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Traffic Engineering Assessment

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Proposed Mixed Use Development
55-61 Atherton Road, Oakleigh

Prepared for
DC Atherton Pty Ltd

June 2026

G34209R-03D

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1. Introduction

Traffix Group has been engaged by DC Atherton Pty Ltd to prepare a Traffic Engineering Assessment for the Proposed Mixed Use Development at 55-61 Atherton Road, Oakleigh.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

In the course of preparing this assessment, we inspected the subject site, commissioned traffic and car parking inventory surveys, reviewed development plans and background material, and assessed the car parking and traffic impacts of the proposal.

Our assessment is as follows.

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2. Existing Conditions

2.1. Subject Site

The subject land, addressed as 55-61 Atherton Road, Oakleigh, is located on the northwest corner of the intersection between Atherton Road and Atkinson Street in Oakleigh.

The subject site is generally rectangular in shape with an approximate area of 1,550 square metres.

The site has frontages of approximately 38 metres and 41 metres to Atherton Road and Atkinson Street to the south and east, respectively. The site also has an abuttal of approximately 5 metres to a Right-of-Way (RoW) at the north-west boundary of the site. The portion of the site which extends to the RoW is subject to a carriageway easement in favour of the neighbouring land.

A locality plan and aerial view of the site are provided at Figure 1 and Figure 2, respectively.

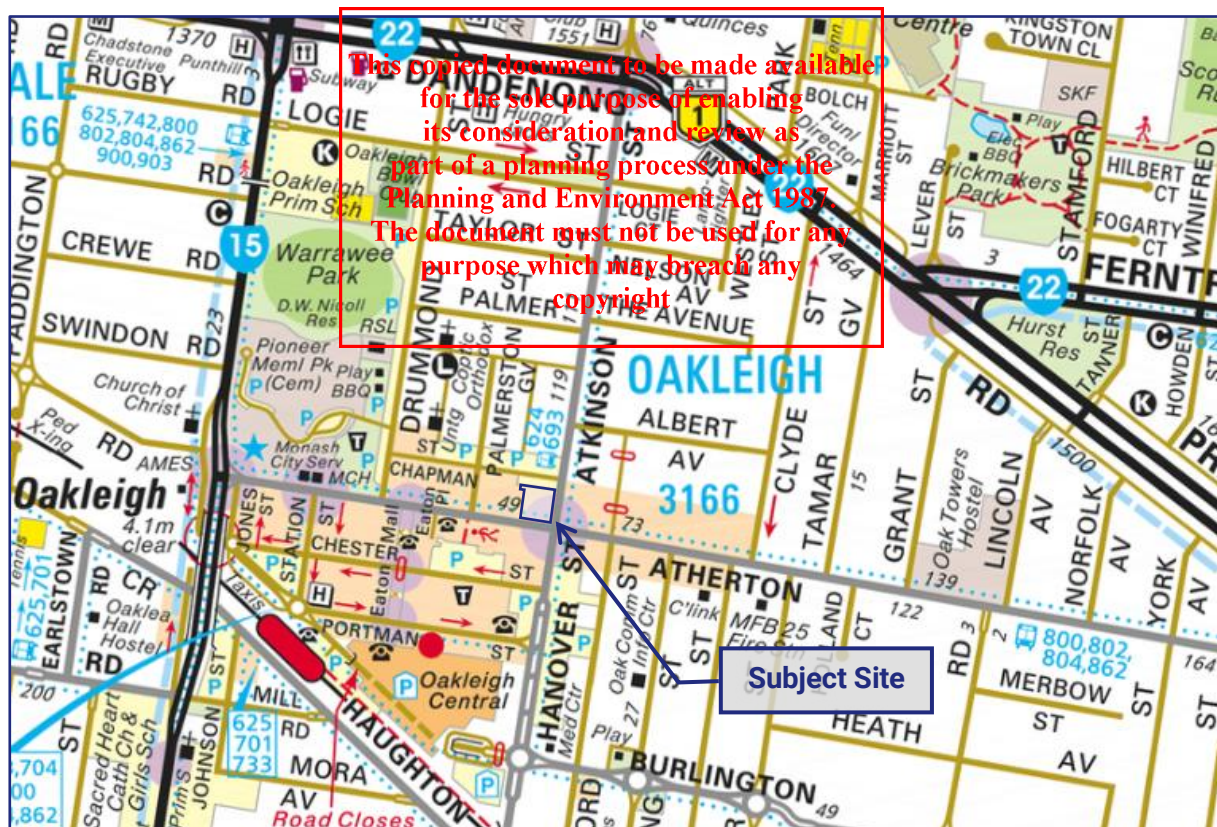


Figure 1: Locality Map

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Figure 2: Aerial View

Source: Nearmap (October 2023)

2.2. Existing / Historical Use & Vehicle Access

The subject site is currently occupied by a single storey commercial building which we understand operated as a restricted retail use (paint sales) with an estimated floor area of approximately 690 square metres (estimated utilising Nearmap aerial imagery).

The subject site includes an at-grade car park on the eastern half of the site accommodating 19 off-street car spaces.

Vehicle access to the on-site carpark is afforded via two existing crossovers including:

- A double width crossover 6.4 metres wide to Atkinson Road 32 metres north of the Atherton Road / Atkinson Street signals, and
- A double width crossover 6.8 metres wide to Atherton Road 6 metres west of the signals.

2.3. Planning Scheme Zones & Surrounding Uses

The subject site is zoned as Commercial 1 Zone (CZ1) under the Monash Planning Scheme. A planning zone map is provided at Figure 3.

The site is within Precinct 1 – Oakleigh Village, of the Oakleigh Major Activity Centre Structure Plan, and forms a key part of the overall Oakleigh Village precinct.

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Land uses in the immediate vicinity of the subject is generally commercial in nature with residential uses further to the north and northeast.

The site to the immediate north is the Council Atkinson Street multi-deck public car park, which was completed in 2017 and provides 275 car spaces for the precinct.

Notable other nearby uses include:

- Eaton Mall, located approximately 200 metres south-west of the site,
- Oakleigh Central Shopping Centre (includes a full line Coles and Woolworths), located 250 metres south of the site,
- Oakleigh Train Station, located 350 metres south-west of the site, and
- Oakleigh Library, located 200 metres north-west of the site.

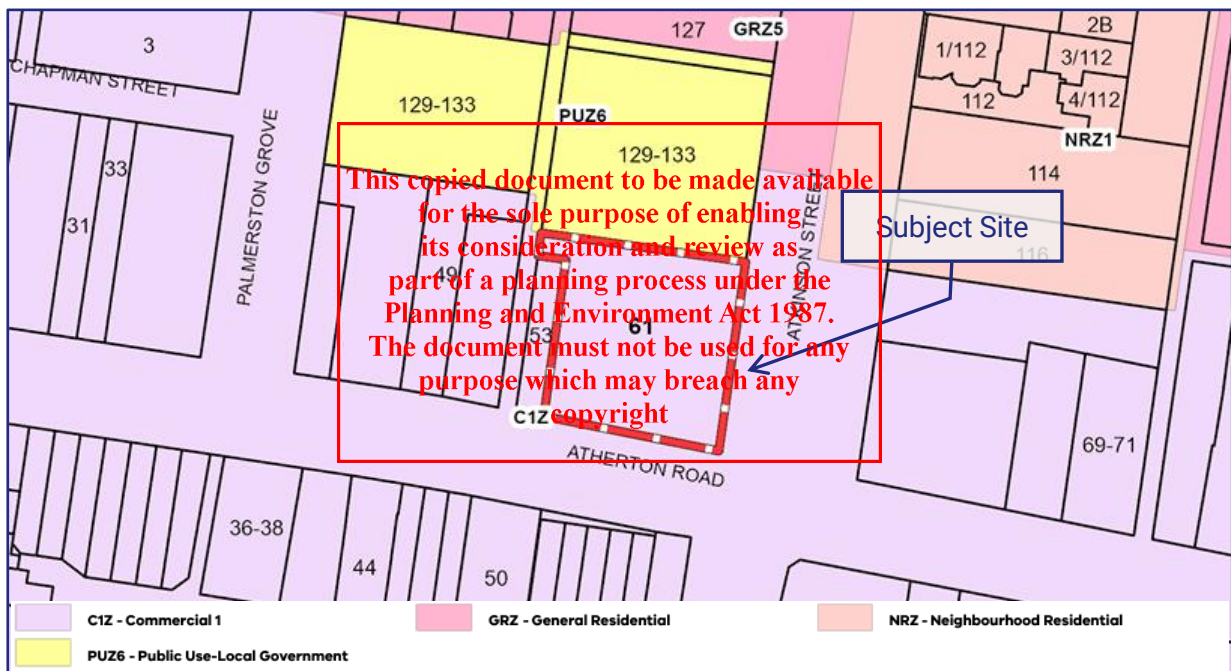


Figure 3: Planning Zone Map – Monash

2.4. Road Network

Atherton Road is a Council collector road running in a west-east direction between Warrigal Road to the west and the Princes Highway/Dandenong Road to the east.

In the vicinity of the site, Atherton Road allows for a single traffic lane in both directions with on-street bicycle lanes and indented kerbside parking on both sides.

The footpath along the subject site boundary is a wide urbanised tiled pavement, which provides street furniture, but no planting.

On-street parking on Atherton Road in the vicinity of the site is generally short-term (1P 8am-8pm) restricted, and there is 1 space which sits at the immediate frontage of the site. The

remainder of the site frontage is No Stopping restricted due to the proximity to the signalised intersection at Atkinson Street.

An area speed limit of 40km/h applies to Atherton Road in the vicinity of the site.

Atkinson Street is a Council collector road generally aligned in a north-south direction. Atkinson Street extends between Waverley Road at the north and Atherton Road at the south, where it continues as Hanover Street to Haughton Road.

On-street parking along Atkinson Street in the vicinity of the site is subject to short-term restrictions (1P and 2P). The frontage of the site, however, is No Stopping restricted due to the proximity of the signals and the access which is provided to the multi-deck car park to the north of the site.

An area speed limit of 40km/h applies to Atkinson Street in the vicinity of the site.

A public **RoW** is situated west of the subject site, running along the western abuttal of the neighbouring site at 53 Atherton Road. It extends north from Atherton Road past the site and through the multi-deck car park site, and to the rear of residential development to the north, ultimately connecting to an east-west laneway to running behind properties which front Palmer Street).

The RoW operates two-way but is approximately 4.2 metres wide – meaning that vehicles must prop and wait within their respective site boundaries to facilitate passing.

Parking is not permitted along the RoW.

A signed shared use speed limit of 10km/h applies to the RoW.

There are no turn restrictions at the laneway intersection with Atherton Road.

Figure 4 to Figure 9 provide views of the surrounding road network.



Figure 4: Atherton Road - View West



Figure 5: Atherton Road - View East

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Figure 6: Atkinson Street - View North



Figure 7: Atkinson Street - View South



Figure 8: RoW - View North



Figure 9: RoW - View South

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3. Proposal

3.1. The Development

The application proposes to develop the site for the purposes of a multi-storey mixed use development, comprising residential apartments and a retail tenancy at ground level.

The proposed development schedule is provided in Table 1.

Table 1: Proposed Development Schedule

	Use	No./ Area
Residential	1 bed dwelling	15 no.
	2 bed dwelling	81 no.
	3 bed dwelling	26 no.
	Total	122 no.
Commercial	Shop/Food and Drink (3 tenancies)	541 m ²

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3.2. Access

3.2.1. Pedestrian & Cyclist Access

The retail tenancies will have direct access to the abutting streets.

Access to the residential lobby will be along the Atkinson Street frontage.

Back of House access is provided internally for the retail tenancy, including to waste, amenity and bike parking areas.

Staff, residents and visitors will be able to access bikes at ground level through the lobbies, and also via the rear access to the rear laneway.

It is noted that whilst the south-eastern corner title boundary is aligned at 90 degrees, the proposal includes a chamfer of the south-eastern corner of the ground floor to facilitate improved pedestrian access at the corner of the Atkinson Street/Atherton Road intersection.

3.2.2. Vehicular Access

Vehicular access is proposed via a single, double-width crossover at the north-east boundary of the site to Atkinson Street. Essentially this is a shifting of the existing crossover to Atkinson Street to the north.

The existing crossover to Atherton Road is proposed to be decommissioned and will be reinstated with kerb and channel.

Car parking will be accessed via an internal ramp.

Loading vehicles will use the Atkinson Street access to access the on-site loading bay.

