



ptc.

26th March 2026

**601 Pacific Highway,  
St Leonards  
Transport Impact  
Assessment  
SSD-85848713**

For: Stockland Development Pty Ltd

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# 1. Introduction

This Transport Impact Assessment (TIA) has been prepared by **ptc.** and is submitted to the Department of Planning, Housing and Infrastructure (DPHI) in support of a State Significant Development Application (SSDA) (SSD-85848713) and concurrent rezoning proposal for a new mixed-use development at 601 Pacific Highway, St Leonards (the site).

The proposal seeks consent for the following:

- An amendment to the North Sydney Local Environmental Plan 2013 (NLEP 2013) to rezone the site from E2 Commercial Centre to MU1 Mixed Use and to amend the minimum non-residential floor space ratio development standard under Clause 4.4A from 20:1 to 1:1.
- Demolition of the existing 14 storey commercial office building that is currently on the site.
- Site excavation, remediation and other preparatory works.
- Construction and operation of a new 52 storey (RL264.50) mixed use shop top housing development, with a FSR of 20:1 (maximum GFA of 56,880m<sup>2</sup>), comprising:
  - 538 dwellings including 508 Build-to-Sell apartments and 30 Affordable Housing apartments across a mix of apartment typologies.
  - A contribution of 5% of the residential GFA toward Affordable Housing.
  - Retail and commercial land uses at the ground and podium levels.
  - Internal and external residential amenities provided throughout the building.
  - Six levels of basement parking, comprising a total of 300 car spaces, motorcycle parking, bicycle parking, loading bays, waste areas, plant, and back of house.
- Vehicular access to the basement via Atchison Street.
- Landscaping and Public Domain works.
- Reticulation of site services and infrastructure (electricity, telecommunication, water, and sewer connections).

This TIA has been prepared to address the following relevant Secretary’s Environmental Assessment Requirements (SEARs) set out in Table 1.

Table 1: SEARs Requirements

<b>SEARs Requirement</b>	<b>Report Section / Response</b>
<b>9. Transport</b>	
If the construction of the development would cause interruptions to regular pedestrian and transport routes (including public transport, active transport or general traffic), a preliminary Construction Traffic (or Transport) Management Plan (CTMP) should be prepared as part of the TIA to mitigate any such impacts.	Refer to Section 7 for the preliminary CTMP. This CTMP outlines high level considerations relevant for the SSDA submission in regard to expected construction activities.
Given Mitchell Street is a shared zone, vehicular access using Atchison Street (a local road) must be considered to demonstrate consistency with Section 2.119 of State	Vehicular access to the development site is proposed via Atchison Street. Refer to Section 5.

Environmental Planning Policy (Transport and Infrastructure) 2021.	
No vehicular access to/from the Pacific Highway.	Refer to Section 5. Vehicular access proposed from Atchison Street.
Transport Impact Assessment (TIA) to be prepared in accordance with the Guide to Transport Impact Assessment (GTIA). GTIA replaces the Guide to Traffic Generating Developments and can be found at this link. TIA to demonstrate impacts of the development on the state classified road network and impacts from local road connections with the state classified road network caused by increased vehicular, bus and pedestrian/active transport movements. Mitigation measures to address any impacts must be identified.	The GTIA has been used for assessment throughout this TIA. Refer to Section 3 for details of traffic modelling (SIDRA) to evaluate the impact of the development traffic generation on the local road network.
Prepare detailed traffic modelling (e.g. SIDRA) for the potential impact on the existing and proposed road network with an existing base and a +10 years with background growth scenarios, with and without the proposed development. Modelling shall: <ul style="list-style-type: none"> <li>- Be based on current traffic counts</li> <li>- Ensure the base model is calibrated with on-site observations (e.g. queue lengths, delays). Details on the calibration undertaken must be provided</li> <li>- Detail any defaults that have been changed, along with supporting justification for each change</li> <li>- Electronic copies of all modelling files are to be provided and be made available to TfNSW.</li> </ul>	Refer to Section 3 for traffic modelling (SIDRA). Traffic counts taken from 2025. Base model calibration has been undertaken. No SIDRA defaults have been changed.
Address the need for the current 250 car parking spaces given the proximity of rail, Metro and bus network. Consider a mode shift to public and active transport modes.	The latest development yield proposes 290 residential, 8 commercial and 2 courier car parking spaces. This falls within the provision of parking as outlined in the DCP. Provision of car parking spaces for residential land use does not inherently lead to high traffic generation. Nearby public and active transport links are identified and found to be excellent, which will be beneficial in forming the GTP strategies to shift travel mode. Refer to Section 6 and Appendix 5. Ultimately the parking provision meets the requirements of the relevant planning control (the Council DCP) in regard to quantity.
Transport Orientated Development design standards shall be considered for bicycle parking and end of trip facilities, including layout and security of bicycles. Consider: <ul style="list-style-type: none"> <li>- Australian Standard AS 2890.3:2015 Parking Facilities Part 3: Bicycle Parking Facilities</li> </ul>	Refer to Section 4.2. Bicycle parking is proposed in accordance with AS2890.3.
Consider NSW Futures and NSW Active Transport Strategy	Refer to Section 6 for the GTP.
Prepare a Green Travel Plan (GTP) demonstrating a commitment to sustainable transport and modal shift. Consider preparing a Travel Access Guide (TAG) as an appendix in the GTP. More information to assist in the preparation of a GTP can be found at the following link - <a href="https://www.mysydney.nsw.gov.au/travelchoices/tm#develop">https://www.mysydney.nsw.gov.au/travelchoices/tm#develop</a> .	Refer to Section 6 for the GTP. This GTP outlines the travel opportunities surrounding the site and proposes strategies to promote sustainable travel methods.

## 1.1. The Site

The site is located on Cammeraygal country at 601 Pacific Highway, St Leonards within North Sydney (LGA). The site is legally described as Lot 71 in DP749690 and has a total area of 2,844m<sup>2</sup>. The site is 4.5 km north of the Sydney CBD, 3 km from the North Sydney CBD, and within proximity to the centres of St Leonards, Chatswood, and Macquarie Park. The site is located 350 metres (walking distance) from St Leonards train station and approximately 400m (walking distance) from the Crows Nest Metro station.

A site aerial and location plan is provided in Figure 1.

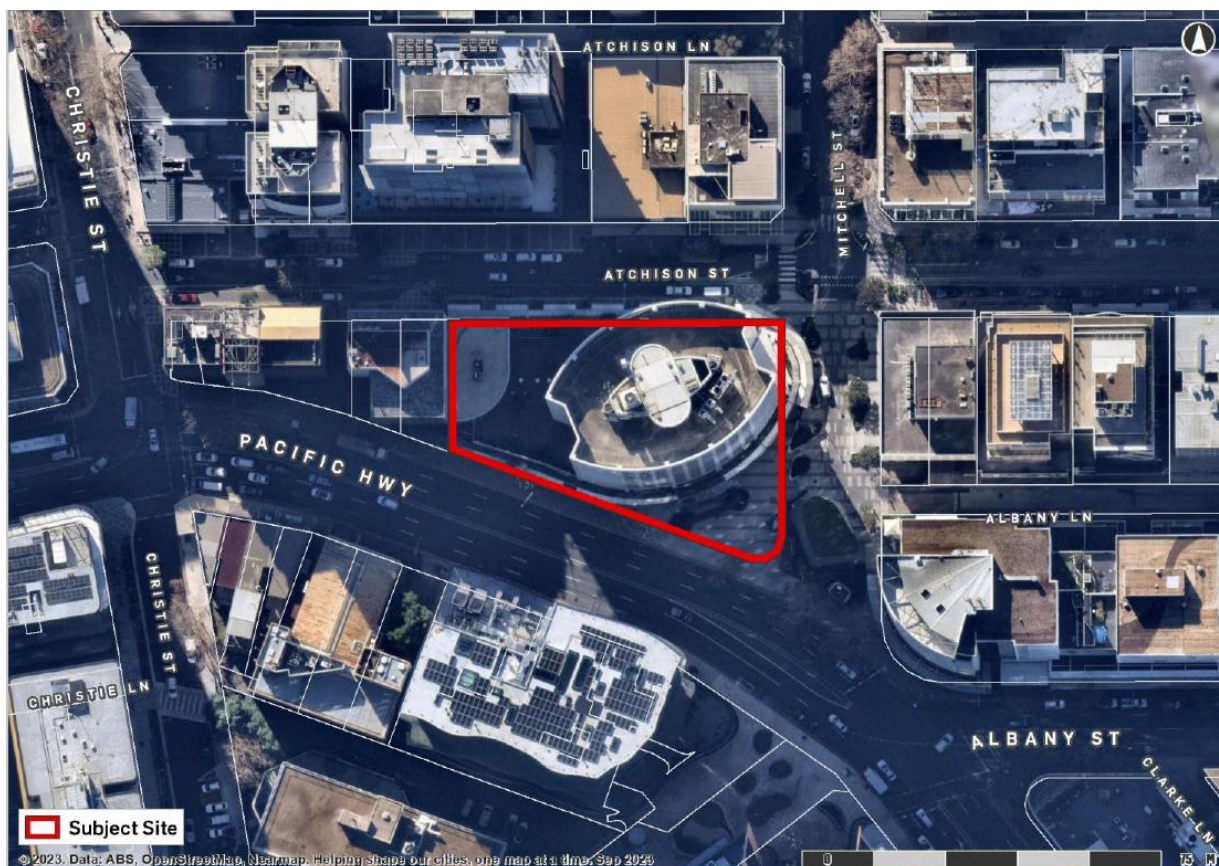


Figure 1: Site Location (Urbis)

## 1.2. Site Context

601 Pacific Highway is located within the North Sydney Council local government area and is situated in a well-established urban setting, surrounded by a mix of commercial, recreational, and mixed-use land uses. With reference to the NSW Planning Portal Spatial Viewer, the land zoning for the site is Commercial Centre (E2), and the immediate surrounding areas are categorised as follows:

- Mixed Use (MU1) to the east and south
- Public Recreation (RE1) to the east
- Commercial Centre (E2) to the west.

The land use of the development site is illustrated in Figure 2 below.



Figure 2: Local Land Use Map (Source: ePlanning Spatial Viewer)

### 1.3. Current Site Use

The existing site use currently consists of:

- A 14-storey commercial office building, which can be seen in Figure 1.

The existing traffic generation is considered in later sections of this report for assessing the traffic implications of the proposed development.

### 1.4. Development Planning Control

The site is within the North Sydney Council area, and as such is subject to the Council Local Environmental Plan (LEP) 2013 and Development Control Plan (DCP).

The DCP supports the LEP by providing additional objectives and development controls to enhance the function and appearance of development in St Leonards area. The development controls include storey limits, setbacks, urban design, amenity, landscaping, access and parking.

Specifically, the LEP provides the maximum car parking provision rates for various land uses and vehicle types. The development proposal has been reviewed against the LEP later in this report.

## 2. Transport Facilities

### 2.1. Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- State Roads Freeways and Primary Arterials (TfNSW managed)
- Regional Roads Secondary or sub arterials (Council managed, part funded by State)
- Local Roads Collector and local access roads (Council managed)

The road network classification map illustrates the site's location in relation to surrounding roads, as shown in Figure 3.

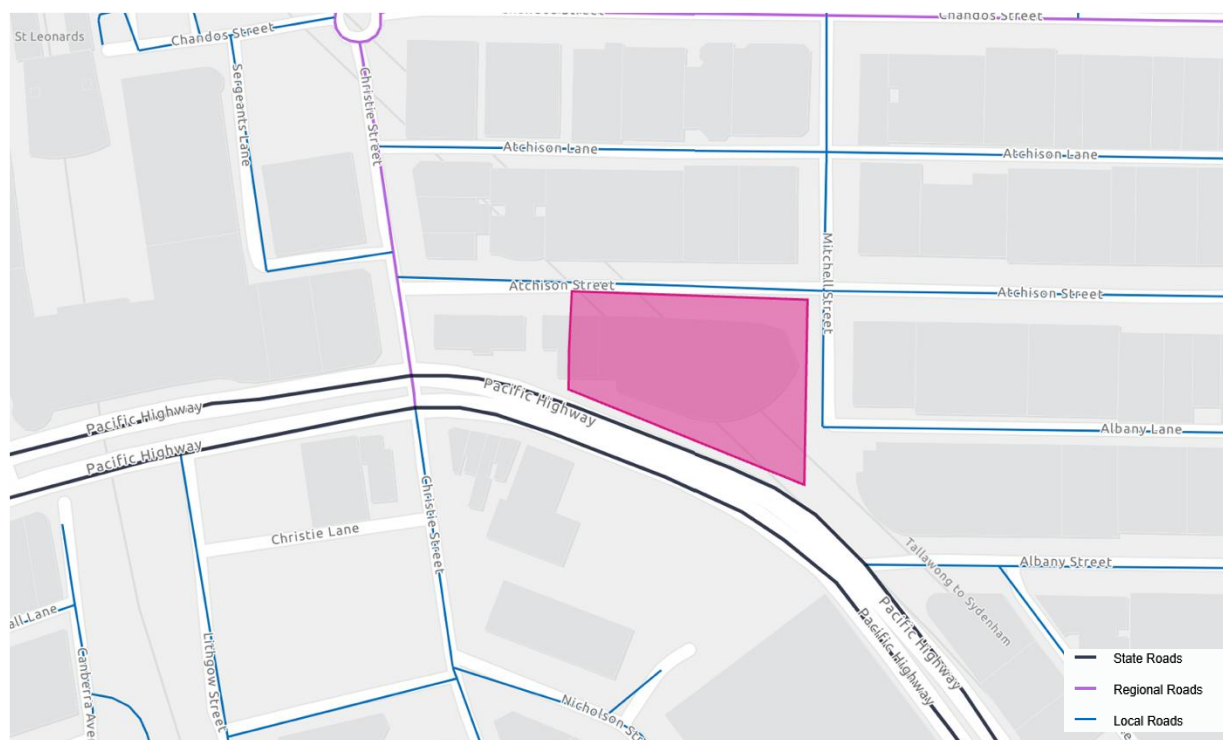


Figure 3: Road classification of surrounding network

Overviews of the main surrounding roads can be seen below.

<b>Pacific Highway</b>	
Road Classification	State Road
Alignment	East – West / Southeast – Northwest
Number of Lanes	3 lanes in each direction
Carriageway Type	Divided by raised median
Carriageway Width	17.5 m
Speed Limit	60 km/h
School Zone	No
Parking Controls	1P (Weekday 10am-3pm and weekend 8:30am-12:30pm) and no stopping (3pm-7pm)
Forms Site Frontage	Yes



Figure 4: Pacific Highway - Aerial Image (source: Nearmap)



Figure 5: Pacific Highway facing Northeast to Christie Street (Source: Google Street View, 2024)

<b>Mitchell Street</b>	
Road Classification	Local Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Undivided to Shared Zone
Carriageway Width	5 m
Speed Limit	10 km/h
School Zone	No
Parking Controls	No parking
Forms Site Frontage	Yes



Figure 6: Mitchell Street (rotated) - Aerial Image (source: Nearmap)



Figure 7: Mitchell Street facing North to Atchison Street (Source: Google Street View, 2021)

<b>Atchison Street</b>	
Road Classification	Local Road
Alignment	East - West
Number of Lanes	1 lane in one direction (East)
Carriageway Type	Undivided
Carriageway Width	3.3 m
Speed Limit	50 km/h
School Zone	No
Parking Controls	2P (Weekdays 8:30am - 6pm and weekends 8:30am – 12:30pm)
Forms Site Frontage	Yes

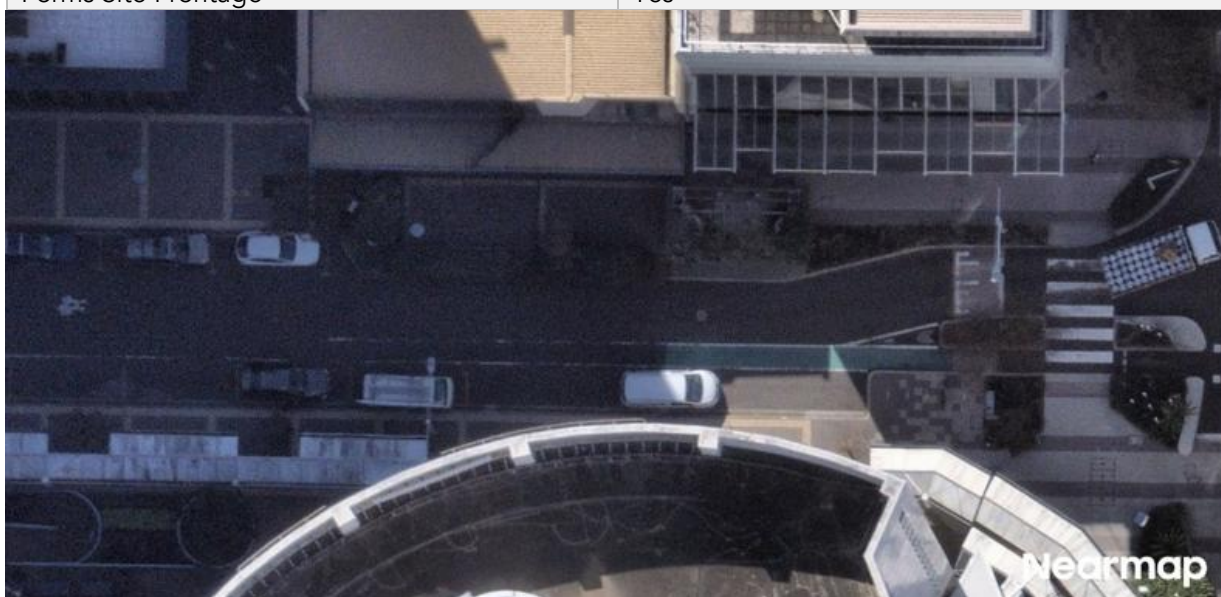


Figure 8: Atchison Street - Aerial Image (source: Nearmap)



Figure 9: Atchison Street facing East to Mitchell Street (Source: Google Street View, 2021)

<b>Christie Street</b>	
Road Classification	Local Road
Alignment	North - South
Number of Lanes	2 lanes in both directions (for the start)
Carriageway Type	Undivided
Carriageway Width	12.4 m
Speed Limit	50 km/h
School Zone	No
Parking Controls	No stopping
Forms Site Frontage	No



Figure 10: Christie Street (rotated) - Aerial Image (source: Nearmap)



Figure 11: Christie Street facing North to Atchison Street (Source: Google Street View, 2021)

## 2.2. Public Transport

The NSW Planning Guidelines for Walking and Cycling (2004) suggest that an 800-metre (10-minute walk) catchment is an acceptable walking distance for accessing public transport. The site has been reviewed for its accessibility to existing public transport options, see Figure 12.



Figure 12: Public transport within walking catchment of the site

### 2.2.1. Bus Services

Public bus services operate along Pacific Highway and surrounding streets, with the nearest stop located approximately 100 metres from the site. These services provide direct connections to key destinations including St Leonards Station, North Sydney CBD, and surrounding residential and commercial areas. These public transport options significantly enhance the accessibility of the site for both staff and visitors.

Key bus routes servicing the area include:

Table 2: Bus Services

Bus Route	Route Description	Service Frequency (Peak)	Service Frequency (Off-Peak)
114	Balmoral - Royal North Shore Hospital	~10-20 min	~30-60 min
119	Gore Hill - North Sydney Station (Loop Service)	~20-30 min	~30-60 min
144	Manly - Chatswood via St Leonards	~10-15 min	~20-30 min

252	North Sydney -Gladesville	~15–20 min	~30 min
254	McMahons Point - Riverview via North Sydney	~30 min	~30–60 min
265	North Sydney - Lane Cove via Crows Nest	~20–30 min	~30–60 min
267	Chatswood - Greenwich via Crows Nest	~30 min	~30–60 min
286	Milsons Point - Denistone East via North Sydney & St Leonards	~20–30 min	~30–60 min
287	Milsons Point - Ryde via North Sydney & St Leonards	~20–30 min	~30–60 min
290	City Erskine St - Epping via North Sydney (Night Service)	Night only	Night only
291	McMahons Point - Epping via North Sydney	~20–30 min	~30–60 min

### 2.2.2. Train and Metro Services

The site is located within a short walking distance of the local rail and metro network. The property is approximately 300–350 metres (about 4–5 minutes’ walk) from St Leonards Station.

St Leonards Station is served by the T1 North Shore Line, which provides frequent suburban train services connecting the Lower North Shore with the Sydney CBD and further north to Hornsby and Berowra (and intercity connections beyond). Services operate at high frequency in peak periods and provide convenient access to CBD stations such as Wynyard, Town Hall and Central.

At Central Station passengers can interchange with multiple Sydney Trains lines (including the T2, T3, T4 and T8 services shown on the network) as well as NSW TrainLink intercity services, supporting efficient travel across metropolitan Sydney and to regional destinations.

In addition, Crows Nest Metro Station on the Sydney Metro City & Southwest line is within walking distance of the site (approximately 350–400 metres, ~4–6 minutes’ walk). The Metro provides turn-up-and-go, high-frequency services (metro services run every few minutes in peak periods), connecting the Lower North Shore with Chatswood, Barangaroo, Martin Place, Central and beyond.

Together, St Leonards Station, Crows Nest Metro and the frequent Pacific Highway bus services in the immediate area deliver strong multimodal connectivity for the site. The Sydney Trains and Sydney Metro service routes are illustrated in Figure 13.

