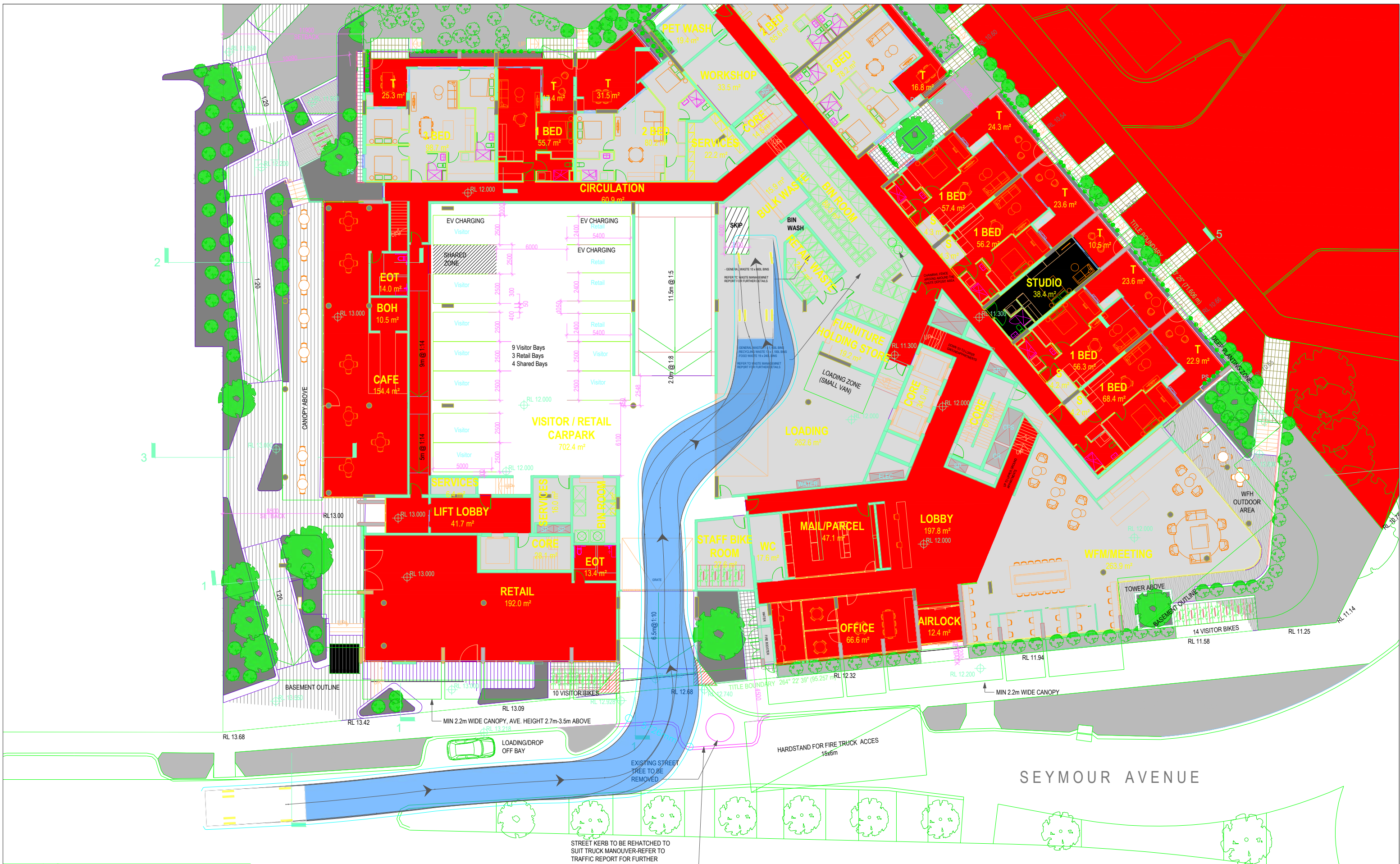
EV CHARGING

EV CHARGING

EV CHARGING

EV CHARGING

EV CHARGING



SEYMOUR AVENUE

STREET KERB TO BE REHATCHED TO SUIT TRUCK MANOEUVRE-REFER TO TRAFFIC REPORT FOR FURTHER

Appendix D. SIDRA RESULTS

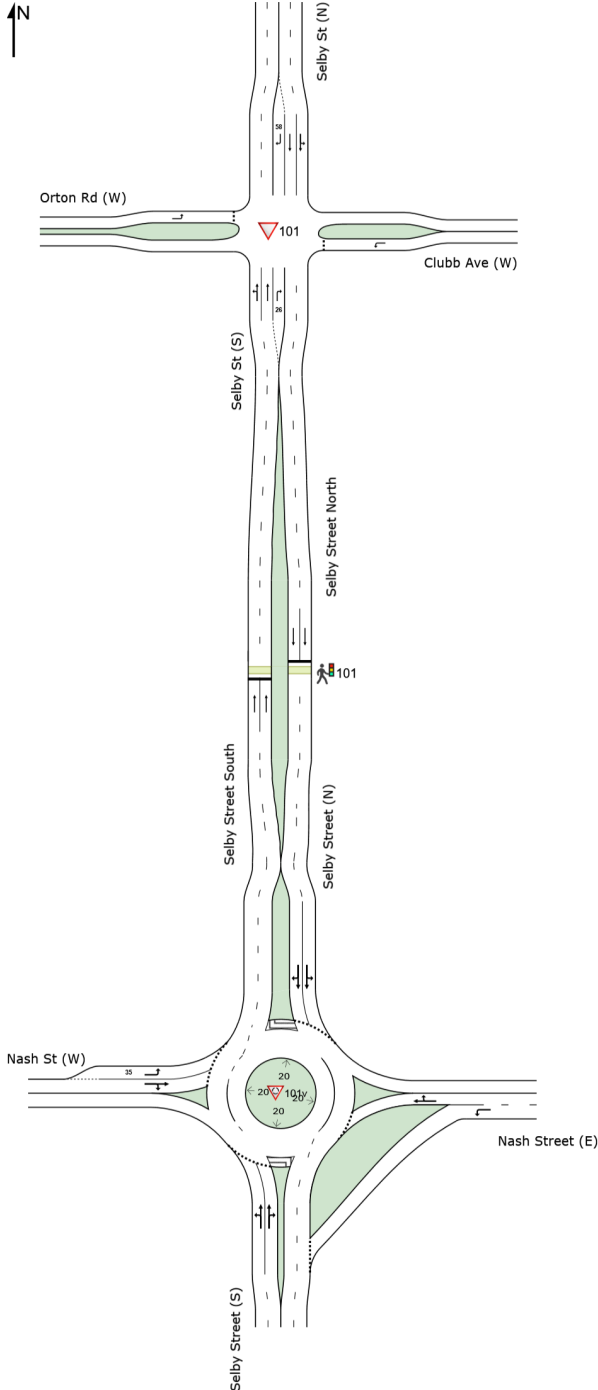
NETWORK LAYOUT

Network: N101 [2023_AM (Network Folder: General)]

