641 – 655A Pacific Highway, Chatswood
Traffic Impact Assessment

Prepared for:

One Global Capital

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The Transport Planning Partnership

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Traffic Impact Assessment

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1 Introduction

1.1 Background

This traffic and parking impact assessment report relates to a planning proposal for the site located at 641 – 655A Pacific Highway, Chatswood. It is proposed to construct two residential towers each above a non-residential podium over a site area of 5,773 m^2. The site is located within the Chatswood Central Business District (CBD) boundary and is recommended in the Chatswood CBD Strategy to be zoned as B4 – Mixed Use. Accordingly, this Planning Proposal is proposing to rezone the land from R3 – Medium Density Residential to B4 - Mixed Use.

The planning proposal is to be lodged with Willoughby City Council (Council). The Transport Planning Partnership (TTPP) has prepared this report on behalf of One Global Capital to accompany the planning proposal and assess the traffic and parking implications of the proposed development.

The layout of the report is set out as follows:

- Chapter 2 discusses the existing conditions including a description of the subject site
- Chapter 3 provides a brief description of the proposed development
- Chapter 4 assesses the parking requirements
- Chapter 5 examines the traffic generation and its impact
- Chapter 6 presents the conclusions of the assessment

1.2 Strategic Context

Chatswood is identified as a Strategic Centre within the Sydney metropolitan area with an economic role and jobs target in the North District plan. The *Chatswood CBD Planning and Urban Strategy 2036* aims to establish a strong framework to guide future private and public development as the CBD grows over the next 20 years.

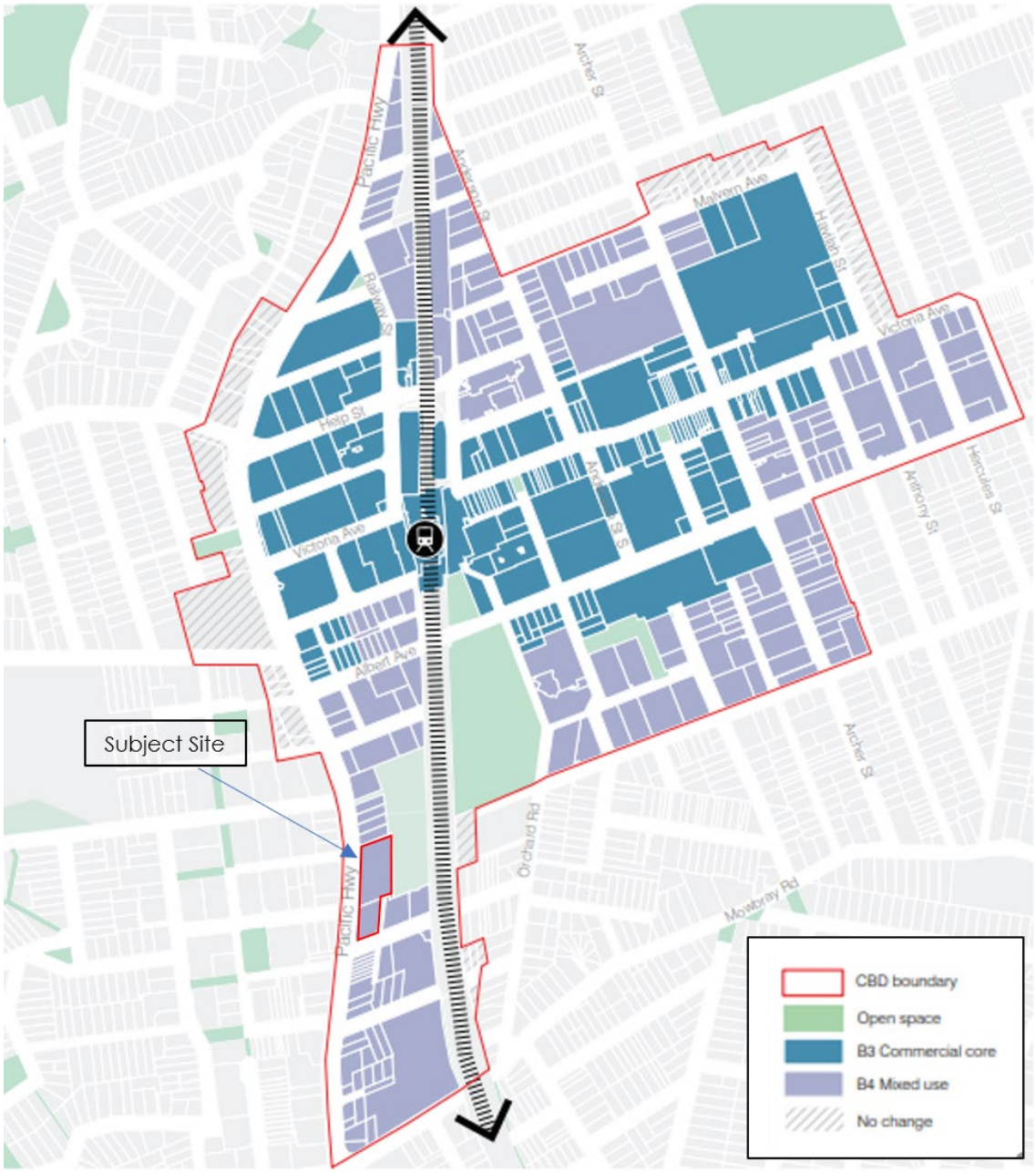
The strategies aim to achieve the followings:

- A reinvigorated commercial core area and economically buoyant CBD, to provide for future employment.
- A sustainable balance between commercial, retail, residential, education, cultural and other uses to ensure on-going vibrancy.
- A compact, walkable CBD.
- A city form and scale to accommodate future growth and change.

- A CBD of exceptional urban design, easy pedestrian linkages and good public domain, where local character and heritage are embraced, and the greening of the centre is achieved.
- Simplified controls for the LEP and DCP in relation to the CBD.

The proximity of the proposed site to the Chatswood CBD Boundary and the recommended surrounding land use are shown in Figure 1.1.

Figure 1.1: Site Context and Recommended Land Use



Source: Chatswood CBD Planning and Urban Design Strategy 2036

2 Existing Conditions

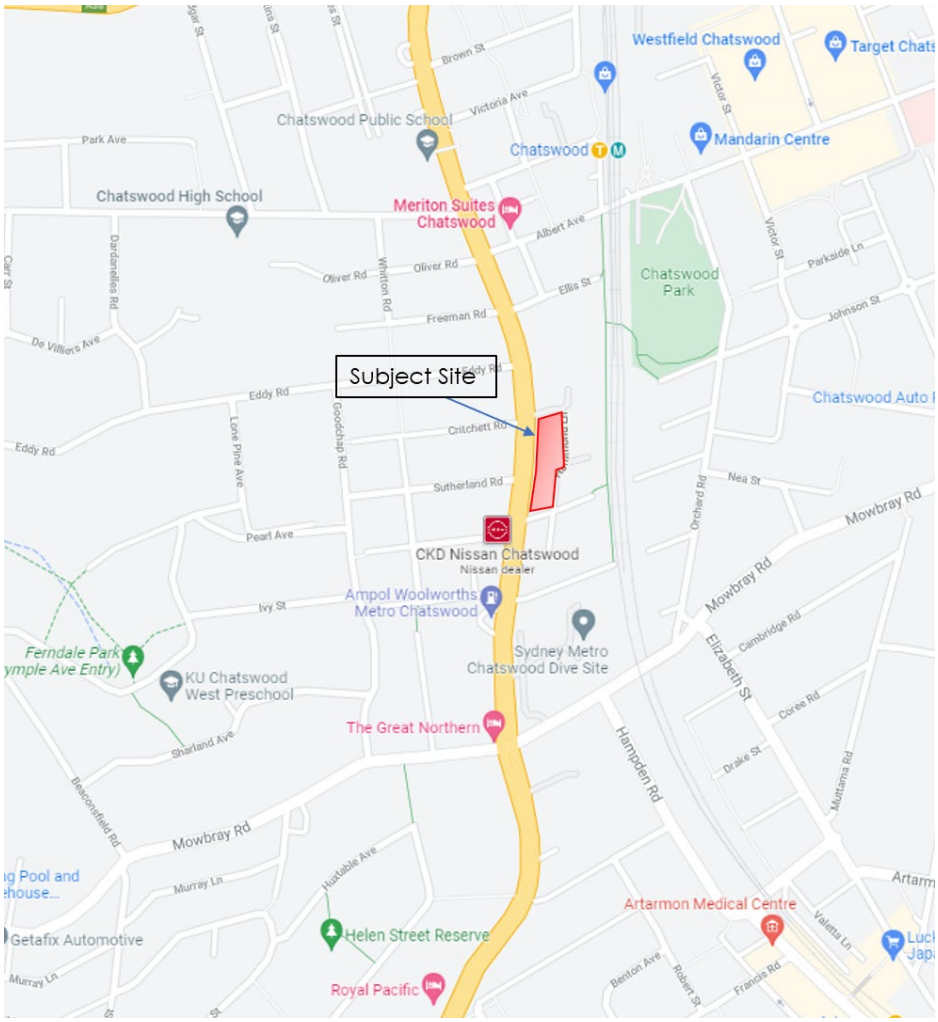
2.1 Site Description

The site is located at 641 – 655A Pacific Highway, Chatswood, within Willoughby City Council. It is a corner lot with frontage to Pacific Highway along the western boundary and Gordon Avenue along its southern boundary, and Hammond Lane along its eastern boundary. Chatswood Bowling Club is to the east, on the other side of Hammond Lane. The site has a total area of 5,773 m^2, with an existing land use of R3 – Medium Density Residential.

The surrounding land uses comprise residential dwellings, and similar mixed-use developments with retail / commercial components on the ground floors and residentials on the upper floors. The site is currently occupied by two medium-density residential buildings.

The site location and context are shown in Figure 2.1 below.

Figure 2.1: Site Location



Base Map Source: Google Maps Australia, access online 15/02/22

2.2 Surrounding Road Network

Pacific Highway is a classified state road providing a key link between the northern suburbs and Sydney CBD. Pacific Highway is configured with three traffic lanes in both northbound and southbound directions. Parking is prohibited along both sides of the road with all day (i.e. 6:00am – 7:00pm, Monday to Friday and 9:00am – 6:00pm, Saturday and Sunday) clearway restrictions.

Mowbray Road is a classified regional road which connects Epping Road to suburbs such as Chatswood, Artarmon, Willoughby and Northbridge. Mowbray Road is generally configured with two lanes in both directions in the east-west alignment. In the immediate vicinity of the site, parking is prohibited along both sides of the road. However, parking is available west of Pacific Highway outside morning and evening peak periods.

Gordon Avenue is a two-lane, two-way, no through road, connecting to Pacific Highway on the west. To the western side of the road is a dedicated cycleway and pedestrian walkway, spanning along the railway corridor, which connects to the Chatswood Centre Precinct. On-street parking is available on both sides of the road with no restriction. The road has a posted speed limit of 50 km/h.

Hammond Lane is a local road, which provides accesses to several residential dwellings and Chatswood Bowling Club. The road connects with Gordon Avenue to the south via a two-way, two-lane road section. It also connects with Pacific Highway to the east via a one-lane, one-way driveway, which allows for exit to the Pacific Highway only. Parking is prohibited along both sides of Hammond Lane.

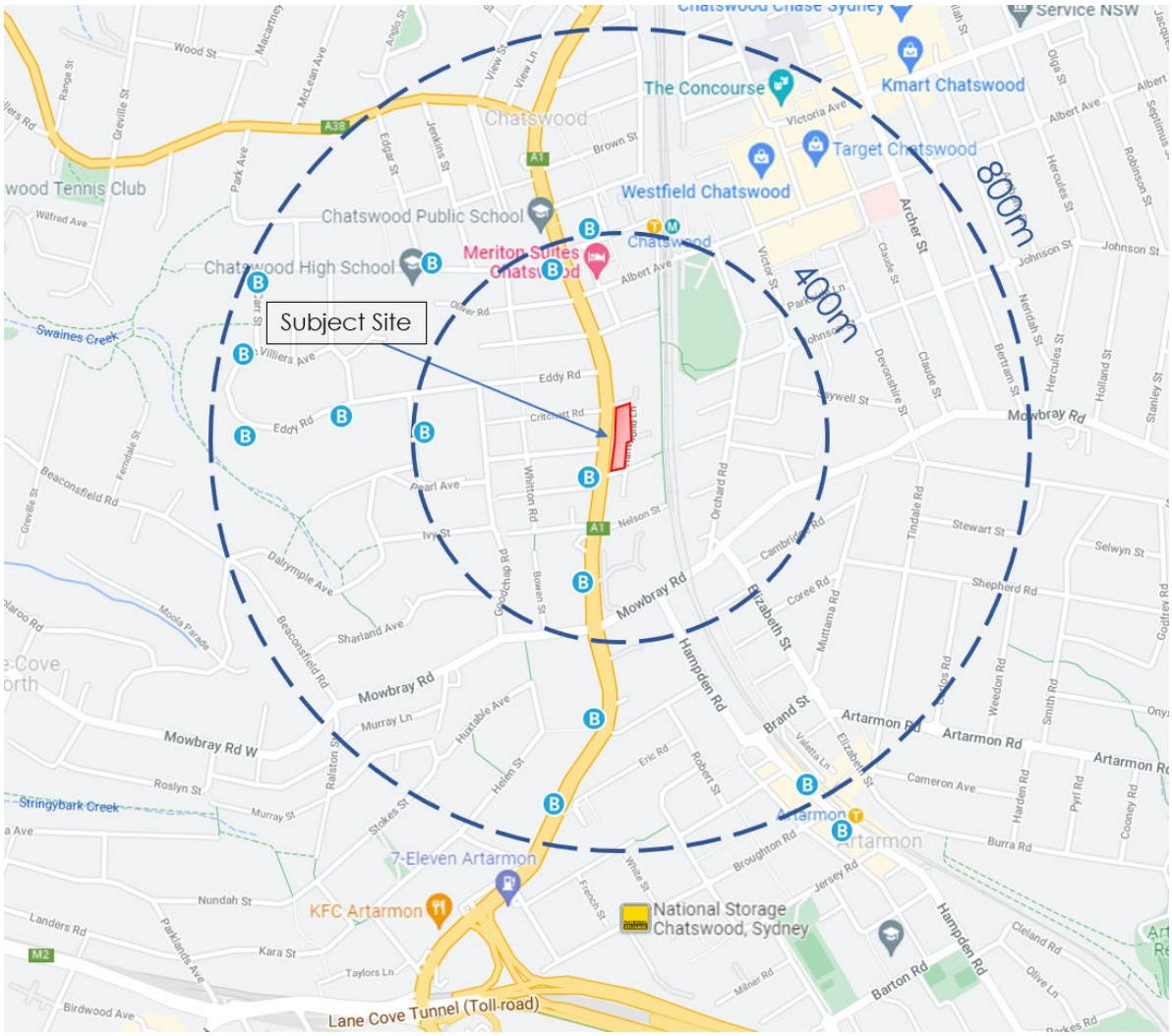
2.3 Public Transport Facilities

An extensive bus route network can be found along Pacific Highway. The nearest bus stop is located on Pacific Highway frontage of the subject site. The bus stop is serviced by multiple bus routes, namely 144, 258, 261, 530, 533 and 536, connecting to suburbs such as Chatswood, Manly, Lane Cove, Burwood and Drummoyne.

In addition, the site is located between Chatswood train station and Artarmon train station, which have high frequency rail and metro services connecting to major centres such as Sydney CBD, North Sydney, Macquarie, Epping, Hornsby and Parramatta. Chatswood station is located at about 550m walking distance (7 mins) from the subject site, whereas Artarmon is about 1km walking distance (14 mins).

Figure 2.2 shows the public transport services surrounding the subject site within a 400m and 800m radius.

Figure 2.2: Public Transport Facilities



Base Map Source: Google Maps Australia, accessed online 15/02/22

2.3.1 Future Public Transport Improvements

The New South Wales (NSW) Government is implementing Sydney's Rail Future, a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers in the future (Transport for NSW, 2012). Sydney Metro is a new standalone rail network identified in Sydney's Rail Future.

Stage 1 of Sydney Metro is complete and operation and provides services between Tallawong and Chatswood Railway Station.

Stage 2 is scheduled for completion in 2024 and would involve extending the line from Chatswood to Sydenham via Sydney CBD and on to Bankstown through the conversion of the existing line to metro standards.

Once completed, Sydney Metro will have the ultimate capacity for 30 trains an hour (one every two minutes) through the CBD in each direction - a level of service never seen before in Sydney. The resulting Metro line will improve transport capacity for Chatswood and the subject site.