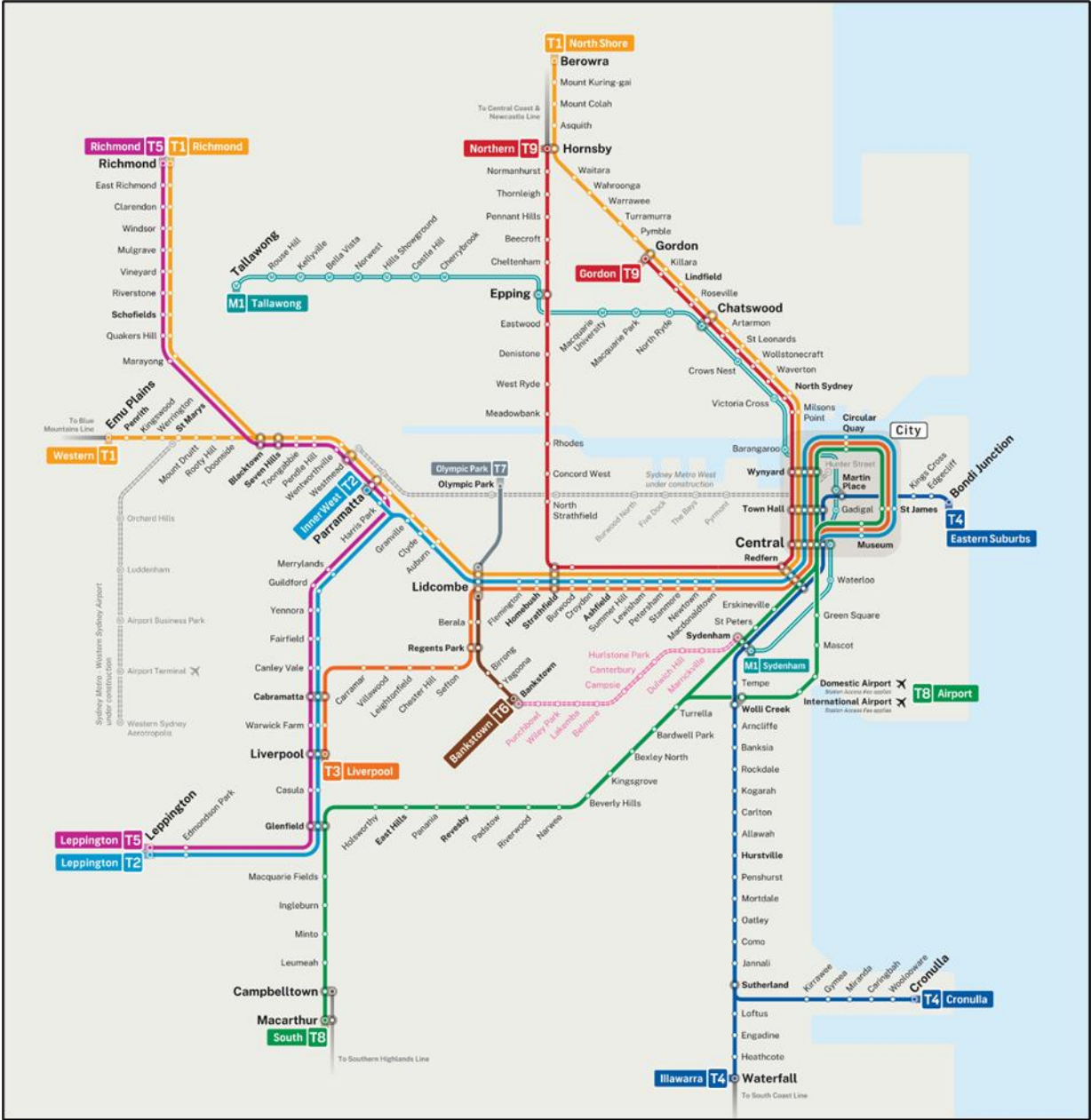


Figure 13: Train Services (Source: TfNSW Trip Planner)

The frequency of peak hour services and operating hours for St Leonards Station and Crows Nest Metro can be seen in Table 3 and Table 4, respectively.

Table 3: Train Services

<b>Time Period</b>	<b>Line</b>	<b>Direction</b>	<b>Service Frequency</b>	<b>Operating Hours</b>
<b>Early Morning</b>	T1 North Shore	To Central, Town Hall & Bondi Junction	Every 15–20 min	4:30 AM – 6:30 AM
<b>Early Morning</b>	T9 Northern	To Strathfield & Hornsby	Every 15–20 min	4:30 AM – 6:30 AM
<b>Weekday Peak</b>	T1 North Shore	To Central, Town Hall & Bondi Junction	Every 3–6 min	6:30 AM – 9:30 AM & 4:00 PM – 7:00 PM
<b>Weekday Peak</b>	T9 Northern	To Strathfield & Hornsby	Every 6–10 min	6:30 AM – 9:30 AM & 4:00 PM – 7:00 PM
<b>Weekday Off-Peak</b>	T1 North Shore	To Central, Town Hall & Bondi Junction	Every 8–12 min	9:30 AM – 4:00 PM
<b>Weekday Off-Peak</b>	T9 Northern	To Strathfield & Hornsby	Every 10–15 min	9:30 AM – 4:00 PM
<b>Evening/Night</b>	T1 North Shore	To Central, Town Hall & Bondi Junction	Every 15 min	7:00 PM – 12:00 AM
<b>Evening/Night</b>	T9 Northern	To Strathfield & Hornsby	Every 20–30 min	7:00 PM – 12:00 AM
<b>Weekend</b>	T1 North Shore	To Central, Town Hall & Bondi Junction	Every 10–15 min	6:00 AM – 12:00 AM
<b>Weekend</b>	T9 Northern	To Strathfield & Hornsby	Every 15–20 min	6:00 AM – 12:00 AM

Table 4: Metro Services

Time Period	Line	Direction	Service Frequency	Operating Hours
<b>Weekday Peak</b>	M1 Metro	To Tallawong (North West) and To Sydenham (South)	Every 4 minutes	Varies (e.g., 6:30 AM - 10:00 AM and 3:00 PM - 7:00 PM)
<b>Weekday Off-Peak</b>	M1 Metro	To Tallawong (North West) and To Sydenham (South)	Every 5 minutes	Between peak periods (e.g., 10:00 AM - 3:00 PM)
<b>Evening/Night &amp; Weekend</b>	M1 Metro	To Tallawong (North West) and To Sydenham (South)	Every 10 minutes	Generally 7:00 PM onwards and all weekend

### 2.3. Pedestrian and Cycling Infrastructure

The site is well-integrated into the surrounding pedestrian and cyclist network, offering safe and convenient access for staff, visitors, and residents who travel by foot or bicycle. The development benefits from its proximity to the newly completed Pacific Highway shared path, a 3.5 km off-road corridor connecting St Leonards to Chatswood, supporting active transport and reducing reliance on private vehicles. Continuous footpaths and signalised crossings along Pacific Highway and Herbert Street enhance walkability and safety.

The site is located in close proximity with St Leonards Station and Crow’s Nest Metro Station, which are both accessible via well-maintained pedestrian routes. These connections are supported by end-of-trip facilities within the building, including secure bike storage, showers, and change rooms. While dedicated cycle lanes are limited immediately adjacent to the site, nearby routes such as those through Gore Hill Freeway and Artarmon provide access to the broader cycling network, encouraging both commuter and recreational cycling.

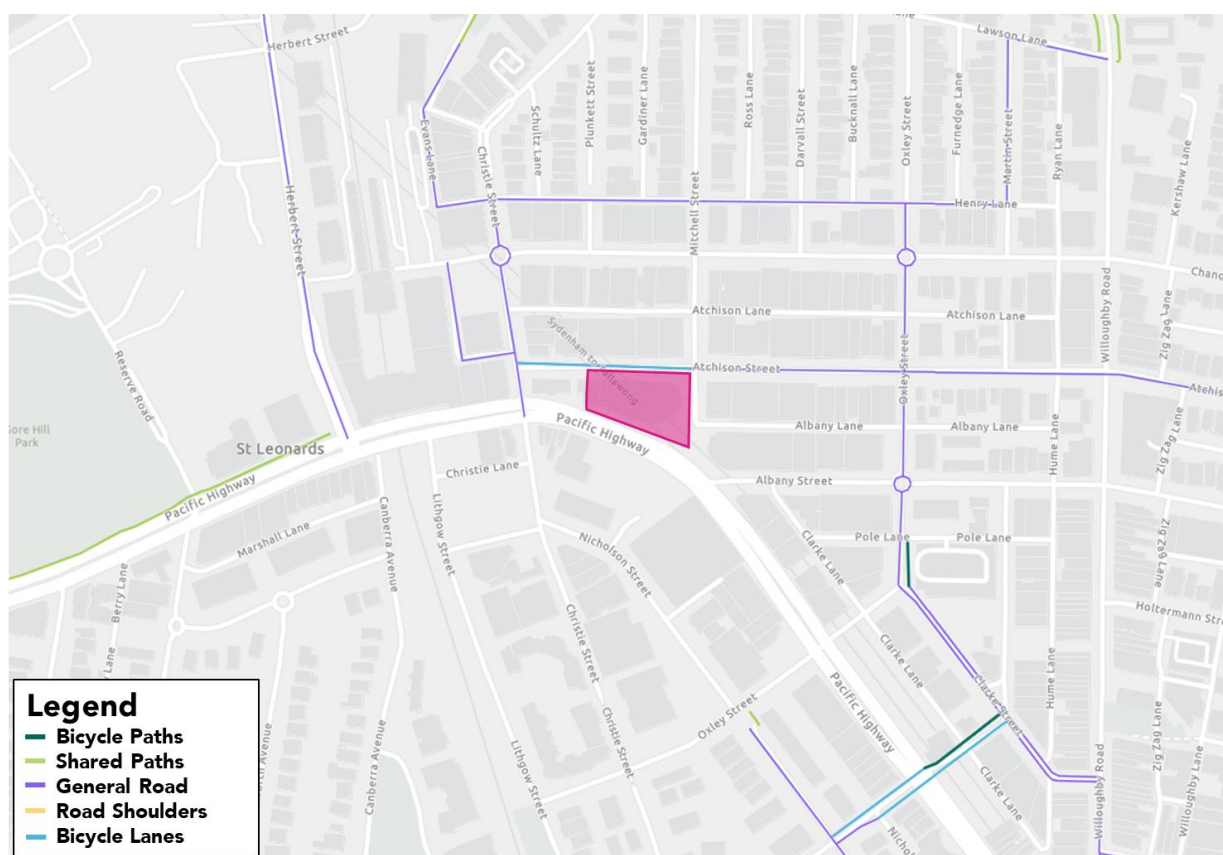


Figure 14: Surrounding Cycling Infrastructure

## 2.4. Existing Traffic Conditions

### 2.4.1. Traffic Intersection Surveys

Intersection traffic surveys were undertaken on Wednesday 20 August 2025. The following intersections were surveyed:

- |   |                               |
|---|-------------------------------|
| 1. Pacific Highway / Albany Street                    | 3-leg signalised intersection |
| 2. Pacific Highway / Christie Street                  | 4-leg signalised intersection |
| 3. Sergeants Lane / Christie Street / Atchison Street | 4-leg priority intersection   |
| 4. Atchison Street / Mitchell Street                  | 4-leg priority intersection   |
| 5. Chandos Street / Christie Street                   | 4-leg roundabout intersection |
| 6. Chandos Street / Mitchell Street                   | 3-leg priority intersection   |
| 7. Chandos Street / Oxley Street                      | 4-leg roundabout intersection |
| 8. Albany Street / Oxley Street                       | 4-leg roundabout intersection |
| 9. Oxley Street / Atchison Street                     | 4-leg priority intersection   |

The locations of the surveyed intersections can be seen in Figure 15.



Figure 15: Traffic Survey Intersections

The survey was conducted covering the AM peak (7:00 - 10:00am) and PM peak (3:00 – 6:00pm). Analysis identified the peak hours as 8:15 – 9:15 am and 4:45 – 5:45 pm for the AM and PM peak, respectively.

The stick diagrams for the intersections shown above are provided in Appendix 3 for AM and PM peak hours.

## 3. Traffic Impact Assessment

To evaluate the potential impact of vehicular traffic generated by the proposed development on the surrounding road network, traffic intersection modelling (SIDRA) has been undertaken. The following sub-sections outline the methodology and processes undertaken.

### 3.1. Traffic Generation

#### 3.1.1. Traffic Generation Rates

The following traffic generation rates from the TfNSW Guide to Transport Impact Assessment (GTIA) (TS00085 v1.1) are relevant to the development:

Table 5: Traffic Trip Generation Rates

Land Use	Trip Generation Rate	Notes
Residential – High Density (high public transport accessibility)	AM: 0.66 PM: 0.56	Person trips per dwelling Person trips per dwelling
Residential – High Density Freight and servicing trips <sup>1</sup>	Daily (2026): 0.248 Daily (2036): 0.295	Service vehicle trips per dwelling Service vehicle trips per dwelling
Commercial	AM: 1.69 PM: 1.20	Vehicle trips/100sqm Gross Floor Area Vehicle trips/100sqm Gross Floor Area
Retail	Retail land use considered to be ancillary to the development and not generate any standalone vehicle trips	

The above trip generation rates are utilised in subsequent report sections, with explanation provided where the rates are modified.

#### 3.1.2. Existing Traffic Generation

The existing site contains a 14-storey office building which would generate trips in its own right. The existing site has approximately 12,000sqm of Net Lettable Area (NLA) office space, and 165 car parking spaces within the basement. The basement is accessed via Atchison Street, as was the case with the existing site.

Using the rates identified above, the vehicular trips generated by the existing building can be estimated as follows:

Table 6: Existing Trip Generation

Land Use	Peak Hour	NLA <sup>2</sup>	Trip Generation Rate	Trips Generated
Commercial	AM	12,000sqm	1.69 trips per 100sqm GFA	203
	PM		1.20 trips per 100sqm GFA	144

The existing site, if not redeveloped as part of this SSDA, has the potential to generate 203 trips in the peak hour.

<sup>1</sup> Site is within a neighbourhood centre, defined as an area of significant high-density development e.g. Crows Nest (from Guide to TIA)

<sup>2</sup> Note that NLA excludes common areas of the building such as the lobby, and as such is generally a lesser area than GFA. NLA has been used to calculate the existing commercial trip generation for a conservative assessment.

Traffic survey data has been used to estimate the actual basement entry trip generation, which is believed to be far lower than the trip generation based on the GTIA rates.

Comparing the quantum of vehicles entering Atchison Street from Christie Street with vehicles entering the next upstream intersection (Atchison with Mitchell), the number of trips of the existing site can be inferred. This is possible as there are very limited site accesses located between these two survey points, including the 601 Pacific Highway basement access.

This is measured to be:

- 12 entering trips in the AM peak hour, and
- 6 exiting trips in the PM peak hour.

Refer to the stick diagrams presented in Appendix 3.

As such, the existing site is estimated to have generated 12 trips in the AM and 6 trips in the PM peak hours on the day of the traffic surveys.

### 3.1.3. Development Traffic Generation

The proposed site contains 538 apartments with mixed use retail and commercial contained within a 52-storey building.

Using the rates identified above, the vehicular trips generated by the proposed building can be estimated as follows:

Table 7: Development Trip Generation

Land Use	Peak Hour	Yield	Trip Generation Rate	Trips Generated
Residential	AM	538 units	0.66 person trips per dwelling with 27% car mode share <sup>3</sup>	95
	PM		0.55 person trips per dwelling with 27% car mode share	79
Residential Servicing	AM	538 units	0.295 daily trips per dwelling	13 AM and PM peak hour trips <sup>4</sup>
	PM		0.295 daily trips per dwelling	
Commercial	AM	2,846smq GFA	1.69 trips per 100sqm GFA	8 AM and PM peak hour trips <sup>5</sup>
	PM		1.20 trips per 100sqm GFA	
Retail	AM	666sqm GFA	-	0 trips <sup>6</sup>
	PM		-	

<sup>3</sup> 27% car mode share is the lowest mode share for car presented in the Guide to TIA. This has been adopted on the basis that the development site is in close proximity to two major transport stations (train and metro) and has bus services nearby.

<sup>4</sup> Daily residential servicing trips (156 trips) have been evenly distributed across a 12-hour period to give approximately 13 peak hour trips in both AM and PM hours. The long-term 2036-year rate has been adopted in all scenarios for robust assessment.

<sup>5</sup> Commercial trip generation is capped at 8 in both AM and PM peak hour given the provision of only 8 commercial car spaces in the development basement, used for all day parking by staff.

<sup>6</sup> Retail land use is not provided with parking, and retail land use is considered ancillary to the development. No standalone peak hour vehicle trips expected to be generated by retail.

### 3.1.4. Cumulative Traffic Generation

Desktop research was undertaken using the NSW LEP Tracker, NSW DA Tracker and the NSW Major Projects Portal to identify approved future developments within the locality which may be relevant in the cumulative impact assessment of the proposal. The cumulative impacts associated with the nearby developments found are listed below:

Table 8: Nearby Development Proposals

DA Number	Detail	Traffic Generation
DA297/2023	617 – 621 Pacific Highway, St Leonards	19 trips in both AM and PM peak hours

### 3.1.5. Net Traffic Generation

For assessing the traffic implications of the additional trips generated by the development, the existing land use traffic generation is first subtracted, and then the development traffic generation is added.

The net traffic generation resulting by the development proposal is calculated by comparing the existing traffic generation and the development traffic generation, as presented in Table 9.

Table 9: Net Traffic Generation

Land Use	Peak Hour	Existing Trips (to be subtracted)	Development Trips (to be added)	Net Trip Generation
Residential	AM	0	95	+95
	PM	0	79	+79
Residential Servicing	AM	0	13	+13
	PM	0	13	+13
Commercial	AM	12	8	-4
	PM	6	8	+2
Retail	AM	0	0	0
	PM	0	0	0
<b>Total</b>	<b>AM</b>	<b>12</b>	<b>116</b>	<b>104</b>
	<b>PM</b>	<b>6</b>	<b>100</b>	<b>94</b>

It is important to note that the existing site has the capacity to generate 203 vehicular trips based on the GTIA rates outlined in Section 3.1.2. This is a greater number than the trip generation expected of the proposed development.

## 3.2. Trip Distribution

The trip distribution for the net trips is largely dependent on the road network in the locality, and the characteristic of various land uses during different peak hours. The existing traffic distribution has been referred to when determining the development distribution.

### 3.2.1. Inbound / Outbound Distribution

Based on the characteristics of various land uses during different peak hours, the inbound and outbound trip distribution has been derived, as shown in Table 10, for distributing the development traffic generation.

Table 10: Inbound/Outbound Net Traffic Distribution Proportions

Land use	AM peak		PM peak	
Residential	20% inbound, 80% outbound	19 inbound trips 76 outbound trips	80% inbound, 20% outbound	63 inbound trips 16 outbound trips
Residential Servicing	50% inbound, 50% outbound	6.5 inbound trips 6.5 outbound trips	50% inbound, 50% outbound	6.5 inbound trips 6.5 outbound trips
Commercial	100% inbound, 0% outbound	4 inbound trips 0 outbound trips	0% inbound, 100% outbound	0 inbound trips 2 outbound trips
Retail	n/a	0 inbound trips 0 outbound trips	n/a	0 inbound trips 0 outbound trips
	<b>30 inbound trips, 82.5 outbound trips</b>		<b>70 inbound trips, 24 outbound trips</b>	

### 3.2.2. Development Trip Directional Distribution

The directional trip distribution is derived based on the patterns of traffic movement observed in the survey data. Given the nature of the road network around the site, all vehicles travelling to the site must perform a left turn from Christie Street into Atchison Street, and all vehicles travelling away from the site must travel east along Atchison Street to Mitchell Street.

Refer to Appendix 3 for a stick diagram of the development traffic movements.

## 3.3. Traffic Modelling

In order to determine the performance of the identified key intersections, an assessment has been undertaken using the SIDRA modelling software, a micro-analytical tool for individual intersections and whole-network modelling. Typically, there are three performance indicators used to summarise the performance of an intersection, being:

- Degree of Saturation (DoS) – The total usage of the intersection expressed as a factor of 1, with 1 representing 100% vehicles/capacity (v/c). (e.g. 0.8 = 80% saturation)
- Average Delay – The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- 95% Queue Lengths (Q95) – is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units.
- Level of Service (LoS) – This is a categorization of average delay, intended for simple reference. Transport for NSW adopts the bands as shown in Table 11.

For signalised intersections, the average intersection SIDRA output is reported. For unsignalised intersections, the values corresponding to the worst approach average delay is reported.

Table 11: Level of Service Bands

LoS	Average delay (seconds)	Traffic signals, roundabouts	Give way & stop signs
A	<14	Good operation	
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating 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	>70	Extra capacity required	Extreme delay, major treatment required

### 3.3.1. Modelling Scenarios

For assessing the traffic implications which may be resultant from the development proposal, the following scenarios have been considered for traffic modelling:

Scenarios	Description
Scenario S1-2025	Existing base conditions in 2025
Scenario S2-2025	S1-2025 + proposed development
Scenario S1-2035	Existing base conditions with network traffic scaled to reflect predicted growth in the future (10yrs), inclusive of cumulative traffic from nearby developments
Scenario S2-2035	S1-2035 + proposed development

Note that in the future modelling scenarios, SIDRA optimised cycle times have been introduced to reflect the dynamic nature of SCATS. The cycle time has been fixed at the current cycle length.