New Network

Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101v	NA	Selby Nash Roundabout AM
▽101	NA	Selby / Orton Rd / Clubb PI AM
🚶101	NA	Pedestrian Site1

MOVEMENT SUMMARY

Site: 101v [Selby Nash Roundabout AM (Site Folder: 2023_AM)]

Network: N101 [2023_AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Selby Street (S)															
1	L2	All MCs	7	5.0	7	5.0	0.324	5.7	LOS A	2.4	18.5	0.57	0.52	0.57	48.4
2	T1	All MCs	458	5.0	458	5.0	0.324	5.8	LOS A	2.4	18.5	0.57	0.53	0.57	48.2
3	R2	All MCs	271	5.0	271	5.0	0.324	10.7	LOS B	2.3	17.8	0.58	0.62	0.58	46.5
Approach			736	5.0	736	5.0	0.324	7.6	LOS A	2.4	18.5	0.57	0.57	0.57	47.3
East: Nash Street (E)															
4	L2	All MCs	149	5.0	149	5.0	0.157	5.2	LOS A	0.9	7.2	0.62	0.58	0.62	48.2
5	T1	All MCs	6	5.0	6	5.0	0.266	5.7	LOS A	1.7	13.2	0.67	0.68	0.67	43.7
6	R2	All MCs	244	5.0	244	5.0	0.266	10.2	LOS B	1.7	13.2	0.67	0.68	0.67	39.8
Approach			400	5.0	400	5.0	0.266	8.3	LOS A	1.7	13.2	0.65	0.64	0.65	43.9
North: Selby Street (N)															
7	L2	All MCs	531	5.0	531	5.0	0.515	6.0	LOS A	3.9	30.4	0.48	0.60	0.48	43.8
8	T1	All MCs	628	5.0	628	5.0	0.515	6.4	LOS A	3.9	30.4	0.50	0.59	0.50	47.4
9	R2	All MCs	20	5.0	20	5.0	0.515	11.1	LOS B	3.7	28.7	0.50	0.59	0.50	42.8
Approach			1179	5.0	1179	5.0	0.515	6.3	LOS A	3.9	30.4	0.49	0.60	0.49	45.7
West: Nash St (W)															
10	L2	All MCs	2	0.0	2	0.0	0.004	7.3	LOS A	0.0	0.1	0.63	0.61	0.63	41.8
11	T1	All MCs	5	0.0	5	0.0	0.014	5.1	LOS A	0.1	0.4	0.61	0.65	0.61	44.8
12	R2	All MCs	6	0.0	6	0.0	0.014	9.6	LOS A	0.1	0.4	0.61	0.65	0.61	47.2
Approach			14	0.0	14	0.0	0.014	7.5	LOS A	0.1	0.4	0.61	0.64	0.61	45.7
All Vehicles			2328	5.0	2328	5.0	0.515	7.0	LOS A	3.9	30.4	0.54	0.60	0.54	45.8

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: \\au2011-ntap01_cifs02\shared_projects\304900738\5_Technical\Traffic\Modelling\Selby St- Seymour Ave (V3 JD_LL).sip9

MOVEMENT SUMMARY

Site: 101 [Selby / Orton Rd / Clubb PI AM (Site Folder: 2023_AM)]

Network: N101 [2023_AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Selby St (S)															
1	L2	All MCs	8	0.0	8	0.0	0.179	3.3	LOS A	0.0	0.0	0.00	0.01	0.00	55.3
2	T1	All MCs	657	5.0	657	5.0	0.179	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
3	R2	All MCs	36	0.0	36	0.0	0.112	14.0	LOS B	0.3	2.3	0.80	0.91	0.80	36.1
Approach			701	4.7	701	4.7	0.179	0.8	NA	0.3	2.3	0.04	0.05	0.04	57.8
East: Clubb Ave (W)															
4	L2	All MCs	44	0.0	44	0.0	0.129	8.0	LOS A	0.4	3.1	0.54	0.76	0.54	41.1
Approach			44	0.0	44	0.0	0.129	8.0	LOS A	0.4	3.1	0.54	0.76	0.54	41.1
North: Selby St (N)															
7	L2	All MCs	7	0.0	7	0.0	0.316	5.6	LOS A	5.4	42.1	0.00	0.01	0.00	57.3
8	T1	All MCs	1165	5.0	1165	5.0	0.316	0.1	LOS A	5.9	45.3	0.00	0.00	0.00	59.7
9	R2	All MCs	47	0.0	47	0.0	0.059	8.5	LOS A	0.2	1.8	0.53	0.69	0.53	47.4
Approach			1220	4.8	1220	4.8	0.316	0.5	NA	5.9	45.3	0.02	0.03	0.02	58.6
West: Orton Rd (W)															
10	L2	All MCs	29	0.0	29	0.0	0.030	5.9	LOS A	0.1	0.9	0.38	0.55	0.38	48.2
Approach			29	0.0	29	0.0	0.030	5.9	LOS A	0.1	0.9	0.38	0.55	0.38	48.2
All Vehicles			1995	4.6	1995	4.6	0.316	0.8	NA	5.9	45.3	0.04	0.06	0.04	57.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site1 (Site Folder: 2023_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2023_AM
(Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 538 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Selby Street South															
2	T1	All MCs	706	5.0	706	5.0	0.199	1.3	LOS A	6.6	48.4	0.08	0.07	0.08	50.1
Approach			706	5.0	706	5.0	0.199	1.3	LOS A	6.6	48.4	0.08	0.07	0.08	50.1
North: Selby Street North															
8	T1	All MCs	1215	5.0	1215	5.0	*0.343	1.5	LOS A	7.8	57.1	0.10	0.09	0.10	38.3
Approach			1215	5.0	1215	5.0	0.343	1.5	LOS A	7.8	57.1	0.10	0.09	0.10	38.3
All Vehicles			1921	5.0	1921	5.0	0.343	1.4	LOS A	7.8	57.1	0.09	0.08	0.09	44.4

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

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

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. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P11	Stage 1	53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48
P12	Stage 2	53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48
All Pedestrians		105	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48

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: 101v [Selby Nash Roundabout PM (Site Folder: 2023_PM)]