3.3. Parking

3.3.1. Bike Parking

The application proposes the provision of 46 bicycle spaces allocated as follows:

- 38 spaces within a secure store at ground level, including:
 - 25 resident spaces, and
 - 13 visitor spaces.
- 8 spaces for commercial use at ground level, including:
 - 4 staff spaces in a secure bike room, and
 - 4 visitor space.

3.3.2. Car Parking

The proposal includes a total of 163 car spaces (including 1 DDA space) across four (4) levels of basement carparking.

Parking is to be allocated as follows:

- 158 spaces for residents, and
- 5 spaces to the retail staff (inclusive of 1 DDA space).

3.4. Loading & Waste Collection

Loading and waste collection will take place within a loading area proposed at ground level at the north-east end of the site, accommodating vehicles up to a 6.4 metre long Small Rigid Vehicle (SRV). The loading area is accessible from the main vehicle access with Atkinson Street.

A summary of the proposed pedestrian, bicycle, vehicle and loading access arrangements is illustrated at Figure 10.

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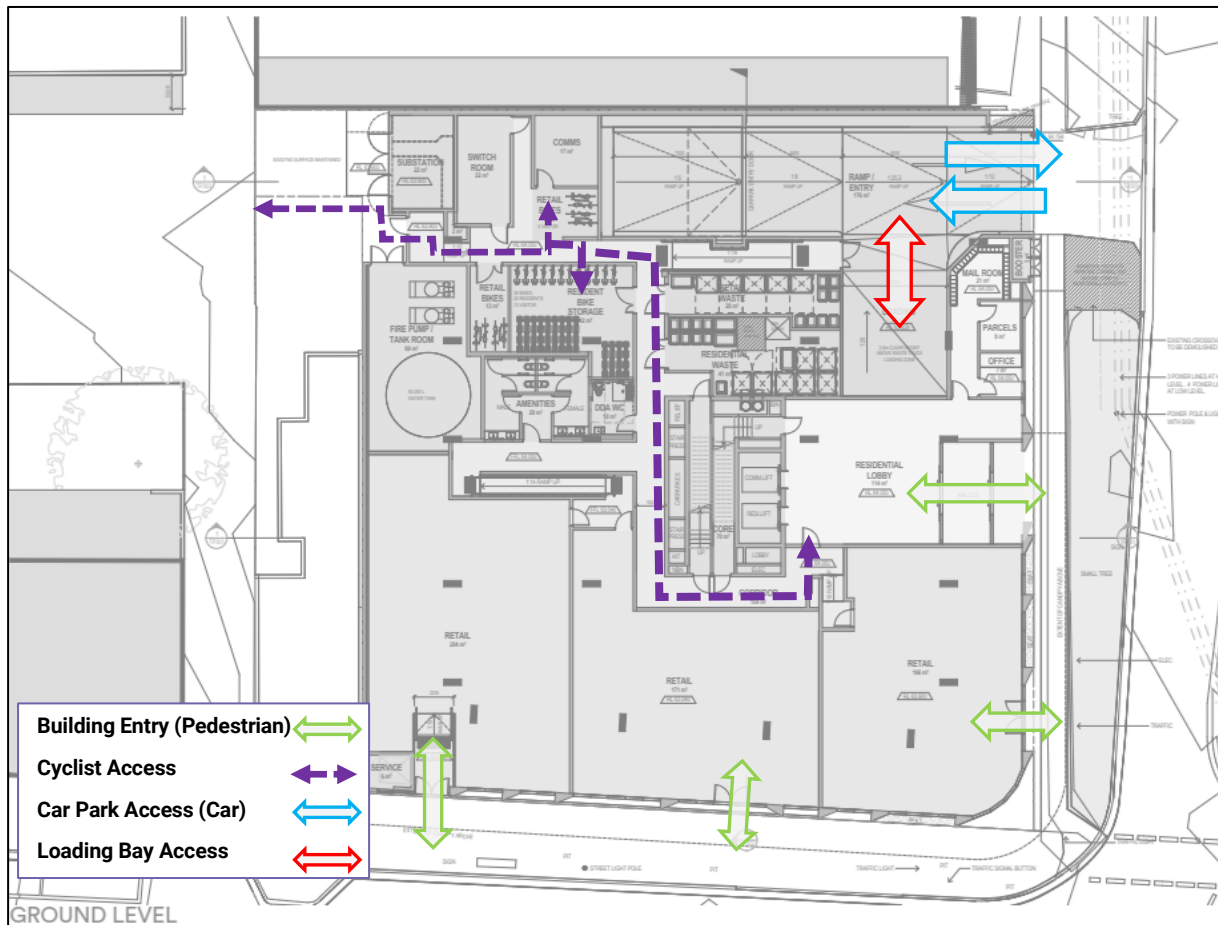


Figure 10: Proposed Access Arrangements

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4. Car Parking Considerations

4.1. Statutory Requirements – Clause 52.06

The car parking requirements for the proposed development are outlined under Clause 52.06 of the Monash Planning Scheme. The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Clause 52.06 was updated on 16th December 2025, and includes a series of rates applicable to different land uses. The rates for each land use vary depending on the location of the site and in particular, access to public transport services. Rates can be minimums or maximums (or a range including both) depending on the category.

The subject site falls into "Category 3" of the new parking rates zoning.

It is noted that transitional controls apply to the requirements at Clause 52.06 whereby the previous rates can continue to be adopted for the first six months of the change if the rates are lower, however the new rates can also be adopted where relevant.

A key change for the proposal is that the new rates apply a maximum for the site, meaning that the proposal must not exceed the maximum provision specified in the scheme. There is no minimum requirement.

The current parking requirements (post December 2025) under Clause 52.06 are given in Table 2.

Table 2: Statutory Car Parking Requirements (Clause 52.06) – Post December 2025

Use	No. / Size	Statutory Requirement	No. Spaces Required
Residential Apartments	96	Minimum 0, maximum 2 car spaces to each dwelling	0-192 spaces
Retail (Shop/Food & Drink)	541 m ²	Minimum 0, maximum 2 spaces to each 100 sqm of LFA	0-10 spaces
Total			0-202 spaces

The proposal includes a single DDA space as required by the BCA.

There is no requirement to provide residential visitor parking for this proposal.

The application proposes the provision of 163 car spaces which is within the requirements of the Planning Scheme.

A permit is therefore not required under Clause 52.06.

4.2. Car Parking Layout & Access Arrangements

The car park layout and access arrangements have been developed with design advice provided to the project architect (Peddle Thorp Architects) and is considered to principally meet the relevant requirements of the Monash Planning Scheme and where applicable, the Australian Standard for Off-Street Parking (AS2890.1:2004).

A review of the car park layout reveals:

4.2.1. General Car Parking Layout

- Car spaces are to be provided with minimum dimensions of 2.6 metres width and 4.9 metres length, accessible from 6.4 metre wide aisles, meeting the requirements of Clause 52.06-9 (Design Standard 2).
- Car spaces adjacent to walls and structures have been provided with appropriate clearances of at least 300mm to allow for satisfactory car door opening and in accordance with the clearance envelope at Diagram 1 of Clause 52.06-9 (Design Standard 2).
- Columns adjacent to car spaces are sited within 0.25-1.25 metres from the aisle end of car spaces in accordance with the car parking envelope of Clause 52.06-9 (Design Standard 2).
- Sufficient headroom clearance is to be provided to, from and throughout the basement car park including along the ramp. In particular, a minimum headroom clearance of at least 2.2 metres will be provided in excess of the statutory requirement under Clause 52.06-9 of the Planning Scheme (Design Standard 2) and in accordance with the relevant Australian Standard (AS2890.1:2004). The exception is 2 resident spaces in Basement 2 underneath the ramp which will have a small encroachment over the bonnet. These spaces will remain functional and will be signed and marked to advise residents of the constraints.
- A DDA parking bay have been provided in accordance with the requirements of AS2890.6:2009. A dedicated bay and shared area have been dimensioned at a minimum width of 2.4 metres and length of 5.4 metres. A minimum headroom clearance of 2.5 metres will be provided.

4.2.2. Access & Ramps

- The proposed access ramp with Atkinson Street and internal ramps, are designed as a 6.1 metre wide (between walls) two-way accessway, in excess of the requirements of Clause 52.06 and in accordance with AS/NZS 2890.1-2004.

- Vehicles can enter and exit the site in a forward direction in accordance with Clause 52.06-9 (Design Standard 1).
- Appropriate opportunities for passing have been provided within the basement and site entrance. Vehicle circulation and passing at the site access has been checked for the 85th and 99th percentile design vehicles (B85 and B99, respectively) and has been found to be satisfactory. Swept paths demonstrating satisfactory access and passing are attached at Appendix A.
- Access to and from each of the critical to access car spaces and garages has been checked for the 85th percentile design vehicle and has been found to be satisfactory. Some car spaces may require an additional manoeuvre to access, however, this is expressly permitted by AS2890.1-2004 for long-term (i.e. Resident/staff) parking and is consistent with current practice. Swept paths for the critical to access car bays are attached at Appendix A.
- A grade no steeper than 1 in 10 for the first 5 metres is to be provided from the property boundary, satisfying the requirements of the Planning Scheme (Design Standard 3).
- The ramp is designed with a maximum grade of 1 in 5 and transitions of 1 in 8, satisfying the requirements of the Clause 52.06-9 (Design Standard 3) for a private accessway.
- It is noted that the access grading at ground level has been premised on the grading and transition requirements of a Small Rigid Vehicle (SRV) under AS2890.2:2018 and are considered appropriate.
- A pedestrian sight splay measuring 2 metres along the Atkinson Street frontage by 2.5 metres along the exit lane has been identified at the site access to provide visibility for vehicles exiting the site onto Atkinson Street. The sight triangle is to be 50 per cent clear of visual obstructions and any landscaping within this area is to be less than 900mm in height. It is noted the sight triangle slightly encroaches the neighbouring property, however, the boundary and frontage of this property is not fenced with landscaping less 900mm in height and will not impede the sight triangle.

Based on the foregoing, the car park layout and access arrangements are considered satisfactory and accord with the requirements of Clause 52.06-9 of the Planning Scheme and AS2890.1-2004 (where relevant).

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5. Traffic Considerations

5.1. Existing Conditions

5.1.1. Traffic Surveys

To understand the existing traffic conditions in the vicinity of the subject site Traffic Group commissioned traffic surveys at the following locations:

- The intersection of Atherton Road and Atkinson Street,
- The southern site access to Atherton Road, and
- The eastern site access to Atkinson Street.

The surveys were undertaken between 7:30am – 9:30am and 3:00pm – 7:00pm on Thursday 8th February 2024.

The surveys identified peak hours between 8:00 – 9:00am and 5:00 – 6:00pm for the morning and afternoon, respectively.

The subject site generated traffic at a rate of 17 and 14 vehicle movements during the AM and PM peak hours, respectively. These were generally split evenly between inbound and outbound movements in both the AM and PM peaks.

A summary of the traffic surveys is provided at Figure 11.

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Figure 11: Existing Traffic Volumes

5.2. Traffic Generation

5.2.1. Proposed Residential Component

In consideration of the location of the site and size of the dwellings and traffic generation rates adopted for other developments in the area, it is expected that the residential component will generate traffic at a rate of 5 vehicle movements per dwelling (allocated a car space) per day, inclusive of 0.5 movements per dwelling in each of the AM and PM peak hours.

Application of these rates to the proposed 122 dwellings with allocated car parking equates to a projected daily traffic generation of 610 movements, inclusive of 61 movements in each of the peak hours.

Assuming a typical AM peak traffic split of 20% arrivals and 80% departures and PM peak traffic split of 60% arrivals and 40% departures for the residential spaces, it is projected the development will generate:

AM PEAK:	12 arrivals and 49 departures
PM PEAK:	37 arrivals and 24 departures

5.2.2. Proposed Retail Component

Regarding the retail component, 5 car spaces are proposed to be provided on-site for retail staff.

With respect to staff parking, it is typical to assume that 50% of the staff spaces provided will generate an arrival movement during the morning peak hour and 50% will generate a departure movement during the evening peak hour.

Based on the foregoing, it is projected that the proposed additional retail staff spaces will generate up to an additional 3 arrivals and 3 departures in the morning and afternoon peak periods, respectively.

5.2.3. Total Traffic Generation

Based on the preceding, it is projected that the proposal will generate up to 64 vehicle movements during both the AM and PM peak hours.

With consideration of the existing traffic movements to/from the site, the proposal will generate an additional 47 movements and 50 movements during the AM and PM peak hours, respectively.

A summary of the total traffic generation is provided in Table 3.