Future network growth has been assumed to be 2% per annum, in line with typical TfNSW growth rates.

### 3.3.2. Modelling Calibration

Observations of the traffic queuing and volumes provided in video footage from the day and time of the traffic surveys has been undertaken to confirm that the SIDRA base model performs within reasonable tolerance of the real-world conditions. **ptc.** find that the base model is calibrated adequately and as such is fit for use in future modelling scenarios.

### 3.3.3. Traffic Modelling Results

Table 12: SIDRA Modelling Results Summary – AM Peak Hour

Intersection	Scenarios	LoS	Average Delay (sec)	Highest DoS (v/c)	Highest Q95 (m)	Notes
<b>AM Peak Traffic Modelling Output</b>						
1. Pacific Highway / Albany Street	Scenario S1-2025	B	19.4	0.912	159.9	
	Scenario S2-2025	B	20.3	0.912	160.4	
	Scenario S1-2035	B	26.2	0.803	244.8	
	Scenario S2-2035	B	24.4	0.820	244.8	
2. Pacific Highway / Christie Street	Scenario S1-2025	A	11.7	0.735	252.4	
	Scenario S2-2025	A	11.6	0.737	252.9	
	Scenario S1-2035	F	111.9	1.178	801.4	Note 1
	Scenario S2-2035	F	128.5	1.215	845.3	Note 2
3. Sergeants Lane / Christie Street / Atchison St	Scenario S1-2025	B	27.7	0.559	102.8	
	Scenario S2-2025	C	30.5	0.659	102.8	Note 3
	Scenario S1-2035	F	275.2	1.466	102.8	Note 1
	Scenario S2-2035	F	299.1	1.492	102.8	Note 2
4. Atchison Street / Mitchell Street	Scenario S1-2025	A	7.7	0.028	0.6	
	Scenario S2-2025	A	7.9	0.104	2.5	
	Scenario S1-2035	A	7.8	0.023	0.5	
	Scenario S2-2035	A	7.9	0.088	2.1	
5. Chandos Street / Christie Street	Scenario S1-2025	A	11.7	0.693	34.1	
	Scenario S2-2025	A	14.2	0.780	44.9	
	Scenario S1-2035	B	20.2	0.887	70.6	Note 4
	Scenario S2-2035	C	36.3	0.975	118.5	Note 4
6. Chandos Street / Mitchell Street	Scenario S1-2025	A	11.8	0.084	2.1	
	Scenario S2-2025	A	12.3	0.145	3.8	
	Scenario S1-2035	A	13.2	0.107	2.7	
	Scenario S2-2035	A	13.7	0.170	4.3	
7. Chandos Street / Oxley Street	Scenario S1-2025	A	8.7	0.290	12.3	
	Scenario S2-2025	A	8.9	0.322	14.0	
	Scenario S1-2035	A	9.6	0.363	16.4	
	Scenario S2-2035	A	9.9	0.396	18.3	
8. Albany Street / Oxley Street	Scenario S1-2025	A	11.2	0.528	31.2	
	Scenario S2-2025	A	11.8	0.562	35.5	
	Scenario S1-2035	B	15.4	0.704	56.2	
	Scenario S2-2035	B	16.2	0.715	59.2	
9. Oxley Street / Atchison Street	Scenario S1-2025	A	11.7	0.095	2.4	
	Scenario S2-2025	A	12.3	0.192	5.1	
	Scenario S1-2035	A	12.7	0.112	2.8	
	Scenario S2-2035	A	13.2	0.205	5.3	

Note 1: Failure in this scenario is a result of future network growth, and not the development traffic generated. Note that these future scenarios are limited in their capacity to accurately represent conditions in 10 years' time, and mode share may change given the ever increasing public and active transport networks, which may reduce overall traffic in the road network. The failing approach is the western approach along The Pacific Highway.

Note 2: Failure in this scenario is a result of future network growth, and not the development traffic generated. Additional development traffic added onto this scenario creates an exacerbated SIDRA result.

Note 3: The change from LOS B to LOS C is a result of a minor increase to average delay (2.8 second increase).

Note 4: The values reported in the 10 year scenarios have an increased queue length as a result of extended queues from intersections 2 and 3.

Table 13: SIDRA Modelling Results Summary – PM Peak Hour

Intersection	Scenarios	Average LoS	Average delay (sec)	Highest DoS (v/c)	Highest Q95 (m)	Notes
<b>PM Peak Traffic Modelling Output</b>						
1. Pacific Highway / Albany Street	Scenario S1-2025	B	20.8	0.579	140.3	
	Scenario S2-2025	B	20.8	0.579	140.3	
	Scenario S1-2035	B	25.9	0.696	220.0	
	Scenario S2-2035	B	25.7	0.696	218.5	
2. Pacific Highway / Christie Street	Scenario S1-2025	A	9.0	0.493	127.9	
	Scenario S2-2025	A	9.0	0.500	128.2	
	Scenario S1-2035	B	22.0	0.901	312.1	Note 1
	Scenario S2-2035	B	25.3	0.918	338.2	Note 2
3. Sergeants Lane / Christie Street / Atchison St	Scenario S1-2025	B	28.1	0.469	77.4	
	Scenario S2-2025	C	30.7	0.566	96.0	Note 3
	Scenario S1-2035	D	44.9	0.851	102.8	Note 1
	Scenario S2-2035	D	48.0	0.872	102.8	Note 2
4. Atchison Street / Mitchell Street	Scenario S1-2025	A	7.7	0.034	0.8	
	Scenario S2-2025	A	8.0	0.057	1.4	
	Scenario S1-2035	A	7.7	0.056	1.3	
	Scenario S2-2035	A	7.9	0.080	2.0	
5. Chandos Street / Christie Street	Scenario S1-2025	A	9.2	0.160	5.9	
	Scenario S2-2025	A	10.1	0.236	7.6	
	Scenario S1-2035	A	10.5	0.236	8.7	Note 4
	Scenario S2-2035	A	11.7	0.698	34.0	Note 4
6. Chandos Street / Mitchell Street	Scenario S1-2025	A	10.5	0.082	2.0	
	Scenario S2-2025	A	11.0	0.103	2.6	
	Scenario S1-2035	A	11.3	0.124	3.1	
	Scenario S2-2035	A	12.0	0.151	3.8	
7. Chandos Street / Oxley Street	Scenario S1-2025	A	8.7	0.055	2.1	
	Scenario S2-2025	A	8.8	0.055	2.1	
	Scenario S1-2035	A	10.2	0.079	3.2	
	Scenario S2-2035	A	10.3	0.080	3.2	
8. Albany Street / Oxley Street	Scenario S1-2025	A	9.7	0.420	20.4	
	Scenario S2-2025	A	9.7	0.427	20.9	
	Scenario S1-2035	A	13.3	0.567	36.4	
	Scenario S2-2035	A	13.5	0.576	37.5	
9. Oxley Street / Atchison Street	Scenario S1-2025	A	11.8	0.112	2.8	
	Scenario S2-2025	A	12.5	0.145	3.8	
	Scenario S1-2035	A	13.2	0.176	4.4	
	Scenario S2-2035	A	14.1	0.217	5.7	

Note 1: Failure in this scenario is a result of future network growth, and not the development traffic generated. Note that these future scenarios are limited in their capacity to accurately represent conditions in 10 years' time, and mode share may change given the ever increasing public and active transport networks, which may reduce overall traffic in the road network. The failing approach is the western approach along The Pacific Highway.

Note 2: Failure in this scenario is a result of future network growth, and not the development traffic generated. Additional development traffic added onto this scenario creates an exacerbated SIDRA result.

Note 3: The change from LOS B to LOS C is a result of a minor increase to average delay (2.6 second increase).

Note 4: The values reported in the 10 year scenarios have an increased queue length as a result of extended queues from intersections 2 and 3. The worst approach differs between these two scenarios and as such the reported values have high variance. Refer to Appendix 4.

Based on the SIDRA output, summarised above and presented in full in Appendix 4, it is clear that in the overwhelming majority of cases the development traffic causes no change to LoS. Minor increases to average delays and 95<sup>th</sup> percentile queues are noted, however these are presented as not significant enough to cause a LoS change. The most significant LoS resultant from development traffic in the existing scenario is LoS C, which is considered satisfactory (refer to Table 11).

A primary cause for degradation to LoS between the various scenarios is the overall growth factor applied to represent the base 10-year traffic in the surrounding road network.

Complete SIDRA output can be found in Appendix 4.

## 4. Parking Provision Assessment

The project site lies within the North Sydney Council LGA, hence, in establishing the parking provision requirements, reference is made to the parking provision rates stipulated in the following documents for assessment:

- North Sydney Local Environmental Plan 2024 (LEP 2013)
- North Sydney DCP 2025 Part D Section 4, and the St Leonards / Crows Nest Planning Area DCP

### 4.1. Car Parking

Car parking as stipulated in the North Sydney DCP is to be provided within a maximum permissible quantity. The site falls within a zone identified in the DCP as a “high accessibility area”, and as such, is subject to the following parking rates:

Table 14: Car Parking Provision

Land Use	Yield	Car Parking Rate (spaces per unit/GFA)	Maximum Permissible Parking	Development Proposed Parking
<b>BTS Residential</b>				
Studio	0	0.3 spaces per dwelling	0	
1 bed	195	0.4 spaces per dwelling	78	
2 bed	185	0.7 spaces per dwelling	129	
3 bed	120	1 spaces per dwelling	120	
Penthouse	8	1 spaces per dwelling	8	
<b>Affordable Housing</b>				
Studio	0	0.3 spaces per dwelling	0	
1 bed	22	0.4 spaces per dwelling	8	
2 bed	6	0.7 spaces per dwelling	4	
3 bed	2	1 spaces per dwelling	2	
Penthouse	0	1 spaces per dwelling	0	
<b>Residential Total</b>			<b>349</b>	<b>290</b>
<b>Residential Car Share</b>				<b>4</b>
<b>Non-Residential (Commercial, Retail and Courier)</b>				
Retail	3,512sqm	1 space per 400sqm	8	4
Commercial	GFA	1 space per 400sqm		
Courier	-	-	-	2
<b>Non-Residential Total</b>			<b>8</b>	<b>6</b>
<b>Grand Total</b>			<b>357</b>	<b>300</b>

Therefore, the development meets the requirements of the DCP in regard to car parking provision and thus is deemed acceptable in this regard.

Accessible and adaptable parking is provided for 50% of the adaptable units proposed under the development. That is, 40 adaptable/accessible parking spaces are allocated amongst the 81 adaptable apartments to achieve ~50% of adaptable units being provided with adaptable/accessible parking spaces within the residential basement parking levels.

One accessible parking space is provided for commercial use, which exceeds the minimum provision for a Class 5 land use (commercial), being 1 accessible space per 100 car spaces, as per the NCC.

## 4.2. Bicycle Parking

Bicycle parking within the development is proposed as follows:

Table 15: Bicycle Parking Provision

Land Use	Yield	Bicycle Parking Rate (spaces per unit/area)	Minimum Required Parking	Development Proposed Parking
<b>Residential</b>				
Residential	538	1 spaces per dwelling	538	538
Residential Visitor	538	0.1 spaces per dwelling	54	56
Commercial	2,846sqm	1 space per 150sqm	18	21
Retail	666sqm	1 space per 250sqm	2	
Commercial Visitor	2,846sqm	1 space per 400sqm	7	16
Retail Visitor	666sqm	2+ 1 space per 100sqm over 100sqm	7	

The development proposes bicycle parking in excess of the minimum requirements, which aligns with the goals of the DCP and the strategies proposed in the Green Travel Plan.

Note that the bicycle parking facilities are provided to the following security classes:

- Residential: individual storage cages
- Residential Visitor: secure room within the building (Level 1)
- Commercial and Retail: secure room within the building (Level B1)
- Commercial and Retail Visitor: available in the public domain as hoops

### 4.2.1. End of Trip Facilities

End of trip facilities are provided for both retail and commercial tenants of the development, with facilities proposed within Level B1 of the building. A secure room contains the bicycle parking and lockers for retail and commercial (shared room), at a rate of 1 locker per bicycle space.

End of Trip facilities are required at a rate outlined in the DCP of:

- 1 for up to 10 bicycle spaces
- 2 for the next 10 bicycle spaces
- 2 per 20 bicycle space thereon

The development proposes at least 4 shower/change room inclusive of 1 accessible shower/change room within the End of Trip facilities on Level B1. Thus, the development provides end of trip facilities which are deemed appropriate.

## 4.3. Motorcycle Parking

In alignment with P11 of Section 10.2 of the North Sydney DCP, motorcycle parking is provided at the minimum rate of one motorcycle space per 10 car spaces. The development proposes a total of 298 car parking spaces, and 30 motorcycle spaces, which meets the minimum outlined in the DCP.

#### **4.4. Loading and Servicing Provision**

The development proposes a loading dock on Level B1 which can accommodate

1x 8.8m long MRV, and

1x 10.5m long HRV.

In addition, the development provides

2x B99 Courier Bays on Level B1

In accordance with P3 of Section 10.4 of The North Sydney DCP, a requirement of 2x MRV bays is required for developments in excess of 60 dwellings. This is achieved.

In addition to this, there are up to 6 loading zone parking space on Hutchinson and Mitchell Street, in close proximity (<100m) to the site, which are available for use by the development.

## 5. Access and Car Park Design Assessment

The following section presents an assessment of the proposed development parking and vehicular facilities, with reference to the requirements of

- AS2890.1:2004 (Off-street car Parking),
- AS2890.2:2018 (Off-street Commercial Vehicle Facilities),
- AS2890.3:2015 (Bicycle Parking), and
- AS2890.6:2009 (Off-street Parking for People with Disabilities).

### 5.1. Vehicular Access

Access to the site is provided from Atchison Street via a car park entry ramp. No vehicle access into the site will be provided along the Pacific Highway.

All vehicles shall enter the site via a right turn, and exit the site via a right turn, as a result of the site location along a one-way road (Atchison Street).

The entry ramp can accommodate two-way traffic. Refer to swept path assessment provided in Appendix 2. Furthermore, the design of the vehicular access allows for an exiting vehicle to wait within the site boundary, check for pedestrians making use of the pedestrian sight splay provided in accordance with AS2890, before proceeding to join the road.

In such a way, obstruction to the pedestrian pathway caused by vehicles is not anticipated to occur, which is considered to be a valuable design outcome.

The proposed access ramp into the site has been assessed in relation to width and relevant grades, as follows:

- AS2890.2 requirements for service vehicles:
  - Maximum ramp grades of 1:6.5
  - Maximum transition grades of 1:16 running for at least 7.0m
- AS2890.1 requirements for light vehicles:
  - A 1:20 maximum grade for the first 6m into the site measured from the property boundary. Note that the grade on the exit side of the ramp out from the basement is an average of 5% (1:20) over 7.3 metres, which aligns with the requirements of AS2890 for pedestrian visibility when exiting basements.

For the circulation roadways, AS2890.1 stipulates the following:

- Intersection areas designed for use by one vehicle at a time shall be designed for use by the B99 vehicle;
- Areas in which it is necessary for two vehicles to pass one another shall be designed at least for a B85 vehicle to passing a B99 vehicle; and

- Additional clearance of 300mm to be provided where one side of the roadway is bounded by obstruction over 150mm.

The assessment for the access driveway and loading area circulation has been undertaken using an MRV and 10.5m long Council refuse vehicle. The circulation in the remainder of the carpark has been assessed using a B99 and B85 vehicle with appropriate clearances. Refer to Appendix 2.

## 5.2. Car Park Arrangement

### 5.2.1. Typical Requirements

The car parking arrangements have been assessed against the requirements of AS2890.1:2004, with reference to Class 1 / 1A (residential/employees):

#### Class 1 / 1A (residential/employee) facilities:

- Car Spaces: 2.4m x 5.4m minimum (perpendicular)  
2.1m x 6.2m minimum (parallel)
- Aisle Width: 5.8m (double-sided aisles)

#### Small Cars:

- Car Spaces: 2.3m x 5.0m

All parking spaces have been individually assessed and found to be compliant with the minimum requirements of AS2890.1. All spaces are to meet the clearance requirements (door opening, entry flanges, column locations) of the parking space envelope requirements provided in Figure 5.2 of AS2890.1.

### 5.2.2. Accessible & Adaptable Parking

All accessible parking spaces have been individually assessed against the requirements of AS2890.6. The parking spaces are to be designed based on the following dimensions:

- Accessible Spaces: 2.4m x 5.4m minimum
- Adjacent Shared Bay: 2.4m x 5.4m minimum

All accessible spaces and shared bays have been individually assessed and found to be compliant with the minimum requirements of AS2890.6, with relevant pavement markings and bollards, or the 3.2m wide adaptable parking provision. A minimum height clearance of 2.5m is to be maintained directly above the above-mentioned parking and shared spaces and 2.2m throughout the path of travel.

### 5.2.3. Headroom Clearance

Headroom clearances should be provided in accordance with the minimum requirements of AS2890.1 and AS2890.2.

- A minimum height clearance of 2.2m shall be maintained in all vehicular circulation areas (including motorcycle and bicycle access paths) and above all standard Class 1 / 1A parking bays;
- Minimum 2.5m above all accessible and adaptable spaces and adjacent shared bays;
- Wherever access is required by service vehicles, a minimum clear headroom of 4.5m shall be provided (i.e., within the loading dock and along the entire vehicle access path). This clear

headroom is to be measured to the underside of any overhead obstructions including, but not limited to, utilities, mechanical ducts, sprinklers, lighting or any other overhead fixtures, etc.)

The proposed car park is to provide the minimum height clearance as per the requirements stipulated in the Australian Standards.

#### **5.2.4. Motorcycle Parking**

Approved motorcycle parking spaces shall be provided as per the following requirements of AS2890.1:2004:

- Motorcycle Parking: 2.5m x 1.2m

All motorcycle parking spaces are to be compliant or capable of compliance with the minimum requirements of AS2890.1.

#### **5.2.5. Bicycle Parking**

Approved bicycle parking devices (BPD's) shall be installed as per the following requirements of AS2890.3:2015:

- Horizontal Bicycle Parking: 1.8m x 0.5m
- Vertical Bicycle Parking 1.2m x 0.5m
- Access Aisle: 1.5m

Storage cages used as residential bicycle parking shall have dimensions sufficient to accommodate the bicycle parking envelope (1.8m long and 0.5m wide), and require an aisle of 2.0m.

Double height bicycle parking should have a minimum headroom of 2.7m.

All bicycle parking spaces have been individually assessed and found to be compliant or capable of compliance with the minimum requirements of AS2890.3.

#### **5.2.6. Service Vehicle Parking**

The loading dock has been designed to accommodate up to a 10.5m long heavy rigid vehicle and provides for two service vehicle bays with a turntable. Each service vehicle bay is minimum 3.5m wide, in accordance with AS2890.2, and have been assessed with vehicle tracking. Further, there are two courier bays proposed for B99 car derived vans/utes etc. to supplement the larger vehicle spaces in the loading dock.

## 6. Framework Green Travel Plan

It is expected that the details in this section will be developed further as the project progresses, with a view to implementation of a formalised monitoring and evaluation process to achieve the maximum benefits of a Green Travel Plan (GTP).

### 6.1. What is a Green Travel Plan?

A Green Travel Plan (GTP) is a document that outlines how a development intends to make travel to and from the site safer and more sustainable for occupants and their visitors. The GTP addresses local traffic issues around the site and encourages active, safe and sustainable travel methods, such as walking, cycling, scooting, public transport or car sharing. A GTP correlates with the development's overall aspirations and is a document that is monitored and reviewed regularly.

A GTP is not just the installation of bike racks or provision of end-of-trip facilities. An effective GTP aims to promote and maximise the use of more sustainable modes of travel via a range of actions, promotional campaigns and incentives. The plan includes site management tools that encourage staff and visitors to make more sustainable transport choices. A GTP requires ongoing implementation, monitoring and review. As such, nominating an individual or a team to oversee the implementation of a travel plan is a crucial component of success.

An effective GTP can offer many benefits, such as less congestion on public road networks, as well as health and environmental benefits.