Network: N101 [2023_PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
South: Selby Street (S)															
1	L2	All MCs	5	5.0	5	5.0	0.898	35.8	LOS D	13.7	106.2	1.00	1.44	2.15	35.4
2	T1	All MCs	602	5.0	602	5.0	0.898	37.8	LOS D	13.7	106.2	1.00	1.44	2.16	27.4
3	R2	All MCs	149	5.0	149	5.0	0.898	46.3	LOS D	13.2	102.1	1.00	1.44	2.20	32.9
Approach			757	5.0	757	5.0	0.898	39.4	LOS D	13.7	106.2	1.00	1.44	2.17	29.0
East: Nash Street (E)															
4	L2	All MCs	75	5.0	75	5.0	0.066	4.0	LOS A	0.4	2.8	0.44	0.47	0.44	48.7
5	T1	All MCs	4	5.0	4	5.0	0.930	17.0	LOS B	21.5	166.0	1.00	1.14	1.61	38.7
6	R2	All MCs	840	5.0	840	5.0	0.930	21.5	LOS C	21.5	166.0	1.00	1.14	1.61	32.5
Approach			919	5.0	919	5.0	0.930	20.1	LOS C	21.5	166.0	0.95	1.09	1.51	34.1
North: Selby Street (N)															
7	L2	All MCs	337	5.0	337	5.0	0.276	5.1	LOS A	1.7	13.4	0.35	0.53	0.35	44.3
8	T1	All MCs	336	5.0	336	5.0	0.276	5.3	LOS A	1.7	13.4	0.36	0.49	0.36	48.3
9	R2	All MCs	4	5.0	4	5.0	0.276	9.9	LOS A	1.7	12.8	0.36	0.49	0.36	43.6
Approach			677	5.0	677	5.0	0.276	5.2	LOS A	1.7	13.4	0.35	0.51	0.35	46.2
West: Nash St (W)															
10	L2	All MCs	13	0.0	13	0.0	0.048	12.1	LOS B	0.2	1.3	0.82	0.85	0.82	37.7
11	T1	All MCs	32	0.0	32	0.0	0.076	9.5	LOS A	0.4	3.2	0.85	0.81	0.85	43.7
12	R2	All MCs	6	0.0	6	0.0	0.076	14.0	LOS B	0.4	3.2	0.85	0.81	0.85	45.9
Approach			51	0.0	51	0.0	0.076	10.7	LOS B	0.4	3.2	0.84	0.82	0.84	43.0
All Vehicles			2403	4.9	2403	4.9	0.930	21.8	LOS C	21.5	166.0	0.80	1.03	1.38	34.9

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 101 [Selby / Orton Rd / Clubb PI PM (Site Folder: 2023_PM)]

Network: N101 [2023_PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Selby St (S)															
1	L2	All MCs	5	0.0	5	0.0	0.389	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	55.3
2	T1	All MCs	1441	5.0	1441	5.0	0.389	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
3	R2	All MCs	24	0.0	24	0.0	0.035	6.8	LOS A	0.1	0.9	0.54	0.70	0.54	41.6
Approach			1471	4.9	1471	4.9	0.389	0.1	NA	0.1	0.9	0.01	0.01	0.01	59.3
East: Clubb Ave (W)															
4	L2	All MCs	28	0.0	28	0.0	0.036	5.9	LOS A	0.1	0.8	0.38	0.58	0.38	42.9
Approach			28	0.0	28	0.0	0.036	5.9	LOS A	0.1	0.8	0.38	0.58	0.38	42.9
North: Selby St (N)															
7	L2	All MCs	13	0.0	13	0.0	0.216	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
8	T1	All MCs	647	5.0	647	5.0	0.216	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
9	R2	All MCs	9	0.0	9	0.0	0.048	23.2	LOS C	0.1	1.1	0.87	0.94	0.87	39.8
Approach			669	4.8	669	4.8	0.216	0.5	NA	0.1	1.1	0.01	0.02	0.01	58.8
West: Orton Rd (W)															
10	L2	All MCs	64	0.0	64	0.0	0.116	9.5	LOS A	0.4	2.9	0.61	0.82	0.61	46.1
Approach			64	0.0	64	0.0	0.116	9.5	LOS A	0.4	2.9	0.61	0.82	0.61	46.1
All Vehicles			2233	4.7	2233	4.7	0.389	0.6	NA	0.4	2.9	0.03	0.05	0.03	58.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site1 PM (Site Folder: 2023_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2023_PM (Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 786 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Selby Street South															
2	T1	All MCs	1463	5.0	1463	5.0	*0.402	0.9	LOS A	16.0	116.7	0.07	0.06	0.07	52.7
Approach			1463	5.0	1463	5.0	0.402	0.9	LOS A	16.0	116.7	0.07	0.06	0.07	52.7
North: Selby Street North															
8	T1	All MCs	679	5.0	679	5.0	0.187	0.7	LOS A	5.5	40.4	0.05	0.04	0.05	48.2
Approach			679	5.0	679	5.0	0.187	0.7	LOS A	5.5	40.4	0.05	0.04	0.05	48.2
All Vehicles			2142	5.0	2142	5.0	0.402	0.8	LOS A	16.0	116.7	0.06	0.06	0.06	51.9

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

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

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. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37
All Pedestrians		53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37

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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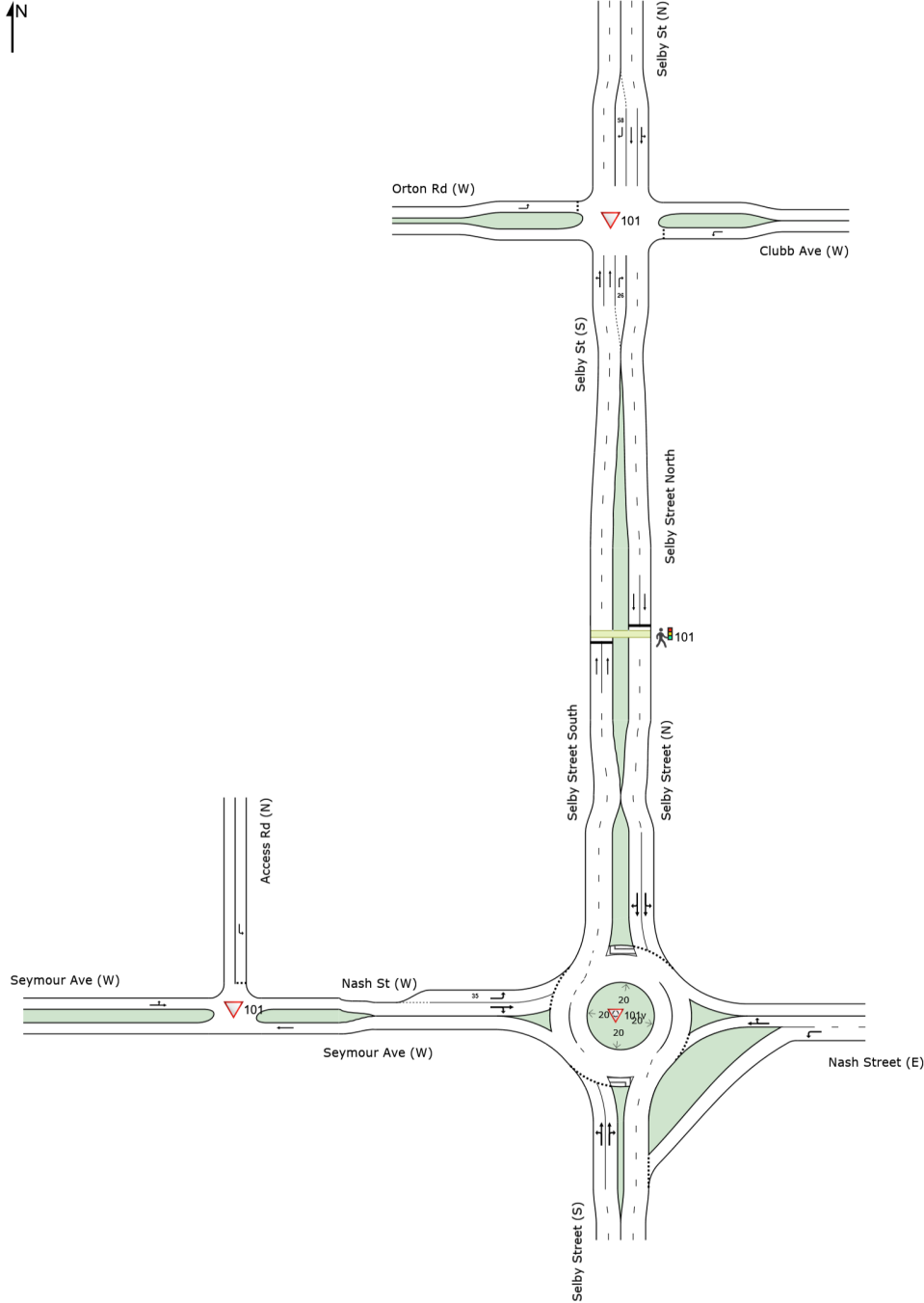
NETWORK LAYOUT