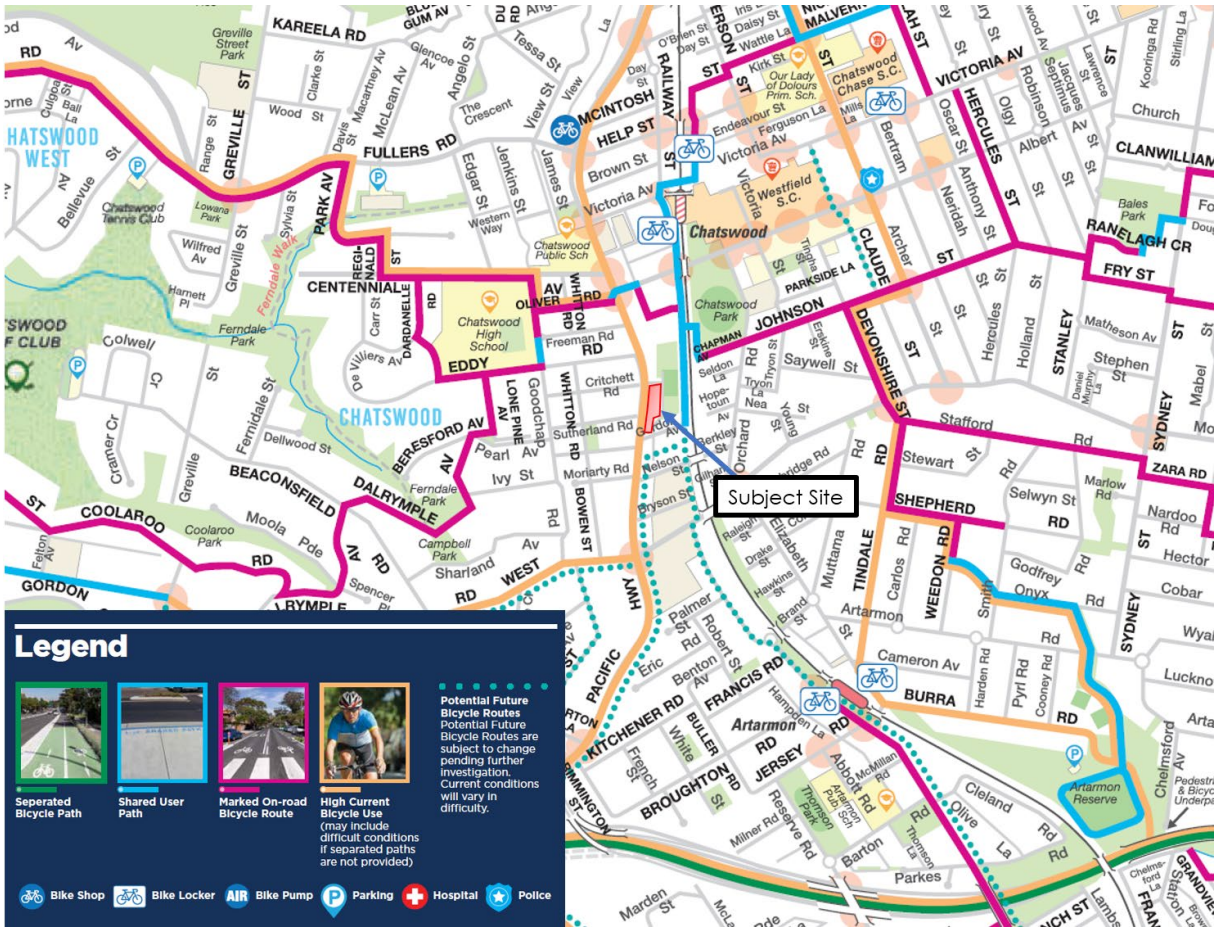
2.4 Pedestrian and Cyclist Infrastructure

Well-established pedestrian footpaths are available along both sides of the roads surrounding the subject site. Signalised pedestrian crossings are available at the intersection of Pacific Highway and Albert Avenue, and Pacific Highway and Mowbray Road.

There is an existing shared path at the end of Gordon Avenue, which provides cycle links and pedestrian walkway along the railway corridor to Chatswood Park and Chatswood train station via Albert Street, as seen in Figure 2.3.

Several potential future bicycle routes can be seen along Nelson Street, Pacific Highway and Hampden Road. This would provide more cycle links as part of the plan to encourage people to travel via active transport to and from the site.

Figure 2.3: Cycleway Infrastructure Surrounding the Site



Source: Willoughby City Council Bike Map

2.5 Existing Vehicle Access Arrangement

The existing site contains two residential developments, which are accessed via Gordon Avenue and Hammond Lane.

Hammond Lane is a shared roadway between Gordon Avenue and Pacific Highway, which provides vehicular access to the subject site and the Chatswood Bowling Club which located to the east. Hammond Lane along the frontage of 655A Pacific Highway is within the site boundary of the site and currently also contains visitor car parking for the Bowling Club.

Hammond Lane intersects with Pacific Highway at the northern boundary of the site and permits exit movements (left turn into Pacific Highway) from Hammond Lane only. At its intersection with Gordon Avenue, Hammond Lane is a 5.2m wide road, and permits entry movements only.

The traffic flow diagram for Hammond Lane is demonstrated in Figure 2.4.

Figure 2.4: Hammond Lane Road Circulation Traffic

Base Map Source: Google Maps Australia, accessed online 15/02/22

2.6 Existing Traffic Volume

Traffic surveys were carried out on 22 February 2022 for a 3-hour AM and 3-hour PM peak period. The survey included counts of vehicle turning movements at the following 5 intersections:

- Pacific Highway – Gordon Avenue
- Pacific Highway – Mowbray Road
- Gordon Avenue – Hammond Lane
- Hammond Lane – Pacific Highway

The road network peak hours with the highest number of overall vehicle movements were recorded as occurring at 7:30am – 8:30am in the morning period and 4:45pm – 5:45pm in the evening period.

The existing turning volumes at the above-mentioned intersections are presented in Appendix A.

2.7 Planned Development Projects

A Planning Proposal for a mixed-use development at the neighbouring site, 5 – 9 Gordon Avenue has been approved by the Council and will see 103 new residential apartments and commercial / retail tenancies being constructed. The development also comprises a new basement car parking area, which can be accessed from Hammond Lane.

The site is expected to provide 98 car parking spaces to cater for 103 apartment units, visitors, and non-residential spaces. All car parking is to be provided within a basement car park. The proposal is expected to bring a net increase traffic of up to 36 vehicles per hour (vph) in the AM peak and 26 vph in the PM peak.

The Planning Proposal for 5-9 Gordon Avenue included a variation from the DCP parking rates, with the following parking rates adopted, with concurrence from Council and TfNSW:

- Residential
  - Studio/ 1-bed – 0.5 spaces per dwelling
  - 2+ bed – 1 space per dwelling
  - Visitor – 1 space per 10 dwellings.
- Office – 1 space per 400m^2 GFA
- Retail < 1000m^2 – NIL
- Retail > 1000m^2 – 1 space per 300m^2 GFA.

The 5 – 9 Gordon Avenue development is also required to dedicate land to facilitate the widening of Hammond Lane to 6m.

3 Proposed Development

3.1 Overview of the Masterplan

The proposed development comprises the construction of two mixed use towers over three levels of non-residential comprising:

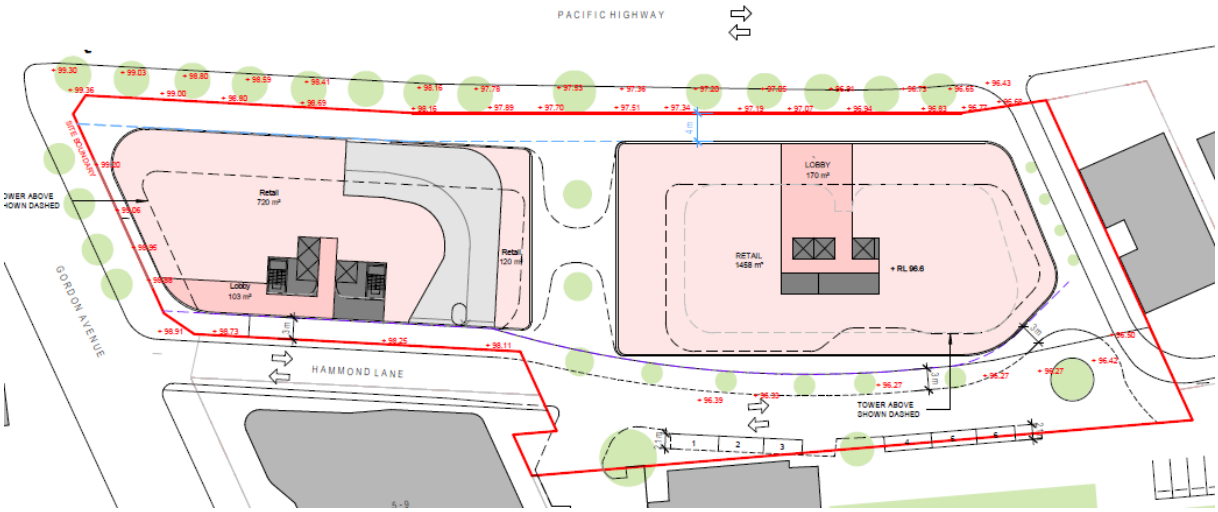
- 319 apartment units, and
- 5,772m^2 of non-residential.

The site would be serviced by three levels of basement car park.

In addition, it is intended that the 41 at-grade car spaces for the Chatswood Bowling Club will be reinstated via a separate basement car park (located directly under the bowling green) and at ground level subject to a future development consent.

Figure 3.1 shows the indicative ground floor plan of the subject site.

Figure 3.1: Proposed Ground Floor Layout



Source: Architectus, September 2023

3.2 Proposed Vehicle Access Arrangements

All vehicles will access the site from Hammond Lane via Gordon Avenue. Hammond Lane is currently 5.2m wide, however, in the future is to be 6m wide as approved as part of the Planning Proposal for 5-9 Gordon Avenue, Chatswood.

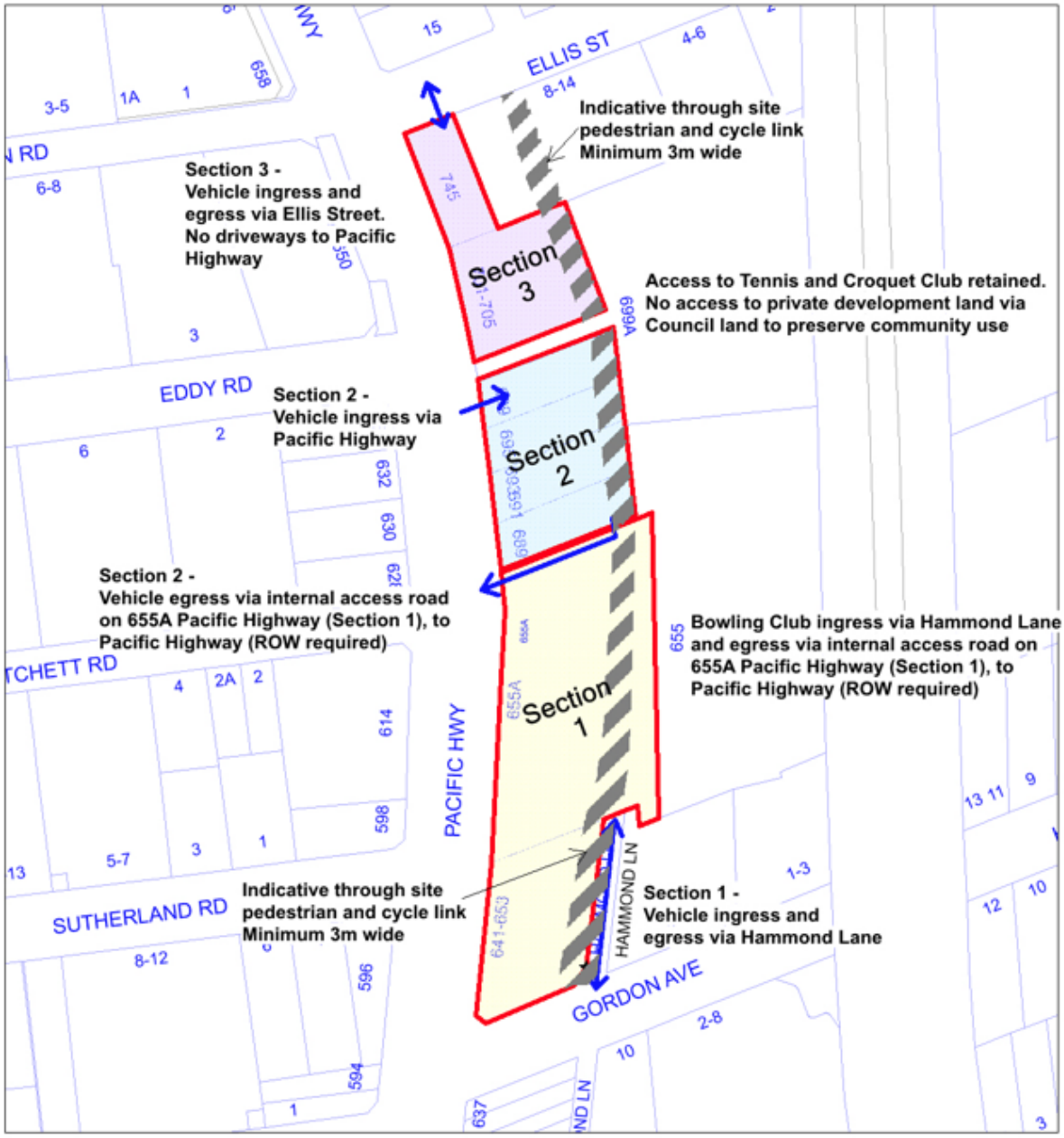
A 6m wide roadway will permit two-way traffic flow and provide access to the basement car park ramp and the ground level loading dock. Access into the basement car park and loading dock will be via a shared driveway which be serviced from Hammond Lane.

A small roundabout is provided at the end of Hammond Lane to enable cars who have erroneously travelled along Hammond Lane to turn around safely and efficiently.

At the end of Hammond Lane, there will also be a link into the proposed underground car park being provided for Chatswood Bowling Club. This underground parking and a small amount at grade car parking running parallel along Hammond Lane will largely reinstate the parking levels currently enjoyed by the club along Hammond Lane.

At the request of council, the existing driveway running along the northern boundary of the site (which currently provides direct egress onto Pacific Highway) will be retained. This will be aligned such that it could, if necessary, be used to facilitate egress from the properties to north of the subject site (i.e. 689-699 Pacific Highway) as per the council's sketch precinct plan below.

Figure 3.2: Council's Sketch Precinct Plan for 641 Pacific Highway to 755 Pacific Highway



4 Parking Assessment

4.1 Car Parking Requirements

The Willoughby City Council's Development Control Plan (DCP) rates currently apply to the site and surrounds.

However, the site is less than 800m from the Chatswood Railway Station. State Environmental Planning Policy 65 (SEPP 65) details minimum car parking requirements for a residential development within 800 metres of a railway station.

More specifically, Part 3J of the Apartment Design Guide (ADG) states:

> *"For development…on sites that are within 800 metres of a railway station…the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Development, or the car parking requirement prescribed by the relevant council, whichever is less."*

Chatswood Train Station is within 550m walking distance (i.e. 7 minutes) north of the site. In this regard, parking requirements from the TfNSW (formerly Roads and Maritime Services) *Guide to Traffic Generating Guideline 2002* is applicable.

A comparison of DCP and SEPP requirements are presented in Table 4.1.

Table 4.1: Comparison of Parking Requirements

Land Use	Type	DCP Parking Rate (Minimum)	DCP Parking Rate (Maximum)	TfNSW Rate (Minimum)
Residential	1-Bedroom unit	0.1 space per unit	0.5 space per unit	0.4 space per unit
	2-Bedroom unit	0.2 space per unit	0.5 space per unit	0.7 space per unit
	3 -Bedroom unit	0.25 space per unit	0.5 space per unit	1.2 spaces per unit
	Visitors	-	1 space per 7 units	1 space per 7 unit
Non-Residential	Offices	1 space per 670m^2	1 space per 400m^2	NA
	Retail (Shops)	1 space per 200m^2	1 space per 70m^2	NA
	Retail (Restaurant)	1 space per 145m^2	1 space per 50m^2	NA
	Retail (specialised premises)	1 space per 200m^2	1 space / 150m^2 showroom and outdoor areas	NA

We note the approved Planning Proposal at the adjoining site has been approved for reduced rates that vary from the DCP as shown in Table 4.2.

Table 4.2: Approved Parking Rates for 5-9 Gordon Ave, Chatswood

Land use	Parking rate
Office	1 space per 400 sqm GFA
Retail (<1000 sqm)	-
Retail (>1000 sqm)	1 space per 300 sqm GFA

Land use		Parking rate
Residential	Studio	0.5 spaces per dwelling
	1-bed	0.5 spaces per dwelling
	2+ bed	1 space per dwelling
	Visitor	1 space per 10 dwelling

Source: Varga Traffic Planning, 2021, 5-9 Gordon Avenue, Chatswood Traffic and Parking Assessment

4.1.1 Residential Parking Requirements

The parking requirement for residential scheme has been assessed based on the DCP and the TfNSW rates, and is summarised in Table 4.3.

Table 4.3: Car Parking Requirement - Residential

Type	Size	DCP Parking Rate (Min)	DCP Parking Rate (Max)	TfNSW Parking Rate (Min)	DCP Parking Requirement (Min)	DCP Parking Requirement (Max)	TfNSW Parking Requirement
1-Bedroom unit	80 units	0.1 space per unit	0.5 space per unit	0.4 space per unit	8	40	32
2-Bedroom unit	199 units	0.2 space per unit	0.5 space per unit	0.7 space per unit	39	99	139
3 -Bedroom unit	40 units	0.25 space per unit	0.5 space per unit	1.2 spaces per unit	10	20	48
Sub-total	319 units				**57**	**159**	**219**
Visitors	319 units	-	1 space per 7 units	1 space per 7 unit	-	45	46
Total					**57**	**204**	**265**

The TfNSW rates requires a provision of minimum 265 car spaces for the residential component of the site whereas the Council DCP requires between 57 and 204 car spaces to be provided for the residential component.

Based on SEPP 65/ ADG guidelines, the lesser of the TfNSW requirement and Council DCP requirement would be the determining factor. As such, a provision of 57 – 204 residential car spaces is required for the proposed residential element of the development.

4.1.2 Non-Residential

The land uses that would be included in the non-residential component would be confirmed at the DA stage and may vary between office spaces, retail shops, community facilities etc.

However, an indicative split of 3,518m^2 GFA of commercial office space and 2,254m^2 GFA of bulky goods is assumed for the development, as a worst-case scenario.

Based on the minimum office rate of 1 space per 110m^2 and maximum office rate of 1 space per 200m^2, 3,518m^2 GFA office would require between 5 - 17 car spaces.