### 6.2. Why is a Green Travel Plan required?

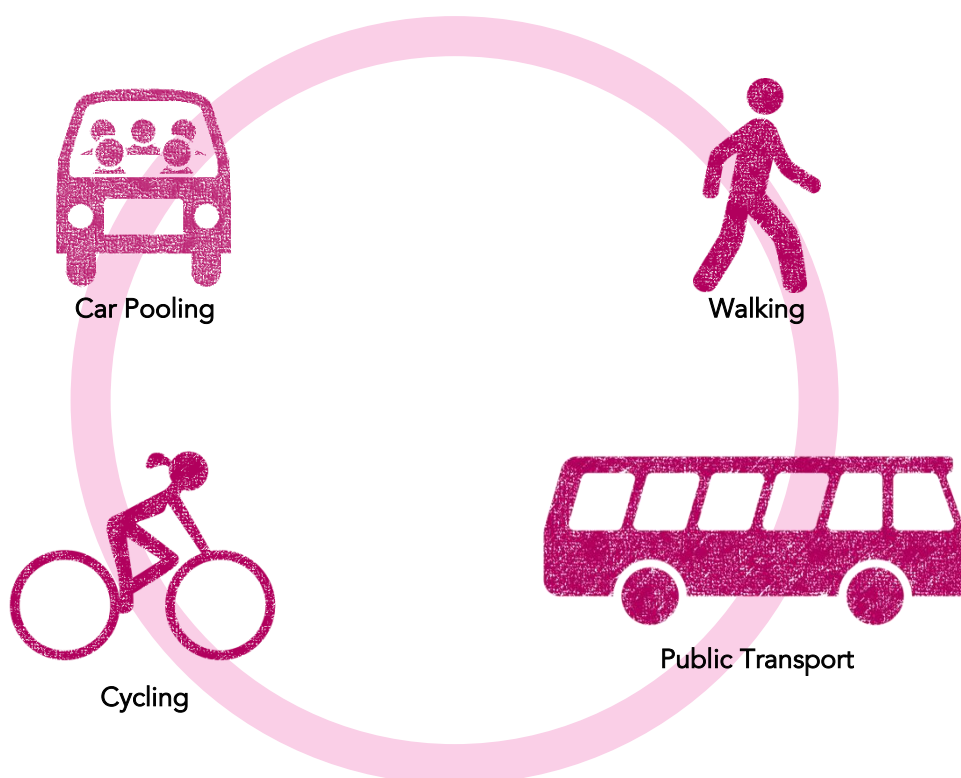
The implementation of a GTP is generally accepted as one of the best ways to increase active travel to and from the subject site. A successful GTP offers many benefits for the community, including:

- Building confidence and improving social interaction by walking and/or cycling;
- Assists in the implementation of health, fitness and well-being programs.
- Improving social interaction with others to be more interested and involved with the precinct as they walk or cycle;
- Improving safety by reducing traffic and local road congestion;
- Improving the environment by reducing air pollution from private vehicles;
- Creating opportunities for healthier lifestyles and more vibrant, cohesive and accessible communities;

It is likely that occupants with a good understanding of active and sustainable modes of transport will follow a healthy and active lifestyle, care about the environment and prioritise location and lifestyle over car ownership.

### 6.3. The Purpose of Green Travel Plan

The purpose of the GTP is to provide a package of measures with the aim of promoting and reducing the reliance on private car usage and encouraging and supporting the uptake of daily business in a more sustainable way. This may be achieved through the review of existing policies and identifying programmes to encourage occupants and visitors to adopt more active and sustainable forms of transport.



This document identifies the following:

- Review of existing public transport infrastructure and future transport options;
- Assessment of existing travel patterns within the area;
- A modal share target for the development;
- A framework to identify and respond to travel demand from the development and surrounding area;
- Strategies to implement prior to and during occupancy and
- The monitoring strategy to track the performance of the GTP.

## **6.4. Relevant Priorities from the NSW State Plan**

- Increase walking and cycling,
- Increase the number of people participating in physical activity,
- Improve health in the community,
- Increase the share of journey-to-work trips on a safe and reliable public transport system,
- Improve the efficiency of the road network,
- Increase the number of jobs closer to home,
- Tackle climate change,
- Improve air quality.

## **6.5. Potential Outcomes**

- Successful negotiations with private transport providers (if necessary) to provide increased public transport services to the precinct.
- Improvements to cycling and walking infrastructure, if required.
- Recommendations for any relevant policy changes will be made to management (e.g. flexible work and work-from-home/hub policies).
- A campaign promoting the health and other benefits of non-car modes of travel will be implemented.
- Monitoring and Evaluation
  - Carpooling use (number of new users)
  - Private car-park usage
  - Feedback from public transport providers
  - Patronage on any new commuter public transport services

## 6.6. Steps to Set Up a Green Travel Plan

To develop a GTP, there are five key steps to follow to commence its operation, as illustrated in Figure 16.

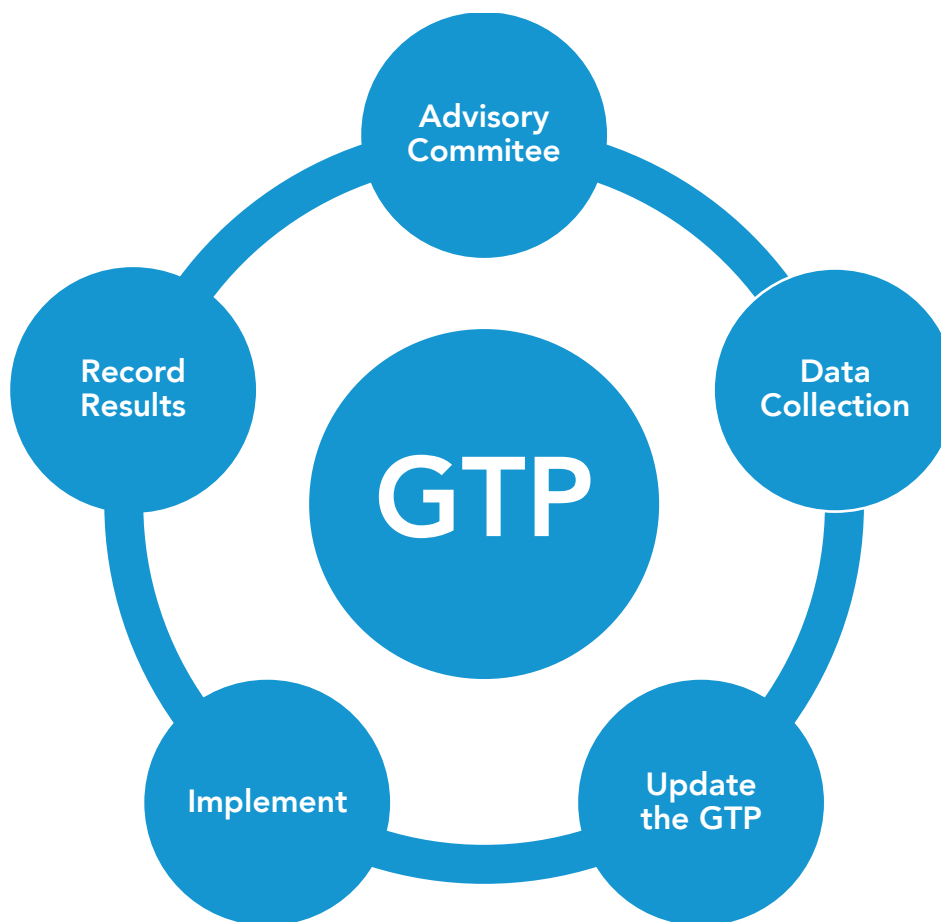


Figure 16: Steps in developing a GTP

### 6.6.1. Step 1 – Set up an Advisory Committee

- Appoint an individual to coordinate specific actions and to track the progress of this work;
- Develop a working group that involves representatives from residents within the development;
- Identify ways in which residents will be involved and informed of the work (e.g. regular articles / social media).

### 6.6.2. Step 2 – Data Collection and Review Existing Situation

As part of the development, it is expected that there will be new residents, employees and visitors travelling to and from the site on a daily basis. To identify how residents and tenants in the development travel to and from the site for work, an initial survey should be conducted to identify the travel behaviour of employees and visitors within six months of the occupation of the development. This may be conducted as an online survey or an intercept survey of those accessing the site.

As a minimum, the following questions should be considered:

- Are you a resident, employee or visitor to the site?

- Did you park on-site today? If so, where?

#### **Tenant Only Questions**

- If you are a resident, do you have an allocated parking space within the site?
- How do you currently travel to work, and the distance to their travel?
- Based on the availability of public transport and other sustainable travel options, which would be their preferred mode of travel?
  - Walk/Run
  - Bicycle
  - Train/Metro
  - Bus
  - Drive car
  - Passenger in car
  - Other
- Is your place of work in an area that is not currently serviced by any of the identified transport options?
- Do you need to drive to work for another reason? Why and how often this would occur (i.e. shift work).

#### **Visitors Only Questions**

- If you are a visitor, where did you travel from today?
- What mode of transport did you use?
- Why did you use this particular mode of transport?

#### **All Users**

- Have you heard of car share? If this was readily available to you, would you use car share if car parking was unavailable?
- If not, what are the barriers to you using car share to travel to and from the site?
- What would make you consider using car share to access the site?
- Do you have any suggestions/recommendations to encourage the uptake of sustainable modes of transport, etc.?

Once the survey findings are available, methods to achieve specific targets can be identified with proposed time frames.

### **6.6.3. Step 3 – Prepare the Green Travel Plan**

Based on the data, an overall vision for the travel modes should be considered with clear objectives. The GTP should be prepared based on these objectives, notably:

- Build a culture that supports active travel by motivating and encouraging the community to get involved.
- Set specific SMART (Specific, Measurable, Achievable, Relevant, Timed) targets.
- Develop an action plan that lists activities and strategies to eliminate the community's barriers to active travel and meet the objectives.
- Estimate the budget required to meet the objectives, identify funding sources, and develop implementation strategies.
- Review and consult with the community.

#### **6.6.4. Step 4- Deliver and Implement**

Once developed, launch the GTP and carry out regular monitoring (every 12 months is recommended) as part of the implementation strategy. Travel mode data should be collected and reviewed each quarter.

#### **6.6.5. Step 5 – Recognise Progress**

The successes of the GTP should be celebrated regularly, for example, at key community events. The plan should regularly be reviewed and include new ideas, targets, and benchmarks.

### **6.7. Existing Travel Mode Share**

A large component of the residents and employees associated with the development are anticipated to adopt public transport as their primary mode of travel as the site has excellent access to the public transport.

As a starting point, it can be estimated that 27% of person trips made per dwelling (for residents) would be made by car. This aligns with the Guide to Transport Impact Assessment (see Section 3).

Given the age of the latest reliable census and journey to work data (2016 as a result of Covid-19 pandemic influence), and the recent addition of nearby Sydney Metro, existing travel mode for the area would not be representative. As such, a travel mode survey should be undertaken within 6 months of occupation to gather more accurate data.

### **6.8. Future Mode Share Targets**

A GTP is not a one-off document – it is a process of ongoing implementation, review, and improvement. As such, setting out the objectives and targets is the first step in the preparation of a GTP. When developing objectives, site context is important.

Targets must be specific, reasonable, and achievable and should be associated with measurable improvement in mode share. They need to be realistic but ambitious and must be time-bound so that progress can be assessed against targets.

Based on the transport network described in Section 2, this section identifies potential travel patterns to and from the new development. It builds on the walking and public transport networks already (or will be) available around the premise, identifying transport modes which may be best suited to meet the travel demand for the site.

It is recommended that the following realistic opening year mode share targets be adopted for the development.

Table 16: Opening year target mode split

Mode	Target Mode Split
Public and Active Transport	73%
Private Vehicles (as driver and passenger)	27%

## 6.9. Proposed Action Items

In developing the GTP, it may not be possible to implement all action items at the same time. Therefore, a staged implementation should be considered. There may be some crucial actions that can be implemented immediately, while others might take longer to plan and develop.

Before implementing any actions, relevant stakeholders must be consulted to approve the changes.

The following travel mode hierarchy is proposed for this GTP:



Figure 17: Mode Hierarchy

There are several actions that can be employed to encourage non-car modes of transport to and from the site. The following sections outline the potential strategies that can be adopted to achieve future transport targets.

### 6.9.1. Walking

Walking is the most space-efficient mode of transport for short trips and presents the highest benefits. The co-benefits of walking when replacing a motorised trip include improved health for the individual, reduced congestion on the road network, and reduced noise and emission pollution. The following action items could be implemented to increase walking amongst residents in the development:

- Residents and staff living within 1km of their place of work could be targeted to walk to work for their commuting journey;
- A working partnership could be established with North Sydney Council to determine whether there are opportunities to improve the pedestrian connectivity to the site;
- Residents and staff could be encouraged to implement the *'10,000 steps per day initiative'* to measure their daily step count as a way of promoting a healthy lifestyle and
- Residents and staff could be encouraged to participate in *'Walk to Work'* day on an annual basis.

### 6.9.2. Cycling

The site is well-integrated into the surrounding pedestrian and cyclist network, offering safe and convenient access for staff, visitors, and residents who travel by foot or bicycle. The development benefits from its proximity to the newly completed Pacific Highway shared path, a 3.5 km off-road corridor connecting St Leonards to Chatswood, supporting active transport and reducing reliance on

private vehicles. Continuous footpaths and signalised crossings along Pacific Highway and Herbert Street enhance walkability and safety.

To improve future bike usage by residents and visitors, the development will include bicycle parking provisions as outlined in Section 4.2.

### 6.9.3. Public Transport

The public transport options surrounding the site are well-established, with St Leonards Train Station located approximately 300 metres walking distance from the site and Crows Nest Metro Station located approximately 400 metres walking distance from the site. Bus stops are located around the site within walking distance with a wide range of services available.

A review of the public transport available in the vicinity of the site is outlined in Section 2.2.

### 6.9.4. Car Share

Car share schemes have become increasingly common throughout Sydney and are now recognised as a viable transport option for a range of trip purposes throughout Sydney, particularly shorter trips. Such facilities are likely to be of benefit to future tenants at the site.

GoGet car share has approximately 3 pods within a short walk of the site, as shown in Figure 18, with opportunities to provide further facilities as part of the precinct redevelopment to further reduce travel by private car.

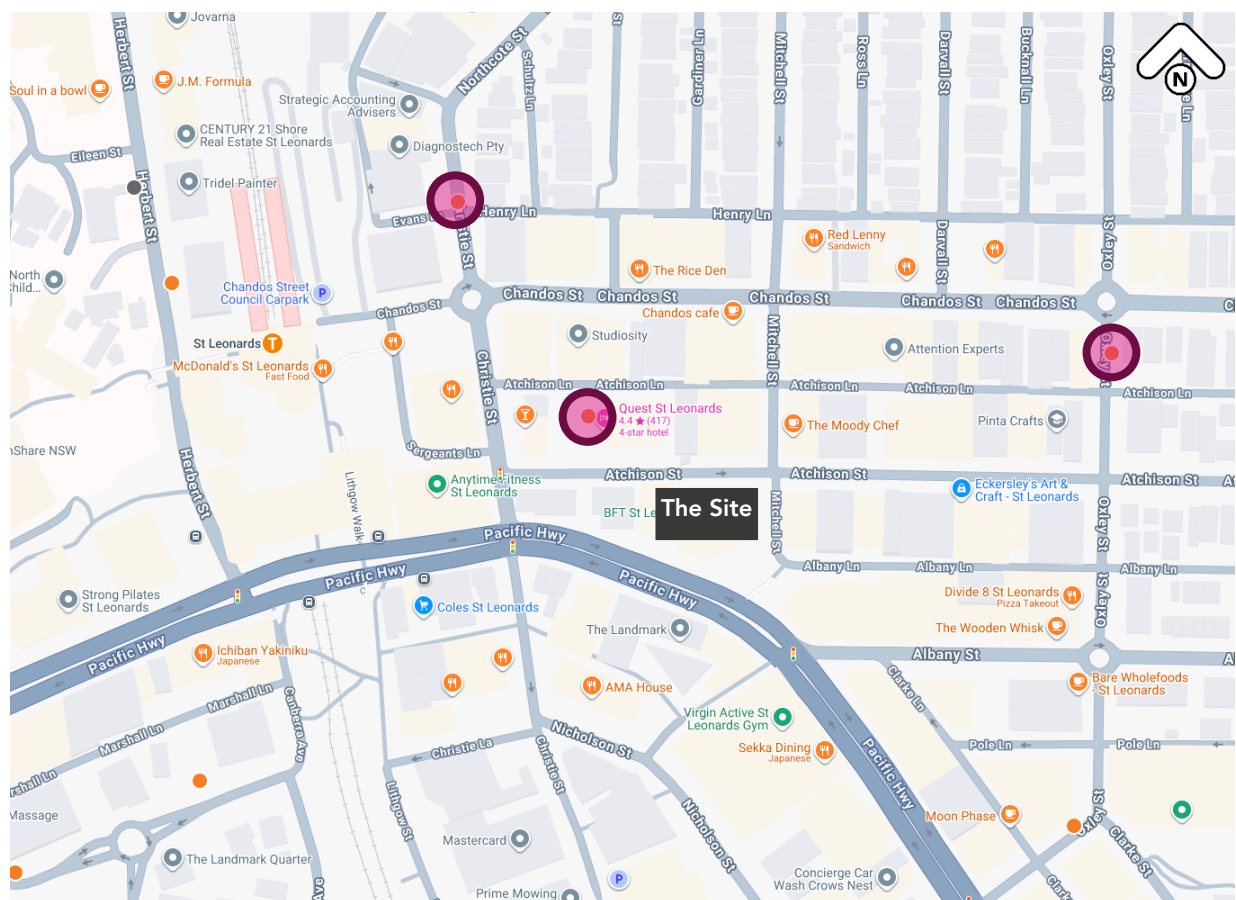


Figure 18: GoGet Car Share Pods within the vicinity of the site (Source:GoGet)

Car sharing provides an alternative to private vehicle ownership and has community benefits such as avoiding embodied carbon from reduced parking provisions, reducing greenhouse gas emissions, and providing overall greater amenities for the local community.

## 6.10. Promotion and Marketing Strategy

Once the plan has been adopted, it is essential to maintain interest in the scheme. Each new initiative in the plan will need to be publicised with effective marketing. Actions are the core of a GTP. Therefore, the GTP needs to have a variety of actions that guide strategies relating to promotion, facilities, and policies to create incentives for sustainable travel behaviour. If actions are to be staged, a staging strategy should be outlined in the plan.

Strategic promotion of travel plans and associated initiatives tend to result in higher uptake of sustainable travel modes. It is imperative to ensure that all users are aware of the initiatives. From time to time, assistance should be sought from Council, Bicycle NSW, Pedestrian Council Australia, TfNSW and other stakeholders.

Another way to promote non-vehicle modes of transport is to print a map on the back of business cards or brochures. Best practice suggests that the information should be as concise, simple and site-specific as possible. If instructions are too complex, staff members are likely to ignore them.

## 6.11. Monitoring and Evaluation

A travel plan should not simply be a list of actions. Monitoring and reviewing of a travel plan is one of the most critical components of the travel planning process. It is crucial to understand whether and how the travel plan is having an impact on the mode share. An annual review of the GTP is recommended to identify how mode share has changed over time. This will assist in understanding whether progress is being made.

The monitoring strategy should ensure that the GTP is achieving the desired benefits. As stated in Section 6.6.2, it is essential to undertake the initial data collection of the existing mode share to establish targets and overall goals. Surveys will help to identify which actions are having an impact on occupant's travel behaviour and whether some are more effective than others. It may also help to identify ongoing or unresolved issues and barriers that are preventing greater improvement.

The overall success of the GTP will depend on good communication. It will be necessary to explain the reason for adopting the plan, promote benefits and provide information about alternatives to driving. It will also be necessary to provide feedback to occupants to ensure that they can see the benefits of sustainable transport.

Once data are updated, the targets and actions of the travel plan will need to be reviewed. The review should consider:

- Are the targets still realistic? Are they still ambitious? Should they be updated?
- Are residents and visitors struggling to achieve particular targets? What are the likely reasons for this?
- Are there any gaps with regard to actions?
- What is preventing further improvement in mode share, and how can this be addressed?

The GTP Coordinator will be responsible for ensuring that annual performance reports are provided to the Council for at least the first five years from occupation of the development. Consultation with the Council during the monitoring and evaluation process will ensure that the targets are still achievable and allow for any existing strategies to be adjusted or developed to achieve the outlined mode share targets.

The steps outlined above should not be considered as a linear process but rather be an ongoing cycle. Travel planning requires regular review and adjustment, which may reveal the need to reconsider objectives or targets or add new actions to create greater incentives for the uptake of sustainable transport choices.

## **6.12. Travel Access Guide**

To encourage residents, employees and visitors to adopt alternative sustainable transport options, a Transport Access Guide (TAG) should be developed to summarise available transport options identified. A TAG is a concise presentation of how to reach the site using low-energy, sustainable and active forms of transport.

The aim of a TAG is to make sure people know how to get to the subject development by walking, cycling or public transport (as well as by car).

A TAG can take many forms; TAGs may be incorporated into stationery, brochures and provided electronically on social media. An electronic version can be kept on a computer and produced as needed.

TAGs should be included in Green Travel Plans and should comply with TfNSW guidelines. An indicative TAG has been prepared for the development included Appendix 5.

# 7. Preliminary Construction Traffic Management Plan

The following sections outline the preliminary traffic management arrangements and considerations for the delivery of the project. Noting that this TIA has been written to support a State Significant Development Application for the Site, a detailed CTMP will need to be prepared to support the subsequent detailed Development Application prior to Subdivision Works Certification which outlines the specific site requirements and scope upon the appointment of a Principal Contractor.

## 7.1. Key Standards and Guidelines

Reference has been made to the following Standards and guidelines:

- *TfNSW Traffic Control at Works Sites (TCAWS) Technical Manual Issue 6.1*
- *AS1742.3:2009 Manual of Uniform Traffic Control Devices Part 3: Traffic Control Devices for Works on Roads*

## 7.2. Objective

The traffic management plan associated with the construction activity aims to ensure the safety of all workers and road users within the vicinity of the construction site and the following are the primary objectives:

- To minimise the impact of the construction vehicle traffic on the overall operation of the road network;
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction workers;
- Installation of appropriate advance warning signs to inform users of the changed traffic conditions;
- To provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site;
- To provide information regarding the changed access arrangement and also a description of the proposed external routes for vehicles including the construction vehicles accessing the site; and
- Establishment of a safe pedestrian environment in the vicinity of the site.