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Table 3: Projected Future Traffic Generation

Use	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Residential	12	49	61	37	24	61
Retail	3	0	3	0	3	3
Total	15	49	64	37	27	64
Existing Use	10	7	17	7	7	14
Additional Traffic	5	42	47	30	20	50

5.3. Development Traffic Distribution & Volumes

Based on the existing connections to the arterial network (including turn restrictions and likely peak hour road network demands) and likely car trips to/from the surrounding precinct due to the position of key employment, shopping, school and leisure generators, we have adopted the following distributions to/from the subject site for the purposes of the assessments.

The change in distribution to Atkinson Street north vs Atherton Road west is related to the turning restrictions at Warrigal Road, the connection to the freeway via Warrigal Road, and the convenience of turning movements at the key intersections along Princes Highway/Warrigal Road.

Table 4: Likely Peak Hour Distributions

	Inbound	Outbound
Atkinson Street (north)	20%	70%
Hanover Street (south)	10%	10%
Atherton Road (east)	10%	10%
Atherton Road (west)	60%	10%

Based on these distributions, Figure 12 and Figure 13 show the expected peak hour turning movements at the site access and also at the intersection of Atherton Road/Atkinson Street.

Figure 12 shows the traffic movements generated by this proposal.

Figure 13 shows the future traffic volumes expected through the intersection, post development.

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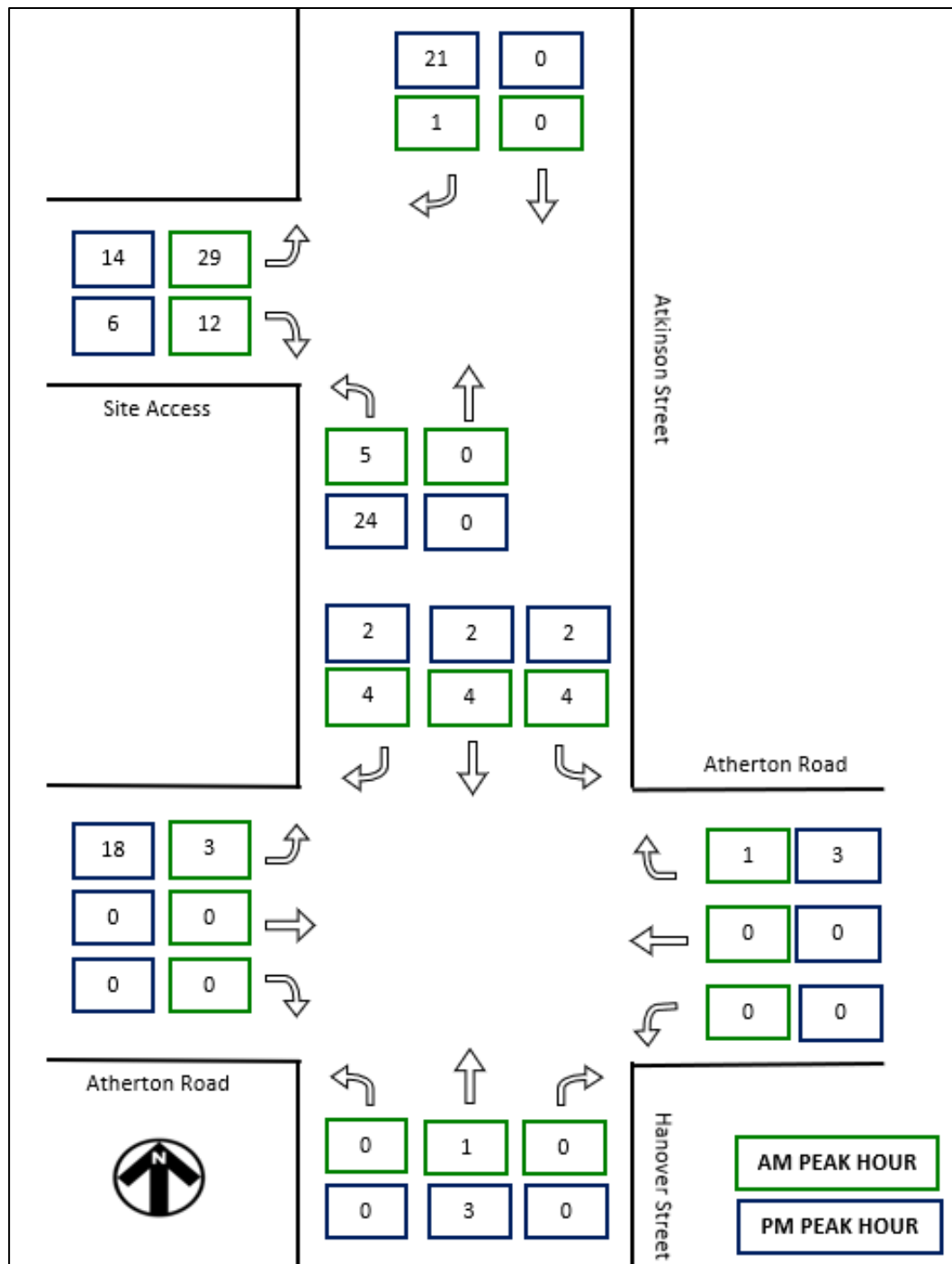


Figure 12: Intersection of Atherton Road/Atkinson Road – Traffic Generation

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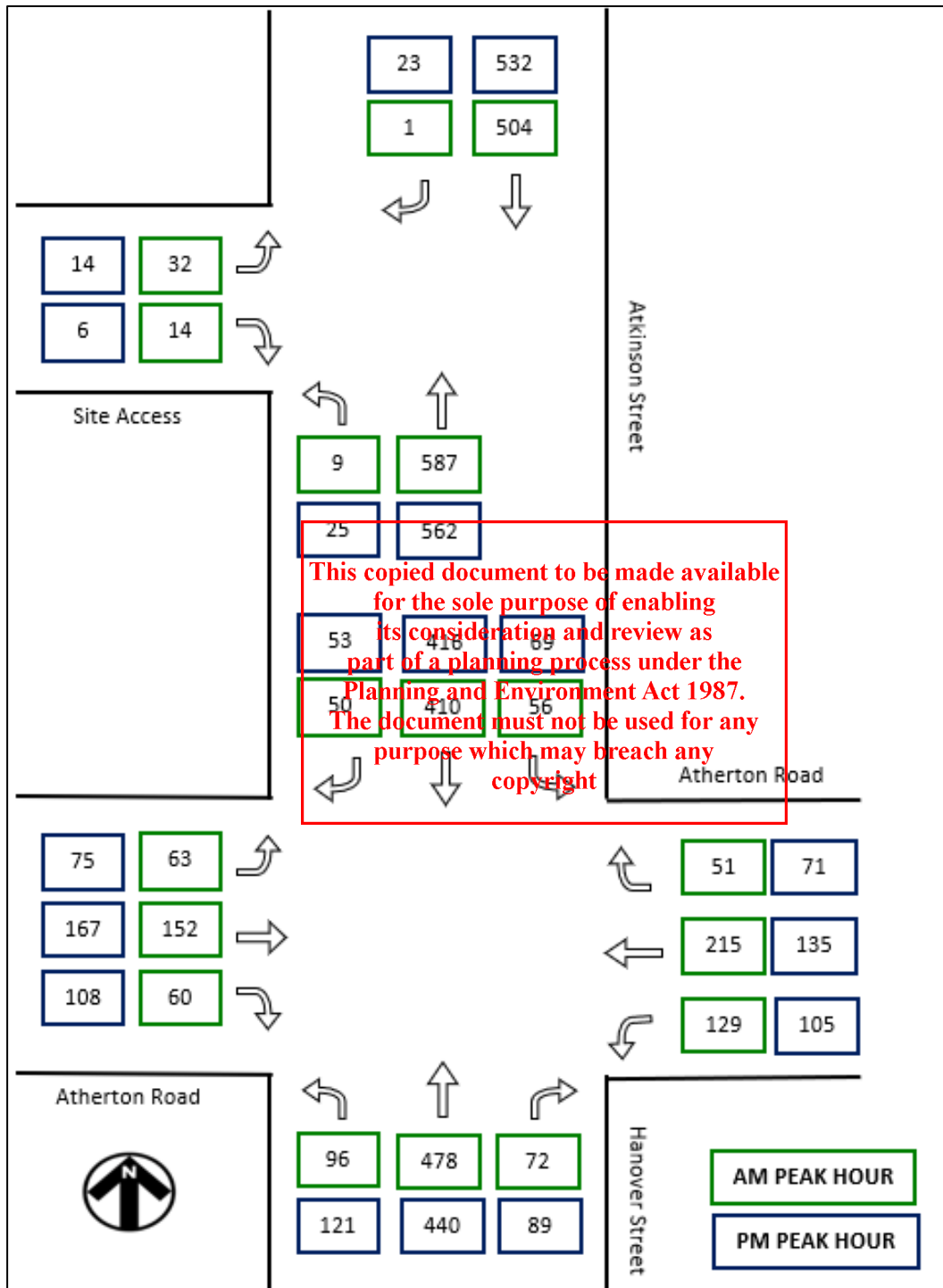


Figure 13: Intersection of Atherton Road/Atkinson Road – Post Development Traffic Volumes

5.4. Traffic Impact

With reference to Figure 12, the proposal is likely to generate the majority of its movements to the north, with only relatively low generation through the adjacent signals.

With the exception of the left turn from the west (where people are arriving from Warrigal Road), not more than 5 vehicle movements, or an average of 1 vehicle every 12 minutes, is expected to be generated to any one turning movement at the signals.

In relation to the site access, the signals to the immediate south provide gaps in traffic on Atkinson Street to appropriately allow for vehicles to enter and exit the site with relative ease.

The proposal is expected to generate not more than 12 right turns out of the site access in a peak hour, this is equal to an average of 1 right turn movement every 4 signals cycle, meaning that there will be ample opportunity for vehicles to exit during the gaps.

We note that the multi deck car park to the north which provides over 270 car spaces, has fully directional and unrestricted access, and from our observations, does not appear to have any capacity access issues.

The signals currently cater for over 1,800 vehicles in a peak hour. This proposal will not generate more than 30 vehicle movements to the intersection in the peak hour.

This is only 1.7% of the existing traffic and does not warrant further analysis of the intersection on the basis of Department of Transport and Planning Guidelines (which suggest that 10% of existing traffic would typically trigger a need to undertake detailed analysis).

In any case, we have undertaken some existing and post development analysis of the signals to demonstrate that the site traffic generation will not adversely impact on the operation of the existing network.

5.5. SIDRA Intersection Analysis - Signalised Intersection

We have used SIDRA Intersection 9 to undertake an assessment of the performance of the Atkinson Street / Atherton Road / Hanover Street signalised intersection and site access as a network model.

SIDRA is a computer simulation package which assesses the operating performance of intersections. A summary of the key outputs follows:

- **Degree of Saturation (DoS)** – The ratio of traffic volume to maximum capacity for a particular turning movement. Various values of degree of saturation and their rating are shown following.

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Level of Service (LOS)		Intersection Degree of Saturation (DOS)	
		Unsignalised Intersection	Signalised Intersection
A	Excellent	≤ 0.60	≤ 0.60
B	Very Good	0.60 – 0.70	0.60 – 0.70
C	Good	0.70 – 0.80	0.70 – 0.90
D	Acceptable	0.80 – 0.90	0.90 – 0.95
E	Poor	0.90 – 1.00	0.95 – 1.00
F	Very Poor	≥ 1.0	≥ 1.0

- **Average Delay (Avg. Delay)** – The average delay in seconds for a vehicle making a particular turning movement.
- **95th Percentile Queue (95% Queue)** – The 95% percentile queue is the length in metres which 95 per cent of all observed cycle queues fall below (or 5% exceed) during the peak analysis period.

The intersection operates as a three-phase system.

For the purposes of this assessment we have adopted a cycle time of 60 seconds, with phase times programmed and checked against IDM data.

We have assumed a 3.5% and 2.5% heavy vehicle volume for all movements at the signals for the AM and PM peak hour analyses, respectively. These have been informed by the traffic surveys. The above heavy vehicle rates have been applied only to the through movements at the site access intersection.

Figure 14 and Figure 15 show the SIDRA Network output diagrams for Degree of Saturation for both the AM and PM peak hours, comparing the existing and post-development conditions.

The results show that under post-development conditions, the Degree of Saturation at the signals and site access are generally consistent with existing conditions and will continue to be within an acceptable range.

Table 5 and Table 6 show the SIDRA Network output diagrams for 95th percentile queues for the AM and PM peak hours, respectively, comparing the existing and post-development conditions.

The results show that under post-development conditions, there will be no material impact to queue lengths at all intersections and will generally continue to operate similar to existing conditions. We note that there are small increases to queue lengths including at the eastern, western and southern legs of the signalised intersection. However, we are satisfied that these queues can adequately be accommodated within the existing lanes.