The specific use of the bulky goods retail is unknown. The Council DCP stipulates the car parking rate for office / business / retail land use (specialised retail premises) within Chatswood CBD, which includes bulky good premises. A minimum of 1 space per 200m^2 and a maximum of 1 space per 150m^2 of showroom and outdoor area accessible to the public are required. 2,254m^2 GFA of showroom could require between 11 - 15 car spaces.

Table 4.4: Indicative Non-Residential Parking Requirement

Type	Size	DCP Parking Rate (Minimum)	DCP Parking Rate (Maximum)	Car Parking Requirement (Minimum)	Car Parking Requirement (Maximum)
Offices	3,518m^2	1 space per 670m^2	1 space per 200m^2	5	17
Bulky Goods (Showroom)	2,254m^2	1 space per 200m^2	1 space per 150m^2 showroom and outdoor area	11	15
Total				**16**	**32**

4.1.3 Chatswood Bowling Club and Croquet Club

Chatswood Bowling Club currently has property rights to 41 existing car spaces including six car spaces which are used by the Chatswood Croquet Club, located along the Hammond Lane extension within the site.

The proposed underground car park plus several parking spaces proposed on ground level will re-provide these spaces.

4.1.4 Proposed Provision

The requirements of the residential parking (57 – 204) spaces and the commercial parking (16 - 32) spaces could result in a requirement of between 73 and 236 spaces. This range is expected to vary during the refinement of the project during the development application stage. In addition, 41 spaces are to be dedicated to the Chatswood Bowling Club and Chatswood Croquet Club.

The proposal includes three levels of basement parking, which can provide around 310 parking spaces. However, the provision is to comply with the maximum rates of the DCP.

4.2 Accessible Parking Requirements

Council DCP references the Building Code of Australia (BCA), which stipulates the accessible car parking requirements for different building classifications.

A residential flat building (Class 2 building) is required to provide accessible parking spaces in the order of the greater between the following:

- 1 resident and 1 visitor space
- 1 space per 4 adaptable units plus 1 visitor space for developments comprising 50 or more car parking spaces.

In addition, the DCP requires office buildings and shops (Class 5 and 6) to provide the greater number between the following for the accessible spaces:

- 1 employee and 1 visitor space
- 3% of total car parking spaces (10% of spaces provided as visitor spaces)

It is proposed to adopt the above requirements.

4.3 Bicycle Parking Requirements

The requirements for bicycle parking spaces are shown in Table 4.5 below, which follows the DCP rate.

Table 4.5: Bicycle Parking Requirement

Land Use	Yield	Class A or B Spaces – Lockers / Secure Spaces (Staff / Residents)		Class C Spaces - Rails/ Racks (Visitors)	
		Rate	Requirement	Rate	Requirement
Residential	319 units	1 space per 10 units	32 spaces	1 space per 10 units	32 spaces
Office / Business / Retail	5,772 m^2	The greater of 1 space or 1 space per 10 car spaces	2 spaces	The greater of 1 space or 1 space per 10 Class A or B spaces	1 spaces
		Total	34 Class A or B spaces	**Total**	33 Class C spaces

Table 4.5 shows that a total number of 34 Class A or B bicycle spaces (bicycle lockers or bicycle spaces within a secure room, intended for use by residents or staff) are required for the proposed development.

A minimum of 33 Class C bicycle spaces (bicycle rails / racks, intended for uses by visitors) are required to satisfy the DCP requirement. These would be located in an area accessible to the public.

It is noted that bicycle parking spaces provided for the development would be designed in accordance with *AS2890.3: Bicycle Parking Facilities*.

4.4 Motorcycle Parking Requirements

Motorcycle parking spaces are to be provided at a rate of 1 space per 20 car spaces, plus 1 visitor space per 10 motorcycle spaces, in accordance with the DCP requirement.

It is noted that all motorcycle parking spaces provided for the development would be designed in accordance with *AS2890.1:2004*.

4.5 Loading Bay Requirements

The DCP states that off-street loading and unloading facilities must be provided for all businesses, commercial, office and retail as required by Council. The size and number of loading bays provided will be determined by Council having regard to the:

- Frequency of deliveries;
- Size and bulk of goods;
- Size of trucks;
- Availability of on-street loading zones; and
- Intended use of the premises.

The DCP also states that provision must be made for removalist vans to park, load and unload onsite for all residential developments in excess of 12 units.

In this regard, the proposed uses on-site are not anticipated to generate frequent heavy vehicles. The key servicing requirement for the site would be waste collection services (which is expected to occur two to four times a week). Other servicing requirements including removalist vehicles would be infrequent (less than once a month) and deliveries for the retail developments (two to three vehicles per week). On this basis, no more than one or two vehicles per day is expected to the site.

On this basis, one loading bay is proposed within the basement car park, which could accommodate up to and including 8.8m Medium Rigid Vehicle (MRV).

It is expected that loading dock manager will schedule the deliveries throughout the day such that no two deliveries are happening at the same time. This helps avoid queuing onto the road network. Any deliveries should be booked in advance with the loading dock manager. The procedures for loading would be captured in a Loading Dock Management Plan which would be provided at the Development Application stage.

A swept Path Analysis for accessing the loading bay is shown in Appendix B.

5 Traffic Assessment

5.1 Traffic Generation

The proposed residential development traffic has been assessed against the traffic generation rates set out for high density residential developments in the TfNSW's *Guide to Traffic Generating Developments* (The Guide) and the *Technical Direction TDT 2013/04a*.

For the purpose of estimating traffic generation, the following traffic generation rates for residential uses have been used:

- 0.19 vehicle trips per unit (AM Peak)
- 0.15 vehicle trips per unit (PM Peak)

For the purpose of estimating traffic generation, the following traffic generation rates for office blocks have been used:

- 1.6 trips per 100 m^2 (AM Peak)
- 1.2 trips per 100 m^2 (PM Peak)

The traffic generation from the proposed retail development has been assessed based on the rate provided in The Guide for a bulky goods store. It is considered that the shopping centre rate stipulated in The Guide is excessive for the subject site as it more likely to be bulky goods/storerooms that destination retail. It is further noted that the proposed shops would form part of the wider CBD centre and would, therefore, generate a high proportion of walk-in trips.

Based on the above, the traffic generation during the morning and evening peak hours is summarised in Table 5.1.

Table 5.1: Traffic Generation Summary (vehicle trips per hour)

Land Use	Size	Trip Rate		Trip Generation	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Residential	319 units	0.19 trips per unit	0.15 trips per unit	61	48
Office / Business	3,445 m^2	1.6 trips per 100m^2	1.2 trips per 100m^2	56	42
Retail (Bulky Goods)	2,329 m^2	1.4 trips per 100m^2 [1]	2.7 trips per 100m^2	30	61
			Total	**147**	**151**

[1] AM peak is assumed to be 50% of the PM peak traffic

5.2 Trip Distribution

The intersection of Pacific Highway and Mowbray Road will be used as a key intersection to distribute traffic to and from the wider road network, as it is the nearest intersection to the site.

The site access via Gordon Avenue will provide left-in/left-out access from Pacific Highway. Therefore, it is assumed that all traffic generation from the Proposal will arrive from the north and exit to the south along Pacific Highway. Ultimately, exiting traffic expected to split between the through movement and the left-turn movement of the Pacific Highway north approach to Mowbray Road. The development traffic at this approach has been distributed proportionally based on the existing surveyed directional split, which includes 90% of traffic travelling south and 10% turning left on to Mowbray Road.

5.2.1 Directional Split

The ratio between inbound and outbound vehicle movements during the road network peak periods is referred to as the directional split.

The directional split adopted for the proposed residential development is as follows:

- AM Peak Period - 20: 80 (inbound: outbound).
- PM Peak Period – 80:20 (inbound: outbound).

The directional split adopted for the proposed office development is as follows:

- AM Peak Period - 80: 20 (inbound: outbound).
- PM Peak Period – 20:80 (inbound: outbound).

The directional split adopted for the proposed retail (bulky goods) development is as follows:

- AM Peak Period - 50: 50 (inbound: outbound).
- PM Peak Period – 50:50 (inbound: outbound).

Based on the above, the inbound/outbound split is as per Table 5.2.

Table 5.2: Traffic Generation Summary (vehicle trips per hour)

Peak Period	Inbound	Outbound	Total
AM Peak	72	75	147
PM Peak	77	74	151

5.3 Background Traffic Growth

Future traffic growth has been estimated based on the Sydney's Strategic Travel Forecast Model (STFM) provided by TfNSW. The STFM is a strategic transport planning model that considers population and employment growths and is used for high level of assessment of major infrastructure proposals, transport strategies and policy decision making.

The STFM provides future year traffic volumes to determine the relative traffic growth between years for application to the baseline traffic to provide estimations for future year traffic conditions.

STFM growth rates from 2022-2032 have been applied to the relevant intersections in the local road network to determine future base volumes.

In addition, the 2032 base case includes the traffic generated by the approved 5-9 Gordon Avenue Planning Proposal which is estimated to generate an increase in 36 vehicles per hour in the AM peak and 26 vehicles per hour in the PM peak.

5.4 Nearby Approved Planning Proposals

Willoughby Council has issued an RFI for the proposed development on 18th December 2023, requesting further information to be provided for the site. Item 1(a)(ii) requires the traffic assessment to be updated to include the approved nearby planning proposals in response to the Chatswood CBD Planning and Urban Design Strategy 2036.

A review of the developments surrounding the subject site has identified seven approved planning proposals located in close proximity to the subject site. These include the following developments.

- 5-9 Gordon Avenue
- 613–627 Pacific Highway
- 629-639 Pacific Highway
- 10 Gordon Avenue, 15,17,19 Nelson Street
- 3 Ellis Street
- 9-11 Nelson Street
- 753 Pacific Highway & 15 Ellis Street

These approved developments are predominantly mixed-use, comprising high-density residential dwellings, commercial and/ or retail land uses. The traffic reports of these developments have been reviewed to identify the yields and the expected traffic generation associated with the sites.

Table 5.3 shows the summary of the expected traffic generation of these approved developments.

Table 5.3: Nearby Approved Developments Traffic Generation (vehicle trips per hour)

Site	Trip Generation		Vehicle Access Arrangement
	AM Peak Hour	PM Peak Hour	
5-9 Gordon Avenue	36	26	Hammond Lane
613–627 Pacific Highway	9	7	Hammond Lane
629-639 Pacific Highway	27	23	Hammond Lane
10 Gordon Avenue, 15,17,19 Nelson Street	55	39	Hammond Lane
3 Ellis Street	5	4	Ellis Street
9-11 Nelson Street	145	145	Nelson Street
753 Pacific Highway & 15 Ellis Street	12	10	Crispe Lane
Total	**147**	**151**	

The traffic generation associated with the nearby approved developments have been included in SIDRA traffic modelling to assess the future operations of the surveyed intersections, following construction of these developments. The expected traffic generation is distributed across the road network based on the existing movements, with the turning movement diagrams provided in Appendix A.

5.5 Traffic Modelling

5.5.1 Level of Service Criteria

TfNSW uses level of service as a performance measure to indicate the operating efficiency of a given intersection. The level of service ranges from A to F. Levels of service between A and D indicate the intersection is operating within capacity, with LoS A providing exceptionally good performance to LoS D indicating satisfactory performance. LoS E and F indicate the intersection is operating at or near capacity and generally would require intersection improvement works to maintain reasonable performance.

The level of service is directly related to the average delay experienced by vehicles travelling through the intersection. At signalised intersections, the average delay is the volume weighted average delay over all movements. For roundabouts and priority (give way and stop sign) controlled intersections, the average delay relates to the movement with the highest average delay per vehicle.

Table 5.4 shows the criteria that TfNSW adopts in assessing the level of service at intersections.

Table 5.4: Intersection Level of Service Criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity; at signals incidents would cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode.
F	Greater than 70	Unsatisfactory, requires additional capacity	Unsatisfactory, requires other control mode or major treatment

5.5.2 Scenarios

The following scenarios have been modelled using SIDRA Intersection, an industry-standard software package that analyses the operating characteristics of intersections:

- Scenario 0 – Existing Case Conditions (Year 2022)
- Scenario 1 – 2022 Existing Case with Development Traffic
- Scenario 2 – 2032 Future Case with Nearby Approved Development Traffic
- Scenario 3 – 2032 Future Case with Cumulative Development Traffic (i.e. Scenario 2 plus subject development traffic)

The turning movement volumes for each scenario are presented in Appendix A.

5.5.3 Modelling Results

The intersection of Mowbray Road and Pacific Highway is the key intersection affected by the proposed development. This has been modelled in SIDRA intersection along with the intersection of Gordon Avenue and Pacific Highway as detailed in the following.

The modelling results for the year 2022 and year 2032 are shown in Table 5.5 for the AM peak hour and in Table 5.6 for the PM peak hour.

Table 5.5: SIDRA Modelling Results AM Peak Hour

Approach	Scenario 0 (Year 2022 Base)		Scenario 1 (2022 + Development)		Scenario 2 (Year 2032 Base + Approved Developments)		Scenario 3 (2032 + Cumulative Development)	
	Ave Delay	LoS	Ave Delay	LoS	Ave Delay	LoS	Ave Delay	LoS
Intersection: Pacific Highway and Mowbray Road								
South	44	D	44	D	55	D	55	D
East	40	C	40	C	42	C	42	C
North	62	E	75	F	189	F	215	F
West	71	F	71	F	141	F	141	F
Overall	**55**	**D**	**60**	**E**	**123**	**F**	**135**	**F**
Intersection: Pacific Highway and Gordon Avenue								
South	6	A	6	A	6	A	6	A
East	10	A	10	A	11	A	11	A
North	6	A	6	A	6	A	6	A
West	7	A	7	A	8	A	8	A

Table 5.6: SIDRA Modelling Results PM Peak Hour

Approach	Scenario 0 (Year 2022 Base)		Scenario 1 (2022 + Development)		Scenario 2 (Year 2032 Base + Approved Developments)		Scenario 3 (2032 + Cumulative Development)	
	Ave Delay	LoS	Ave Delay	LoS	Ave Delay	LoS	Ave Delay	LoS
Intersection: Pacific Highway and Mowbray Road								
South	37	C	40	C	58	E	54	D
East	72	F	64	E	105	F	112	F
North	46	D	50	D	123	F	134	F
West	58	E	58	E	65	E	65	E
Overall	**49**	**D**	**50**	**D**	**87**	**F**	**91**	**F**
Intersection: Pacific Highway and Gordon Avenue								
South	6	A	6	A	6	A	6	A
East	7	A	7	A	8	A	8	A
North	6	A	6	A	6	A	6	A
West	9	A	9	A	11	A	11	A

The Pacific Highway-Mowbray Road intersection is nearing capacity with a LoS D in the current year 2022. The addition of the subject development would have a negligible traffic impact under existing conditions.

The addition of background traffic and nearby approved developments would put pressure on this intersection and result in the need for network upgrades, with the 10-year future scenario indicating a LoS F, with or without the subject development.

The Pacific Highway-Gordon Avenue intersection operates at LoS A in the current year 2022 and would continue to operate at LoS A in the future year, with or without the development.

It's considered that the traffic generated by the proposed development would have a minor impact to the surrounding road network, relative to the impact from general traffic growth and traffic from approved developments in the surrounding areas. Notably, the modelling shows that the Pacific Highway – Mowbray Road intersection will need to be upgraded in the future regardless of the subject development.

Notwithstanding this, it is suggested that site-specific mitigation measures be implemented to reduce traffic levels to the site, by way of a Green Travel Plan.