## 7.3. General Requirements

In accordance with the Standards and guidelines outlined in Section 7.1, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.

All subcontractors must be inducted by the lead contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The lead contractors will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicles operating to, from and within the site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

## **7.4. Staging and Program**

The staging and phasing of the construction will be outlined at subsequent detail Construction Traffic Management Plan once the lead contractor is appointed for the delivery of the proposed development.

## **7.5. Site Plans**

Detailed construction site plans, showing site fencing, hoarding locations, tower crane location, vehicle access points, site offices, amenities, tool and material storage areas and on-street Works Zones will be included in the detailed CTMP post SSDA approval.

The site establishment plan will be provided in the detailed CTMP.

## **7.6. Hours of Work**

All works associated with the proposed development will be restricted to the time periods outlined within the Conditions of Consent upon approval of the SSDA. Until this is available, it has been assumed the indicative hours of work will be as follows:

- Mon-Fri 7:00am – 5:00pm
- Sat 7:00am – 3:00pm
- Sunday & Public Holidays Works subject to out of hours permit approval
- Shift/Night Work Works subject to out of hours permit approval

## **7.7. Construction Vehicle Types**

The construction of the development will involve the use of several different vehicle types in relation to the various stages and tasks involved. The proposed works are envisaged to be carried out using a mix of commercial small to heavy rigid vehicles.

Construction heavy vehicles will range from 19.0m Truck & Dogs (T&D) and 12.5m Heavy Rigid Vehicles (HRV), 8.8m Medium Rigid Vehicle (MRV). Smaller trucks, Utes and vans are also expected.

Based on similar sized construction projects, it is expected that the peak construction heavy vehicle activity will result in up to 35 trucks to and from the site per day, as shown in the Table 17.

It is noted that this is only indicative at this stage and will be reassessed as part of the detailed CTMP, post SSDA approval.

Table 17: Indicative Construction Vehicle size and Estimated Volumes

Stage	Indicative Vehicle Types	Estimated Daily Average - Peak Trucks Volumes
All stages	<ul style="list-style-type: none"> <li>• 12.5m Heavy Rigid Vehicle – initially to deliver scrapers and large plant</li> <li>• 19m Truck &amp; Dog – during bulk earthworks, import of fill and road base</li> <li>• 12.5m Heavy Rigid Vehicle – during balance of works</li> </ul>	35 - 50 trucks (Subject to change)

The delivery of materials to and from the site will result in minimal generated traffic activity associated with the works. All deliveries are recommended to be scheduled outside of the peak commuter periods.

### 7.8. Special Deliveries

Any oversized vehicle that is required to travel to the project into the vicinity of the site will be dealt with separately, with the submission of required permits to and subsequent approval by TfNSW and North Sydney Council prior to any delivery being undertaken. Construction vehicles larger than 19.0m Truck and Dog (including 19.0m Articulated Vehicle/ Semi Trailer) are considered as oversized due to the road geometry surrounding the site. Any road closures associated with the use of a mobile crane must be applied to Council in advance as it requires Local Traffic Committee approval. All Oversize Over Mass (OSOM) applications must be submitted via the National Heavy Vehicle Regulator (NHVR) portal.

### 7.9. Indicative Construction Vehicle Routes

All vehicle routes are constrained to existing public roads that have the physical geometry to accommodate the turning movements. Approaching the site, some vehicle movements may entail the assistance of traffic controllers, as more than one lane will be required for turning manoeuvres.

No queuing or marshalling of trucks is permitted on any public road and all loading and unloading of materials will be undertaken either within the site or within the Works Zones.

All access gates to the site will be managed by gate controllers to ensure the safe management of the access and egress to the site and its interaction with non-construction traffic on the road network.

Appropriate Traffic Guidance Schemes (TGSs) will need to be prepared as part of the detailed CTMP to outline the traffic management measures required for the project.

Details of any Work Zones, if required, will be finalised in the detailed Construction Traffic Management Plan upon the approval of SSDA.

The ingress and egress routes for construction vehicles at this site have been identified and analysed further, as outlined in the following subsections.

### 7.9.1. Access Route for Construction Vehicles

The construction vehicles travelling via Warringah Freeway (M1) from south and Willoughby Road from north will travel south along Willoughby Road, west along Chandos Street, south along Christie Street and east along Atchison Street to access site or work zone as illustrated in Figure 19.

### 7.9.2. Egress Route for Construction Vehicles

After completing loading and unloading, construction vehicle exits site or work zone and travel west along Atchison Street, south on Oxley Street to access Pacific Highway as illustrated in Figure 19.

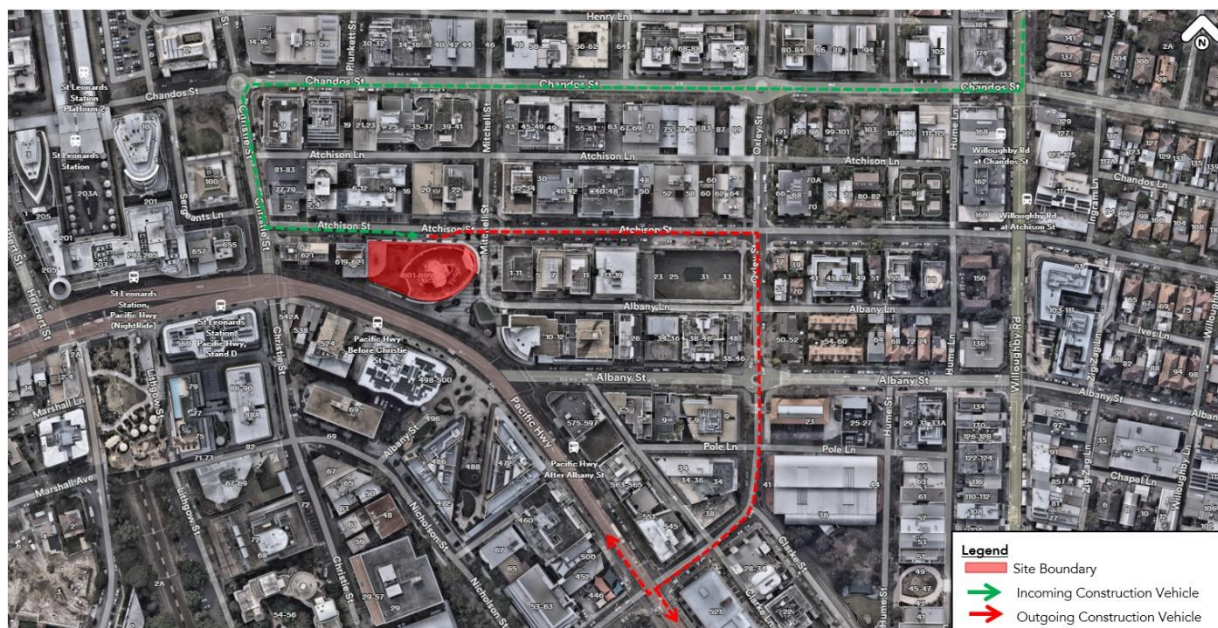


Figure 19: Construction Vehicle Routes

Swept path assessment of the construction vehicles approaching, accessing and leaving site is presented in Appendix 6.

## 7.10. Site Access Arrangements

The right turn from Christie Street into Atchison Street is restricted. Therefore, the construction vehicles cannot approach construction site from Pacific Highway. No vehicular access to the site shall be permitted from Pacific Highway, without prior consent from TfNSW. Any construction vehicles that require site access shall do so via Atchison Street.

A 30m long work zone is proposed along Atchison Street and some of the on-street parking shall be removed for the provision of the work zone as illustrated in Figure 20. It is noted that the length of the work zone is subject to change.



Figure 20: location of Work Zone along Atchison Street

### 7.11. Staff Parking

The construction site is located approximately 200m east of St Leonard Train Station and north of Crows Nest Metro Station. As such the Construction workers will be encouraged to use public transport, noting that there is a high level of public transport services and accessibility available to/from the site, as outlined in Section 2.2, and surrounding on-street parking spaces are short-term time restricted.

It is expected there will be no on-site parking for the construction workers. Where contractors are required to drive to the site, they will be encouraged to carpool.

### 7.12. Work Site Security

To provide security to the works site and protection to the general public, it is proposed that temporary fencing is to be erected along the construction site boundary by the Lead Contractor. The B class hoarding shall be established along Atchison Street for the safety pedestrian if required. This fencing will define the extent of the works site. All access points are to be securely locked when construction activities are not in progress. The exact location of this fence is to be agreed on site, prior to commencement of the works.

The traffic controller will supervise the work zone at all the time during the work hours for the safety of general vehicles and pedestrian.

### 7.13. Staff Induction

All staff and subcontractors engaged on site will be required to undergo a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures. Additionally, the Lead Contractor will discuss TMP requirements regularly as a part of toolbox talks and advise workers of public transport and car-pooling opportunities.

## 7.14. Parking Impact

Atchison Street has 2H time restricted paid parking on both sides of the road. A 30m work zone is proposed along Atchison Street adjacent to the construction site as described in section 7.10. The location of work zone, result in the temporary loss of approximately 5 on-street parking as shown in Figure 21.



Figure 21: Loss of On-street Parking

Lead contractor shall apply and obtain the approval from the relevant authority (council) to remove on-street parking prior to the establishment of the work zone.

As the construction site is located in proximity of the St Leonards Train Station and Crows Nest Metro Station, majority of the workers are expected to use public modes of transport to travel to/ from the site with a tool storage area to be provided on-site to allow workers to travel with ease via public transport. During the site induction, workers will be informed of all the alternative modes of transport. As such, the impact on on-street parking is expected to be minimal.

## 7.15. Pedestrian and Cyclist Impact

It is also noted that due to the construction vehicle movement along Atchison Street, the dedicated bike lane on Atchison Street is proposed to be closed to mitigate risk for cyclist. The cycle way shall be detoured along the shared zone (Mitchell Street) to Pacific Highway as illustrated in Figure 22. The lead contractor shall co-ordinate with relevant authorities, council and TfNSW and obtain approval prior to the closure and detour of the cycle way. Traffic Guidance Scheme shall be developed for the cycle way closure and detour.

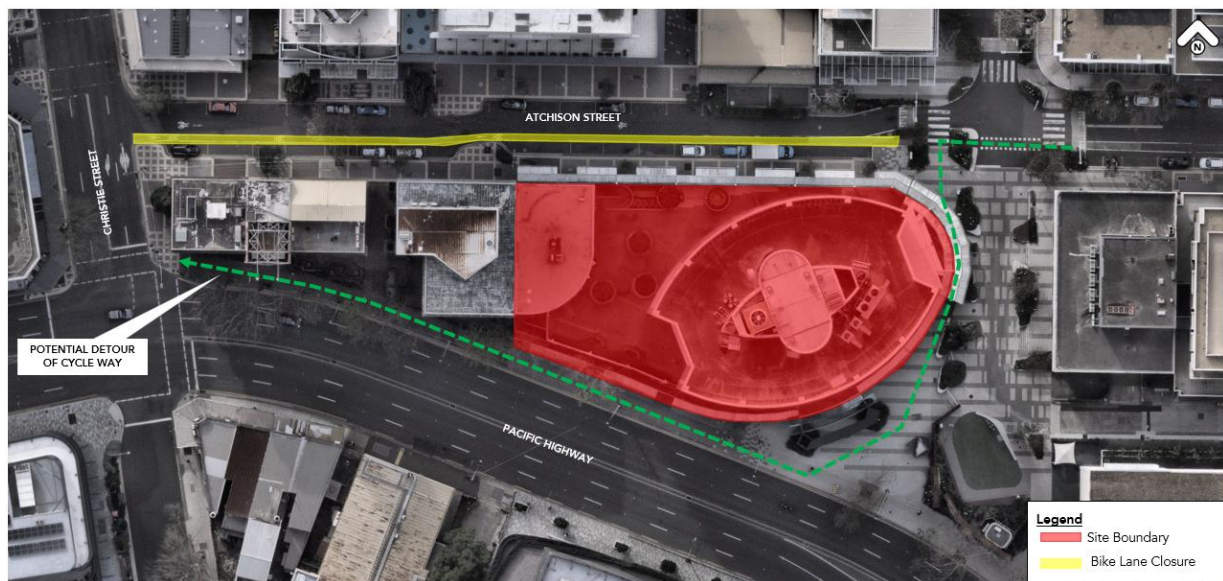


Figure 22: Extend of Bike Lane Closure and Potential Detour

Class B hoarding is expected to be installed along the Atchison Street frontage. Pedestrian access along the footpaths will be maintained during the construction works with traffic spotters stationed at the site driveways or approved work zone to safely manage pedestrian activity when a construction vehicle is entering and exiting the site or approved work zone. Pedestrians may be held for very short periods to ensure safety when trucks are entering or leaving the site but will not be stopped in anticipation or for extended periods. Pedestrians will have right-of-way on the footpath at all times.

Pedestrian access to the site will be via designated pedestrian gates and the exact location of these gates will be determined during the Subdivision Works Certification processes once a Lead Contractor has been appointed for delivery of the construction works.

## 7.16. Public Transport Impact

The construction activities are not expected to impact existing public transport services near the site.

## 7.17. Emergency Vehicle Access

Any emergency vehicles requiring access into the site will do so via Atchison Street. In the event that an emergency vehicle is required to access the site, all construction work will be stopped.

Traffic controllers shall not, under any circumstances, stop emergency vehicles to allow trucks to enter or leave the site.

## 7.18. Access to Adjoining Properties

Access to all adjoining properties will be maintained throughout the works.

## 7.19. Occupational Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold the appropriate SafeWork NSW accreditation in accordance with the Standards and guidelines outlined in Section 7.1.

## **7.20. Method of Communicating Traffic Changes**

Traffic Guidance Schemes (TGSs) in accordance with the Standards and guidelines outlined in Section 7.1 will advise motorists of upcoming changes in the road network.

During construction, the contractor shall each morning, prior to work commencing, ensure all signage is erected in accordance with the TGS and clearly visible. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required. Sign size is to be size "A".

No deviation from the approved TGS shall be permitted, unless otherwise approved by Council and certified by SafeWork NSW accredited personnel.

The associated TGS road signage will inform drivers of works activities in the area including truck movements in operation.

The TGSs will be formalised in the detailed Construction Traffic Management Plan.

Prior to commencement of works on site, the contractor is to inform neighbouring properties of proposed works and provide site contact information by means of a letter box distribution.

## **7.21. Contact Details for On-site Enquiries and Site Access**

Details of the nominated site contact would be included in the future detailed CTMP prior to the commencement of construction.

## 8. Conclusion

ptc. has been engaged by Stockland Development to prepare a Transport Impact Assessment (TIA) to accompany a State Significant Development Application (SSDA) for the construction of a mixed-use development at 601 Pacific Highway, St Leonards. This TIA includes a Green Travel Plan (GTP) and Preliminary Construction Traffic Management Plan (CTMP) to satisfy the requirements of the relevant SEARs.

The site is well-serviced by public and active transport and is in proximity to numerous bus stops as well as St Leonards Train Station and Crows Nest Metro Station. These facilities are expected to be highly utilised by both residential and commercial tenants of the proposed site, contributing to a minimised vehicular traffic impact to the local road network.

The development proposes car parking which falls within the permissible maximum car parking of the North Sydney Council DCP. Other forms of parking, including accessible car, motorcycle, and bicycle parking, are provided to a satisfactory level, aligning with the goals and rates of the DCP, to promote alternate modes of transportation to and from the site.

An assessment of the potential traffic generation associated with the development indicates the local intersections continue to operate satisfactorily, maintaining good levels of service with development traffic included.

An assessment of the concept car parking layout has been undertaken with respect to the minimum requirements of the AS2890 series. The maximum-sized vehicle expected to access the loading dock on Level B1 will be a 10.5m Council refuse vehicle, and a swept path analysis undertaken and provided in Appendix 2 demonstrates that the design vehicles can manoeuvre into and out of the loading dock and the site satisfactorily. Based on our assessment, the proposed car park and access arrangements are deemed suitable and to be capable of complying with the requirements of the relevant Australian Standards and planning policies.

From a traffic engineering perspective, ptc. find that the proposed development meets the relevant requirements and is supportable.

# Appendix 1. Architectural Plans

Autodesk Docs/S12758\_001/Pacifi- Hwy/601 PACIFIC HIGHWAY\_BS\_ARCHL\_R20025.rvt



Transformative thinking  
for the future city.

Bates Smart Architects Pty Ltd  
ABN 68 094 740 986

NSW Nominated Responsible Architects  
Kellie Payne 6454, Philip Vivian 6696, Guy Lake 7119, Matt Allen 8498.

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Stockland Development

Current Revision Description

Data Issue Record

Rev	Date	Description
A	17/03/2026	SSDA Issue
P5	02/03/2026	For Information
P4	14/11/2025	For Information
P3	31/10/2025	For Information
P2	16/10/2025	For Information
P1	08/10/2025	For Information

Project Title  
601 Pacific Hwy  
First Nations Country  
Cammeraygal Country  
Project Address  
601 Pacific Hwy, St Leonards,  
NSW

Project No.  
S12758

Drawing Title  
DA03 - General Arrangements  
General Arrangement Plan Level 01

Phase  
SSDA

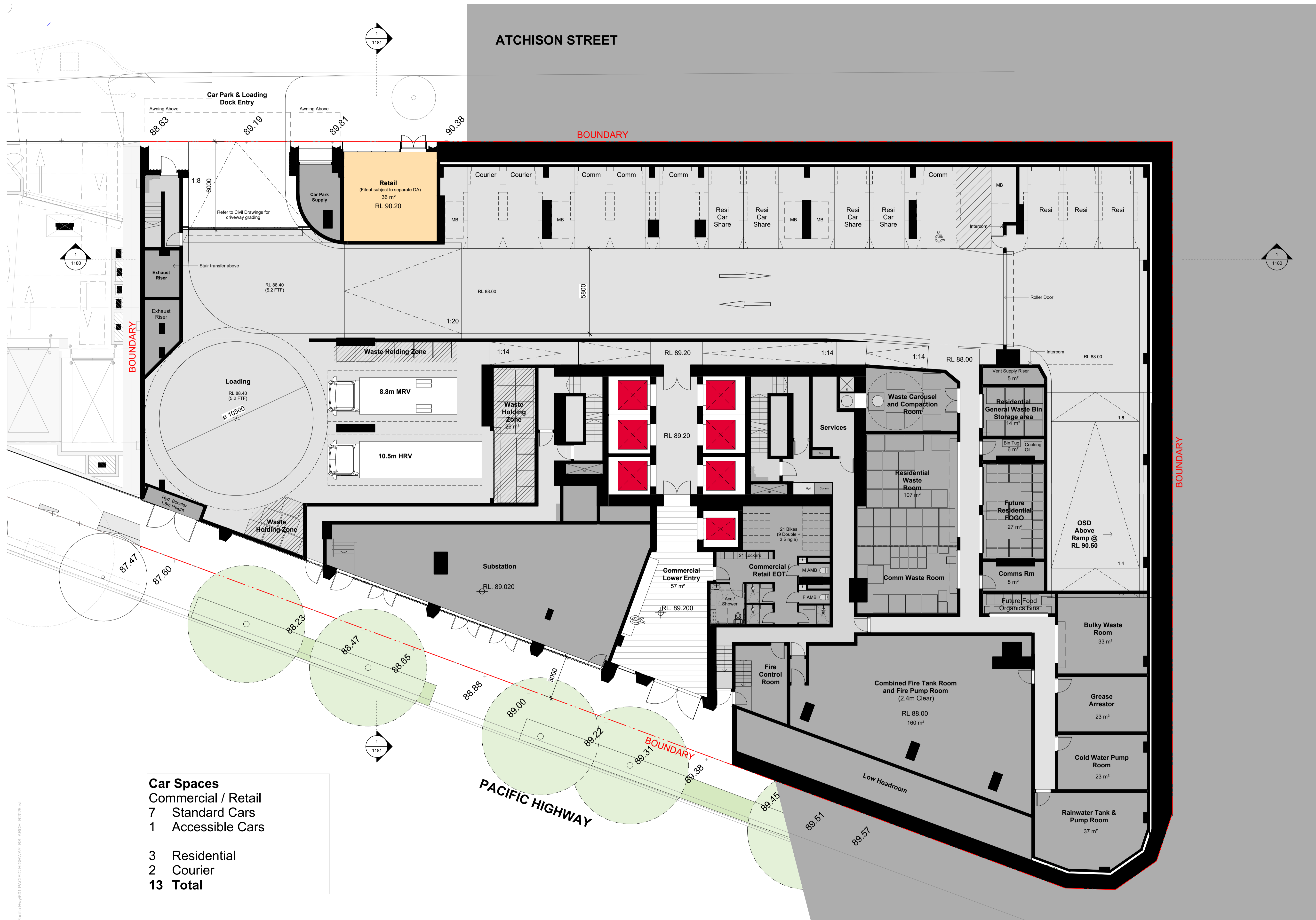
Status  
For Approval

Drawing no.  
1001

Scale  
1 : 125 @ A1

Revision  
A





Autodesk Docs/S12758\_001/Profile/601 Pacific Highway\_BS\_ARCH\_R2025.rvt

Current Revision Description

Data Issue Record  
Current Revision released by

Rev	Date	Description
A	17/03/2026	SSDA Issue
P5	02/03/2026	For Information
P4	14/11/2025	For Information
P3	31/10/2025	For Information
P2	16/10/2025	For Information
P1	08/10/2025	For Information