It is noted that under existing conditions, queueing for the right turn lane on the eastern leg of the signals, already extends beyond the turning lane.

Detailed SIDRA outputs of the analysis are attached at Appendix B.

Based on our traffic generation assessment and SIDRA analysis, traffic generated by the proposed development can be adequately accommodated by the Atkinson Street / Atherton Road / Hanover Street signalised intersection and the site access, which will continue to operate within acceptable conditions.

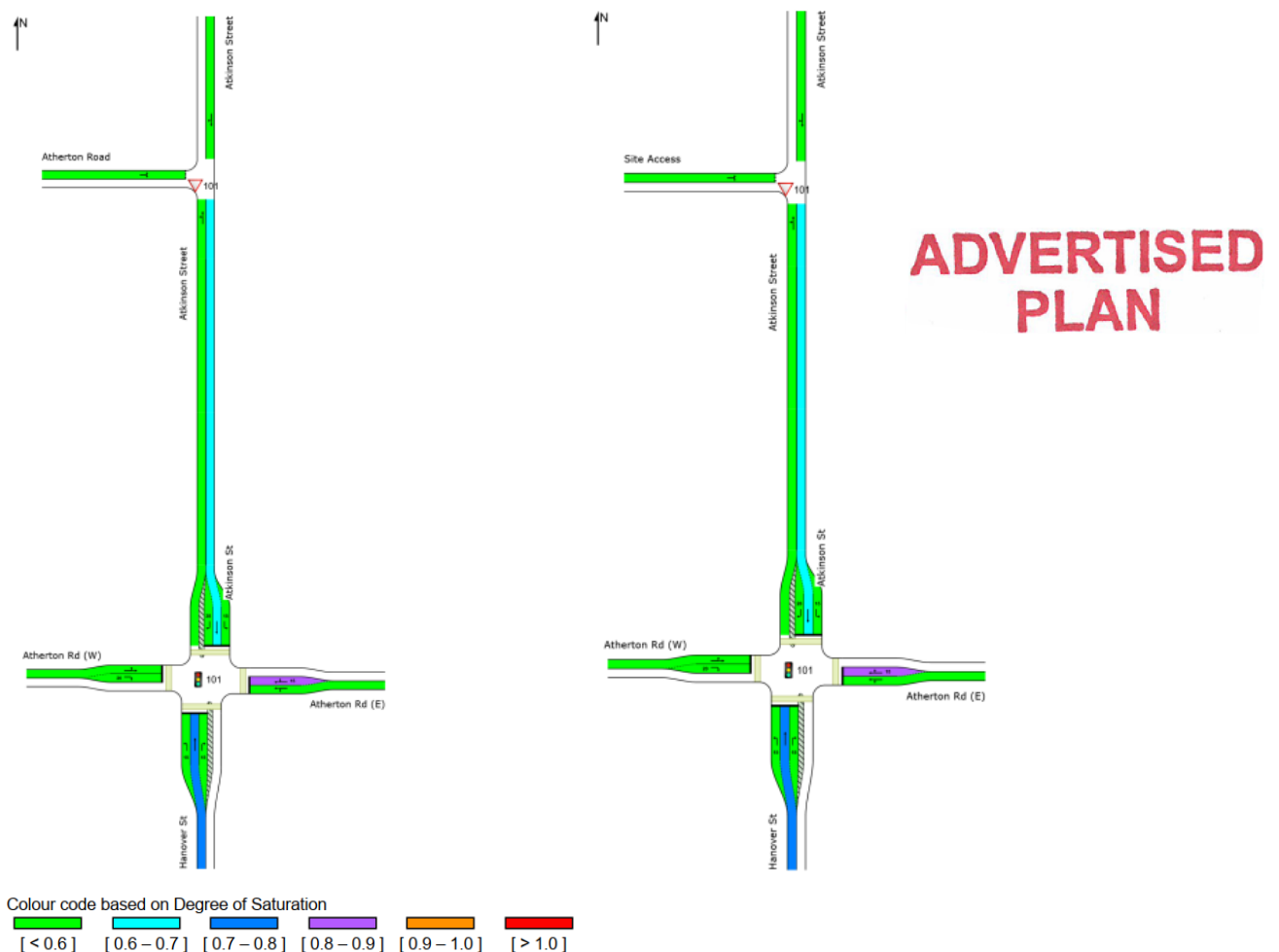


Figure 14: Degree of Saturation –AM Existing VS Post-Development

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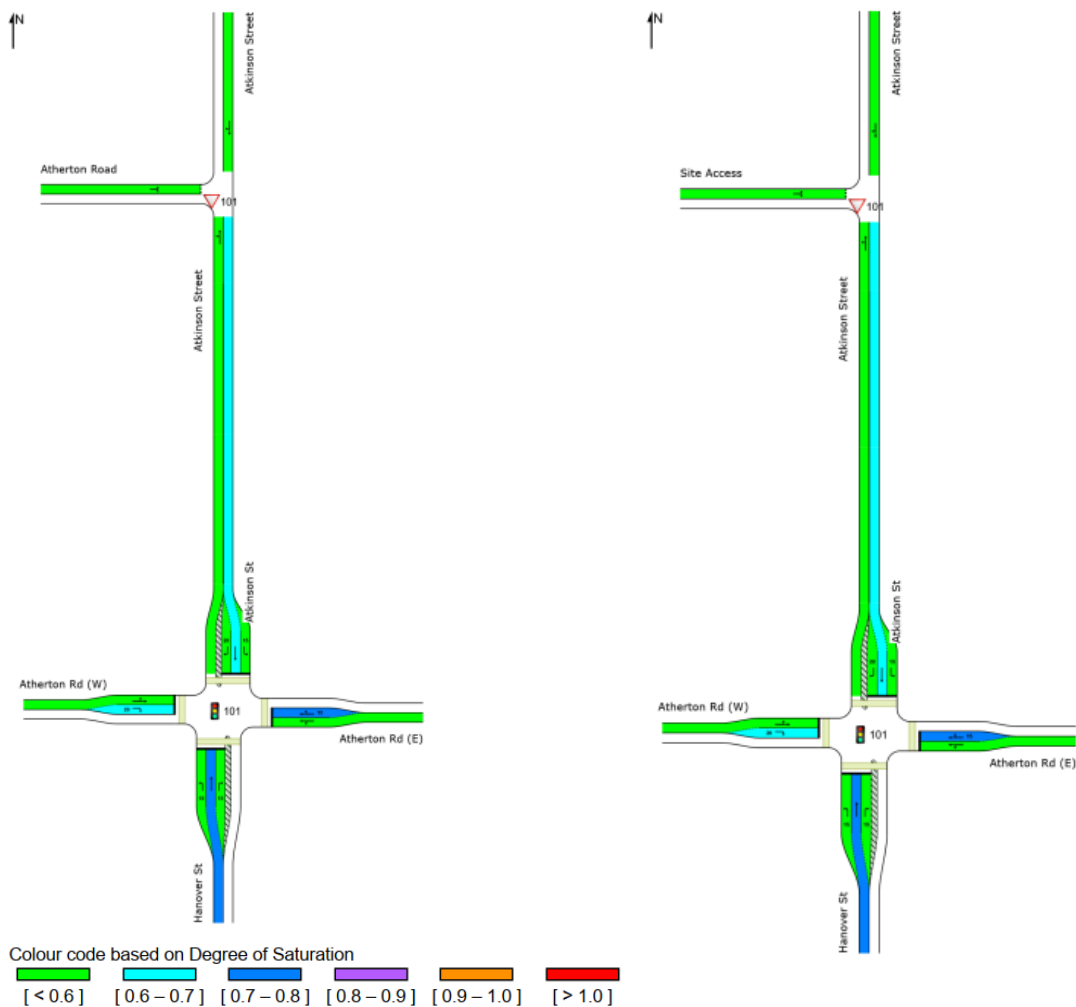


Figure 15: Degree of Saturation – PM Existing VS Post-Development

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Traffic Engineering Assessment

55-61 Atherton Road, Oakleigh

Table 5: Signalised Intersection Performance – 95th Percentile Queuing (metres)

Movement	AM Peak Hour		PM Peak Hour	
	Existing	Post-Development	Existing	Post-Development
South: Hanover Street (L)	10	10	13	13
South: Hanover Street (T)	107	108	92	93
South: Hanover Street (R)	15	15	19	19
East: Atherton Road (L)	26	26	21	21
East: Atherton Road (T)	72	73	46	48
East: Atherton Road (R)	72	73	46	48
North: Atkinson Street (L)	8	8	10	10
North: Atkinson Street (T)	49	49	49	49
North: Atkinson Street (R)	10	11	11	11
West: Atherton Road (L)	31	31	33	37
West: Atherton Road (T)	31	31	33	37
West: Atherton Road (R)	14	14	25	25

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Table 6: Site Access Intersection Performance – 95th Percentile Queuing (metres)

Movement	AM Peak Hour		PM Peak Hour	
	Existing	Post-Development	Existing	Post-Development
South: Atkinson Street (L)	0	0	0	0
South: Atkinson Street (T)	0	0	0	0
North: Atkinson Street (T)	26	27	29	29
North: Atkinson Street (R)	26	27	29	29
West: Site Access (L)	0	2	0	1
West: Site Access (R)	0	2	0	1

6. Bicycle Considerations

Clause 52.34 of the Planning Scheme specifies the bicycle parking requirement for new developments.

The relevant requirements are summarised in Table 7.

Table 7: Statutory Bicycle Parking Requirements

Use	Units	Statutory Requirement	No. Spaces Required
Dwellings	122 dwellings	1 space per 5 dwellings for residents 1 space per 10 dwellings for visitors	24 resident spaces 12 visitor spaces
Retail	541 m ²	1 space per 300 square metres for staff 1 space per 500 square metres for customers	2 staff spaces 1 visitor space
Total		Resident Staff Visitors	24 resident spaces 2 staff spaces 13 visitor/customer spaces

Based on the above assessment, the development is required to provide a total of 39 bicycle spaces, comprising 24 resident spaces, 13 residential/commercial visitor spaces and 2 staff spaces.

The application proposes the provision of 46 bicycle spaces allocated as follows:

- 38 spaces within a secure store at ground level, including:
 - 25 resident spaces, and
 - 13 visitor spaces.
- 8 spaces for commercial use at ground level, including:
 - 4 staff spaces in a secure bike room, and
 - 4 visitor space.

Bicycle parking has been provided in accordance with the design requirements under Clause 52.34 of the Planning Scheme and AS2890.3-2015 with a mix of vertical and horizontal rails as follows:

- Wall mounted vertical rails are dimensioned at 1.2 metres deep spaces, 0.5 metres spacings, and are accessible from an aisle 1.5 metres wide;
- Two-tier horizontal rails are provided with dimensions of 2.0 metre length and spaced at 0.4 metre centres, accessible from a minimum 2.0 metre aisle; and
- Horizontal rails can accommodate a bicycle with dimensions of 1.8 metre length and are accessible from an aisle at least 1.5 metres wide. The rails should be spaced at a minimum 1 metre centres.

These above noted provisions exceed the minimum requirements under Clause 52.34.

Accordingly, an appropriate provision and design of bicycle parking is to be provided by the proposed development.

7. Loading and Waste Considerations

7.1. Loading

Clause 65.01 of the Planning Scheme states that the responsible authority must consider a number of matters as appropriate including:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

A loading bay has been provided at the north-eastern end of the site, which is accessed off the main ramp entry with Atkinson Street.

It is recommended that the loading bay is provided with a grade no steeper than 1:25 to accord with the Australian Standard for Parking facilities, Part 2: Off-street commercial vehicle facilities (AS2890.2:2018).

Swept paths have been undertaken to demonstrate ingress and egress via a 6.4 metre long Small Rigid Vehicle (SRV) and are provided at Appendix A.

This will cater for both loading and waste collection.

Accordingly, we are satisfied that appropriate loading and waste provisions can be accommodated in accordance with the objectives of the Planning Scheme.

We refer to the Waste Management Plan report prepared by Traffix Group, accompanying the application, for further details regarding waste management of the proposal.

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8. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at 55-61 Atherton Road, Oakleigh, we are of the opinion that:

- a. the proposed development has a statutory car parking requirement of between 0 and 202 car spaces under Clause 52.06-5 of the Planning Scheme and the provision of 163 car space is in accordance with these requirements,
- b. the proposed parking layout and access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice,
- c. the level of traffic generated as a result of this proposal is acceptable and, once distributed to the multiple access routes, will not have a detrimental impact on the surrounding road network,
- d. bicycle parking is provided in accordance the requirements set out at Clause 52.34 of the Planning Scheme,
- e. the on-site loading area has been designed to meet the objectives of Clause 65.01 of the Planning Scheme, and
- f. there are no traffic engineering reasons why a planning permit for the proposed mixed use development at 55-61 Atherton Road, Oakleigh, should be refused, subject to appropriate conditions.