6 Summary and Conclusion

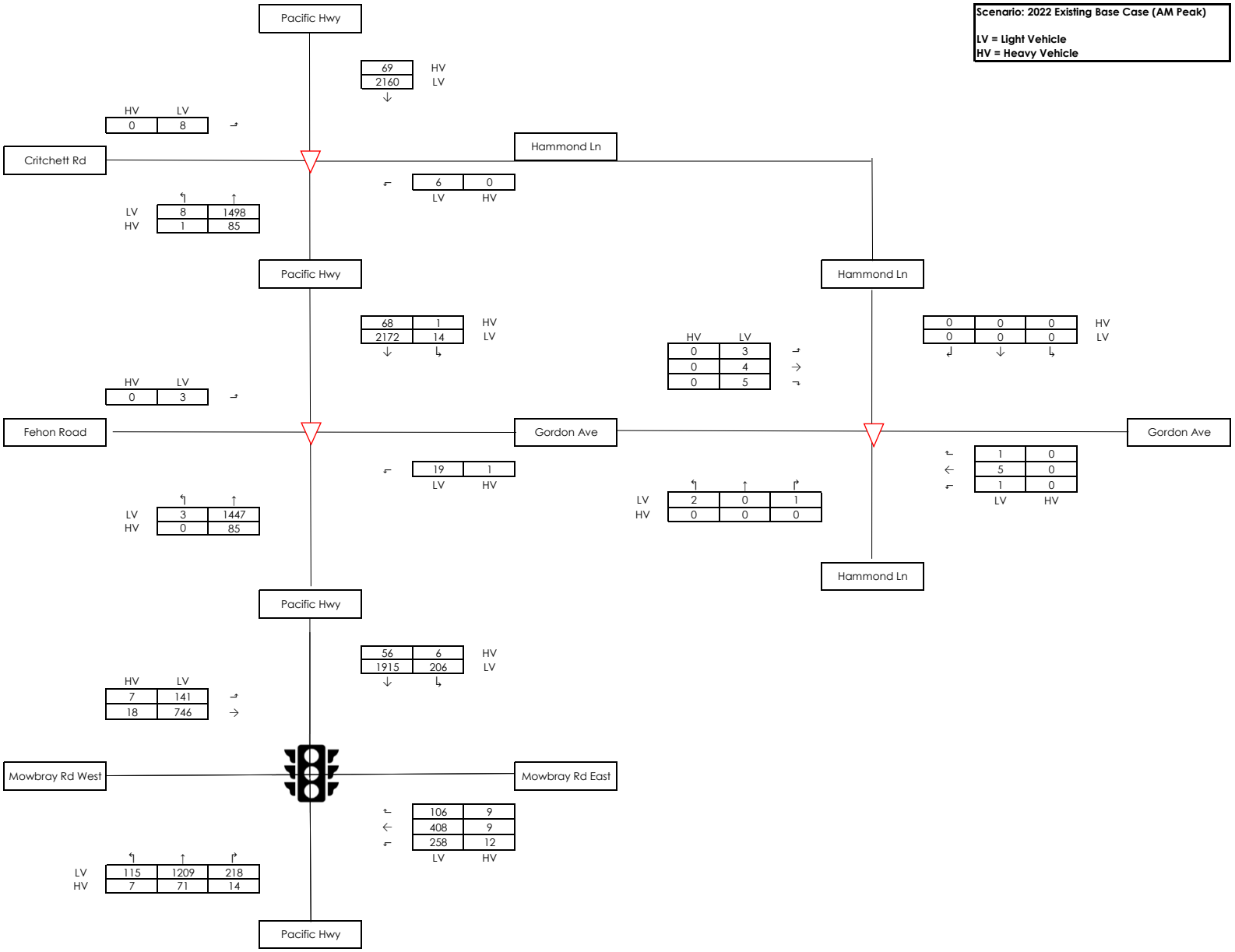
This transport impact assessment report relates to a Planning Proposal for a mixed use development at 641 – 655A Pacific Highway, Chatswood. The key findings from this assessment are provided below:

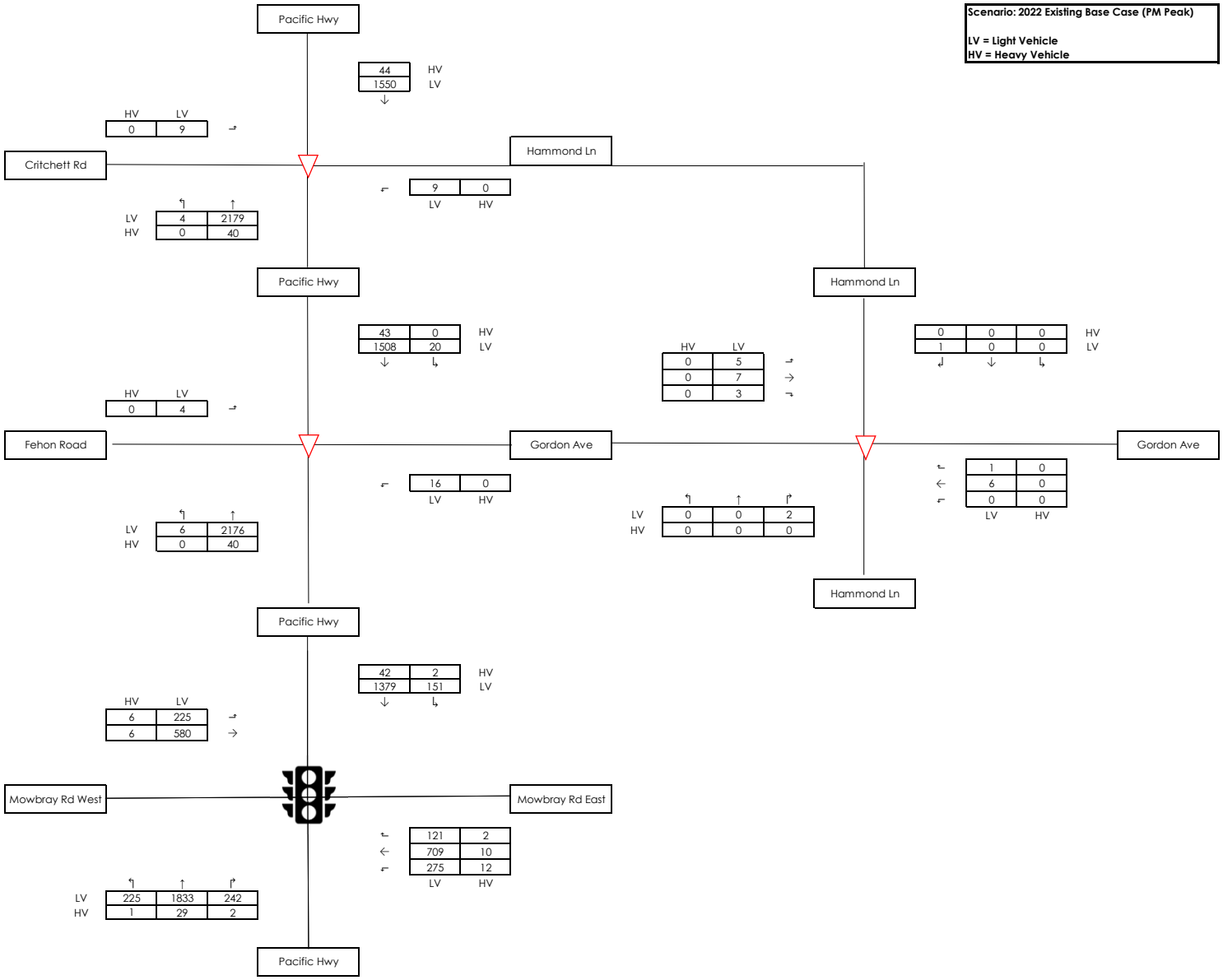
- The proposed development comprises the construction of two towers of mixed-use development, comprising of 319 residential apartment units and 5,772m2 of non-residential.
- The proposed development includes three (3) levels of basement car park, which can be accessed from Hammond Lane via an access driveway.
- The basement car parks will be provided for residents, staff and retail visitors. There are likely to be internal controls for security purposes but these will be developed at the development application stage. In addition, it is intended that the 41 at-grade car spaces for the Chatswood Bowling Club will be reinstated via a separate basement car park (located directly under the bowling green) and at ground level subject to a future development consent.
- Through applications of SEPP 65 and DCP, the proposal is expected to require a provision of around between 57 and 204 car spaces. The indicative plans suggest that the proposal will provide around 310 spaces, inclusive of 41 for Chatswood Bowling Club.
- Loading dock facilities has been proposed for the subject site to cater for waste collection and deliveries. The loading has capacity to accommodate up to an 8.8m MRV.
- The proposed development is expected to generate an additional 147 vehicle trips in the AM and 151 vehicles trips in the PM peak period.
- SIDRA Intersection modelling results indicate that the additional traffic associated with the proposed development would have a minor impact to the intersections in the close vicinity of the site, especially when compared to the impacts of the nearby substantial developments within the area.

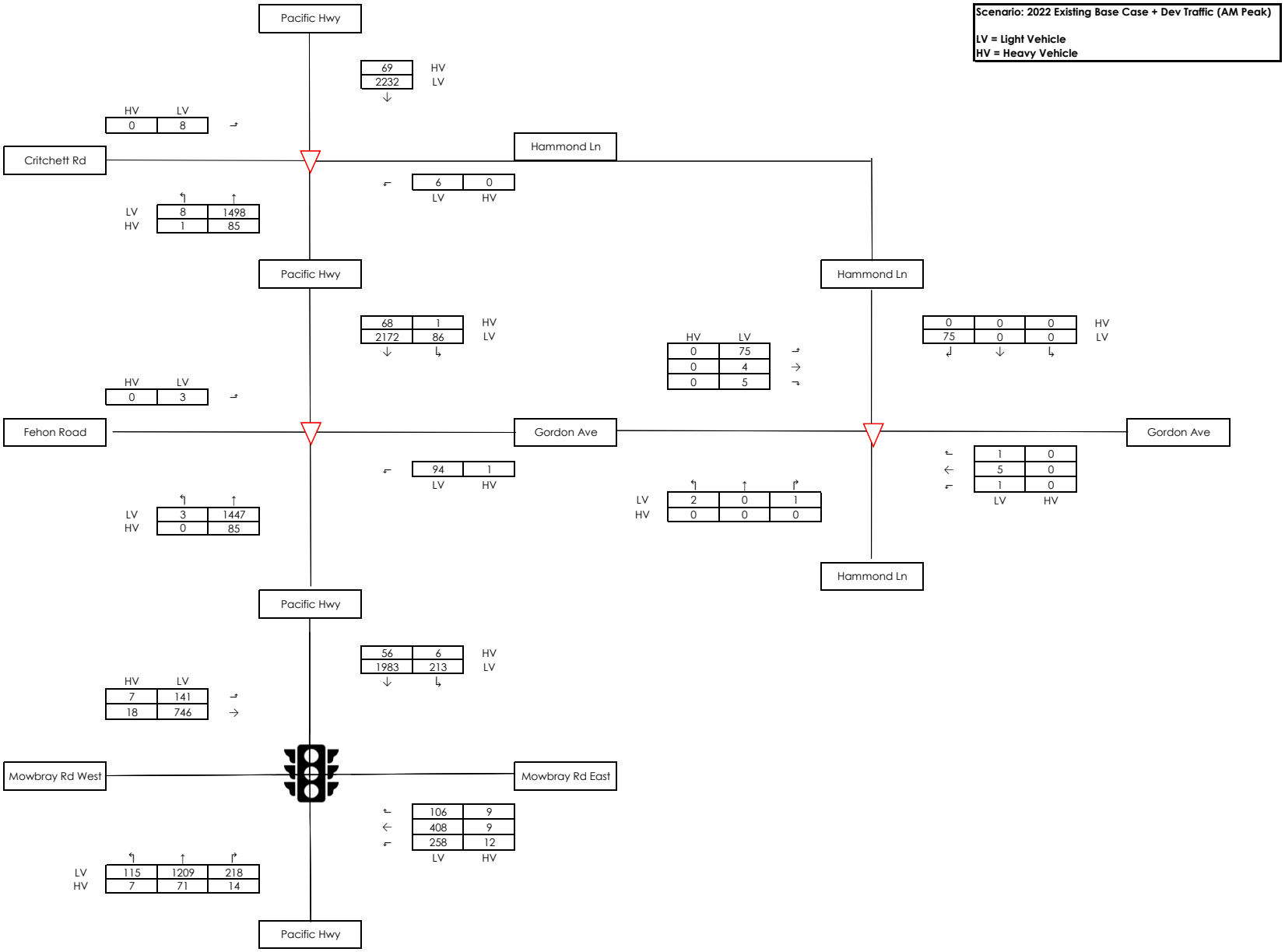
Overall, the traffic and parking implications of the proposed development are considered satisfactory.