Project Title  
601 Pacific Hwy  
First Nations Country  
Cameraygal Country  
Project Address  
601 Pacific Hwy, St Leonards,  
NSW

Project No.  
S12758

Drawing Title  
DA03 - General Arrangements  
General Arrangement Plan Level B2

Phase  
SSDA

Status  
For Approval

Drawing no.  
10B2

Scale  
1 : 125 @ A1

Revision  
A



**Car Spaces**  
41 Standard Cars  
8 Adaptable Cars  
**49 Total**

9 Motorbike Spaces  
53 Storage Cages

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Current Revision released by

Rev	Date	Description
A	17/03/2026	SSDA Issue
P5	02/03/2026	For Information
P4	14/11/2025	For Information
P3	31/10/2025	For Information
P2	16/10/2025	For Information
P1	08/10/2025	For Information

Project Title  
601 Pacific Hwy  
First Nations Country  
Cammeraygal Country  
Project Address  
601 Pacific Hwy, St Leonards,  
NSW

Project No.  
S12758

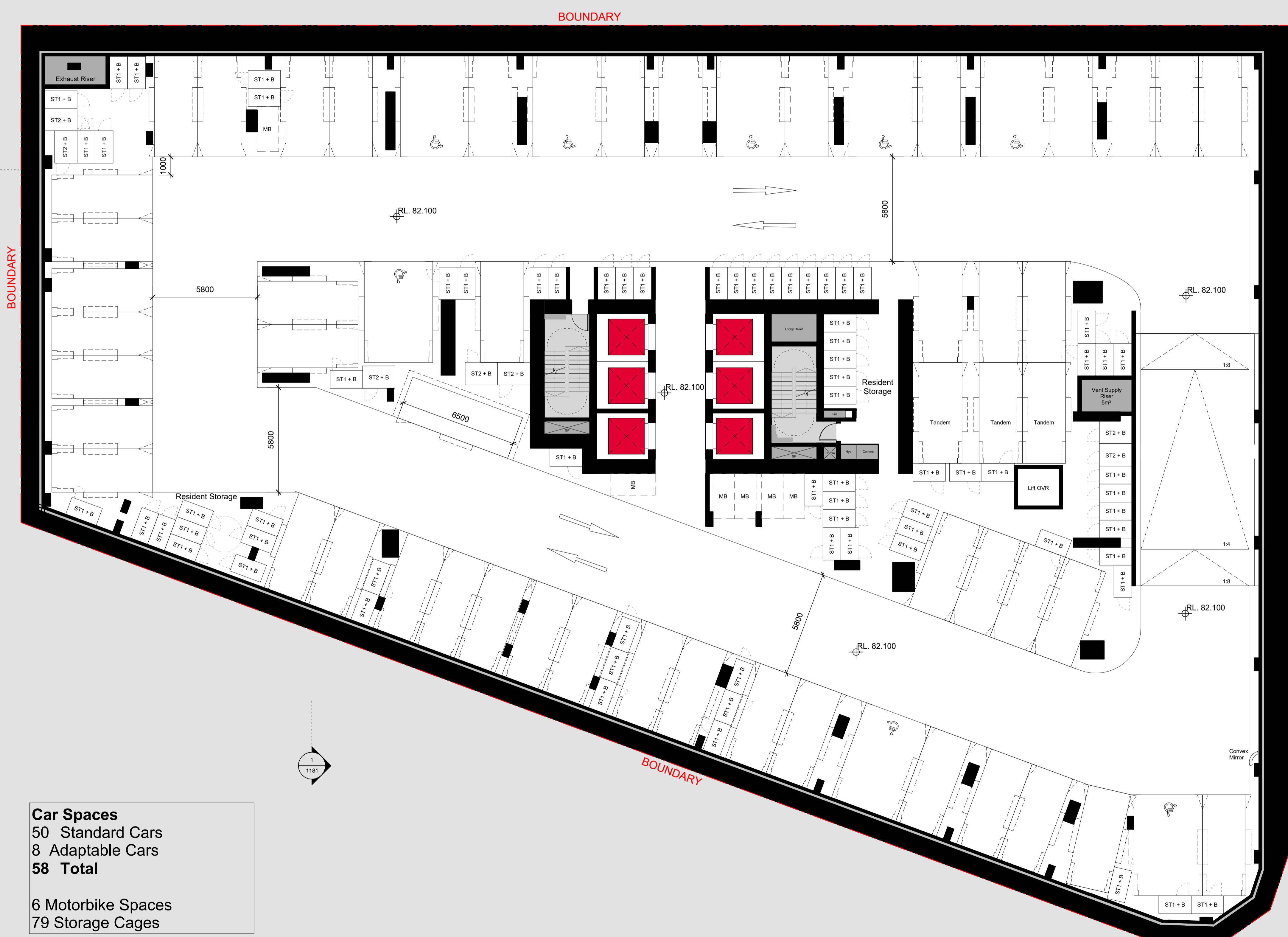
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DA03 - General Arrangements  
General Arrangement Plan Level B3

Phase  
SSDA  
Status  
For Approval

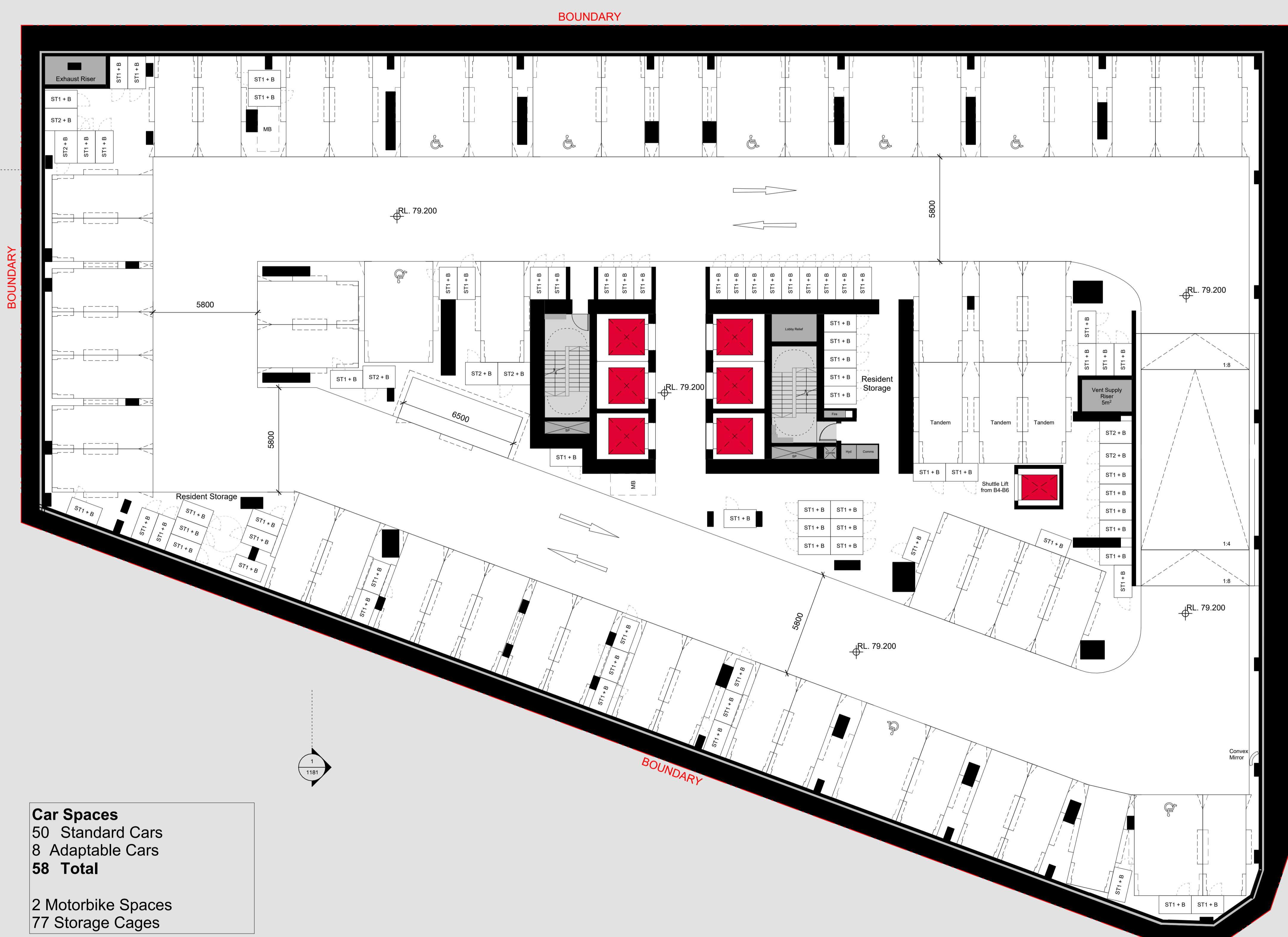
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Drawing no.  
10B3

Revision  
A



**Car Spaces**  
50 Standard Cars  
8 Adaptable Cars  
**58 Total**  
  
6 Motorbike Spaces  
79 Storage Cages



**Car Spaces**  
50 Standard Cars  
8 Adaptable Cars  
**58 Total**  
  
2 Motorbike Spaces  
77 Storage Cages

Autodesk Docs/S12758\_01/P106-Hwy601-PACIFIC HIGHWAY\_BS\_ARCHL\_R2025.rvt

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Current Revision Description

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Rev	Date	Description
A	17/03/2026	SSDA Issue
P4	02/03/2026	For Information
P3	14/11/2025	For Information
P2	31/10/2025	For Information
P1	16/10/2025	For Information

Project Title  
**601 Pacific Hwy**  
First Nations Country  
**Cammeraygal Country**  
Project Address  
**601 Pacific Hwy, St Leonards, NSW**

Project No.  
**S12758**

Drawing Title  
**DA03 - General Arrangements  
General Arrangement Plan Level B5**

Phase  
**SSDA**  
Status  
**For Approval**

Scale  
**1 : 125 @ A1**

Drawing no.  
**10B5**

Revision  
**A**



**Car Spaces**  
52 Standard Cars  
8 Adaptable Cars  
**60 Total**  
  
4 Motorbike Spaces  
80 Storage Cages

Current Revision Description

Data Issue Record  
Current Revision released by

Rev	Date	Description
A	17/03/2026	SSDA Issue
P5	02/03/2026	For Information
P4	14/11/2025	For Information
P3	31/10/2025	For Information
P2	16/10/2025	For Information
P1	08/10/2025	For Information

Project Title  
**601 Pacific Hwy**  
First Nations Country  
**Cammeraygal Country**  
Project Address  
**601 Pacific Hwy, St Leonards, NSW**

Project No.  
**S12758**

Drawing Title  
**DA03 - General Arrangements  
General Arrangement Plan Level B6**

Phase  
**SSDA**  
Status  
**For Approval**

Scale  
**1 : 125 @ A1**

Drawing no.  
**10B6**

Revision  
**A**



**Car Spaces**  
54 Standard Cars (incl 3 Small Spaces)  
8 Adaptable Cars  
**62 Total**  
  
4 Motorbike Spaces  
83 Storage Cages

# Appendix 2. ptc. Design Review

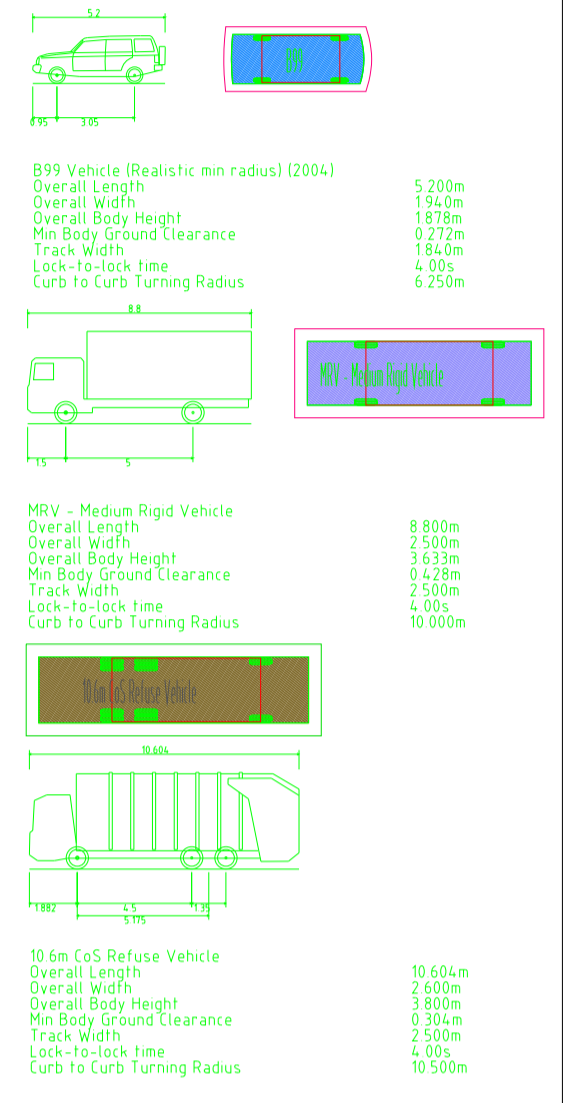


**AFRIAL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/ scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/ scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle routes and accesses are suitable for the anticipated vehicles. All swept paths performed by ptc using aerial imagery/ scaled pdf are indicative and should be used for preliminary purposes only.

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- TRAFFIC GUIDANCE SCHEMES**
- All signs to be clearly visible throughout the works and monitored.
  - Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
  - All signs to be size A.
  - All signs to be visible when workers are in the area and covered when workers are not present.
  - Signs to be in accordance with RMS Traffic Control at Worksites (TCWWS) Manual and AS1742.2 Traffic Control for Works on roads. RMS/Council approvals to be obtained prior to implementation.
  - This TGS is based on TCWWS Manual and is to be set up by qualified traffic controllers (yellow cards). Any alterations on site to the TGS is to be documented and re-recorded by qualified personnel with a Red/Change card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autocad vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytic Pty Ltd based upon vehicle data provided by Autodata. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.



REV	DATE	DESCRIPTION	DRAWN	REVIEWED
7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 LEVEL 2  
 TRAFFIC ASSESSMENT

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 North Sydney NSW 2060  
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**CLIENT** STOCKLAND  
**DRAWING #** L2.1  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

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**REV 7**

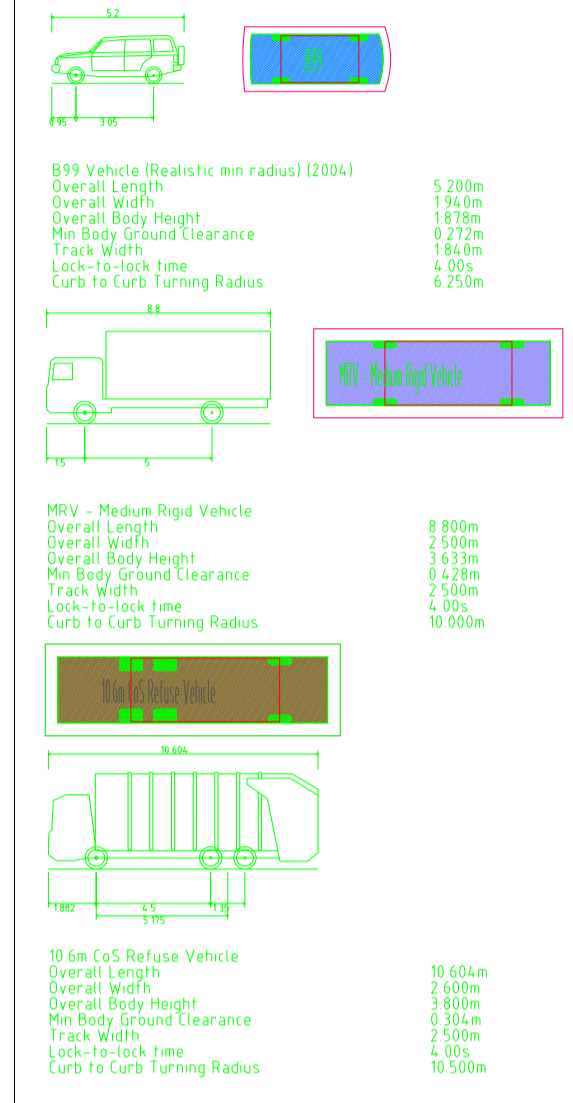


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3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW

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**PROJECT**  
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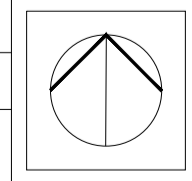
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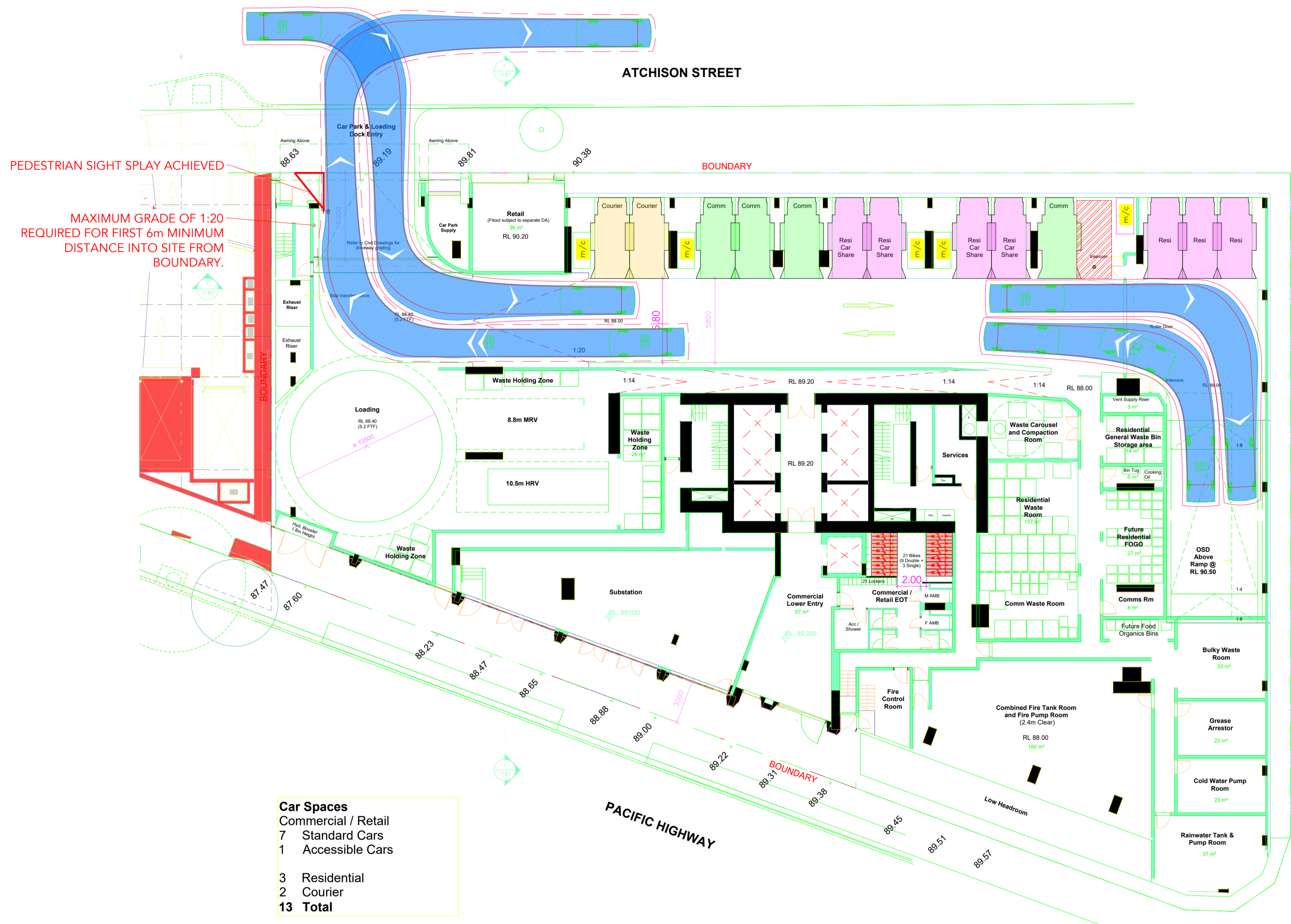
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SSDA - DESIGN REVIEW