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Appendix A

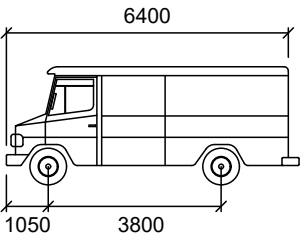
Swept Paths

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VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



SRV (AS 2890.2) mm

Width	:	2300
Track	:	2300
Lock to Lock Time	:	6.0
Steering Angle	:	38.0

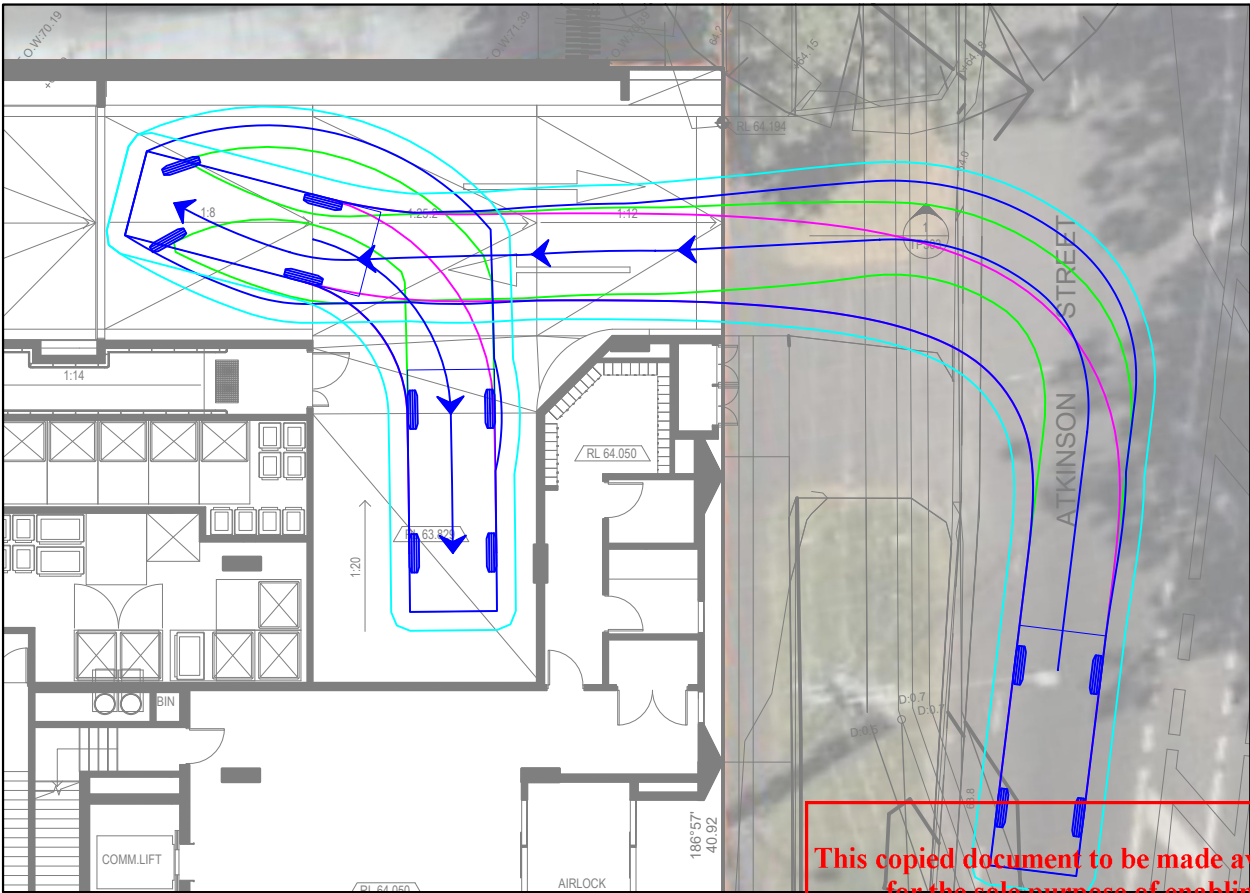
REAR WHEELS

FRONT WHEELS

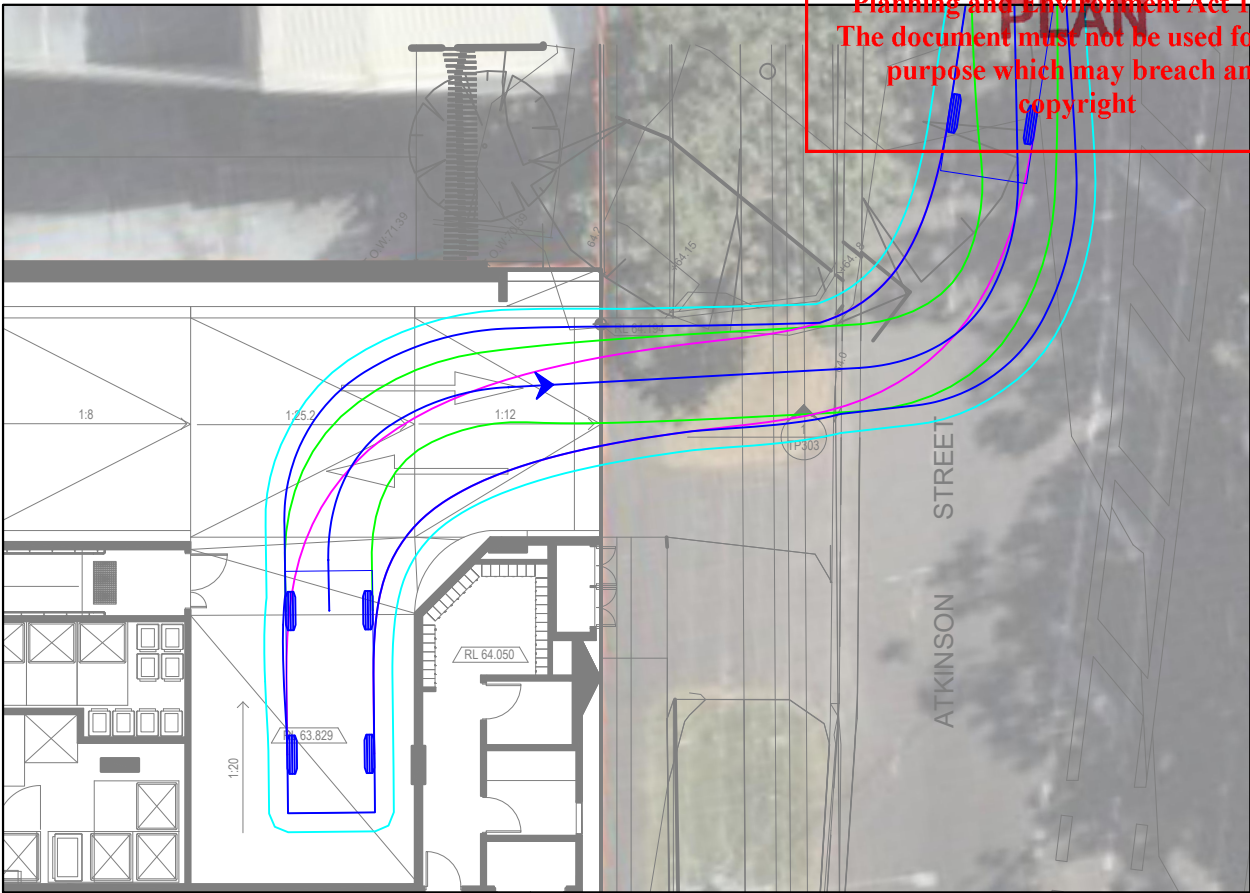
VEHICLE BODY

BODY CLEARANCE

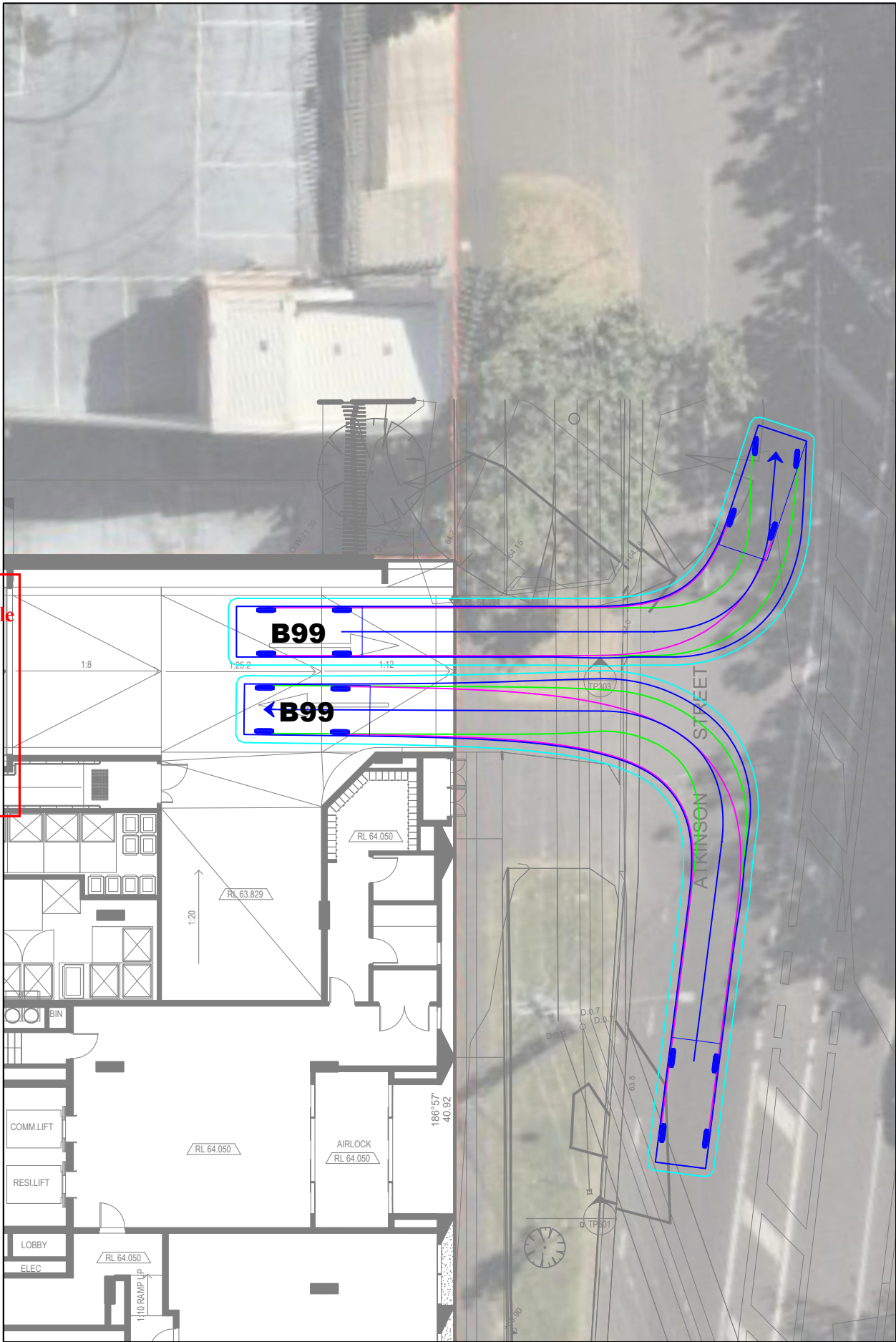
LOADING BAY - INGRESS (SRV)



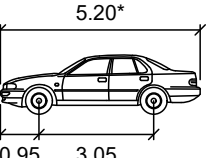
LOADING BAY - EGRESS (SRV)



SITE ACCESS - B99 PASSING



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

Width	:	1.94
Track	:	1.84
Kerb to Kerb Radius	:	12.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

REAR WHEELS

FRONT WHEELS

VEHICLE BODY

BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	05/04/2024	TOWN PLANNING	E. O'FARRELL	C. MORELLO
B	23/05/2025	AMENDED SCHEME	T. AMANATIDIS	C. MORELLO
C	10/09/2025	AMENDED SCHEME	D. DURAIRAJ	C. MORELLO

61 ATHERTON ROAD, OAKLEIGH
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
PLANS PREPARED BY PEDDLE THORP,
RECEIVED SEPTEMBER 2025. AERIAL FOR
CONTEXT ONLY.