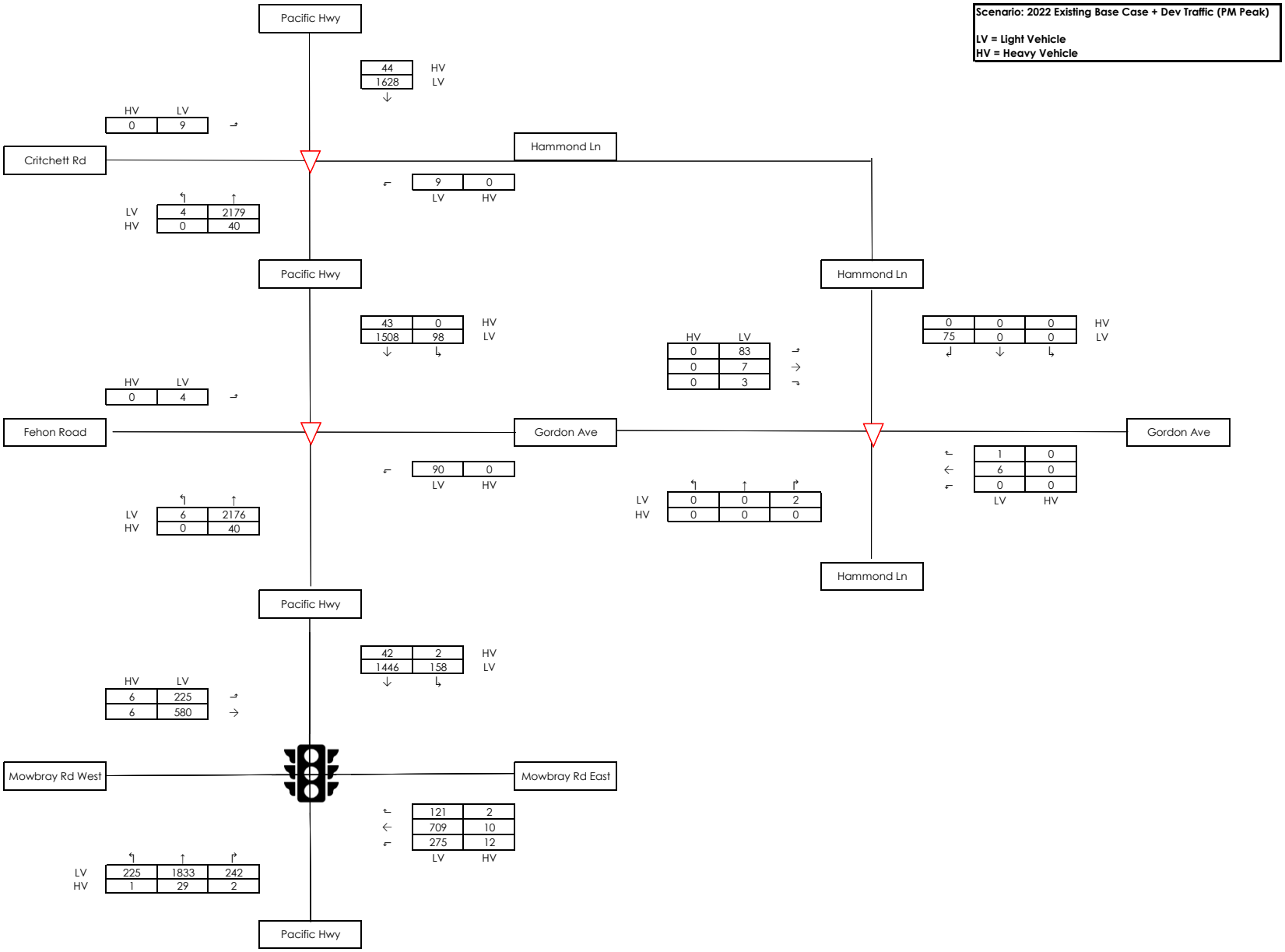
Appendix A

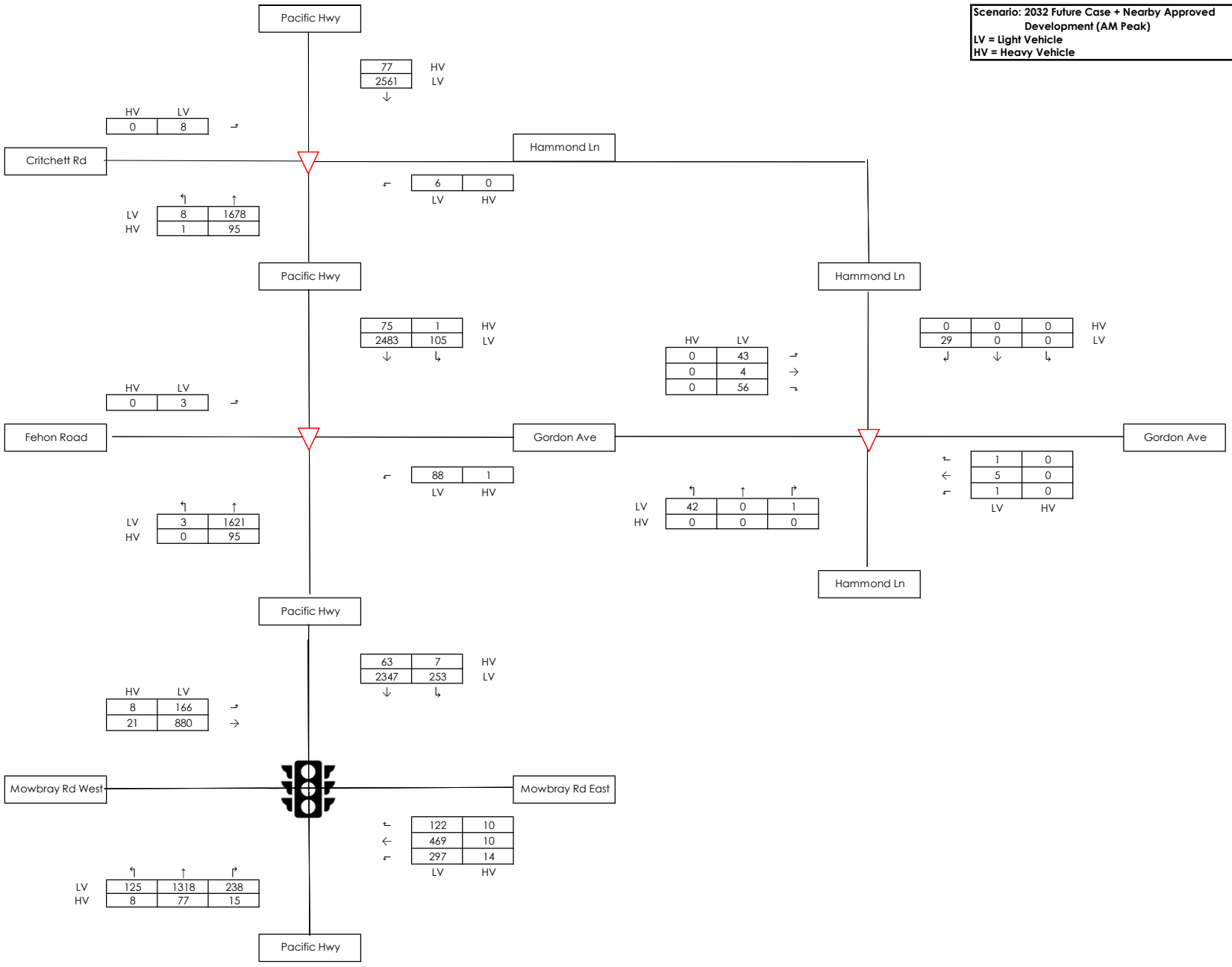
Turning Movement Diagrams

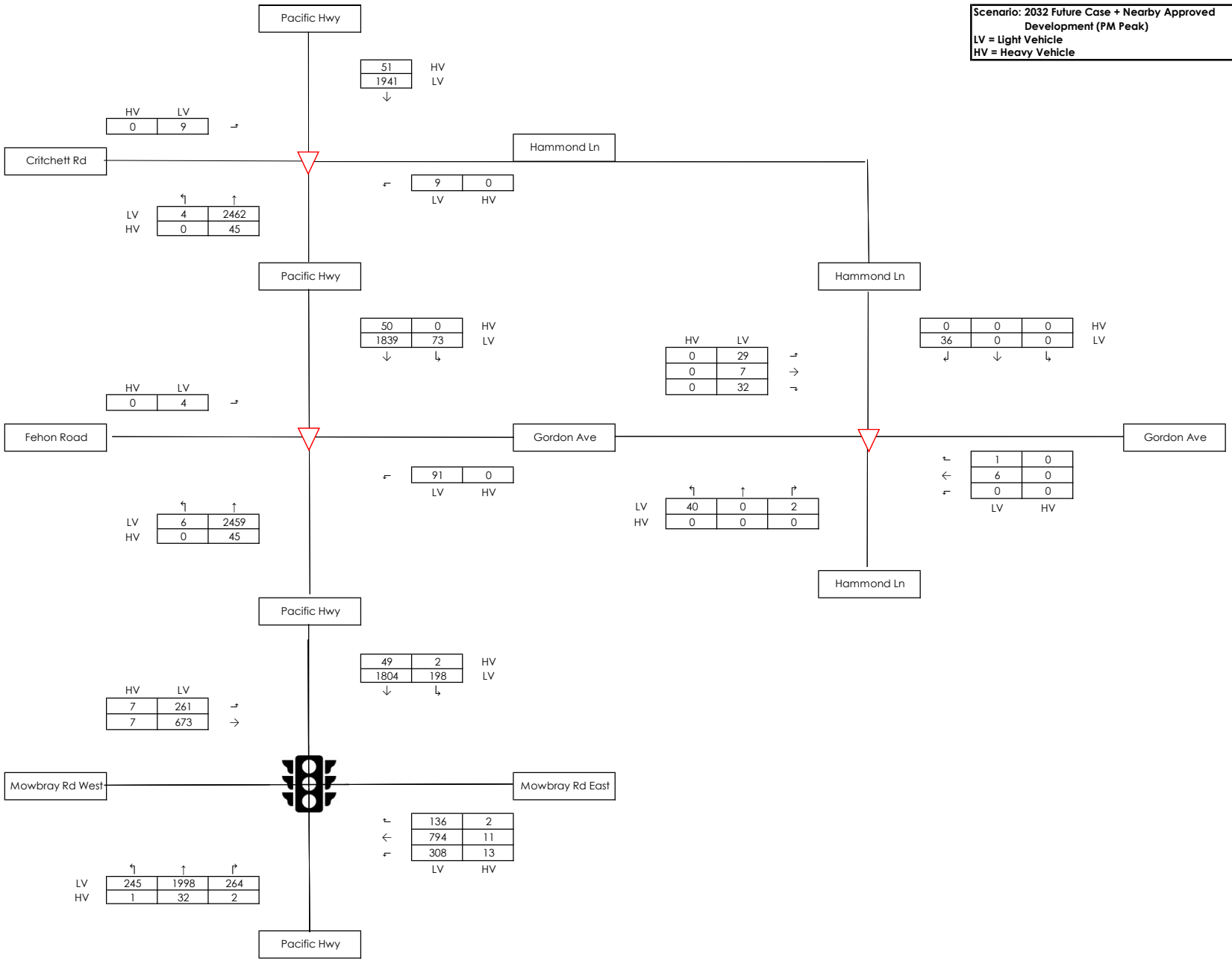

Scenario: 2022 Existing Base Case (AM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy

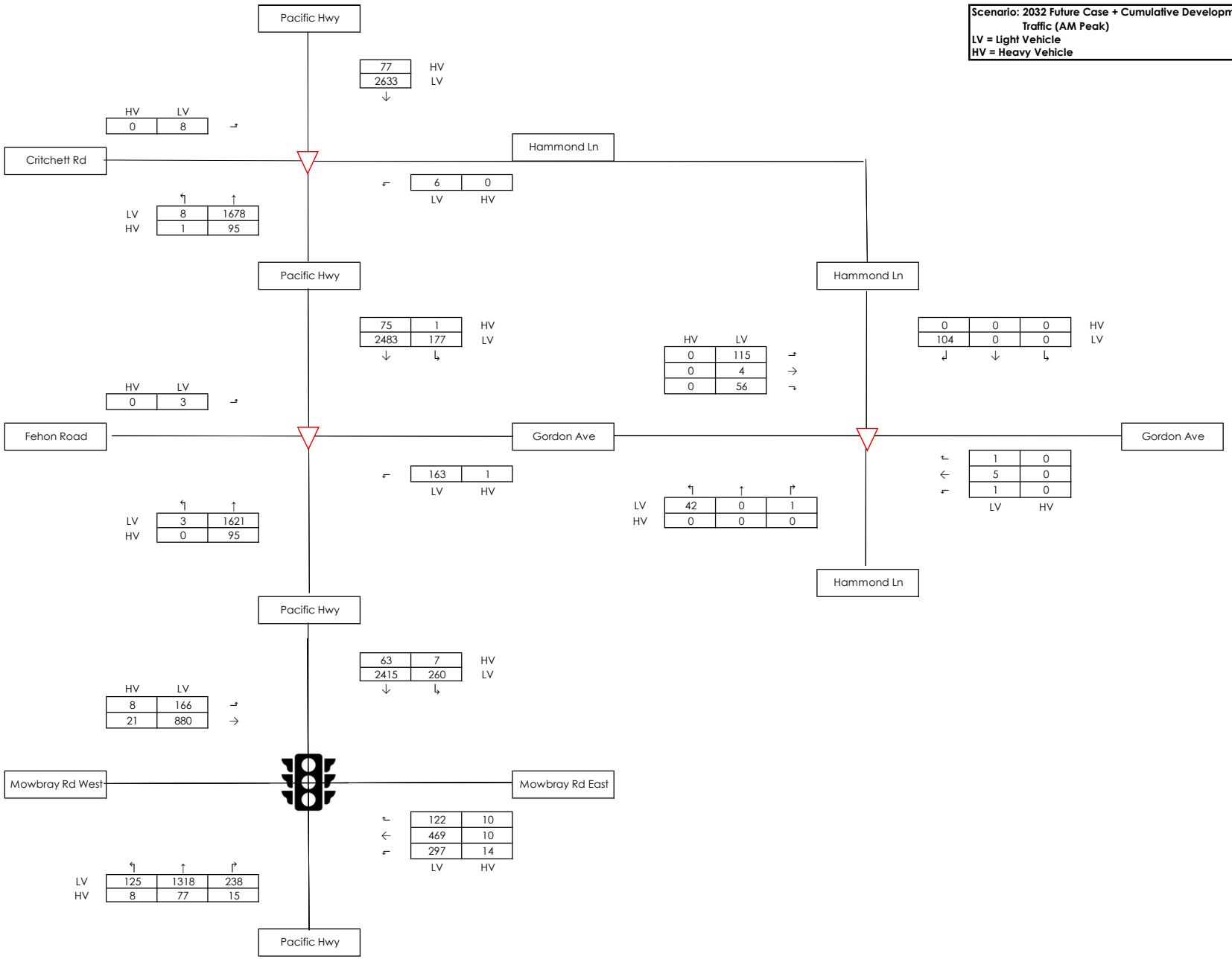

Scenario: 2022 Existing Base Case (PM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
44
1550
HV
LV
HV LV
0 9
9 0
LV HV
↰ ↑
LV 4 2179
HV 0 40
43 0
1508 20
HV
LV
HV LV
0 5
0 7
0 3
0 0 0
1 0 0
HV
LV
HV LV
0 4
16 0
LV HV
↰ ↑
LV 6 2176
HV 0 40
↰ ↑ ↱
LV 0 0 2
HV 0 0 0
1 0
6 0
0 0
LV HV
42 2
1379 151
HV
LV
HV LV
6 225
6 580
121 2
709 10
275 12
LV HV
↰ ↑ ↱
LV 225 1833 242
HV 1 29 2

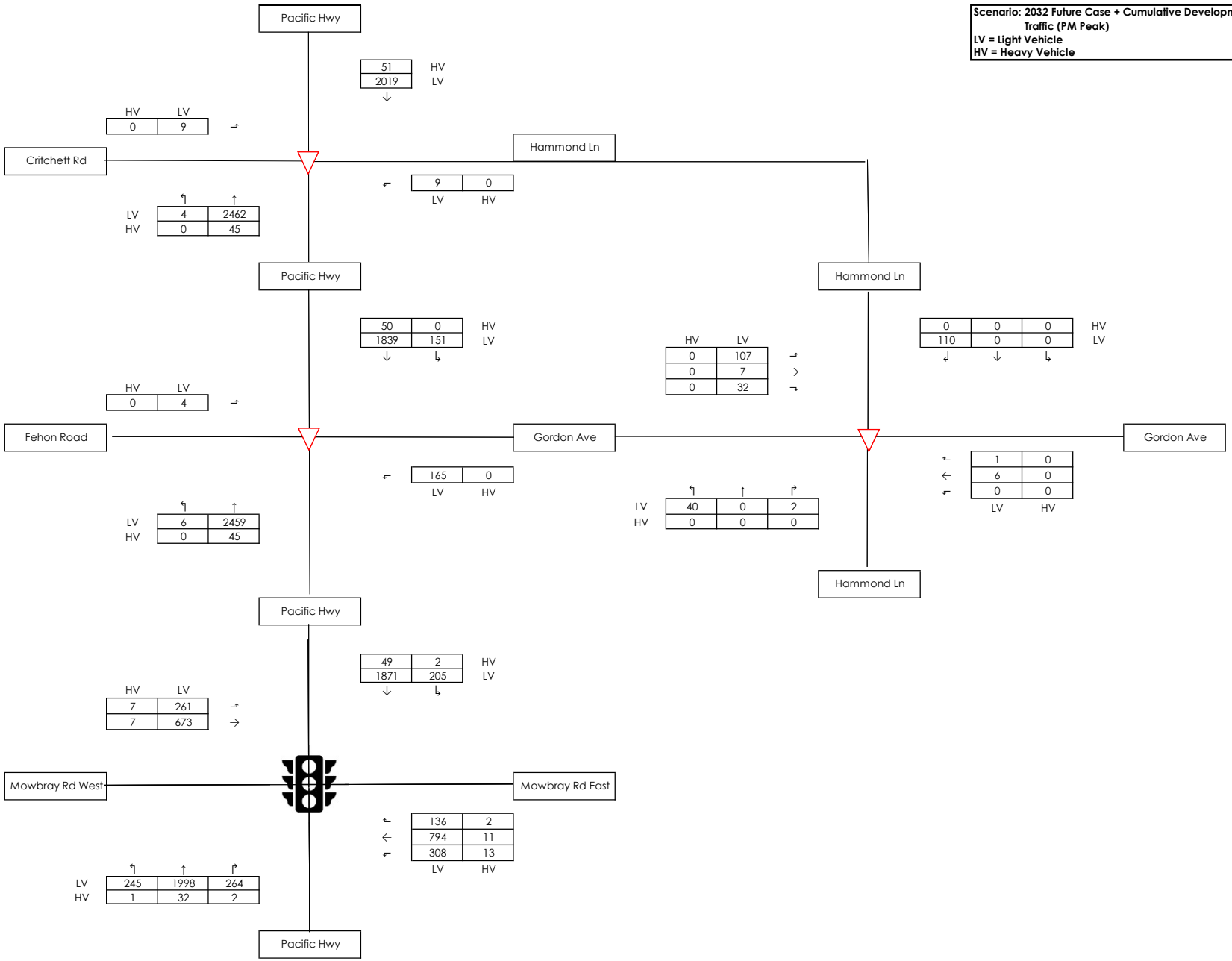

Scenario: 2022 Existing Base Case + Dev Traffic (AM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
69
2232
HV
LV
HV LV
0 8
6 0
LV HV
↰ ↑
LV 8 1498
HV 1 85
68 1
2172 86
HV
LV
HV LV
0 75
0 4
0 5
0 0 0
75 0 0
HV
LV
HV LV
0 3
94 1
LV HV
↰ ↑
LV 3 1447
HV 0 85
↰ ↑ ↱
LV 2 0 1
HV 0 0 0
1 0
5 0
1 0
LV HV
56 6
1983 213
HV
LV
HV LV
7 141
18 746
106 9
408 9
258 12
LV HV
↰ ↑ ↱
LV 115 1209 218
HV 7 71 14


Scenario: 2022 Existing Base Case + Dev Traffic (PM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
44
1628
HV
LV
HV LV
0 9
9 0
LV HV
↰ ↑
LV 4 2179
HV 0 40
43 0
1508 98
HV
LV
HV LV
0 83
0 7
0 3
0 0 0
75 0 0
HV
LV
HV LV
0 4
90 0
LV HV
↰ ↑
LV 6 2176
HV 0 40
↰ ↑ ↱
LV 0 0 2
HV 0 0 0
1 0
6 0
0 0
LV HV
42 2
1446 158
HV
LV
HV LV
6 225
6 580
121 2
709 10
275 12
LV HV
↰ ↑ ↱
LV 225 1833 242
HV 1 29 2


Scenario: 2032 Future Case + Nearby Approved Development (AM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
77 HV
2561 LV
HV LV
0 8
6 0
LV HV
↰ ↑
LV 8 1678
HV 1 95
75 1 HV
2483 105 LV
↓ ↳
HV LV
0 43
0 4
0 56
0 0 0 HV
29 0 0 LV
↲ ↓ ↳
HV LV
0 3
88 1
LV HV
↰ ↑
LV 3 1621
HV 0 95
↰ ↑ ↱
LV 42 0 1
HV 0 0 0
1 0
5 0
1 0
LV HV
63 7 HV
2347 253 LV
↓ ↳
HV LV
8 166
21 880
122 10
469 10
297 14
LV HV
↰ ↑ ↱
LV 125 1318 238
HV 8 77 15


Scenario: 2032 Future Case + Nearby Approved Development (PM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
HV LV
51 1941
HV LV
0 9
HV LV
9 0
↰ ↑
LV 4 2462
HV 0 45
HV LV
50 1839 0 73
HV LV
0 0 0 36 0 0
HV LV
0 29
0 7
0 32
HV LV
0 4
HV LV
91 0
↰ ↑ ↱
LV 40 0 2
HV 0 0 0
↰ ↑
LV 6 2459
HV 0 45
HV LV
1 0
6 0
0 0
HV LV
49 1804 2 198
HV LV
7 261
7 673
HV LV
136 2
794 11
308 13
↰ ↑ ↱
LV 245 1998 264
HV 1 32 2


Scenario: 2032 Future Case + Cumulative Development Traffic (AM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
HV
LV


Scenario: 2032 Future Case + Cumulative Development
Traffic (PM Peak)
LV = Light Vehicle
HV = Heavy Vehicle
Pacific Hwy
Critchett Rd
Hammond Ln
Pacific Hwy
Hammond Ln
Fehon Road
Gordon Ave
Gordon Ave
Hammond Ln
Pacific Hwy
Mowbray Rd West
Mowbray Rd East
Pacific Hwy
HV LV
0 9
51 HV
2019 LV
9 0
LV HV
LV ↰ ↑
4 2462
HV 0 45
50 0 HV
1839 151 LV
HV LV
0 107
0 7
0 32
0 0 0 HV
110 0 0 LV
HV LV
0 4
165 0
LV HV
LV ↰ ↑
6 2459
HV 0 45
LV ↰ ↑ ↱
40 0 2
HV 0 0 0
1 0
6 0
0 0
LV HV
49 2 HV
1871 205 LV
HV LV
7 261
7 673
136 2
794 11
308 13
LV HV
LV ↰ ↑ ↱
245 1998 264
HV 1 32 2

Appendix B

Swept Path Analysis

VEHICLE ENTERING

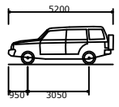
VEHICLE EXITING

+ 99.30 + 99.03 + 98.80 + 98.59 + 98.41 + 98.16 + 97.78
+ 99.36 + 99.00 + 98.80 + 98.69 + 98.16 + 97.89
SITE BOUNDARY
+ 99.20
+ 99.06
+ 98.95
+ 98.88
+ 98.91 + 98.73 + 98.25 + 98.11
Retail
724 m²
Retail
125 m²
Lobby
125 m²
GORDON AVENUE
HAMMOND LANE
5 m
10 m
5 - 9
GORDON
AVENUE

+ 98.80 + 98.59 + 98.41 + 98.16 + 97.78 + 97.53
+ 99.00 + 98.80 + 98.69 + 98.16 + 97.89 + 97.70
PACIFIC HIGH
12 m
Retail
724 m²
Retail
125 m²
Lobby
125 m²
+ 98.91 + 98.73 + 98.25 + 98.11
HAMMOND LANE
5 m
10 m
POTENTIAL PUBLIC R
1216 m²

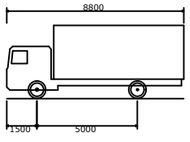
KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm



MRV - Medium Rigid Vehicle

Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	OF	KH	02/06/23

ttpp transport planning

PROJECT
CHATSWOOD DIVE SITE
SWEPT PATH ANALYSIS - GROUND LEVEL

TITLE
RAMP ACCESS VIA HAMMOND LANE
8.8m MEDIUM RIGID VEHICLE & 5.2m B99 VEHICLE

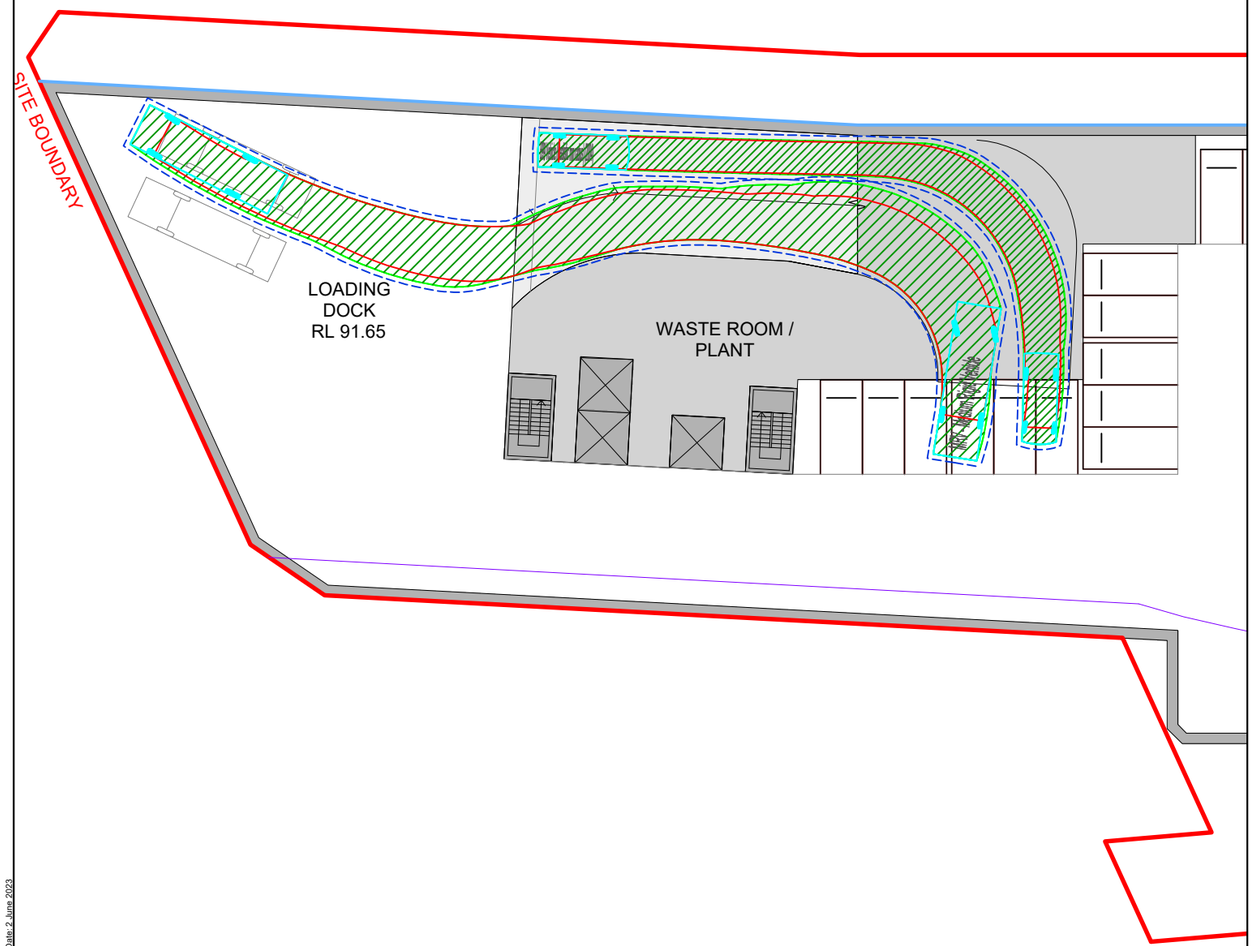
DWG No. 21520CAD006
FIGURE 1

DATE STAMP 02 JUNE 2023

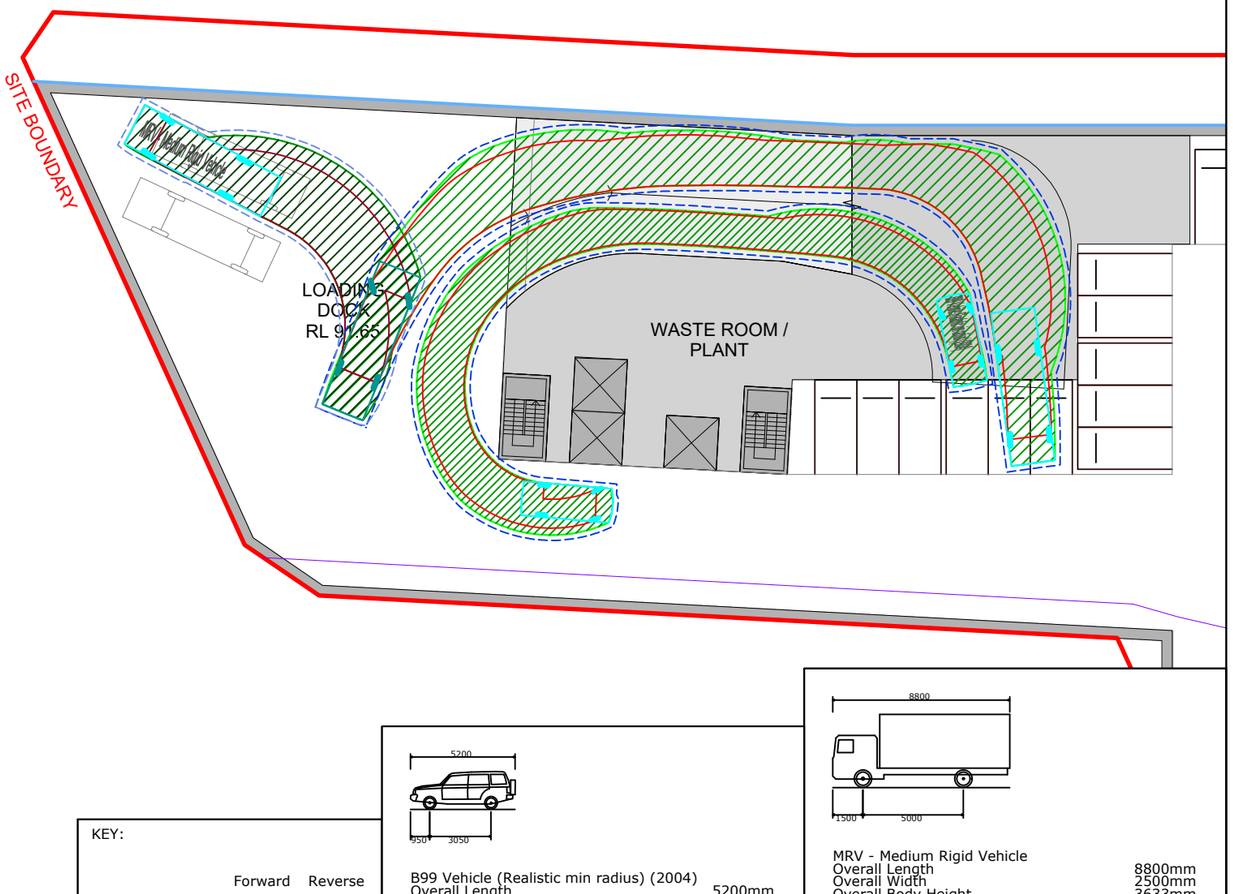
PROJECT No.	SCALE	REV.
21520	1:350 @A3	A

Filename: 21520CAD006-230602-SWEPT PATH.dwg
Date: 2 June 2023

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

MRV - Medium Rigid Vehicle

Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	OF	KH	02/06/23

ttpp transport planning

PROJECT
CHATSWOOD DIVE SITE
SWEPT PATH ANALYSIS - BASEMENT 1 (LOADING DOCK)

TITLE
AS2890.2 8.8m MEDIUM RIGID VEHICLE (ENTERS IN FORWARD DIRECTION)
& 5.2m B99 VEHICLE

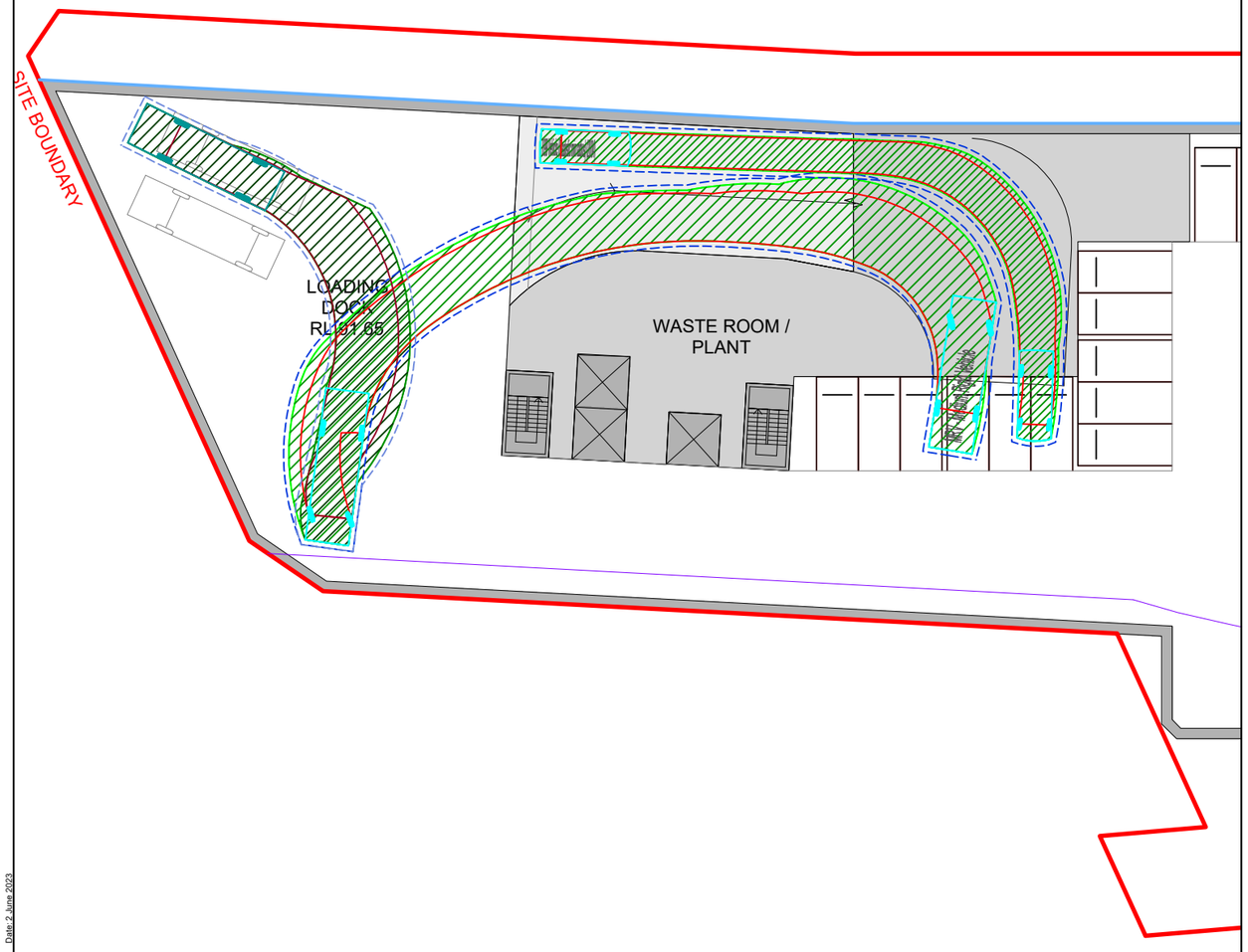
DWG No. 21520CAD006
FIGURE 2

DATE STAMP 02 JUNE 2023

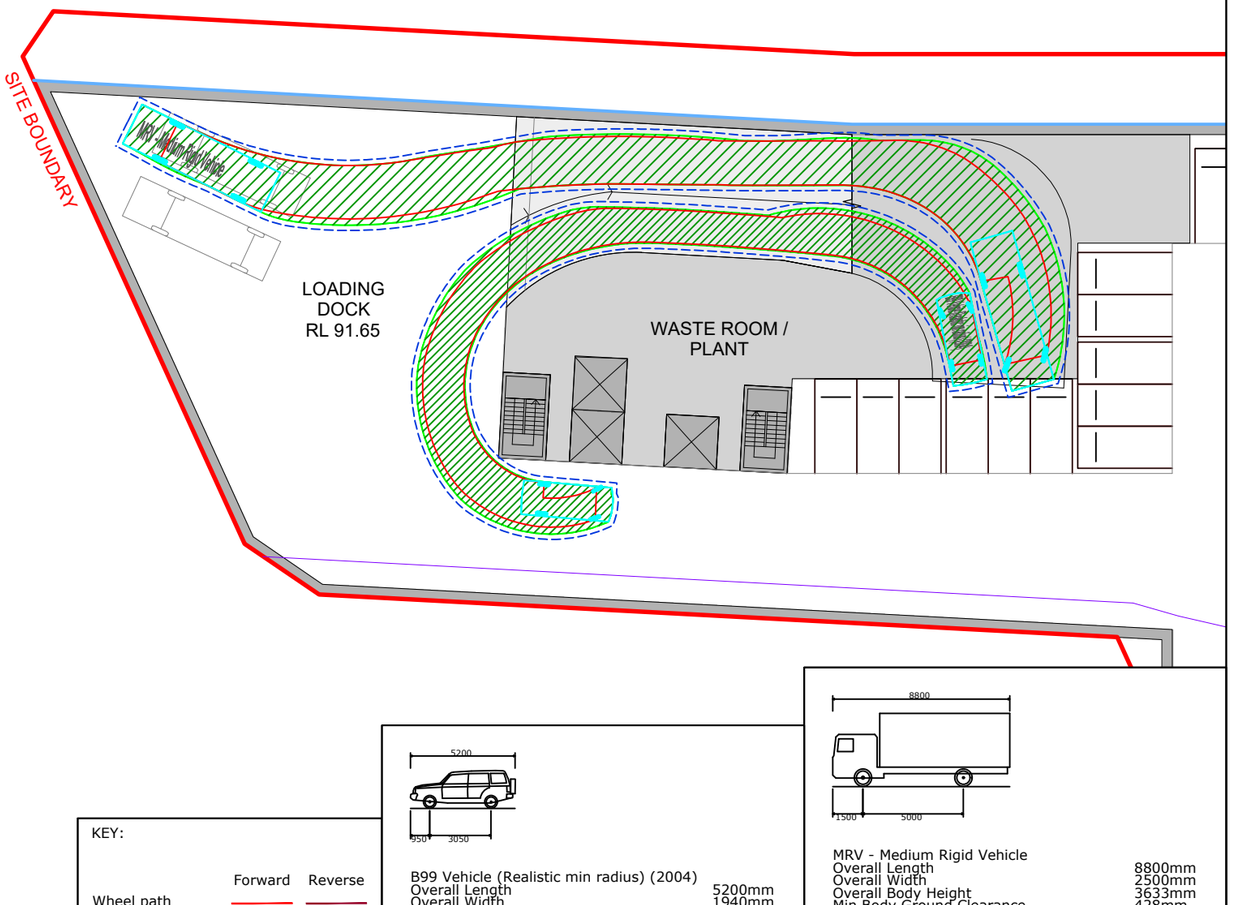
PROJECT No. 21520 | SCALE 1:350 @A3 | REV. A

Filename: 21520CAD006-230602-SWEPT PATH.dwg Date: 2 June 2023

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

MRV - Medium Rigid Vehicle	
Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	OF	KH	02/06/23

ttpp transport planning

PROJECT
CHATSWOOD DIVE SITE
SWEPT PATH ANALYSIS - BASEMENT 1 (LOADING DOCK)