**REV 7**

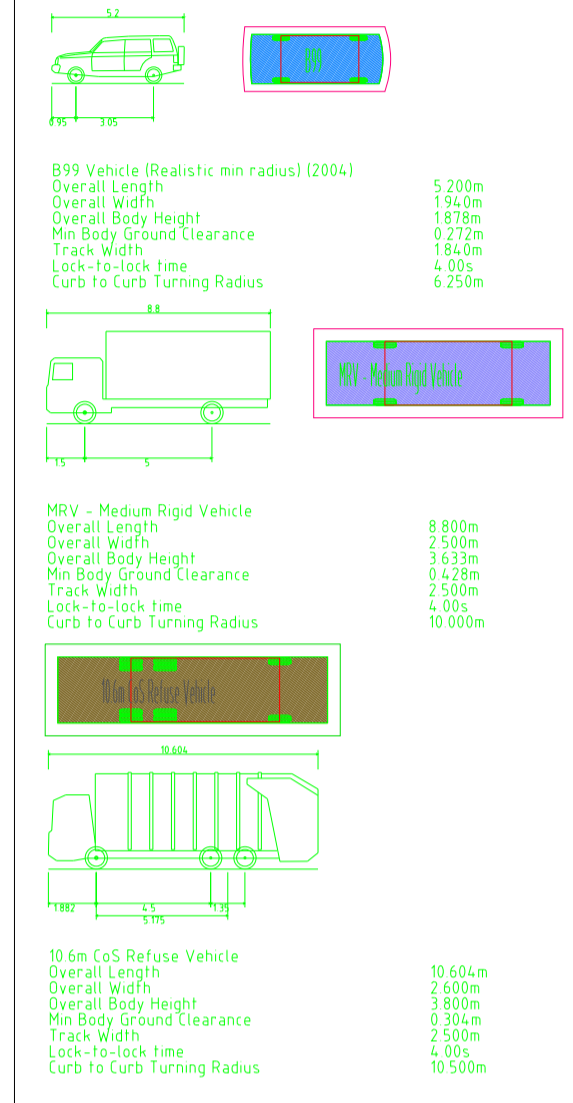


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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
7	18.03.26	UPDATE FOR SSDA	JJ	JJ
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5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
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2	04/11/25	FOR INFORMATION	JJ	SW
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**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 1  
 TRAFFIC ASSESSMENT

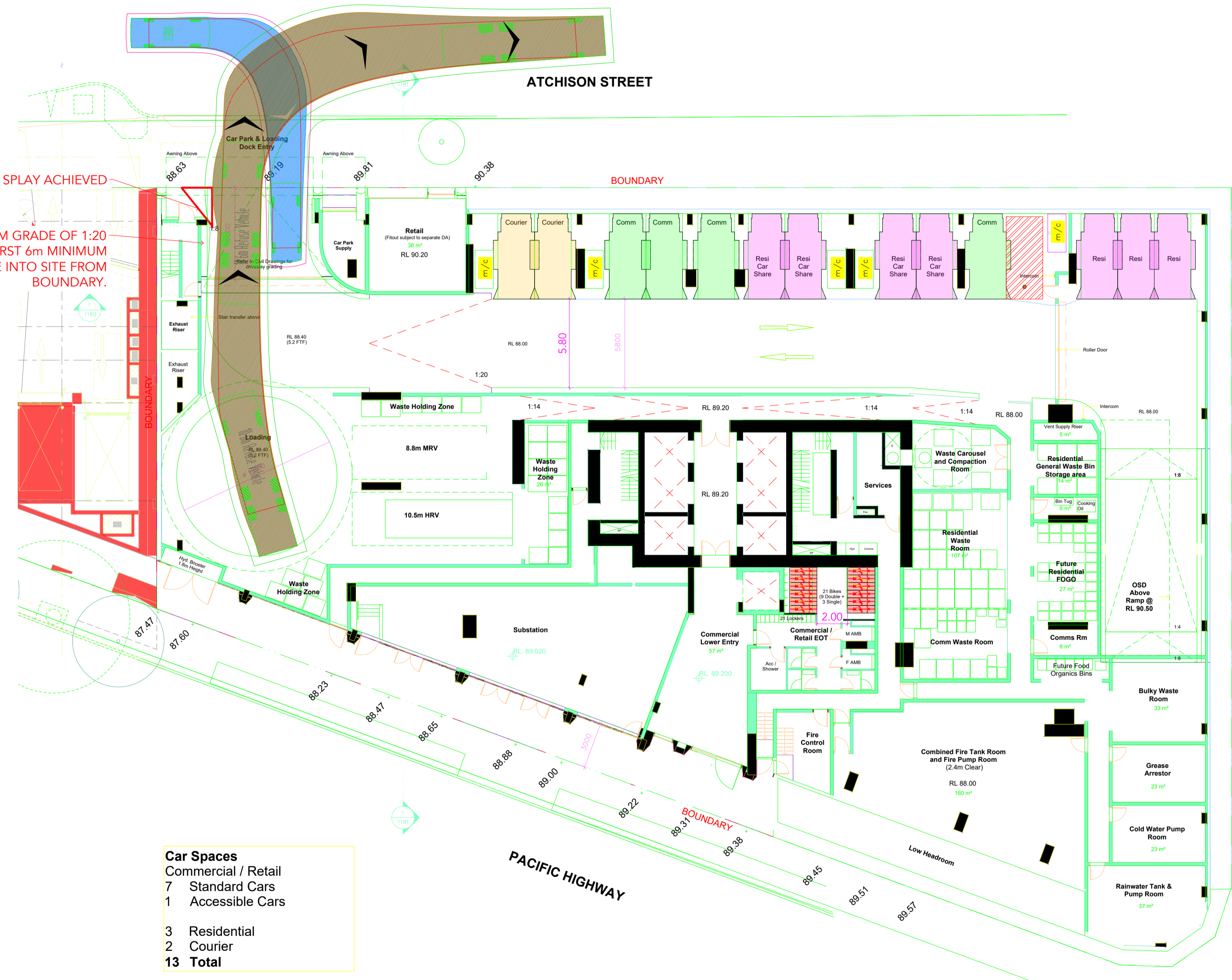
**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 t +61 2 8920 0800  
 ptcconsultants.co

**CLIENT** STOCKLAND  
**DRAWING #** B1.1  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**



PEDESTRIAN SIGHT SPY ACHIEVED  
 MAXIMUM GRADE OF 1:20  
 REQUIRED FOR FIRST 6m MINIMUM  
 DISTANCE INTO SITE FROM  
 BOUNDARY.



Car Spaces	
Commercial / Retail	7
Standard Cars	1
Accessible Cars	
Residential	3
Courier	2
<b>Total</b>	<b>13</b>

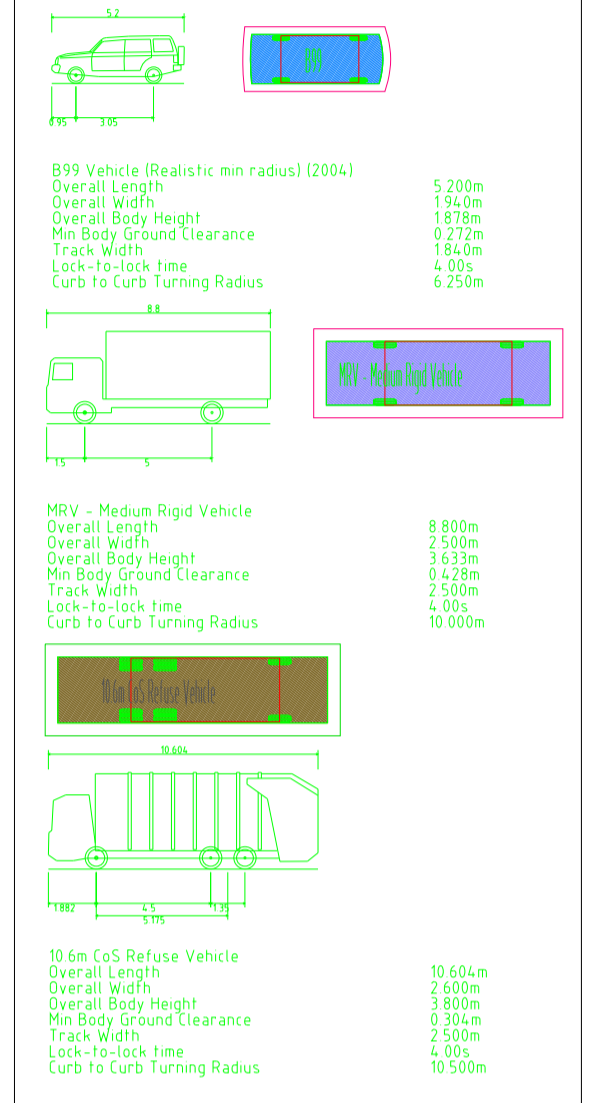
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3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW

**PROJECT**  
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**DRAWING TITLE**  
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**CLIENT** STOCKLAND  
**DRAWING #** B1.3  
**PROJECT #** 23-0801  
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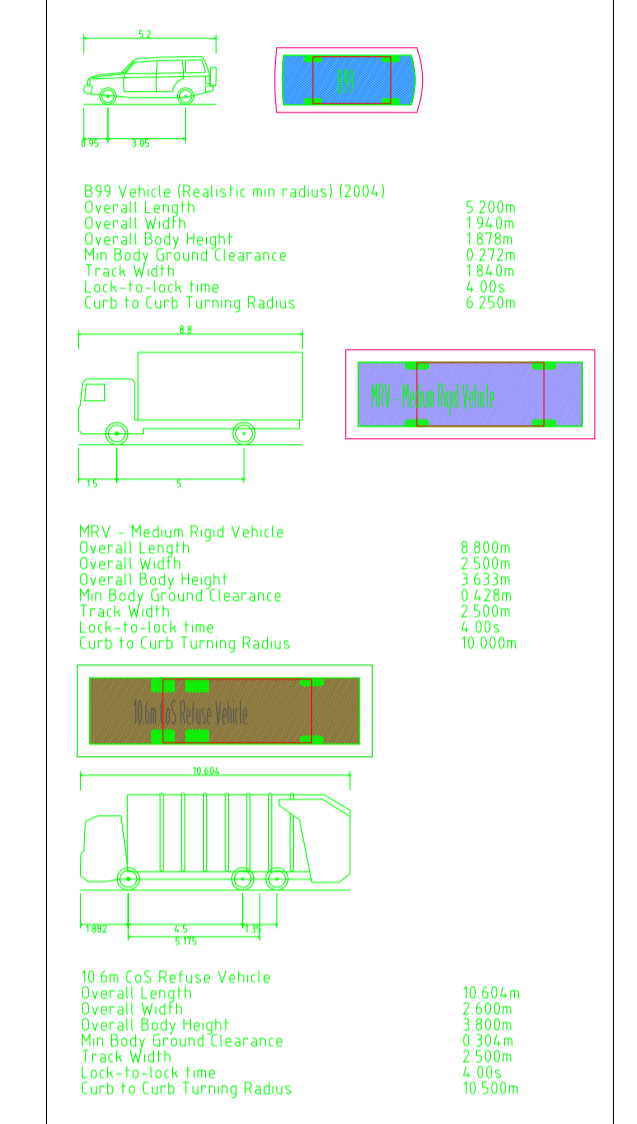
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5	17.02.25	ARCH UPDATE	JJ	SW
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3	18.11.25	FOR INFORMATION	JJ	SW
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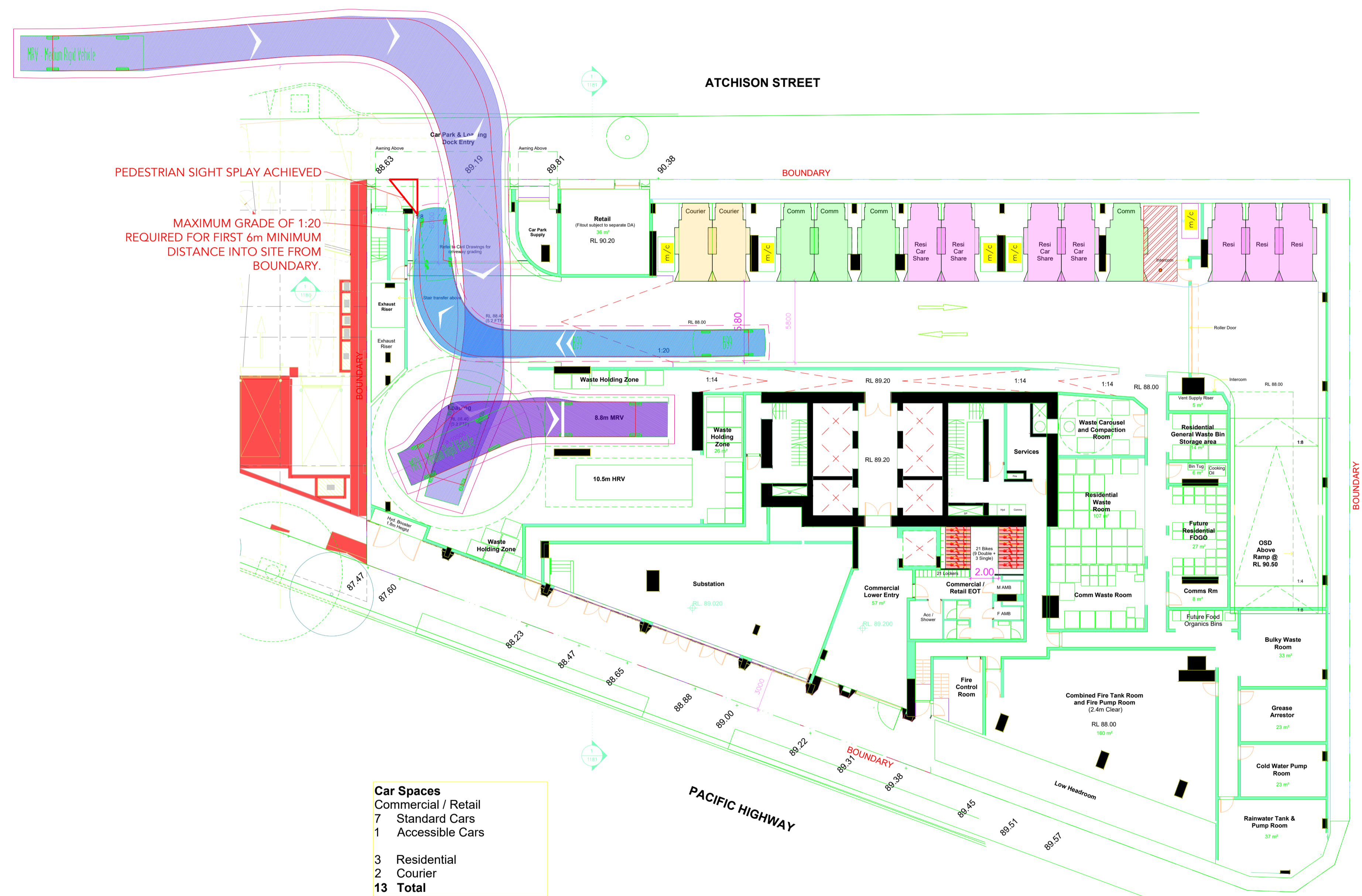
**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 1  
 TRAFFIC ASSESSMENT

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 North Sydney NSW 2060  
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**CLIENT** STOCKLAND  
**DRAWING #** B1.4  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**

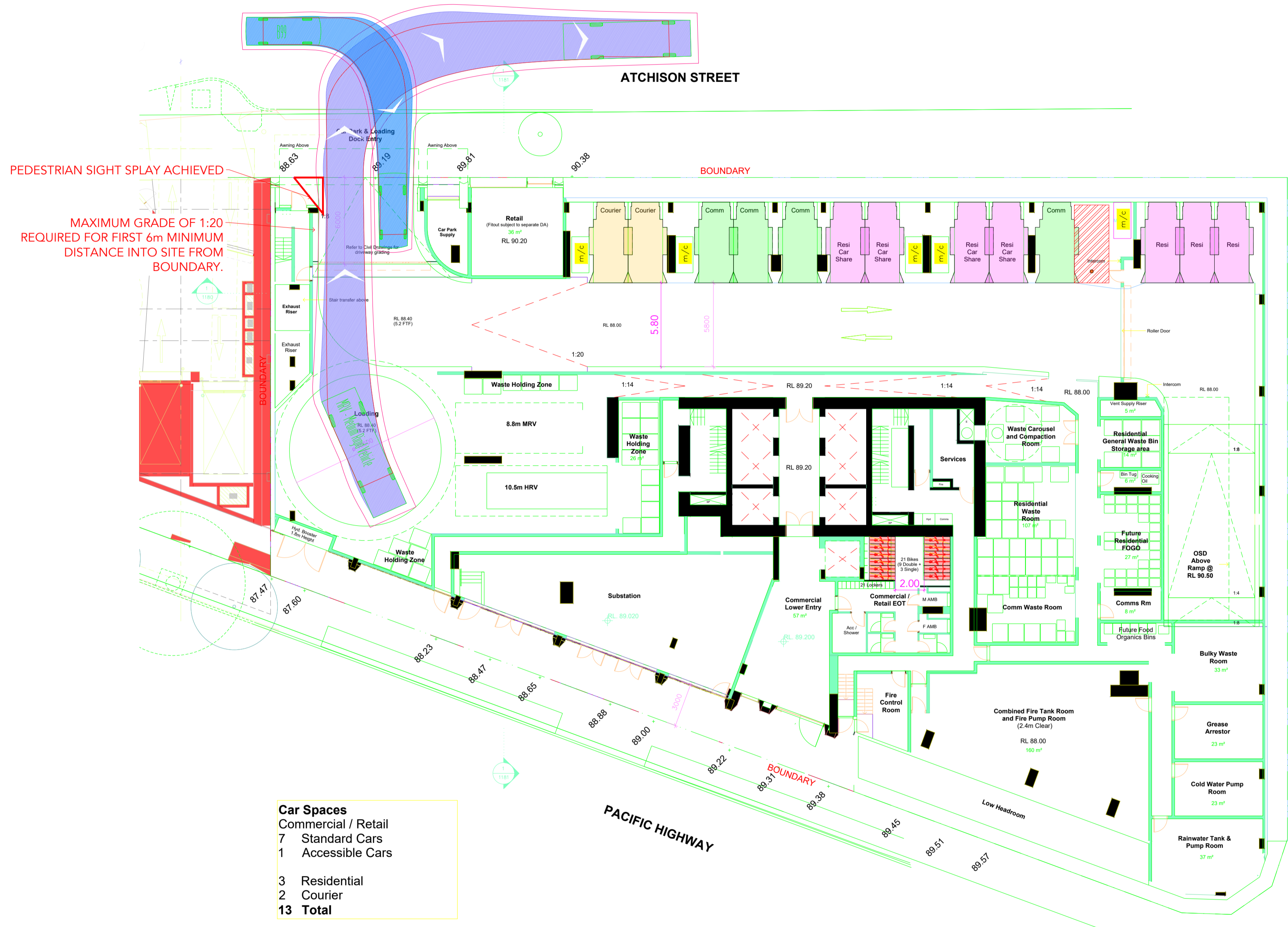


**PEDESTRIAN SIGHT SPY ACHIEVED**

**MAXIMUM GRADE OF 1:20 REQUIRED FOR FIRST 6m MINIMUM DISTANCE INTO SITE FROM BOUNDARY.**

**Car Spaces**

Commercial / Retail	7
Standard Cars	1
Accessible Cars	3
Residential	2
Courier	2
<b>Total</b>	<b>13</b>



**Car Spaces**

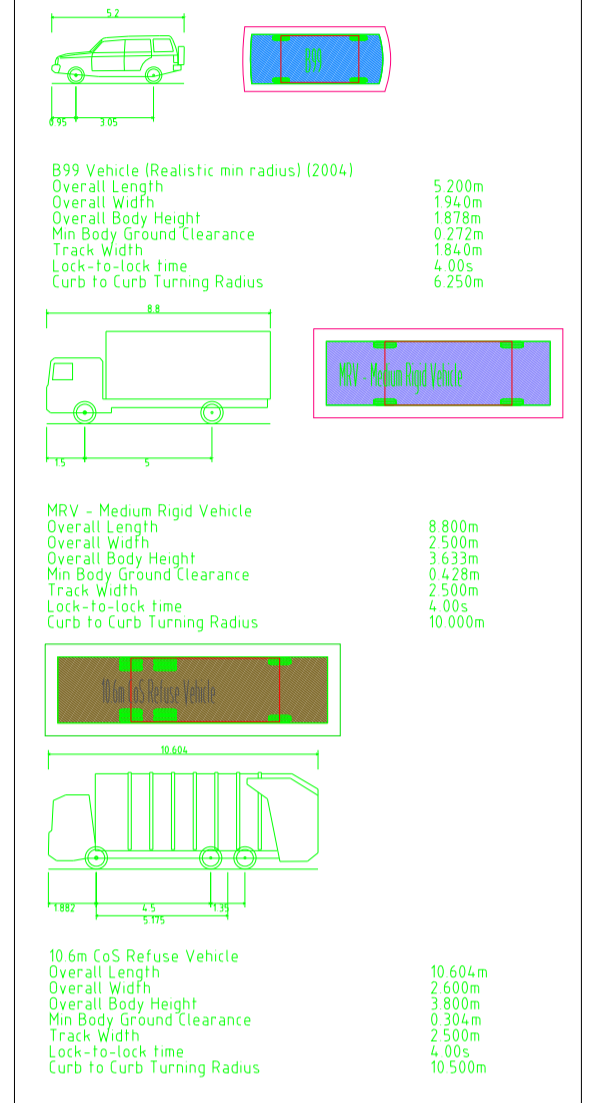
Commercial / Retail	7
Standard Cars	7
Accessible Cars	1
Residential	3
Courier	2
<b>Total</b>	<b>13</b>

**AERIAL IMAGERY / SCALED PDF**  
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6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 1  
 TRAFFIC ASSESSMENT

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**CLIENT** STOCKLAND  
**DRAWING #** B1.5  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**