Network: N101 [2025+DEV_AM (Network Folder: General)]

New Network

Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101v	NA	Selby Nash Roundabout AM
▽101	NA	Selby / Orton Rd / Clubb PI AM
▽101	NA	Seymour/ Access AM
🚶101	NA	Pedestrian Site 1

MOVEMENT SUMMARY

Site: 101v [Selby Nash Roundabout AM (Site Folder: 2025 +DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 +DEV_AM (Network Folder: General)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Selby Street (S)															
1	L2	All MCs	7	5.0	7	5.0	0.344	5.8	LOS A	2.6	20.0	0.59	0.53	0.59	48.5
2	T1	All MCs	481	5.0	481	5.0	0.344	5.9	LOS A	2.6	20.0	0.59	0.54	0.59	48.0
3	R2	All MCs	279	5.0	279	5.0	0.344	10.8	LOS B	2.5	19.2	0.61	0.63	0.61	46.5
Approach			767	5.0	767	5.0	0.344	7.7	LOS A	2.6	20.0	0.60	0.57	0.60	47.2
East: Nash Street (E)															
4	L2	All MCs	155	5.0	155	5.0	0.168	5.4	LOS A	1.0	7.8	0.64	0.60	0.64	48.1
5	T1	All MCs	6	5.0	6	5.0	0.291	5.9	LOS A	1.9	14.6	0.70	0.70	0.70	39.7
6	R2	All MCs	258	5.0	258	5.0	0.291	10.4	LOS B	1.9	14.6	0.70	0.70	0.70	39.7
Approach			419	5.0	419	5.0	0.291	8.5	LOS A	1.9	14.6	0.68	0.66	0.68	43.7
North: Selby Street (N)															
7	L2	All MCs	547	5.0	547	5.0	0.553	6.4	LOS A	4.3	33.3	0.52	0.63	0.52	43.5
8	T1	All MCs	649	5.0	649	5.0	0.553	7.0	LOS A	4.3	33.3	0.53	0.63	0.55	47.2
9	R2	All MCs	21	5.0	21	5.0	0.553	11.7	LOS B	4.2	32.4	0.54	0.63	0.55	30.8
Approach			1218	5.0	1218	5.0	0.553	6.8	LOS A	4.3	33.3	0.53	0.63	0.53	45.4
West: Nash St (W)															
10	L2	All MCs	29	0.0	29	0.0	0.045	5.5	LOS A	0.2	1.4	0.64	0.70	0.64	21.2
11	T1	All MCs	18	0.0	18	0.0	0.052	4.6	LOS A	0.2	1.7	0.63	0.73	0.63	42.2
12	R2	All MCs	25	0.0	25	0.0	0.052	8.8	LOS A	0.2	1.7	0.63	0.73	0.63	46.1
Approach			73	0.0	73	0.0	0.052	6.4	LOS A	0.2	1.7	0.63	0.72	0.63	41.6
All Vehicles			2477	4.9	2477	4.9	0.553	7.3	LOS A	4.3	33.3	0.58	0.62	0.58	45.6

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 101 [Selby / Orton Rd / Clubb PI AM (Site Folder: 2025 +DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 +DEV_AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Selby St (S)															
1	L2	All MCs	23	0.0	23	0.0	0.196	3.3	LOS A	0.0	0.0	0.00	0.04	0.00	55.1
2	T1	All MCs	705	5.0	705	5.0	0.196	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
3	R2	All MCs	37	0.0	37	0.0	0.123	14.9	LOS B	0.4	3.0	0.81	0.91	0.81	35.6
Approach			765	4.6	765	4.6	0.196	0.8	NA	0.4	3.0	0.04	0.06	0.04	57.7
East: Clubb Ave (W)															
4	L2	All MCs	45	0.0	45	0.0	0.136	8.2	LOS A	0.3	2.5	0.55	0.77	0.55	41.0
Approach			45	0.0	45	0.0	0.136	8.2	LOS A	0.3	2.5	0.55	0.77	0.55	41.0
North: Selby St (N)															
7	L2	All MCs	7	0.0	7	0.0	0.326	5.6	LOS A	4.6	35.4	0.00	0.01	0.00	57.3
8	T1	All MCs	1203	5.0	1203	5.0	0.326	0.1	LOS A	4.9	38.1	0.00	0.00	0.00	59.7
9	R2	All MCs	61	0.0	61	0.0	0.095	9.8	LOS A	0.4	2.6	0.59	0.80	0.59	46.6
Approach			1272	4.7	1272	4.7	0.326	0.6	NA	4.9	38.1	0.03	0.04	0.03	58.2
West: Orton Rd (W)															
10	L2	All MCs	31	0.0	31	0.0	0.032	6.1	LOS A	0.1	0.8	0.39	0.59	0.39	48.2
Approach			31	0.0	31	0.0	0.032	6.1	LOS A	0.1	0.8	0.39	0.59	0.39	48.2
All Vehicles			2113	4.5	2113	4.5	0.326	0.9	NA	4.9	38.1	0.05	0.07	0.05	57.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [Seymour/ Access AM (Site Folder: 2025+DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025+DEV_AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Seymour Ave (W)															
5	T1	All MCs	36	0.0	36	0.0	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			36	0.0	36	0.0	0.018	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Access Rd (N)															
7	L2	All MCs	46	0.0	46	0.0	0.029	4.6	LOS A	0.1	0.8	0.06	0.51	0.06	44.3
Approach			46	0.0	46	0.0	0.029	4.6	LOS A	0.1	0.8	0.06	0.51	0.06	44.3
West: Seymour Ave (W)															
10	L2	All MCs	27	0.0	27	0.0	0.022	4.6	LOS A	0.0	0.0	0.00	0.35	0.00	45.1
11	T1	All MCs	15	0.0	15	0.0	0.022	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	36.7
Approach			42	0.0	42	0.0	0.022	3.0	NA	0.0	0.0	0.00	0.35	0.00	44.2
All Vehicles			124	0.0	124	0.0	0.029	2.7	NA	0.1	0.8	0.02	0.31	0.02	44.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site 1 (Site Folder: 2025+DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2025+DEV_AM (Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 538 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Selby Street South															
2	T1	All MCs	777	5.0	777	5.0	0.217	1.0	LOS A	6.6	47.9	0.07	0.07	0.07	51.9
Approach			777	5.0	777	5.0	0.217	1.0	LOS A	6.6	47.9	0.07	0.07	0.07	51.9
North: Selby Street North															
8	T1	All MCs	1263	5.0	1263	5.0	*0.353	1.2	LOS A	7.8	57.1	0.09	0.08	0.09	41.5
Approach			1263	5.0	1263	5.0	0.353	1.2	LOS A	7.8	57.1	0.09	0.08	0.09	41.5
All Vehicles			2040	5.0	2040	5.0	0.353	1.1	LOS A	7.8	57.1	0.08	0.08	0.08	47.1