FILE NAME: G34209-02
SHEET NO.: 01



SCALE:
1:200 (A3)

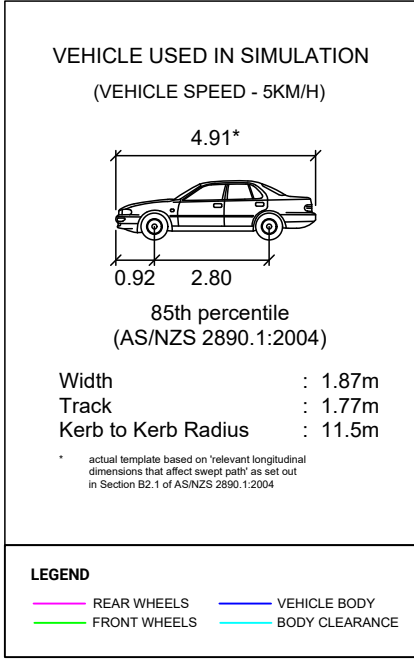
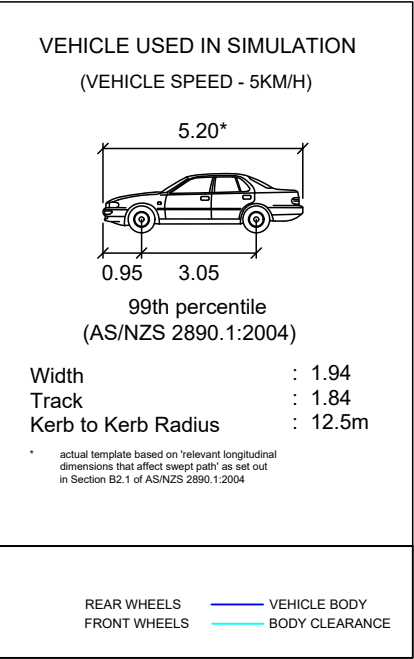


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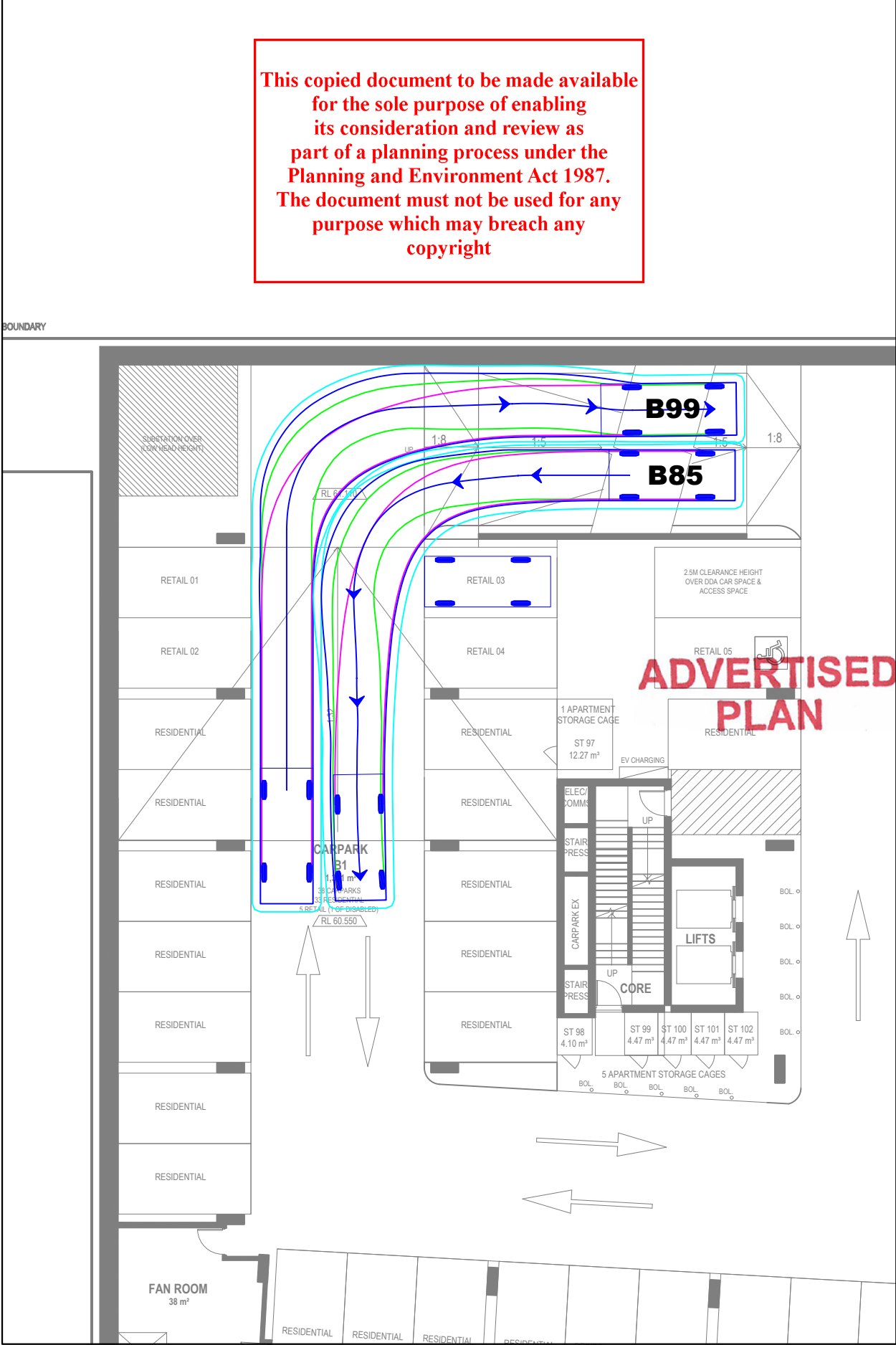
Trafficx Group

Level 28, 459 Collins St, MELBOURNE VIC 3000
T: (03) 9822 2888
www.trafficxgroup.com.au

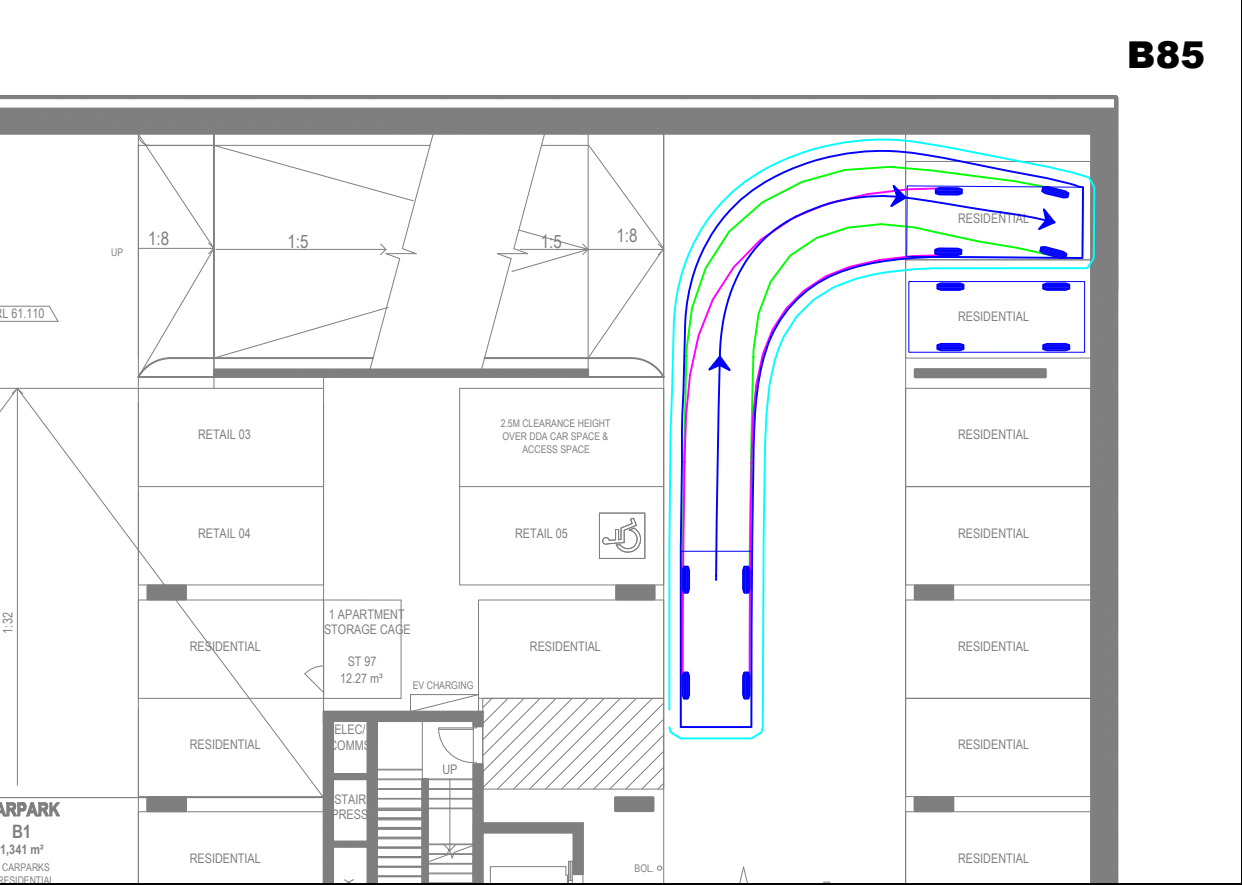
VEHICLE PROFILE



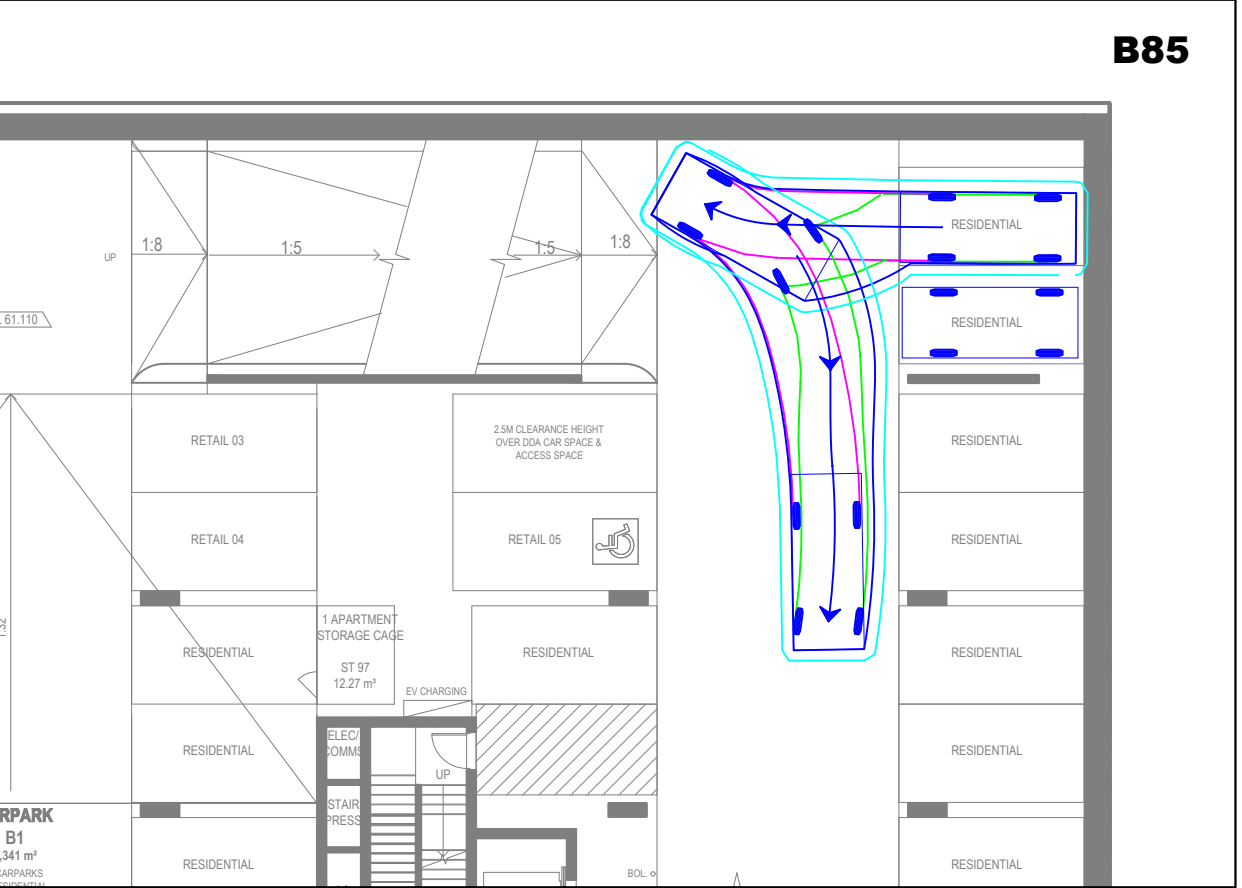
BASEMENT 1 - TYPICAL PASSING



TYPICAL CAR SPACE - INGRESS



TYPICAL CAR SPACE - EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	05/04/2024	TOWN PLANNING	E. O'FARRELL	C. MORELLO
B	23/05/2025	AMENDED SCHEME	T. AMANATIDIS	C. MORELLO
C	10/09/2025	AMENDED SCHEME	D. DURAIRAJ	C. MORELLO

61 ATHERTON ROAD, OAKLEIGH
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
PLANS PREPARED BY PEDDLE THORP,
RECEIVED SEPTEMBER 2025.