TITLE
AS2890.2 8.8m MEDIUM RIGID VEHICLE (REVERSES INTO LOADING DOCK)
& 5.2m B99 VEHICLE

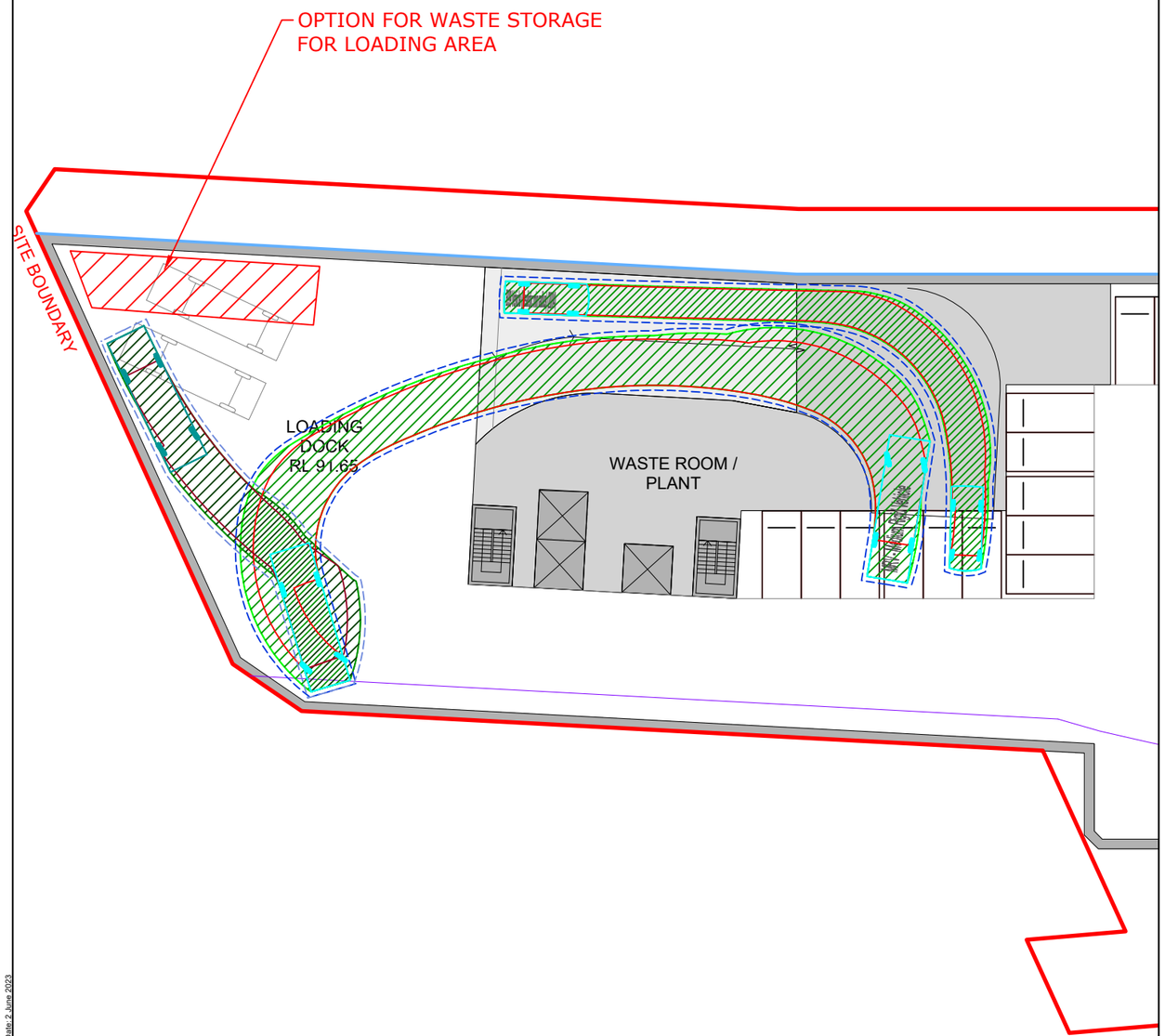
DWG No. 21520CAD006
FIGURE 3

DATE STAMP 02 JUNE 2023

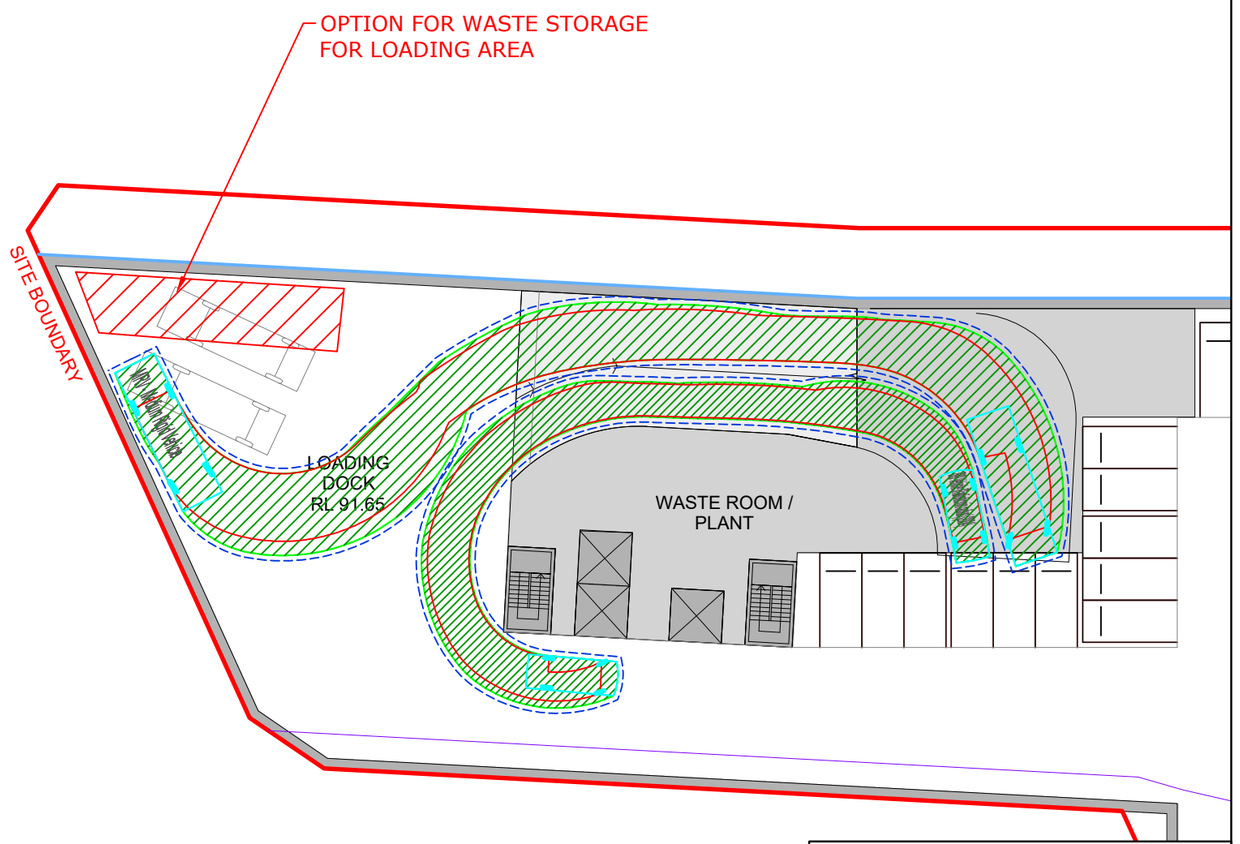
PROJECT No. 21520 | SCALE 1:350 @A3 | REV. A

Filename: 21520CAD006-230602-SWEPT PATH.dwg
Date: 2 June 2023

VEHICLE ENTERING

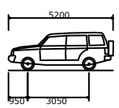


VEHICLE EXITING



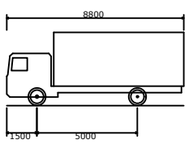
KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm



MRV - Medium Rigid Vehicle

Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	OF	KH	02/06/23

ttpp transport planning

PROJECT
CHATSWOOD DIVE SITE
SWEPT PATH ANALYSIS - BASEMENT 1 (LOADING DOCK)

TITLE
AS2890.2 8.8m MEDIUM RIGID VEHICLE (REVERSES INTO LOADING DOCK)
& 5.2m B99 VEHICLE

DWG No. 21520CAD006
FIGURE 4

DATE STAMP 02 JUNE 2023

PROJECT No.	SCALE	REV.
21520	1:350 @A3	A

Filename: 21520CAD006-230602-SWEPT PATH.dwg Date: 2 June 2023

Appendix C

Traffic Modelling Results

MOVEMENT SUMMARY

Site: 163 [2022 AM Pac-Mow (Site Folder: 2022 Base)]

PH: 730-830
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	122	7	128	5.7	0.551	36.9	LOS C	21.7	159.0	0.79	0.74	0.79	27.0
2	T1	1280	71	1347	5.5	0.551	24.2	LOS B	24.5	179.8	0.72	0.65	0.72	38.4
3	R2	232	14	244	6.0	* 1.067	157.2	LOS F	13.3	97.9	1.00	1.23	1.99	11.8
Approach		1634	92	1720	5.6	1.067	44.0	LOS D	24.5	179.8	0.76	0.74	0.90	28.9
East: Mowbray Rd														
4	L2	270	12	284	4.4	0.623	33.3	LOS C	13.9	100.8	0.92	0.82	0.92	31.5
5	T1	417	9	439	2.2	0.623	35.9	LOS C	21.5	153.6	0.85	0.74	0.85	16.4
6	R2	115	9	121	7.8	0.642	71.7	LOS F	8.2	61.6	1.00	0.81	1.03	12.0
Approach		802	30	844	3.7	0.642	40.1	LOS C	21.5	153.6	0.90	0.78	0.90	21.4
North: Pacific Hwy														
7	L2	212	6	223	2.8	* 0.934	69.1	LOS E	59.7	427.9	1.00	1.09	1.19	13.1
8	T1	1971	56	2075	2.8	* 0.934	61.2	LOS E	60.4	433.0	1.00	1.07	1.19	24.8
Approach		2183	62	2298	2.8	0.934	62.0	LOS E	60.4	433.0	1.00	1.07	1.19	23.9
West: Mowbray Rd														
10	L2	148	7	156	4.7	0.379	54.3	LOS D	9.0	65.6	0.89	0.79	0.89	13.4
11	T1	764	18	804	2.4	* 0.916	74.5	LOS F	31.6	225.6	1.00	1.07	1.27	9.2
Approach		912	25	960	2.7	0.916	71.2	LOS F	31.6	225.6	0.98	1.03	1.21	9.8
All Vehicles		5531	209	5822	3.8	1.067	55.0	LOS D	60.4	433.0	0.91	0.92	1.07	22.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	24	25	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												
P4	Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94

All Pedestrians	120	126	64.2	LOS F	0.2	0.2	0.96	0.96	236.3	223.6	0.95

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

MOVEMENT SUMMARY

Site: 163 [2022 PM Pac-Mow (Site Folder: 2022 Base)]

PH: 1645-1745
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	226	1	238	0.4	* 0.833	52.8	LOS D	36.5	257.6	0.97	0.91	1.03	22.5
2	T1	1862	29	1960	1.6	0.833	31.5	LOS C	48.5	344.2	0.89	0.83	0.91	34.6
3	R2	244	2	257	0.8	0.513	67.3	LOS E	8.3	58.6	0.98	0.80	0.98	22.1
Approach		2332	32	2455	1.4	0.833	37.3	LOS C	48.5	344.2	0.91	0.83	0.93	31.4
East: Mowbray Rd														
4	L2	287	12	302	4.2	* 0.948	76.7	LOS F	33.3	239.9	1.00	1.10	1.34	20.3
5	T1	719	10	757	1.4	* 0.948	70.2	LOS E	49.9	353.8	0.99	1.10	1.28	9.7
6	R2	123	2	129	1.6	0.581	68.8	LOS E	8.6	60.9	0.99	0.80	0.99	12.4
Approach		1129	24	1188	2.1	0.948	71.7	LOS F	49.9	353.8	0.99	1.07	1.26	13.4
North: Pacific Hwy														
7	L2	153	2	161	1.3	0.807	52.7	LOS D	34.1	243.5	0.97	0.93	1.00	16.2
8	T1	1421	42	1496	3.0	0.807	45.7	LOS D	34.7	249.1	0.97	0.90	1.00	29.1
Approach		1574	44	1657	2.8	0.807	46.4	LOS D	34.7	249.1	0.97	0.90	1.00	28.1
West: Mowbray Rd														
10	L2	231	6	243	2.6	0.622	59.2	LOS E	15.2	108.5	0.96	0.83	0.96	12.6
11	T1	586	6	617	1.0	0.743	57.9	LOS E	20.1	142.0	0.99	0.87	1.03	11.3
Approach		817	12	860	1.5	0.743	58.2	LOS E	20.1	142.0	0.99	0.86	1.01	11.7
All Vehicles		5852	112	6160	1.9	0.948	49.3	LOS D	49.9	353.8	0.95	0.90	1.02	24.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	53	56	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												
P4	Full	17	18	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94

All Pedestrians	114	120	64.2	LOS F	0.2	0.2	0.96	0.96	236.5	223.9	0.95

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

MOVEMENT SUMMARY

Site: 101 [2022 AM Pac-Gordon (Site Folder: 2022 Base)]

PH: 730-830
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	3	0	3	0.0	0.291	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.2
2	T1	1532	85	1613	5.5	0.291	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1535	85	1616	5.5	0.291	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
East: Gordon Avenue														
4	L2	20	1	21	5.0	0.042	10.0	LOS A	0.1	1.0	0.62	0.80	0.62	28.7
Approach		20	1	21	5.0	0.042	10.0	LOS A	0.1	1.0	0.62	0.80	0.62	28.7
North: Pacific Highway														
7	L2	15	1	16	6.7	0.421	5.7	LOS A	0.0	0.0	0.00	0.01	0.00	45.3
8	T1	2240	68	2358	3.0	0.421	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach		2255	69	2374	3.1	0.421	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.5
West: Fehon Road														
10	L2	3	0	3	0.0	0.004	7.1	LOS A	0.0	0.1	0.48	0.59	0.48	44.4
Approach		3	0	3	0.0	0.004	7.1	LOS A	0.0	0.1	0.48	0.59	0.48	44.4
All Vehicles		3813	155	4014	4.1	0.421	0.2	NA	0.1	1.0	0.00	0.01	0.00	59.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2022 PM Pac-Gordon (Site Folder: 2022 Base)]

PH: 1645-1745
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	6	0	6	0.0	0.411	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
2	T1	2216	40	2333	1.8	0.411	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		2222	40	2339	1.8	0.411	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
East: Gordon Avenue														
4	L2	16	0	17	0.0	0.022	7.1	LOS A	0.1	0.5	0.48	0.64	0.48	32.2
Approach		16	0	17	0.0	0.022	7.1	LOS A	0.1	0.5	0.48	0.64	0.48	32.2
North: Pacific Highway														
7	L2	20	0	21	0.0	0.292	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	45.6
8	T1	1551	43	1633	2.8	0.292	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach		1571	43	1654	2.7	0.292	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4
West: Fehon Road														
10	L2	4	0	4	0.0	0.008	9.3	LOS A	0.0	0.2	0.60	0.69	0.60	42.1
Approach		4	0	4	0.0	0.008	9.3	LOS A	0.0	0.2	0.60	0.69	0.60	42.1
All Vehicles		3813	83	4014	2.2	0.411	0.1	NA	0.1	0.5	0.00	0.01	0.00	59.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 163 [2022 AM + Dev Pac-Mow (Site Folder: 2022 with Development)]

PH: 730-830
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	122	7	128	5.7	0.551	36.9	LOS C	21.7	159.0	0.79	0.74	0.79	27.0
2	T1	1280	71	1347	5.5	0.551	24.2	LOS B	24.5	179.8	0.72	0.65	0.72	38.4
3	R2	232	14	244	6.0	* 1.067	157.2	LOS F	13.3	97.9	1.00	1.23	1.99	11.8
Approach		1634	92	1720	5.6	1.067	44.0	LOS D	24.5	179.8	0.76	0.74	0.90	28.9
East: Mowbray Rd														
4	L2	270	12	284	4.4	0.623	33.3	LOS C	13.9	100.8	0.92	0.82	0.92	31.5
5	T1	417	9	439	2.2	0.623	35.9	LOS C	21.5	153.6	0.85	0.74	0.85	16.4
6	R2	115	9	121	7.8	0.642	71.7	LOS F	8.2	61.6	1.00	0.81	1.03	12.0
Approach		802	30	844	3.7	0.642	40.1	LOS C	21.5	153.6	0.90	0.78	0.90	21.4
North: Pacific Hwy														
7	L2	219	6	231	2.7	* 0.965	82.0	LOS F	68.0	487.4	1.00	1.15	1.28	11.4
8	T1	2038	56	2145	2.7	* 0.965	74.0	LOS F	68.7	492.2	1.00	1.14	1.28	22.1
Approach		2257	62	2376	2.7	0.965	74.8	LOS F	68.7	492.2	1.00	1.14	1.28	21.2
West: Mowbray Rd														
10	L2	148	7	156	4.7	0.379	54.3	LOS D	9.0	65.6	0.89	0.79	0.89	13.4
11	T1	764	18	804	2.4	* 0.916	74.5	LOS F	31.6	225.6	1.00	1.07	1.27	9.2
Approach		912	25	960	2.7	0.916	71.2	LOS F	31.6	225.6	0.98	1.03	1.21	9.8
All Vehicles		5605	209	5900	3.7	1.067	60.3	LOS E	68.7	492.2	0.91	0.95	1.10	21.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	24	25	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4 Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians	120	126	64.2	LOS F	0.2	0.2	0.96	0.96	236.3	223.6	0.95

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

MOVEMENT SUMMARY

Site: 163 [2022 PM + Dev Pac-Mow (Site Folder: 2022 with Development)]

PH: 1645-1745
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	226	1	238	0.4	* 0.850	54.7	LOS D	38.2	269.9	0.98	0.93	1.06	22.1
2	T1	1862	29	1960	1.6	0.850	34.7	LOS C	50.6	358.8	0.91	0.86	0.95	33.2
3	R2	244	2	257	0.8	0.573	69.7	LOS E	8.5	59.9	0.99	0.80	0.99	21.6
Approach		2332	32	2455	1.4	0.850	40.3	LOS C	50.6	358.8	0.93	0.86	0.96	30.3
East: Mowbray Rd														
4	L2	287	12	302	4.2	* 0.927	69.6	LOS E	30.8	221.8	1.00	1.07	1.29	21.5
5	T1	719	10	757	1.4	0.927	61.7	LOS E	47.5	336.6	0.98	1.05	1.20	10.8
6	R2	123	2	129	1.6	0.520	66.4	LOS E	8.4	59.6	0.98	0.80	0.98	12.8
Approach		1129	24	1188	2.1	0.927	64.3	LOS E	47.5	336.6	0.98	1.02	1.20	14.5
North: Pacific Hwy														
7	L2	160	2	168	1.3	* 0.843	56.4	LOS D	37.7	269.1	0.99	0.97	1.05	15.4
8	T1	1486	42	1564	2.8	0.843	49.3	LOS D	38.3	274.4	0.99	0.95	1.06	28.0
Approach		1646	44	1733	2.7	0.843	50.0	LOS D	38.3	274.4	0.99	0.95	1.06	27.0
West: Mowbray Rd														
10	L2	231	6	243	2.6	0.622	59.2	LOS E	15.2	108.5	0.96	0.83	0.96	12.6
11	T1	586	6	617	1.0	0.743	57.9	LOS E	20.1	142.0	0.99	0.87	1.03	11.3
Approach		817	12	860	1.5	0.743	58.2	LOS E	20.1	142.0	0.99	0.86	1.01	11.7
All Vehicles		5924	112	6236	1.9	0.927	50.0	LOS D	50.6	358.8	0.96	0.92	1.04	24.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	53	56	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4	Full	17	18	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians		114	120	64.2	LOS F	0.2	0.2	0.96	0.96	236.5	223.9	0.95