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

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

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. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48
All Pedestrians		53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48

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: 101v [Selby Nash Roundabout PM (Site Folder: 2025 +DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 +DEV_PM (Network Folder: General)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Selby Street (S)															
1	L2	All MCs	5	5.0	5	5.0	0.987	50.6	LOS E	17.8	137.3	0.99	1.75	2.78	23.3
2	T1	All MCs	644	5.0	644	5.0	0.987	53.0	LOS E	17.8	137.3	0.99	1.74	2.78	22.5
3	R2	All MCs	155	5.0	155	5.0	0.987	62.0	LOS E	17.2	133.1	0.99	1.72	2.80	28.9
Approach			804	5.0	804	5.0	0.987	54.7	LOS E	17.8	137.3	0.99	1.74	2.79	24.2
East: Nash Street (E)															
4	L2	All MCs	77	5.0	77	5.0	0.069	4.1	LOS A	0.4	2.9	0.45	0.49	0.45	48.7
5	T1	All MCs	4	5.0	4	5.0	1.080	89.8	LOS F	63.2	489.0	1.00	2.94	4.73	14.9
6	R2	All MCs	882	5.0	882	5.0	1.080	94.3	LOS F	63.2	489.0	1.00	2.94	4.73	14.9
Approach			963	5.0	963	5.0	1.080	87.1	LOS F	63.2	489.0	0.96	2.75	4.39	16.4
North: Selby Street (N)															
7	L2	All MCs	347	5.0	347	5.0	0.292	5.3	LOS A	1.8	14.0	0.37	0.55	0.37	44.2
8	T1	All MCs	346	5.0	346	5.0	0.292	5.5	LOS A	1.8	14.0	0.38	0.51	0.38	48.1
9	R2	All MCs	4	5.0	4	5.0	0.292	10.1	LOS B	1.7	13.5	0.39	0.51	0.39	33.0
Approach			698	5.0	698	5.0	0.292	5.4	LOS A	1.8	14.0	0.38	0.53	0.38	46.1
West: Nash St (W)															
10	L2	All MCs	39	0.0	39	0.0	0.147	11.2	LOS B	0.5	4.0	0.84	0.86	0.84	13.3
11	T1	All MCs	44	0.0	44	0.0	0.133	9.1	LOS A	0.8	5.7	0.86	0.83	0.86	39.5
12	R2	All MCs	23	0.0	23	0.0	0.133	13.3	LOS B	0.8	5.7	0.86	0.83	0.86	42.9
Approach			106	0.0	106	0.0	0.147	10.8	LOS B	0.8	5.7	0.85	0.84	0.85	36.6
All Vehicles			2572	4.8	2572	4.8	1.080	51.6	LOS E	63.2	489.0	0.81	1.75	2.65	23.4

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: \\au2011-ntap01_cifs02\shared_projects\304900738\5_Technical\Traffic\Modelling\Selby St- Seymour Ave (V3 JD_LL).sip9

MOVEMENT SUMMARY

Site: 101 [Selby / Orton Rd / Clubb PI PM (Site Folder: 2025 +DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 +DEV_PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Selby St (S)															
1	L2	All MCs	44	0.0	43	0.0	0.403	3.3	LOS A	0.0	0.0	0.00	0.03	0.00	55.0
2	T1	All MCs	1512	5.0	1456	5.0	0.403	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
3	R2	All MCs	25	0.0	24	0.0	0.036	7.0	LOS A	0.1	1.0	0.55	0.71	0.55	41.4
Approach			1581	4.8	1523	4.8	0.403	0.2	NA	0.1	1.0	0.01	0.03	0.01	59.0
East: Clubb Ave (W)															
4	L2	All MCs	29	0.0	29	0.0	0.039	6.0	LOS A	0.1	0.8	0.38	0.59	0.38	42.9
Approach			29	0.0	29	0.0	0.039	6.0	LOS A	0.1	0.8	0.38	0.59	0.38	42.9
North: Selby St (N)															
7	L2	All MCs	14	0.0	14	0.0	0.231	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
8	T1	All MCs	667	5.0	667	5.0	0.231	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
9	R2	All MCs	43	0.0	43	0.0	0.244	28.2	LOS D	0.8	5.9	0.90	0.98	0.99	37.7
Approach			724	4.6	724	4.6	0.244	1.9	NA	0.8	5.9	0.05	0.07	0.06	56.0
West: Orton Rd (W)															
10	L2	All MCs	66	0.0	66	0.0	0.117	9.4	LOS A	0.4	2.9	0.61	0.81	0.61	46.2
Approach			66	0.0	66	0.0	0.117	9.4	LOS A	0.4	2.9	0.61	0.81	0.61	46.2
All Vehicles			2401	4.5	2343	4.7	0.403	1.1	NA	0.8	5.9	0.04	0.07	0.05	57.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [Seymour/ Access PM (Site Folder: 2025+DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025+DEV_PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Seymour Ave (W)															
5	T1	All MCs	15	0.0	14	0.0	0.007	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			15	0.0	14	0.0	0.007	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Access Rd (N)															
7	L2	All MCs	42	0.0	42	0.0	0.027	4.7	LOS A	0.1	0.8	0.13	0.50	0.13	44.0
Approach			42	0.0	42	0.0	0.027	4.7	LOS A	0.1	0.8	0.13	0.50	0.13	44.0
West: Seymour Ave (W)															
10	L2	All MCs	73	0.0	73	0.0	0.066	4.6	LOS A	0.0	0.0	0.00	0.31	0.00	45.4
11	T1	All MCs	53	0.0	53	0.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	37.7
Approach			125	0.0	125	0.0	0.066	2.6	NA	0.0	0.0	0.00	0.31	0.00	44.3
All Vehicles			182	0.0	182	0.0	0.066	2.9	NA	0.1	0.8	0.03	0.33	0.03	44.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site1 PM (Site Folder: 2025+DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2025+DEV_PM (Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 786 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Aver. Flows %	Arrival Flows [Total HV]	Aver. Flows %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
South: Selby Street South															
2	T1	All MCs	1582	5.0	1517	5.0	*0.417	0.9	LOS A	17.0	123.8	0.07	0.06	0.07	52.5
Approach			1582	5.0	1517	5.0	0.417	0.9	LOS A	17.0	123.8	0.07	0.06	0.07	52.5
North: Selby Street North															
8	T1	All MCs	698	5.0	698	5.0	0.192	0.7	LOS A	5.7	41.8	0.05	0.05	0.05	48.1
Approach			698	5.0	698	5.0	0.192	0.7	LOS A	5.7	41.8	0.05	0.05	0.05	48.1
All Vehicles			2280	5.0	2214	5.1	0.417	0.8	LOS A	17.0	123.8	0.06	0.06	0.06	51.8