FILE NAME: G34209-02
SHEET NO.: 02



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Appendix B

SIDRA Output

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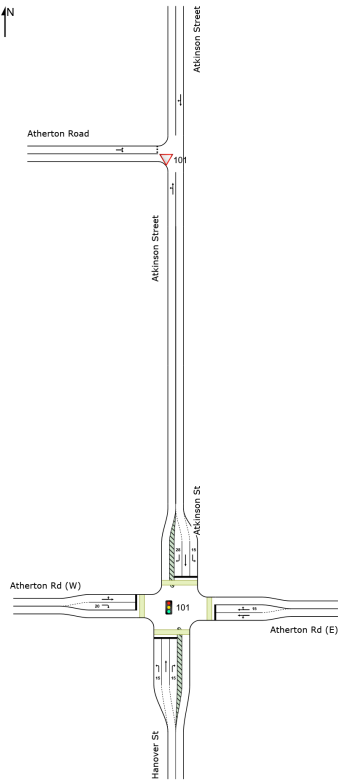
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NETWORK LAYOUT

■ ■ Network: N101 [AM Existing (Network Folder: Existing)]

New Network
Network Category: (None)

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



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SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Atherton/Atkinson AM Existing
101	NA	Site Access AM Existing

MOVEMENT SUMMARY

 Site: 101 [Atherton/Atkinson AM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: N101 [AM Existing (Network Folder: Existing)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Stop Rate	Eff. Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m					km/h
South: Hanover St																
1	L2	All MCs	101	3.5	101	3.5	0.124	22.3	LOS C	1.4	10.3	0.61	0.66		0.61	35.4
2	T1	All MCs	502	3.5	502	3.5	0.702	33.5	LOS C	14.8	107.0	0.95	0.95		1.10	27.2
3	R2	All MCs	76	3.5	76	3.5	0.318	18.7	LOS D	2.0	14.6	0.89	0.75		0.89	30.6
Approach			679	3.5	679	3.5	0.792	32.4	LOS C	14.8	107.0	0.89	0.88		1.00	25.6
East: Atherton Rd (E)																
7	L2	All MCs	136	3.5	136	3.5	0.375	38.1	LOS D	3.6	25.9	0.91	0.77		0.91	30.7
7	T1	All MCs	226	3.5	226	3.5	* 0.873	46.1	LOS D	10.0	72.2	1.00	1.17		1.47	28.9
8	R2	All MCs	53	3.5	53	3.5	0.873	49.4	LOS D	10.0	72.2	1.00	1.17		1.47	22.8
Approach			415	3.5	415	3.5	0.873	43.9	LOS D	10.0	72.2	0.97	1.04		1.29	26.4
North: Atkinson St																
4	L2	All MCs	55	3.5	55	3.5	0.086	26.5	LOS C	1.1	7.8	0.70	0.67		0.70	29.3
5	T1	All MCs	427	3.5	427	3.5	0.635	26.1	LOS C	6.8	49.0	0.87	0.75		0.87	29.9
6	R2	All MCs	48	3.5	48	3.5	0.277	35.6	LOS D	1.4	10.1	0.95	0.73		0.95	24.2
Approach			531	3.5	531	3.5	0.635	27.0	LOS C	6.8	49.0	0.86	0.74		0.86	25.7
West: Atherton Rd (W)																
9	L2	All MCs	63	3.5	63	3.5	0.280	16.4	LOS B	4.3	30.7	0.68	0.61		0.68	31.3
10	T1	All MCs	160	3.5	160	3.5	0.280	11.5	LOS B	4.3	30.7	0.68	0.61		0.68	35.1
10	R2	All MCs	63	3.5	63	3.5	* 0.349	32.7	LOS C	1.9	13.5	0.97	0.74		0.97	29.3
Approach			286	3.5	286	3.5	0.349	17.3	LOS B	4.3	30.7	0.75	0.64		0.75	33.0
All Vehicles			1911	3.5	1911	3.5	0.873	31.1	LOS C	14.8	107.0	0.88	0.84		0.99	27.0

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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 ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. Aver. Speed m m/sec	
South: Hanover St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
East: Atherton Rd (E)											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
North: Atkinson St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
West: Atherton Rd (W)											
P1	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12

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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PHASING SUMMARY

Site: 101 [Atherton/Atkinson AM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Four-Phase Leading Right Turns
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: NA

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	28	40
Green Time (sec)	23	6	14
Phase Time (sec)	29	12	19
Phase Split	48%	20%	32%
Phase Frequency (%)	100.0	100.0	79.2 ²

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See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

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	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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Project: \\tfxsrv02\Group\Synergy\Projects\GRP3\GRP34209\07-Analysis\SIDRA\August 2025\G34209.sip9

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MOVEMENT SUMMARY

Site: 101 [Site Access AM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM Existing (Network Folder: Existing)]

New Site

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Stop Rate	Eff. Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m					km/h
South: Atkinson Street																
1	L2	All MCs	4	0.0	4	0.0	0.326	3.1	LOS A	0.0	0.0	0.00	0.00		0.00	6.6
2	T1	All MCs	618	3.5	618	3.5	0.326	0.0	LOS A	0.0	0.0	0.00	0.00		0.00	59.8
Approach			622	3.5	622	3.5	0.326	0.0	NA	0.0	0.0	0.00	0.00		0.00	59.4
North: Atkinson Street																
8	T1	All MCs	531	3.5	531	3.5	0.279	0.0	LOS A	3.6	26.0	0.00	0.00		0.00	59.9
9	R2	All MCs	1	0.0	1	0.0	0.279	5.9	LOS A	3.6	26.0	0.00	0.00		0.00	53.7
Approach			532	3.5	532	3.5	0.279	0.0	NA	3.6	26.0	0.00	0.00		0.00	59.9
West: Atherton Road																
10	L2	All MCs	3	0.0	3	0.0	0.012	5.4	LOS A	0.0	0.2	0.58	0.66		0.58	46.1
12	R2	All MCs	2	0.0	2	0.0	0.012	9.8	LOS A	0.0	0.2	0.58	0.66		0.58	14.7
Approach			5	0.0	5	0.0	0.012	7.1	LOS A	0.0	0.2	0.58	0.66		0.58	42.0
All Vehicles			1159	3.5	1159	3.5	0.326	0.1	NA	3.6	26.0	0.00	0.01		0.00	59.5

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.

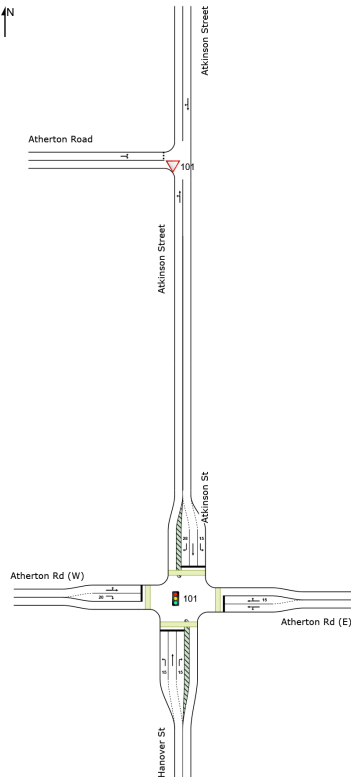
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NETWORK LAYOUT

Network: N101 [PM Existing (Network Folder: Existing)]

New Network
Network Category: (None)

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



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ADVERTISED PLAN

SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Atherton/Atkinson PM Existing
101	NA	Site Access PM Existing

MOVEMENT SUMMARY

 Site: 101 [Atherton/Atkinson PM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: N101 [PM Existing (Network Folder: Existing)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Hanover St															
1	L2	All MCs	127	2.5	127	2.5	0.155	21.6	LOS C	1.8	13.1	0.62	0.67	0.62	35.3
2	T1	All MCs	460	2.5	460	2.5	0.750	30.6	LOS C	11.8	91.5	0.92	0.88	1.03	27.9
3	R2	All MCs	94	2.5	94	2.5	0.408	19.9	LOS D	2.6	18.6	0.92	0.77	0.92	30.2
Approach			681	2.5	681	2.5	0.750	30.6	LOS C	12.8	91.5	0.87	0.83	0.94	26.7
East: Atherton Rd (E)															
7	L2	All MCs	111	2.5	111	2.5	0.330	35.0	LOS D	2.9	21.1	0.91	0.76	0.91	30.5
7	T1	All MCs	142	2.5	142	2.5	* 0.714	34.2	LOS C	6.4	46.1	0.98	0.91	1.14	30.7
8	R2	All MCs	72	2.5	72	2.5	0.714	37.6	LOS D	6.4	46.1	0.98	0.91	1.14	25.1
Approach			324	2.5	324	2.5	0.714	35.2	LOS D	6.4	46.1	0.96	0.86	1.06	27.9
North: Atkinson St															
4	L2	All MCs	71	2.5	71	2.5	0.110	26.8	LOS C	1.4	10.1	0.71	0.68	0.71	29.2
5	T1	All MCs	436	2.5	436	2.5	0.658	26.6	LOS C	6.8	49.0	0.88	0.77	0.89	29.7
6	R2	All MCs	54	2.5	54	2.5	0.281	33.9	LOS C	1.5	10.8	0.92	0.74	0.92	24.7
Approach			560	2.5	560	2.5	0.658	27.4	LOS C	6.8	49.0	0.86	0.75	0.87	25.6
West: Atherton Rd (W)															
9	L2	All MCs	60	2.5	60	2.5	0.305	17.3	LOS B	4.7	33.4	0.71	0.63	0.71	31.0
10	T1	All MCs	176	2.5	176	2.5	0.305	12.4	LOS B	4.7	33.4	0.71	0.63	0.71	34.8
10	R2	All MCs	114	2.5	114	2.5	* 0.623	34.3	LOS C	3.5	25.3	1.00	0.84	1.11	28.9
Approach			349	2.5	349	2.5	0.623	20.3	LOS C	4.7	33.4	0.80	0.70	0.84	32.1
All Vehicles			1915	2.5	1915	2.5	0.750	28.4	LOS C	12.8	91.5	0.87	0.79	0.92	27.8

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ADVERTISED
PLAN

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 ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. Aver. Speed m m/sec	
South: Hanover St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
East: Atherton Rd (E)											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
North: Atkinson St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
West: Atherton Rd (W)											
P1	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12

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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ADVERTISED
PLAN

PHASING SUMMARY

 Site: 101 [Atherton/Atkinson PM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: N101 [PM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Four-Phase Leading Right Turns
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: NA

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	29	41
Green Time (sec)	23	6	13
Phase Time (sec)	29	12	19
Phase Split	48%	20%	32%
Phase Frequency (%)	100.0	100.0	100.0

ADVERTISED
PLAN

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

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	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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ADVERTISED PLAN

MOVEMENT SUMMARY

▽ Site: 101 [Site Access PM Existing (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [PM Existing (Network Folder: Existing)]

New Site

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Atkinson Street															
1	L2	All MCs	1	0.0	1	0.0	0.311	3.1	LOS A	0.0	0.0	0.00	0.00	0.00	6.6
2	T1	All MCs	592	3.5	592	3.5	0.311	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			593	3.5	593	3.5	0.311	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
North: Atkinson Street															
8	T1	All MCs	560	3.5	560	3.5	0.296	0.0	LOS A	3.9	28.5	0.01	0.00	0.01	59.9
9	R2	All MCs	2	0.0	2	0.0	0.296	6.2	LOS A	3.9	28.5	0.01	0.00	0.01	53.6
Approach			562	3.5	562	3.5	0.296	0.0	NA	3.9	28.5	0.01	0.00	0.01	59.9
West: Atherton Road															
10	L2	All MCs	1	0.0	1	0.0	0.006	5.2	LOS A	0.0	0.1	0.59	0.63	0.59	45.8
12	R2	All MCs	1	0.0	1	0.0	0.006	9.6	LOS A	0.0	0.1	0.59	0.63	0.59	14.1
Approach			2	0.0	2	0.0	0.006	7.4	LOS A	0.0	0.1	0.59	0.63	0.59	39.9
All Vehicles			1157	3.5	1157	3.5	0.311	0.0	NA	3.9	28.5	0.00	0.00	0.00	59.8

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.