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

MOVEMENT SUMMARY

Site: 101 [2022 AM + Dev Pac-Gordon (Site Folder: 2022 with Development)]

PH: 730-830
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	3	0	3	0.0	0.291	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.2
2	T1	1532	85	1613	5.5	0.291	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1535	85	1616	5.5	0.291	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
East: Gordon Avenue														
4	L2	94	1	99	1.1	0.174	9.5	LOS A	0.6	4.3	0.62	0.82	0.62	29.4
Approach		94	1	99	1.1	0.174	9.5	LOS A	0.6	4.3	0.62	0.82	0.62	29.4
North: Pacific Highway														
7	L2	86	1	91	1.2	0.434	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	44.9
8	T1	2240	68	2358	3.0	0.434	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.3
Approach		2326	69	2448	3.0	0.434	0.3	NA	0.0	0.0	0.00	0.02	0.00	58.6
West: Fehon Road														
10	L2	3	0	3	0.0	0.004	7.1	LOS A	0.0	0.1	0.48	0.59	0.48	44.4
Approach		3	0	3	0.0	0.004	7.1	LOS A	0.0	0.1	0.48	0.59	0.48	44.4
All Vehicles		3958	155	4166	3.9	0.434	0.4	NA	0.6	4.3	0.02	0.03	0.02	58.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2022 PM + Dev Pac-Gordon (Site Folder: 2022 with Development)]

PH: 1645-1745
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	6	0	6	0.0	0.411	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
2	T1	2216	40	2333	1.8	0.411	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		2222	40	2339	1.8	0.411	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
East: Gordon Avenue														
4	L2	88	0	93	0.0	0.113	7.0	LOS A	0.4	2.8	0.47	0.69	0.47	32.5
Approach		88	0	93	0.0	0.113	7.0	LOS A	0.4	2.8	0.47	0.69	0.47	32.5
North: Pacific Highway														
7	L2	96	0	101	0.0	0.307	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	44.6
8	T1	1551	43	1633	2.8	0.307	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.2
Approach		1647	43	1734	2.6	0.307	0.4	NA	0.0	0.0	0.00	0.03	0.00	58.1
West: Fehon Road														
10	L2	4	0	4	0.0	0.008	9.3	LOS A	0.0	0.2	0.60	0.69	0.60	42.1
Approach		4	0	4	0.0	0.008	9.3	LOS A	0.0	0.2	0.60	0.69	0.60	42.1
All Vehicles		3961	83	4169	2.1	0.411	0.4	NA	0.4	2.8	0.01	0.03	0.01	58.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 163 [2032 + App PPs AM Pac-Mow (Site Folder: 2032 + App PPs)]

PH: 730-830
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	133	8	140	6.0	0.605	37.8	LOS C	24.5	179.8	0.81	0.76	0.81	26.7
2	T1	1395	77	1468	5.5	0.605	25.0	LOS B	28.1	206.1	0.74	0.67	0.74	37.9
3	R2	253	15	266	5.9	* 1.162	230.2	LOS F	18.1	133.5	1.00	1.38	2.33	8.5
Approach		1781	100	1875	5.6	1.162	55.1	LOS D	28.1	206.1	0.78	0.78	0.97	25.4
East: Mowbray Rd														
4	L2	311	14	327	4.5	0.736	35.4	LOS C	17.3	125.3	0.96	0.85	0.97	30.6
5	T1	479	10	504	2.1	0.736	37.2	LOS C	25.3	180.3	0.88	0.78	0.88	16.0
6	R2	132	10	139	7.6	0.736	74.1	LOS F	9.7	72.7	1.00	0.86	1.11	11.7
Approach		922	34	971	3.7	0.736	41.8	LOS C	25.3	180.3	0.93	0.81	0.95	20.9
North: Pacific Hwy														
7	L2	260	7	274	2.7	* 1.141	180.1	LOS F	107.8	771.5	1.00	1.43	2.01	4.9
8	T1	2410	63	2537	2.6	* 1.141	189.6	LOS F	128.1	916.9	1.00	1.65	2.01	10.6
Approach		2670	70	2811	2.6	1.141	188.7	LOS F	128.1	916.9	1.00	1.63	2.01	10.1
West: Mowbray Rd														
10	L2	174	8	183	4.6	0.446	55.2	LOS D	10.8	78.4	0.91	0.81	0.91	13.2
11	T1	901	21	948	2.3	* 1.080	158.0	LOS F	55.4	395.2	1.00	1.51	1.84	4.7
Approach		1075	29	1132	2.7	1.080	141.4	LOS F	55.4	395.2	0.99	1.40	1.69	5.3
All Vehicles		6448	233	6787	3.6	1.162	122.9	LOS F	128.1	916.9	0.93	1.24	1.52	12.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	24	25	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4 Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians	120	126	64.2	LOS F	0.2	0.2	0.96	0.96	236.3	223.6	0.95

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

MOVEMENT SUMMARY

Site: 163 [2032 + App PPs PM Pac-Mow (Site Folder: 2032 + App PPs)]

PH: 1645-1745
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	246	1	259	0.4	0.936	72.7	LOS F	50.5	357.0	1.00	1.05	1.23	18.8
2	T1	2030	32	2137	1.6	0.936	54.7	LOS D	71.2	504.9	0.97	1.03	1.15	26.4
3	R2	266	2	280	0.8	0.663	72.0	LOS F	9.5	67.0	1.00	0.82	1.04	21.2
Approach		2542	35	2676	1.4	0.936	58.3	LOS E	71.2	504.9	0.98	1.01	1.15	25.0
East: Mowbray Rd														
4	L2	321	13	338	4.0	* 1.026	106.3	LOS F	40.9	294.1	1.00	1.19	1.61	14.1
5	T1	805	11	847	1.4	* 1.026	111.1	LOS F	74.5	527.6	1.00	1.31	1.56	6.3
6	R2	138	2	145	1.4	0.553	65.8	LOS E	9.4	66.7	0.98	0.80	0.98	12.8
Approach		1264	26	1331	2.1	1.026	104.9	LOS F	74.5	527.6	1.00	1.23	1.51	9.3
North: Pacific Hwy														
7	L2	200	2	211	1.0	1.051	113.8	LOS F	64.9	463.0	1.00	1.23	1.65	7.0
8	T1	1853	49	1951	2.6	* 1.051	124.0	LOS F	79.5	569.0	1.00	1.37	1.65	14.7
Approach		2053	51	2161	2.5	1.051	123.0	LOS F	79.5	569.0	1.00	1.36	1.65	14.0
West: Mowbray Rd														
10	L2	268	7	282	2.6	0.722	61.3	LOS E	18.2	130.6	0.99	0.86	1.01	12.3
11	T1	680	7	716	1.0	0.862	66.6	LOS E	25.9	183.2	1.00	0.98	1.17	10.1
Approach		948	14	998	1.5	0.862	65.1	LOS E	25.9	183.2	1.00	0.95	1.12	10.7
All Vehicles		6807	126	7165	1.9	1.051	87.4	LOS F	79.5	569.0	0.99	1.15	1.36	16.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	53	56	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4	Full	17	18	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians		114	120	64.2	LOS F	0.2	0.2	0.96	0.96	236.5	223.9	0.95

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

MOVEMENT SUMMARY

Site: 101 [2032 + App PPs AM Pac-Gordon (Site Folder: 2032 + App PPs)]

PH: 730-830
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	3	0	3	0.0	0.326	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.2
2	T1	1716	95	1806	5.5	0.326	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1719	95	1809	5.5	0.326	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
East: Gordon Avenue														
4	L2	89	1	94	1.1	0.193	10.9	LOS A	0.7	4.7	0.68	0.85	0.69	27.9
Approach		89	1	94	1.1	0.193	10.9	LOS A	0.7	4.7	0.68	0.85	0.69	27.9
North: Pacific Highway														
7	L2	106	1	112	0.9	0.497	5.7	LOS A	0.0	0.0	0.00	0.07	0.00	44.8
8	T1	2558	75	2693	2.9	0.497	0.2	LOS A	0.0	0.0	0.00	0.02	0.00	59.2
Approach		2664	76	2804	2.9	0.497	0.4	NA	0.0	0.0	0.00	0.02	0.00	58.4
West: Fehon Road														
10	L2	3	0	3	0.0	0.005	7.6	LOS A	0.0	0.1	0.51	0.61	0.51	43.8
Approach		3	0	3	0.0	0.005	7.6	LOS A	0.0	0.1	0.51	0.61	0.51	43.8
All Vehicles		4475	172	4711	3.8	0.497	0.5	NA	0.7	4.7	0.01	0.03	0.01	58.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2032 + App PPs PM Pac-Gordon (Site Folder: 2032 + App PPs)]

PH: 1645-1745
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	6	0	6	0.0	0.464	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
2	T1	2504	45	2636	1.8	0.464	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach		2510	45	2642	1.8	0.464	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.6
East: Gordon Avenue														
4	L2	91	0	96	0.0	0.140	8.1	LOS A	0.5	3.5	0.54	0.77	0.54	31.0
Approach		91	0	96	0.0	0.140	8.1	LOS A	0.5	3.5	0.54	0.77	0.54	31.0
North: Pacific Highway														
7	L2	73	0	77	0.0	0.365	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	45.0
8	T1	1889	50	1988	2.6	0.365	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.4
Approach		1962	50	2065	2.5	0.365	0.3	NA	0.0	0.0	0.00	0.02	0.00	58.7
West: Fehon Road														
10	L2	4	0	4	0.0	0.009	10.7	LOS A	0.0	0.2	0.67	0.75	0.67	40.8
Approach		4	0	4	0.0	0.009	10.7	LOS A	0.0	0.2	0.67	0.75	0.67	40.8
All Vehicles		4567	95	4807	2.1	0.464	0.3	NA	0.5	3.5	0.01	0.03	0.01	58.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 163 [2032 + Cum Dev Traffic AM Pac-Mow (Site Folder: 2032 + Cum Dev Traffic)]

PH: 730-830
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	133	8	140	6.0	0.605	37.8	LOS C	24.5	179.8	0.81	0.76	0.81	26.7
2	T1	1395	77	1468	5.5	0.605	25.0	LOS B	28.1	206.1	0.74	0.67	0.74	37.9
3	R2	253	15	266	5.9	* 1.162	230.2	LOS F	18.1	133.5	1.00	1.38	2.33	8.5
Approach		1781	100	1875	5.6	1.162	55.1	LOS D	28.1	206.1	0.78	0.78	0.97	25.4
East: Mowbray Rd														
4	L2	311	14	327	4.5	0.736	35.4	LOS C	17.3	125.3	0.96	0.85	0.97	30.6
5	T1	479	10	504	2.1	0.736	37.2	LOS C	25.3	180.3	0.88	0.78	0.88	16.0
6	R2	132	10	139	7.6	0.736	74.1	LOS F	9.7	72.7	1.00	0.86	1.11	11.7
Approach		922	34	971	3.7	0.736	41.8	LOS C	25.3	180.3	0.93	0.81	0.95	20.9
North: Pacific Hwy														
7	L2	267	7	281	2.6	* 1.172	206.7	LOS F	119.1	851.7	1.00	1.51	2.15	4.4
8	T1	2478	63	2608	2.5	* 1.172	215.8	LOS F	140.0	1001.3	1.00	1.75	2.14	9.6
Approach		2745	70	2889	2.6	1.172	214.9	LOS F	140.0	1001.3	1.00	1.72	2.14	9.1
West: Mowbray Rd														
10	L2	174	8	183	4.6	0.446	55.2	LOS D	10.8	78.4	0.91	0.81	0.91	13.2
11	T1	901	21	948	2.3	* 1.080	158.0	LOS F	55.4	395.2	1.00	1.51	1.84	4.7
Approach		1075	29	1132	2.7	1.080	141.4	LOS F	55.4	395.2	0.99	1.40	1.69	5.3
All Vehicles		6523	233	6866	3.6	1.172	134.7	LOS F	140.0	1001.3	0.93	1.28	1.58	11.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	24	25	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4 Full	23	24	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians	120	126	64.2	LOS F	0.2	0.2	0.96	0.96	236.3	223.6	0.95

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

MOVEMENT SUMMARY

Site: 163 [2032 + Cum Dev Traffic PM Pac-Mow (Site Folder: 2032 + Cum Dev Traffic)]

PH: 1645-1745
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacifc Hwy														
1	L2	246	1	259	0.4	0.922	67.7	LOS E	48.9	345.3	1.00	1.03	1.20	19.6
2	T1	2030	32	2137	1.6	0.922	49.4	LOS D	67.5	479.1	0.97	1.00	1.11	28.0
3	R2	266	2	280	0.8	0.663	72.0	LOS F	9.5	67.0	1.00	0.82	1.04	21.2
Approach		2542	35	2676	1.4	0.922	53.5	LOS D	67.5	479.1	0.97	0.98	1.11	26.2
East: Mowbray Rd														
4	L2	321	13	338	4.0	* 1.038	114.2	LOS F	42.9	308.9	1.00	1.22	1.66	13.5
5	T1	805	11	847	1.4	* 1.038	118.9	LOS F	76.2	539.8	1.00	1.35	1.61	5.9
6	R2	138	2	145	1.4	0.582	67.0	LOS E	9.5	67.4	0.99	0.81	0.99	12.7
Approach		1264	26	1331	2.1	1.038	112.0	LOS F	76.2	539.8	1.00	1.26	1.55	8.8
North: Pacific Hwy														
7	L2	207	2	218	1.0	1.067	125.1	LOS F	70.7	503.7	1.00	1.27	1.71	6.5
8	T1	1920	49	2021	2.6	* 1.067	135.1	LOS F	85.8	613.5	1.00	1.42	1.71	13.8
Approach		2127	51	2239	2.4	1.067	134.1	LOS F	85.8	613.5	1.00	1.40	1.71	13.1
West: Mowbray Rd														
10	L2	268	7	282	2.6	0.722	61.3	LOS E	18.2	130.6	0.99	0.86	1.01	12.3
11	T1	680	7	716	1.0	0.862	66.6	LOS E	25.9	183.2	1.00	0.98	1.17	10.1
Approach		948	14	998	1.5	0.862	65.1	LOS E	25.9	183.2	1.00	0.95	1.12	10.7
All Vehicles		6881	126	7243	1.8	1.067	90.8	LOS F	85.8	613.5	0.99	1.16	1.38	15.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Pacifc Hwy												
P1	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	241.4	230.4	0.95
East: Mowbray Rd												
P2	Full	22	23	64.2	LOS F	0.1	0.1	0.96	0.96	234.8	221.8	0.94
North: Pacific Hwy												
P3	Full	53	56	64.3	LOS F	0.2	0.2	0.96	0.96	236.4	223.8	0.95
West: Mowbray Rd												

P4	Full	17	18	64.2	LOS F	0.1	0.1	0.96	0.96	232.3	218.5	0.94
All Pedestrians		114	120	64.2	LOS F	0.2	0.2	0.96	0.96	236.5	223.9	0.95

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

MOVEMENT SUMMARY

Site: 101 [2032 + Cum Dev Traffic AM Pac-Gordon (Site Folder: 2032 + Cum Dev Traffic)]

PH: 730-830
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	3	0	3	0.0	0.326	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.2
2	T1	1716	95	1806	5.5	0.326	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1719	95	1809	5.5	0.326	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
East: Gordon Avenue														
4	L2	164	1	173	0.6	0.323	11.1	LOS A	1.3	9.4	0.69	0.90	0.84	27.6
Approach		164	1	173	0.6	0.323	11.1	LOS A	1.3	9.4	0.69	0.90	0.84	27.6
North: Pacific Highway														
7	L2	178	1	187	0.6	0.511	5.7	LOS A	0.0	0.0	0.00	0.12	0.00	44.3
8	T1	2558	75	2693	2.9	0.511	0.2	LOS A	0.0	0.0	0.00	0.03	0.00	58.9
Approach		2736	76	2880	2.8	0.511	0.5	NA	0.0	0.0	0.00	0.04	0.00	57.7
West: Fehon Road														
10	L2	3	0	3	0.0	0.005	7.6	LOS A	0.0	0.1	0.51	0.61	0.51	43.8
Approach		3	0	3	0.0	0.005	7.6	LOS A	0.0	0.1	0.51	0.61	0.51	43.8
All Vehicles		4622	172	4865	3.7	0.511	0.7	NA	1.3	9.4	0.02	0.06	0.03	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2032 + Cum Dev Traffic PM Pac-Gordon (Site Folder: 2032 + Cum Dev Traffic)]

PH: 1645-1745
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Pacific Highway														
1	L2	6	0	6	0.0	0.464	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
2	T1	2504	45	2636	1.8	0.464	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach		2510	45	2642	1.8	0.464	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.6
East: Gordon Avenue														
4	L2	165	0	174	0.0	0.235	7.9	LOS A	0.9	6.2	0.54	0.78	0.55	31.3
Approach		165	0	174	0.0	0.235	7.9	LOS A	0.9	6.2	0.54	0.78	0.55	31.3
North: Pacific Highway														
7	L2	151	0	159	0.0	0.380	5.6	LOS A	0.0	0.0	0.00	0.14	0.00	44.3
8	T1	1889	50	1988	2.6	0.380	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.0
Approach		2040	50	2147	2.5	0.380	0.5	NA	0.0	0.0	0.00	0.04	0.00	57.6
West: Fehon Road														
10	L2	4	0	4	0.0	0.009	10.7	LOS A	0.0	0.2	0.67	0.75	0.67	40.8
Approach		4	0	4	0.0	0.009	10.7	LOS A	0.0	0.2	0.67	0.75	0.67	40.8
All Vehicles		4719	95	4967	2.0	0.464	0.5	NA	0.9	6.2	0.02	0.05	0.02	57.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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