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped ped]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37
All Pedestrians		53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37

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: 101v [Selby Nash Roundabout AM (Site Folder: 2035 +DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035 +DEV_AM (Network Folder: General)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Selby Street (S)															
1	L2	All MCs	8	5.0	8	5.0	0.415	6.2	LOSA	1.3	10.4	0.67	0.56	0.67	47.9
2	T1	All MCs	553	5.0	553	5.0	0.415	6.3	LOSA	1.3	10.4	0.67	0.58	0.67	47.5
3	R2	All MCs	322	5.0	322	5.0	0.415	11.3	LOS B	1.3	9.9	0.69	0.65	0.69	46.3
Approach			883	5.0	883	5.0	0.415	8.1	LOSA	1.3	10.4	0.68	0.60	0.68	46.8
East: Nash Street (E)															
4	L2	All MCs	178	5.0	178	5.0	0.209	5.9	LOSA	0.5	4.1	0.71	0.64	0.71	47.9
5	T1	All MCs	7	5.0	7	5.0	0.363	6.6	LOSA	1.0	7.7	0.78	0.73	0.78	39.2
6	R2	All MCs	296	5.0	296	5.0	0.363	11.1	LOS B	1.0	7.7	0.78	0.73	0.78	39.2
Approach			481	5.0	481	5.0	0.363	9.1	LOSA	1.0	7.7	0.75	0.70	0.75	43.3
North: Selby Street (N)															
7	L2	All MCs	631	5.0	631	5.0	0.668	8.0	LOSA	2.8	21.4	0.60	0.72	0.69	42.3
8	T1	All MCs	747	5.0	747	5.0	0.668	8.9	LOSA	2.8	21.4	0.62	0.74	0.73	45.5
9	R2	All MCs	24	5.0	24	5.0	0.668	13.7	LOS B	2.7	20.5	0.62	0.74	0.74	27.6
Approach			1402	5.0	1402	5.0	0.668	8.6	LOSA	2.8	21.4	0.61	0.73	0.71	43.9
West: Nash St (W)															
10	L2	All MCs	29	0.0	29	0.0	0.051	6.1	LOSA	0.1	0.7	0.68	0.75	0.68	19.9
11	T1	All MCs	19	0.0	19	0.0	0.061	5.1	LOSA	0.1	0.9	0.68	0.77	0.68	41.9
12	R2	All MCs	26	0.0	26	0.0	0.061	9.2	LOSA	0.1	0.9	0.68	0.77	0.68	45.7
Approach			75	0.0	75	0.0	0.061	6.9	LOSA	0.1	0.9	0.68	0.76	0.68	41.1
All Vehicles			2841	4.9	2841	4.9	0.668	8.5	LOSA	2.8	21.4	0.66	0.69	0.71	44.7

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 101 [Selby / Orton Rd / Clubb PI AM (Site Folder: 2035 +DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035 +DEV_AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Selby St (S)															
1	L2	All MCs	25	0.0	25	0.0	0.224	3.3	LOS A	0.0	0.0	0.00	0.03	0.00	55.1
2	T1	All MCs	808	5.0	808	5.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
3	R2	All MCs	42	0.0	42	0.0	0.199	21.2	LOS C	0.3	1.9	0.88	0.95	0.92	32.0
Approach			876	4.6	876	4.6	0.224	1.1	NA	0.3	1.9	0.04	0.06	0.04	57.2
East: Clubb Ave (W)															
4	L2	All MCs	53	0.0	53	0.0	0.182	9.4	LOS A	0.4	2.8	0.62	0.83	0.64	39.9
Approach			53	0.0	53	0.0	0.182	9.4	LOS A	0.4	2.8	0.62	0.83	0.64	39.9
North: Selby St (N)															
7	L2	All MCs	8	0.0	8	0.0	0.376	5.7	LOS A	5.1	39.1	0.00	0.01	0.00	57.2
8	T1	All MCs	1386	5.0	1386	5.0	0.376	0.1	LOS A	5.5	42.1	0.00	0.00	0.00	59.7
9	R2	All MCs	68	0.0	68	0.0	0.123	11.0	LOS B	0.2	1.3	0.64	0.85	0.64	45.9
Approach			1463	4.7	1463	4.7	0.376	0.7	NA	5.5	42.1	0.03	0.04	0.03	58.1
West: Orton Rd (W)															
10	L2	All MCs	36	0.0	36	0.0	0.040	6.4	LOS A	0.1	0.4	0.42	0.61	0.42	48.0
Approach			36	0.0	36	0.0	0.040	6.4	LOS A	0.1	0.4	0.42	0.61	0.42	48.0
All Vehicles			2427	4.5	2427	4.5	0.376	1.1	NA	5.5	42.1	0.05	0.08	0.05	56.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [Seymour/ Access AM (Site Folder: 2035+DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035+DEV_AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV] veh/h	%	[Total HV] veh/h	%									v/c
East: Seymour Ave (W)															
5	T1	All MCs	41	0.0	41	0.0	0.021	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			41	0.0	41	0.0	0.021	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Access Rd (N)															
7	L2	All MCs	46	0.0	46	0.0	0.029	4.6	LOS A	0.0	0.3	0.06	0.51	0.06	44.2
Approach			46	0.0	46	0.0	0.029	4.6	LOS A	0.0	0.3	0.06	0.51	0.06	44.2
West: Seymour Ave (W)															
10	L2	All MCs	27	0.0	27	0.0	0.023	4.6	LOS A	0.0	0.0	0.00	0.33	0.00	45.2
11	T1	All MCs	17	0.0	17	0.0	0.023	0.0	LOS A	0.0	0.0	0.00	0.33	0.00	37.2
Approach			44	0.0	44	0.0	0.023	2.8	NA	0.0	0.0	0.00	0.33	0.00	44.2
All Vehicles			132	0.0	132	0.0	0.029	2.6	NA	0.0	0.3	0.02	0.29	0.02	44.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: \\au2011-ntap01_cifs02\shared_projects\304900738\5_Technical\Traffic\Modelling\Selby St- Seymour Ave (V3 JD_LL).sip9

MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site 1 (Site Folder: 2035+DEV_AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2035+DEV_AM (Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 538 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Selby Street South															
2	T1	All MCs	915	5.0	915	5.0	0.256	1.1	LOS A	5.0	36.2	0.08	0.07	0.08	51.5
Approach			915	5.0	915	5.0	0.256	1.1	LOS A	5.0	36.2	0.08	0.07	0.08	51.5
North: Selby Street North															
8	T1	All MCs	1500	5.0	1500	5.0	*0.420	1.3	LOS A	4.8	35.0	0.10	0.09	0.10	40.2
Approach			1500	5.0	1500	5.0	0.420	1.3	LOS A	4.8	35.0	0.10	0.09	0.10	40.2
All Vehicles			2415	5.0	2415	5.0	0.420	1.2	LOS A	5.0	36.2	0.09	0.08	0.09	46.2

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

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

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. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48
All Pedestrians		53	263.6	LOS F	0.8	0.8	0.99	0.99	417.5	200.0	0.48

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: 101v [Selby Nash Roundabout PM (Site Folder: 2035 +DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035 +DEV_PM (Network Folder: General)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Selby Street (S)															
1	L2	All MCs	6	5.0	6	5.0	1.076	102.8	LOS F	14.7	113.7	1.00	2.75	5.06	14.3
2	T1	All MCs	739	5.0	739	5.0	1.076	105.0	LOS F	14.7	113.7	1.00	2.69	5.00	14.0
3	R2	All MCs	178	5.0	178	5.0	1.076	113.6	LOS F	14.0	108.2	1.00	2.58	4.89	20.7
Approach			923	5.0	923	5.0	1.076	106.6	LOS F	14.7	113.7	1.00	2.67	4.98	15.6
East: Nash Street (E)															
4	L2	All MCs	89	5.0	89	5.0	0.083	4.4	LOS A	0.2	1.4	0.49	0.51	0.49	48.6
5	T1	All MCs	5	5.0	5	5.0	1.349	324.7	LOS F	71.5	553.1	1.00	7.15	12.79	5.4
6	R2	All MCs	1014	5.0	1014	5.0	1.349	329.2	LOS F	71.5	553.1	1.00	7.15	12.79	5.4
Approach			1108	5.0	1108	5.0	1.349	303.0	LOS F	71.5	553.1	0.96	6.62	11.80	6.2
North: Selby Street (N)															
7	L2	All MCs	401	5.0	401	5.0	0.343	5.4	LOS A	0.9	6.9	0.40	0.56	0.40	44.1
8	T1	All MCs	399	5.0	399	5.0	0.343	5.7	LOS A	0.9	6.9	0.41	0.53	0.41	48.0
9	R2	All MCs	5	5.0	5	5.0	0.343	10.3	LOS B	0.9	6.6	0.41	0.53	0.41	32.6
Approach			805	5.0	805	5.0	0.343	5.6	LOS A	0.9	6.9	0.41	0.55	0.41	46.0
West: Nash St (W)															
10	L2	All MCs	40	0.0	40	0.0	0.160	10.7	LOS B	0.2	1.6	0.84	0.86	0.84	13.7
11	T1	All MCs	49	0.0	49	0.0	0.145	8.7	LOS A	0.3	2.4	0.86	0.83	0.86	39.8
12	R2	All MCs	24	0.0	24	0.0	0.145	12.8	LOS B	0.3	2.4	0.86	0.83	0.86	43.3
Approach			114	0.0	114	0.0	0.160	10.3	LOS B	0.3	2.4	0.85	0.84	0.85	37.2
All Vehicles			2951	4.8	2951	4.8	1.349	149.1	LOS F	71.5	553.1	0.82	3.50	6.13	11.4

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 101 [Selby / Orton Rd / Clubb PI PM (Site Folder: 2035 +DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035 +DEV_PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
South: Selby St (S)															
1	L2	All MCs	45	0.0	38	0.0	0.400	3.3	LOS A	0.0	0.0	0.00	0.03	0.00	55.1
2	T1	All MCs	1738	5.0	1449	5.0	0.400	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
3	R2	All MCs	29	0.0	25	0.0	0.042	8.0	LOS A	0.1	0.4	0.60	0.76	0.60	40.6
Approach			1813	4.8	1511	4.8	0.400	0.2	NA	0.1	0.4	0.01	0.03	0.01	59.0
East: Clubb Ave (W)															
4	L2	All MCs	35	0.0	35	0.0	0.067	6.4	LOS A	0.1	0.4	0.42	0.63	0.42	42.7
Approach			35	0.0	35	0.0	0.067	6.4	LOS A	0.1	0.4	0.42	0.63	0.42	42.7
North: Selby St (N)															
7	L2	All MCs	15	0.0	15	0.0	0.362	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.0
8	T1	All MCs	769	5.0	769	5.0	0.362	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	59.4
9	R2	All MCs	45	0.0	45	0.0	0.250	27.8	LOS D	0.3	2.4	0.90	0.98	0.99	37.9
Approach			829	4.6	829	4.6	0.362	1.8	NA	0.3	2.4	0.05	0.06	0.05	56.1
West: Orton Rd (W)															
10	L2	All MCs	76	0.0	76	0.0	0.134	9.4	LOS A	0.2	1.4	0.61	0.82	0.61	46.2
Approach			76	0.0	76	0.0	0.134	9.4	LOS A	0.2	1.4	0.61	0.82	0.61	46.2
All Vehicles			2753	4.6	2451	5.1	0.400	1.1	NA	0.3	2.4	0.05	0.07	0.05	56.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [Seymour/ Access PM (Site Folder: 2035+DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2035+DEV_PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
East: Seymour Ave (W)															
5	T1	All MCs	17	0.0	15	0.0	0.008	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			17	0.0	15	0.0	0.008	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Access Rd (N)															
7	L2	All MCs	42	0.0	42	0.0	0.027	4.7	LOS A	0.0	0.3	0.14	0.50	0.14	43.9
Approach			42	0.0	42	0.0	0.027	4.7	LOS A	0.0	0.3	0.14	0.50	0.14	43.9
West: Seymour Ave (W)															
10	L2	All MCs	73	0.0	73	0.0	0.070	4.6	LOS A	0.0	0.0	0.00	0.29	0.00	45.5
11	T1	All MCs	61	0.0	61	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	38.3
Approach			134	0.0	134	0.0	0.070	2.5	NA	0.0	0.0	0.00	0.29	0.00	44.4
All Vehicles			193	0.0	191	0.0	0.070	2.8	NA	0.0	0.3	0.03	0.31	0.03	44.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site1 PM (Site Folder: 2035+DEV_PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