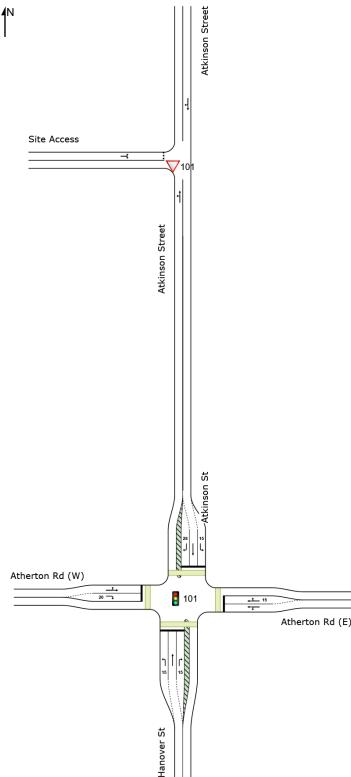
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NETWORK LAYOUT

Network: N101 [AM Post-Dev (Network Folder: Post-Dev)]

New Network
Network Category: (None)

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



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ADVERTISED
PLAN

SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Atherton/Atkinson AM Post-Dev
▽101	NA	Site Access AM Post-Dev

MOVEMENT SUMMARY

 Site: 101 [Atherton/Atkinson AM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: N101 [AM Post-Dev (Network Folder: Post-Dev)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Hanover St															
1	L2	All MCs	101	3.5	101	3.5	0.124	22.4	LOS C	1.4	10.3	0.61	0.66	0.61	35.4
2	T1	All MCs	503	3.5	503	3.5	0.703	33.5	LOS C	1.4	107.5	0.95	0.95	1.10	27.1
3	R2	All MCs	76	3.5	76	3.5	0.324	19.6	LOS D	2.1	14.9	0.91	0.75	0.91	30.3
Approach			680	3.5	680	3.5	0.703	33.5	LOS C	1.4	107.5	0.89	0.88	1.01	25.5
East: Atherton Rd (E)															
7	L2	All MCs	136	3.5	136	3.5	0.375	38.2	LOS D	3.6	25.9	0.91	0.77	0.91	30.7
7	T1	All MCs	226	3.5	226	3.5	* 0.878	46.7	LOS D	10.1	73.2	1.00	1.18	1.49	28.7
8	R2	All MCs	54	3.5	54	3.5	0.878	50.1	LOS D	10.1	73.2	1.00	1.18	1.49	22.6
Approach			416	3.5	416	3.5	0.878	44.4	LOS D	10.1	73.2	0.97	1.04	1.30	26.3
North: Atkinson St															
4	L2	All MCs	59	3.5	59	3.5	0.093	26.6	LOS C	1.2	8.4	0.70	0.67	0.70	29.2
5	T1	All MCs	432	3.5	432	3.5	0.645	26.3	LOS C	6.8	49.0	0.87	0.76	0.87	29.8
6	R2	All MCs	53	3.5	53	3.5	0.303	35.9	LOS D	1.5	11.0	0.95	0.74	0.95	24.1
Approach			543	3.5	543	3.5	0.645	27.3	LOS C	6.8	49.0	0.86	0.75	0.86	25.6
West: Atherton Rd (W)															
9	L2	All MCs	66	3.5	66	3.5	0.284	16.4	LOS B	4.3	31.2	0.68	0.62	0.68	31.3
10	T1	All MCs	160	3.5	160	3.5	0.284	11.6	LOS B	4.3	31.2	0.68	0.62	0.68	35.0
10	R2	All MCs	63	3.5	63	3.5	* 0.349	32.7	LOS C	1.9	13.5	0.97	0.74	0.97	29.3
Approach			289	3.5	289	3.5	0.349	17.3	LOS B	4.3	31.2	0.75	0.64	0.75	32.9
All Vehicles			1928	3.5	1928	3.5	0.878	31.3	LOS C	14.9	107.5	0.88	0.84	0.99	26.9

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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 ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. Aver. Speed m m/sec	
South: Hanover St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
East: Atherton Rd (E)											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
North: Atkinson St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
West: Atherton Rd (W)											
P1	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12

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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ADVERTISED PLAN

MOVEMENT SUMMARY

Site: 101 [Site Access AM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM Post-Dev (Network Folder: Post-Dev)]

New Site

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Atkinson Street															
1	L2	All MCs	9	0.0	9	0.0	0.329	3.1	LOS A	0.0	0.0	0.00	0.01	0.00	6.6
2	T1	All MCs	618	3.5	618	3.5	0.329	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach			627	3.4	627	3.4	0.329	0.1	NA	0.0	0.0	0.00	0.01	0.00	58.8
North: Atkinson Street															
8	T1	All MCs	531	3.5	531	3.5	0.279	0.0	LOS A	3.7	26.5	0.00	0.00	0.00	59.9
9	R2	All MCs	1	0.0	1	0.0	0.279	5.9	LOS A	3.7	26.5	0.00	0.00	0.00	53.7
Approach			532	3.5	532	3.5	0.279	0.0	NA	3.7	26.5	0.00	0.00	0.00	59.9
West: Site Access															
10	L2	All MCs	34	0.0	34	0.0	0.097	5.6	LOS A	0.3	2.0	0.60	0.75	0.60	46.1
12	R2	All MCs	15	0.0	15	0.0	0.097	10.5	LOS B	0.3	2.0	0.60	0.75	0.60	14.9
Approach			48	0.0	48	0.0	0.097	7.1	LOS A	0.3	2.0	0.60	0.75	0.60	43.3
All Vehicles			1207	3.3	1207	3.3	0.329	0.3	NA	3.7	26.5	0.03	0.04	0.03	58.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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PHASING SUMMARY

Site: 101 [Atherton/Atkinson AM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM Post-Dev (Network Folder: Post-Dev)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Four-Phase Leading Right Turns
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: NA

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	28	40
Green Time (sec)	23	6	14
Phase Time (sec)	29	12	19
Phase Split	48%	20%	32%
Phase Frequency (%)	100.0	100.0	79.2 ²

ADVERTISED
PLAN

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

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	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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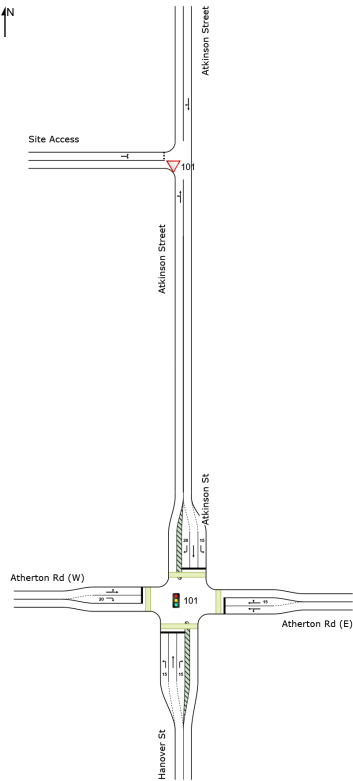
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NETWORK LAYOUT

Network: N101 [PM Post-Dev (Network Folder: Post-Dev)]

New Network
Network Category: (None)

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



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SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Atherton/Atkinson PM Post-Dev
101	NA	Site Access PM Post-Dev

MOVEMENT SUMMARY

 Site: 101 [Atherton/Atkinson PM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: N101 [PM Post-Dev (Network Folder: Post-Dev)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Hanover St															
1	L2	All MCs	127	2.5	127	2.5	0.155	21.6	LOS C	1.8	13.1	0.62	0.67	0.62	35.3
2	T1	All MCs	463	2.5	463	2.5	0.755	30.2	LOS C	11.0	92.8	0.93	0.89	1.04	27.9
3	R2	All MCs	94	2.5	94	2.5	0.412	19.3	LOS D	2.6	18.7	0.93	0.77	0.93	30.2
Approach			684	2.5	684	2.5	0.755	30.2	LOS C	13.0	92.8	0.87	0.83	0.94	26.6
East: Atherton Rd (E)															
7	L2	All MCs	111	2.5	111	2.5	0.330	35.3	LOS D	2.9	21.1	0.91	0.76	0.91	30.5
7	T1	All MCs	142	2.5	142	2.5	* 0.733	35.1	LOS D	6.6	47.5	0.98	0.93	1.17	30.5
8	R2	All MCs	75	2.5	75	2.5	0.733	38.4	LOS D	6.6	47.5	0.98	0.93	1.17	24.9
Approach			327	2.5	327	2.5	0.733	35.9	LOS D	6.6	47.5	0.96	0.87	1.08	27.7
North: Atkinson St															
4	L2	All MCs	73	2.5	73	2.5	0.114	26.9	LOS C	1.5	10.4	0.71	0.68	0.71	29.2
5	T1	All MCs	438	2.5	438	2.5	0.663	26.8	LOS C	6.8	49.0	0.88	0.77	0.89	29.7
6	R2	All MCs	56	2.5	56	2.5	0.295	35.0	LOS C	1.6	11.4	0.94	0.74	0.94	24.4
Approach			566	2.5	566	2.5	0.663	27.6	LOS C	6.8	49.0	0.87	0.76	0.88	25.5
West: Atherton Rd (W)															
9	L2	All MCs	79	2.5	79	2.5	0.335	17.7	LOS B	5.1	36.7	0.72	0.65	0.72	30.8
10	T1	All MCs	176	2.5	176	2.5	0.335	12.8	LOS B	5.1	36.7	0.72	0.65	0.72	34.7
10	R2	All MCs	114	2.5	114	2.5	* 0.623	34.6	LOS C	3.5	25.3	1.00	0.84	1.11	28.9
Approach			368	2.5	368	2.5	0.623	20.6	LOS C	5.1	36.7	0.81	0.70	0.84	31.9
All Vehicles			1946	2.5	1946	2.5	0.755	28.6	LOS C	13.0	92.8	0.87	0.79	0.93	27.6

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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 ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. Aver. Speed m m/sec	
South: Hanover St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
East: Atherton Rd (E)											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
North: Atkinson St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
West: Atherton Rd (W)											
P1	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	178.2	200.0	1.12

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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PHASING SUMMARY

Site: 101 [Atherton/Atkinson PM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM Post-Dev (Network Folder: Post-Dev)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Four-Phase Leading Right Turns
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: NA

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	29	41
Green Time (sec)	23	6	13
Phase Time (sec)	29	12	19
Phase Split	48%	20%	32%
Phase Frequency (%)	100.0	100.0	100.0

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See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

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	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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MOVEMENT SUMMARY

Site: 101 [Site Access PM Post-Dev (Site Folder: Post-Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM Post-Dev (Network Folder: Post-Dev)]

New Site

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Stop Rate	Eff. Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m					km/h
South: Atkinson Street																
1	L2	All MCs	26	0.0	26	0.0	0.322	3.1	LOS A	0.0	0.0	0.00	0.02		0.00	6.6
2	T1	All MCs	592	2.5	592	2.5	0.322	0.0	LOS A	0.0	0.0	0.00	0.02		0.00	59.6
Approach			618	2.4	618	2.4	0.322	0.1	NA	0.0	0.0	0.00	0.02		0.00	57.1
North: Atkinson Street																
8	T1	All MCs	560	2.5	560	2.5	0.317	0.3	LOS A	4.0	28.7	0.08	0.09		0.08	58.8
9	R2	All MCs	24	0.0	24	0.0	0.317	8.8	LOS A	4.0	28.7	0.08	0.09		0.08	52.8
Approach			584	2.4	584	2.4	0.317	0.6	NA	4.0	28.7	0.08	0.09		0.08	58.5
West: Site Access																
10	L2	All MCs	15	0.0	15	0.0	0.042	5.3	LOS A	0.1	0.8	0.58	0.69		0.58	46.4
12	R2	All MCs	6	0.0	6	0.0	0.042	10.5	LOS B	0.1	0.8	0.58	0.69		0.58	15.3
Approach			21	0.0	21	0.0	0.042	6.8	LOS A	0.1	0.8	0.58	0.69		0.58	43.7
All Vehicles			1223	2.4	1223	2.4	0.322	0.5	NA	4.0	28.7	0.05	0.07		0.05	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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