 Network: N101 [2035+DEV_PM (Network Folder: General)]

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 786 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Aver. Flows %	Arrival Flows [Total HV]	Aver. Flows %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
South: Selby Street South															
2	T1	All MCs	1868	5.0	1554	5.0	* 0.427	0.9	LOS A	10.8	79.1	0.07	0.06	0.07	52.4
Approach			1868	5.0	1554	5.0	0.427	0.9	LOS A	10.8	79.1	0.07	0.06	0.07	52.4
North: Selby Street North															
8	T1	All MCs	838	5.0	838	5.0	0.230	0.7	LOS A	4.4	32.2	0.05	0.05	0.05	47.7
Approach			838	5.0	838	5.0	0.230	0.7	LOS A	4.4	32.2	0.05	0.05	0.05	47.7
All Vehicles			2706	5.0	2392	5.7	0.427	0.8	LOS A	10.8	79.1	0.06	0.06	0.06	51.5

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

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

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped ped]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37
All Pedestrians		53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37

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: 101v [Selby Nash Roundabout PM - 20225 WOD (Site Folder: 2025 WOD -PM)]

Network: N101 [2025 WOD-PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Selby Street (S)															
1	L2	All MCs	5	5.0	5	5.0	0.984	58.9	LOS E	8.2	63.7	1.00	1.86	3.06	29.0
2	T1	All MCs	621	5.0	621	5.0	0.984	61.5	LOS E	8.2	63.7	1.00	1.85	3.06	20.5
3	R2	All MCs	155	5.0	155	5.0	0.984	71.1	LOS F	7.9	61.3	1.00	1.81	3.07	27.0
Approach			781	5.0	781	5.0	0.984	63.4	LOS E	8.2	63.7	1.00	1.84	3.06	22.3
East: Nash Street (E)															
4	L2	All MCs	77	5.0	77	5.0	0.069	4.1	LOS A	0.1	1.2	0.44	0.48	0.44	48.7
5	T1	All MCs	4	5.0	4	5.0	1.025	49.5	LOS D	17.6	135.7	1.00	2.07	3.05	29.0
6	R2	All MCs	866	5.0	866	5.0	1.025	54.0	LOS E	17.6	135.7	1.00	2.07	3.05	21.2
Approach			947	5.0	947	5.0	1.025	50.0	LOS D	17.6	135.7	0.95	1.94	2.84	23.1
North: Selby Street (N)															
7	L2	All MCs	347	5.0	347	5.0	0.286	5.1	LOS A	0.7	5.6	0.36	0.54	0.36	44.3
8	T1	All MCs	346	5.0	346	5.0	0.286	5.3	LOS A	0.7	5.6	0.37	0.50	0.37	48.2
9	R2	All MCs	4	5.0	4	5.0	0.286	9.9	LOS A	0.7	5.4	0.37	0.49	0.37	43.5
Approach			698	5.0	698	5.0	0.286	5.2	LOS A	0.7	5.6	0.36	0.52	0.36	46.2
West: Nash St (W)															
10	L2	All MCs	14	0.0	14	0.0	0.055	12.4	LOS B	0.1	0.6	0.83	0.86	0.83	37.5
11	T1	All MCs	33	0.0	33	0.0	0.079	9.8	LOS A	0.2	1.4	0.86	0.82	0.86	43.5
12	R2	All MCs	6	0.0	6	0.0	0.079	14.3	LOS B	0.2	1.4	0.86	0.82	0.86	45.8
Approach			53	0.0	53	0.0	0.079	11.0	LOS B	0.2	1.4	0.85	0.83	0.85	42.8
All Vehicles			2479	4.9	2479	4.9	1.025	40.8	LOS D	17.6	135.7	0.80	1.48	2.17	26.9

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 101 [Selby / Orton Rd / Clubb PI PM - 2025 WOD (Site Folder: 2025 WOD -PM)]

Network: N101 [2025 WOD-PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%					[Veh. veh	Dist]			
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Selby St (S)															
1	L2	All MCs	5	0.0	5	0.0	0.399	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	55.3
2	T1	All MCs	1486	5.0	1477	5.0	0.399	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
3	R2	All MCs	25	0.0	25	0.0	0.037	7.0	LOS A	0.1	0.4	0.55	0.71	0.55	41.4
Approach			1517	4.9	1507	4.9	0.399	0.1	NA	0.1	0.4	0.01	0.01	0.01	59.2
East: Clubb Ave (W)															
4	L2	All MCs	29	0.0	29	0.0	0.039	6.0	LOS A	0.0	0.3	0.38	0.59	0.38	42.9
Approach			29	0.0	29	0.0	0.039	6.0	LOS A	0.0	0.3	0.38	0.59	0.38	42.9
North: Selby St (N)															
7	L2	All MCs	14	0.0	14	0.0	0.231	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
8	T1	All MCs	667	5.0	667	5.0	0.231	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
9	R2	All MCs	9	0.0	9	0.0	0.052	24.6	LOS C	0.1	0.5	0.88	0.95	0.88	39.2
Approach			691	4.8	691	4.8	0.231	0.5	NA	0.1	0.5	0.01	0.02	0.01	58.7
West: Orton Rd (W)															
10	L2	All MCs	66	0.0	66	0.0	0.123	9.8	LOS A	0.2	1.2	0.63	0.82	0.63	46.0
Approach			66	0.0	66	0.0	0.123	9.8	LOS A	0.2	1.2	0.63	0.82	0.63	46.0
All Vehicles			2303	4.7	2294	4.7	0.399	0.6	NA	0.2	1.2	0.03	0.05	0.03	58.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [Pedestrian Site1 PM - 2025 WOD (Site Folder: 2025 WOD -PM)]

 Network: N101 [2025 WOD-PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 786 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Aver. %	Arrival Flows [Total HV]	Aver. %	Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh.]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			veh/h	%	veh/h	%	v/c	sec		veh	Dist] m			km/h	
South: Selby Street South															
2	T1	All MCs	1518	5.0	1496	5.0	* 0.411	0.9	LOS A	10.2	74.2	0.07	0.06	0.07	52.6
Approach			1518	5.0	1496	5.0	0.411	0.9	LOS A	10.2	74.2	0.07	0.06	0.07	52.6
North: Selby Street North															
8	T1	All MCs	698	5.0	698	5.0	0.192	0.7	LOS A	3.5	25.6	0.05	0.05	0.05	48.1
Approach			698	5.0	698	5.0	0.192	0.7	LOS A	3.5	25.6	0.05	0.05	0.05	48.1
All Vehicles			2216	5.0	2194	5.0	0.411	0.8	LOS A	10.2	74.2	0.06	0.06	0.06	51.8

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

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

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. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped	Dist] m			sec	m	m/sec
South: Selby Street South											
P1	Full	53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37
All Pedestrians		53	387.9	LOS F	1.2	1.2	0.99	0.99	541.7	200.0	0.37

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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