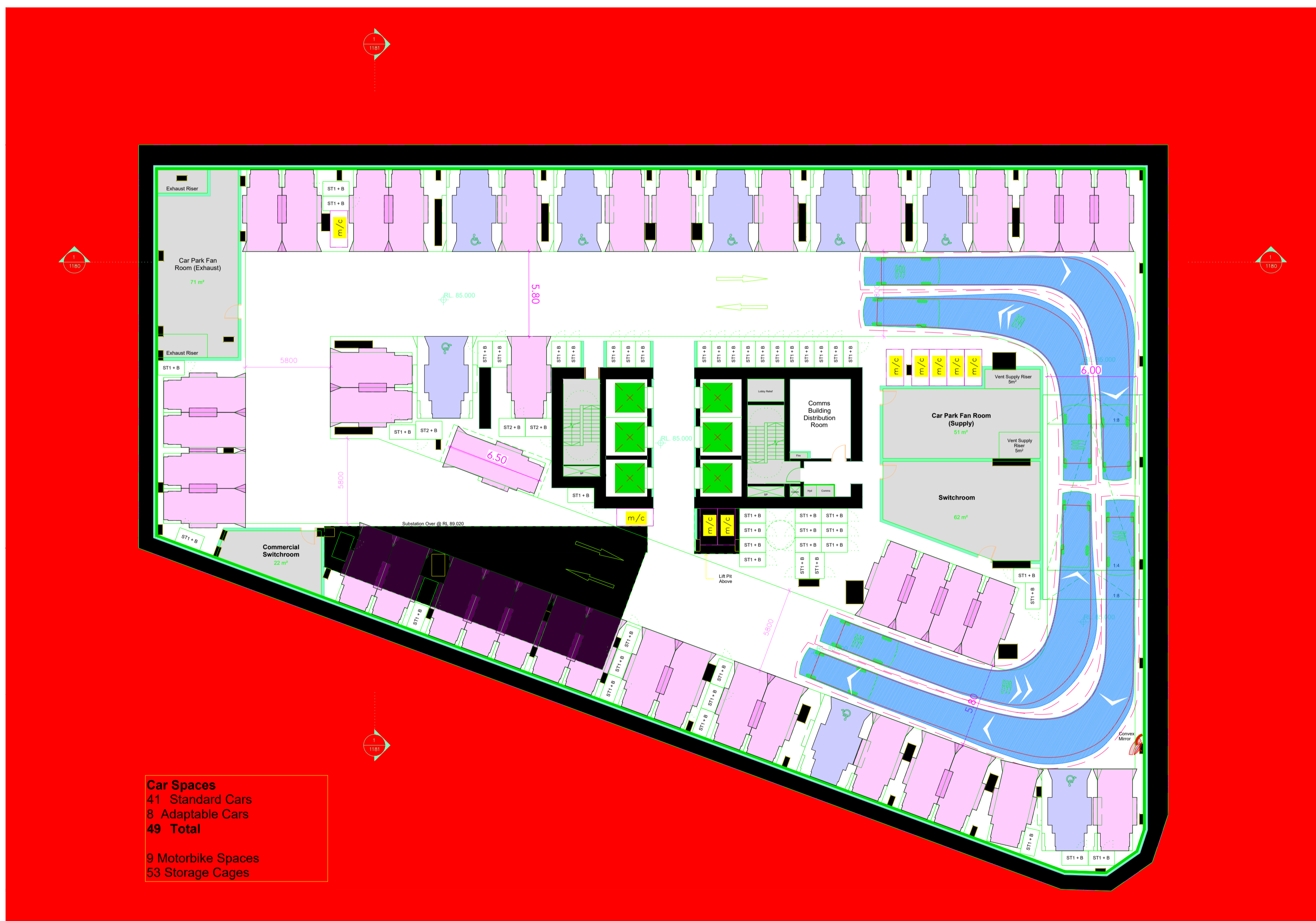
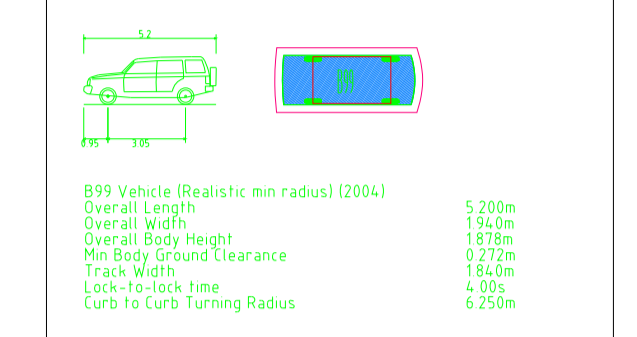
**AFRIL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle notes and access are suitable for the anticipated vehicles. All swept paths performed by ptc using aerial imagery/scaled pdf are indicative and should be used for preliminary purposes only.

**NOT FOR CONSTRUCTION**  
 These drawings have been prepared for information only and are not issue for construction.

**TRAFFIC GUIDANCE SCHEMES**

- All signed to be clearly visible throughout the works and monitored.
- Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
- All signs to be size A.
- All signs to be visible when workers are in the area and covered when workers are not present.
- Signs to be in accordance with RMS Traffic Control at Worksites (TCAWS) Manual and AS1742.3 Traffic Control for Works on roads. RMS/Council approvals to be obtained prior to implementation.
- This TCS is based on TCAWS Manual and is to be set up by qualified traffic controllers (Yellow cards). Any alterations on site to the TCS is to be documented and re-recorded by qualified personnel with a Red/Change card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analysis Pty Ltd based upon vehicle data provided by Autotrack. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.



**Car Spaces**  
 41 Standard Cars  
 8 Adaptable Cars  
**49 Total**  
 9 Motorbike Spaces  
 53 Storage Cages

7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW
REV	DATE	DESCRIPTION	DRAWN	REVIEWED

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 2  
 TRAFFIC ASSESSMENT

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 t +61 2 8920 0800  
 ptcconsultants.co

**CLIENT** STOCKLAND  
**DRAWING #** B2.1  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**

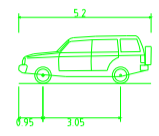
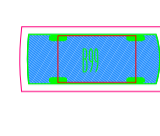
**AFRIL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle routes and accesses are suitable for the anticipated vehicles. All swept paths performed by ptc using aerial imagery/scaled pdf are indicative and should be used for preliminary purposes only.

**NOT FOR CONSTRUCTION**  
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**TRAFFIC GUIDANCE SCHEMES**

- All signed to be clearly visible throughout the works and monitored.
- Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
- All signs to be size A.
- All signs to be visible when workers are in the area and covered when workers are not present.
- Signs to be in accordance with RMS Traffic Control at Worksites (TCAWS) Manual and AS1742.3 Traffic Control for Works on roads. RMS/Council approvals to be obtained prior to implementation.
- This TGS is based on TCAWS Manual and is to be set up by qualified traffic controllers (Yellow cards). Any alterations on site to the TGS is to be documented and re-recorded by qualified personnel with a Red/Orange card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytix Pty Ltd based upon vehicle data provided by Autotrack. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

	
B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.290m
Overall Width	1.940m
Overall Body Height	1.875m
Min Body Ground Clearance	0.270m
Track Width	1.840m
Lock to Lock Time	4.20s
Curb to Curb Turning Radius	6.250m



**Car Spaces**  
 50 Standard Cars  
 8 Adaptable Cars  
 58 Total

6 Motorbike Spaces  
 79 Storage Cages

7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW
REV	DATE	DESCRIPTION	DRAWN	REVIEWED

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 3  
 TRAFFIC ASSESSMENT

**ptc.** Suite 502, 1 James Place  
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 ptcconsultants.co

**CLIENT** STOCKLAND  
**DRAWING #** B3.1  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**

**AFRIAL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/ scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/ scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle notes and access are suitable for the anticipated vehicles. All swept paths performed by ptc using aerial imagery/ scaled pdf are indicative and should be used for preliminary purposes only.

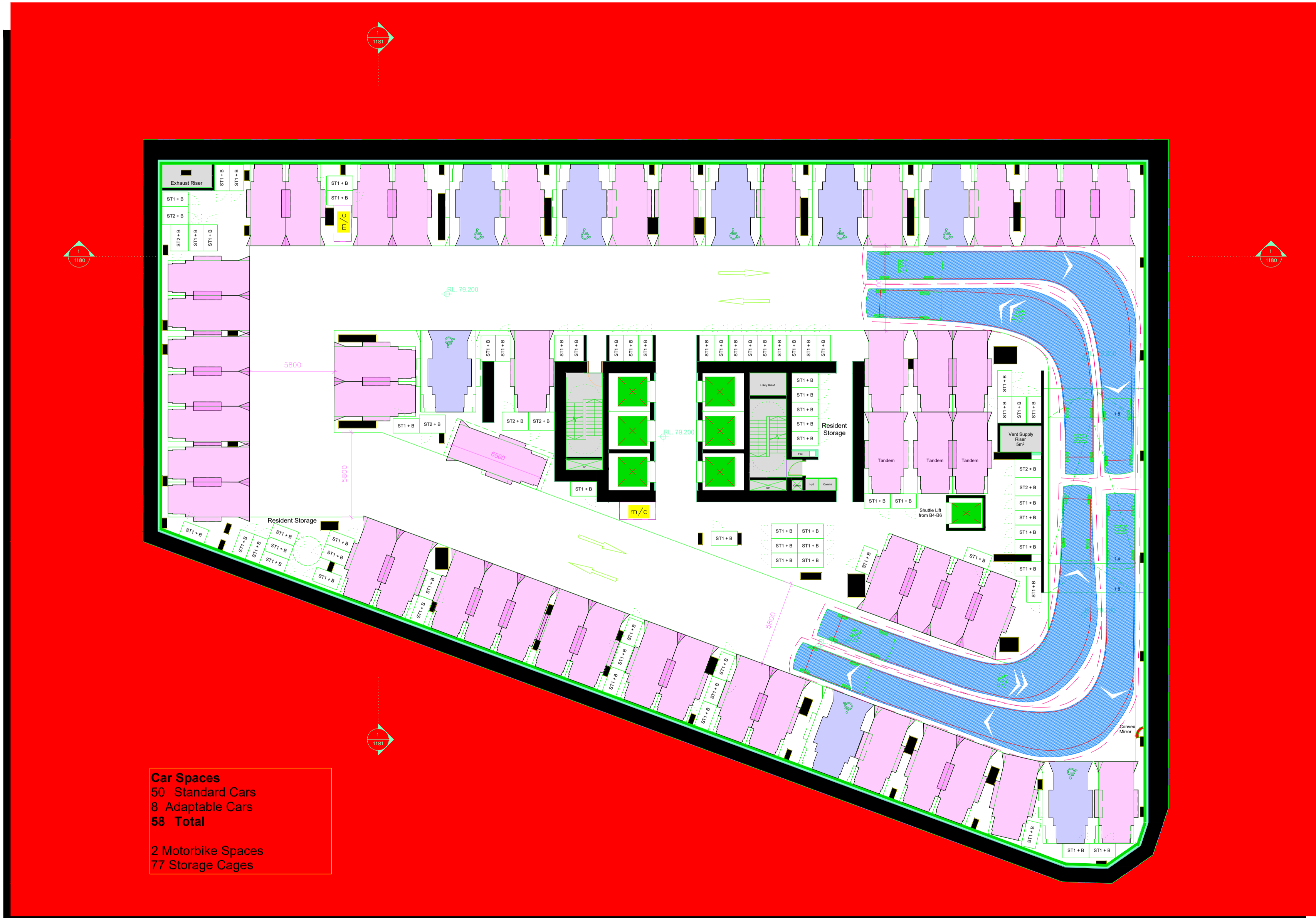
**NOT FOR CONSTRUCTION**  
 These drawings have been prepared for information only and are not issue for construction.

**TRAFFIC GUIDANCE SCHEMES**

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- This TGS is based on TCAWS Manual and is to be set up by qualified traffic controllers (Yellow cards). Any alterations on site to the TGS is to be documented and re-recorded by qualified personnel with a Red/Change card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytix Pty Ltd based upon vehicle data provided by Autotrack. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.290m
Overall Width	1.940m
Overall Body Height	1.875m
Min Body Ground Clearance	0.270m
Track Width	1.840m
Lock-to-lock time	6.20s
Curb to Curb Turning Radius	6.250m



**Car Spaces**  
 50 Standard Cars  
 8 Adaptable Cars  
 58 Total

2 Motorbike Spaces  
 77 Storage Cages

7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW
REV.	DATE	DESCRIPTION	DRAWN	REVIEWED

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 4  
 TRAFFIC ASSESSMENT

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
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 ptcconsultants.co

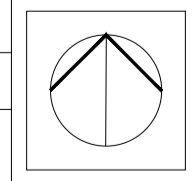
**CLIENT** STOCKLAND

**DRAWING #** B4.1

**PROJECT #** 23-0801

**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW



**REV 7**

**AFRIL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/ scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/ scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle notes and access are suitable for the anticipated vehicles. All swept paths performed by ptc using aerial imagery/ scaled pdf are indicative and should be used for preliminary purposes only.

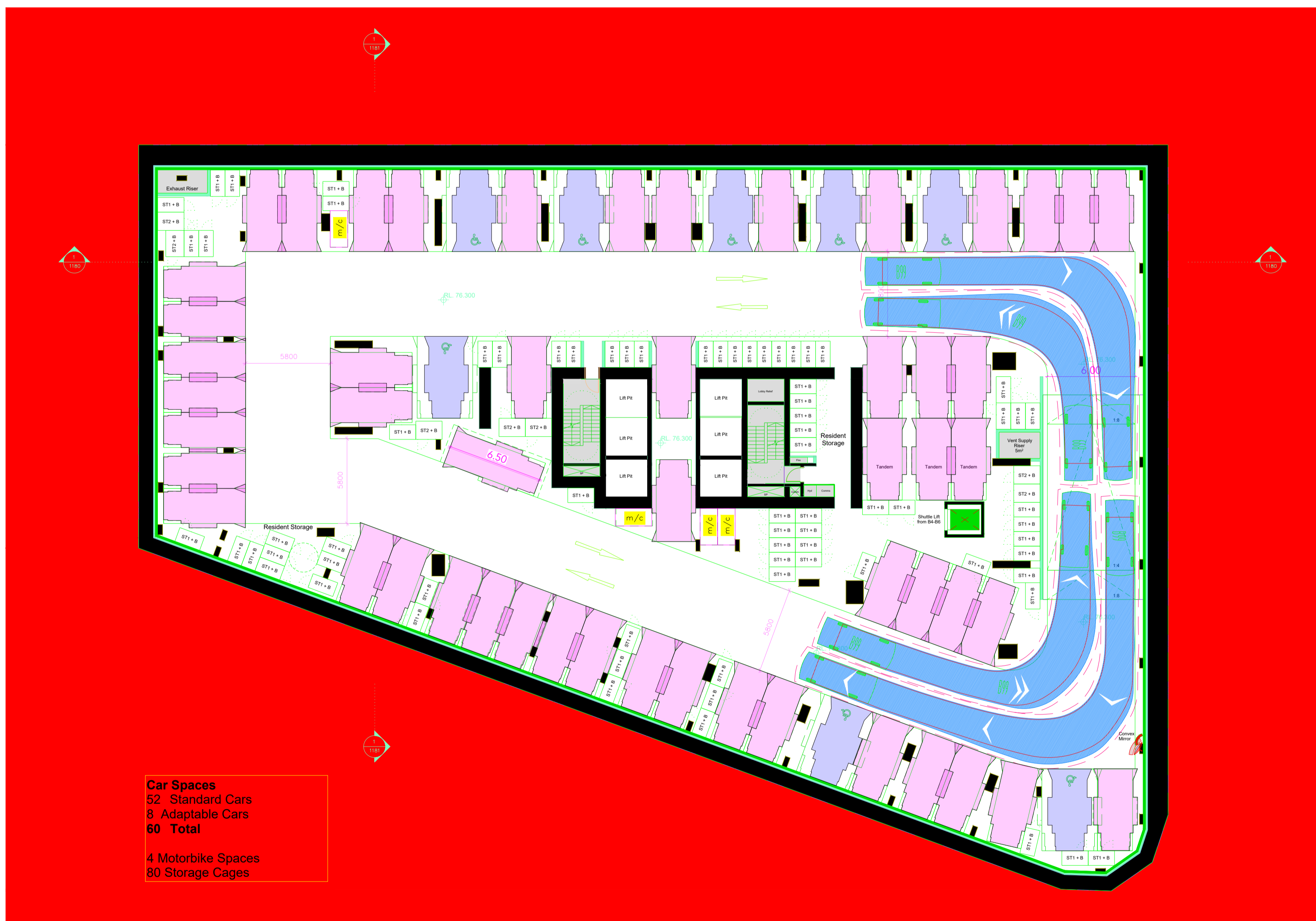
**NOT FOR CONSTRUCTION**  
 These drawings have been prepared for information only and are not issue for construction.

**TRAFFIC GUIDANCE SCHEMES**

- All signed to be clearly visible throughout the works and monitored.
- Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
- All signs to be size A.
- All signs to be visible when workers are in the area and covered when workers are not present.
- Signs to be in accordance with RMS Traffic Control at Worksites (TCAWS) Manual and AS1742.3 Traffic Control for Works on roads. RMS/Council approvals to be obtained prior to implementation.
- This TGS is based on TCAWS Manual and is to be set up by qualified traffic controllers (Yellow cards). Any alterations on site to the TGS is to be documented and re-recorded by qualified personnel with a Red/Change card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytix Pty Ltd based upon vehicle data provided by Autotrack. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.290m
Overall Width	1.940m
Overall Body Height	1.870m
Min Body Ground Clearance	0.270m
Track Width	1.840m
Lock-to-lock time	6.20s
Curb to Curb Turning Radius	6.250m



**Car Spaces**  
 52 Standard Cars  
 8 Adaptable Cars  
 60 Total

4 Motorbike Spaces  
 80 Storage Cages

7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW
REV.	DATE	DESCRIPTION	DRAWN	REVIEWED

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 5  
 TRAFFIC ASSESSMENT

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 t +61 2 8920 0800  
 ptcconsultants.co

**CLIENT** STOCKLAND  
**DRAWING #** B5.1  
**PROJECT #** 23-0801  
**SCALE** 1 : 200 @ A1  
 1 : 400 @ A3

SSDA - DESIGN REVIEW  
**REV 7**

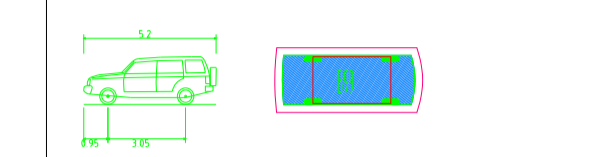
**AERIAL IMAGERY / SCALED PDF**  
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**TRAFFIC GUIDANCE SCHEMES**

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- Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
- All signs to be size A.
- All signs to be visible when workers are in the area and covered when workers are not present.
- Signs to be in accordance with RMS Traffic Control at Worksites (TCAMS) Manual and AS1742.3 Traffic Control for Works on roads. RMS/Council approvals to be obtained prior to implementation.
- This TCS is based on TCAMS Manual and is to be set up by qualified traffic controllers (Yellow cards). Any alterations on site to the TCS is to be documented and re-recorded by qualified personnel with a Red/Change card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytix Pty Ltd based upon vehicle data provided by Autotrack. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.



B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.870m
Min Body Ground Clearance	0.270m
Track Width	1.840m
Lock-to-lock time	6.20s
Curb to Curb Turning Radius	6.250m



**Car Spaces**  
 54 Standard Cars (incl 3 Small Spaces)  
 8 Adaptable Cars  
**62 Total**

4 Motorbike Spaces  
 83 Storage Cages

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
7	18.03.26	UPDATE FOR SSDA	JJ	JJ
6	06.03.26	FOR INFORMATION	JJ	SW
5	17.02.25	ARCH UPDATE	JJ	SW
4	25.11.25	FOR INFORMATION	JJ	SW
3	18.11.25	FOR INFORMATION	JJ	SW
2	04/11/25	FOR INFORMATION	JJ	SW
1	20/10/25	FOR INFORMATION	JJ	SW

**PROJECT**  
 601 PACIFIC HIGHWAY

**DRAWING TITLE**  
 BASEMENT 6  
 TRAFFIC ASSESSMENT

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 t +61 2 8920 0800  
 ptcconsultants.co

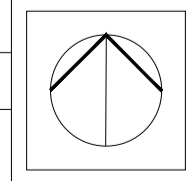
**CLIENT** STOCKLAND

**DRAWING #** B6.1

**PROJECT #** 23-0801

**SCALE** 1 : 200 @ A1  
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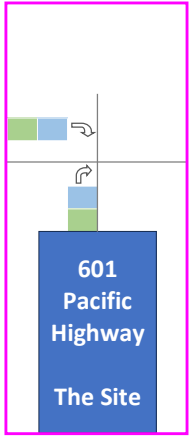
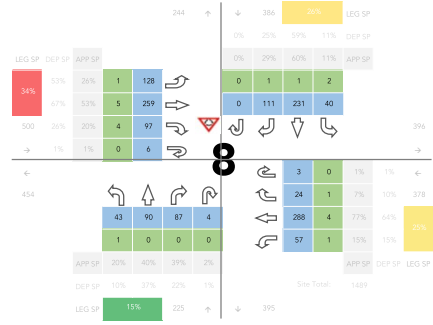
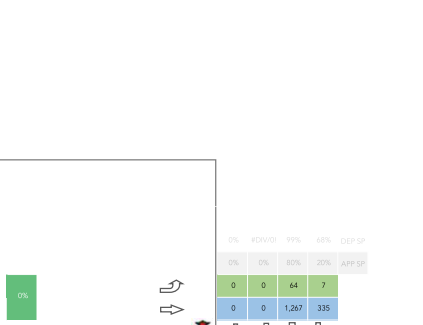
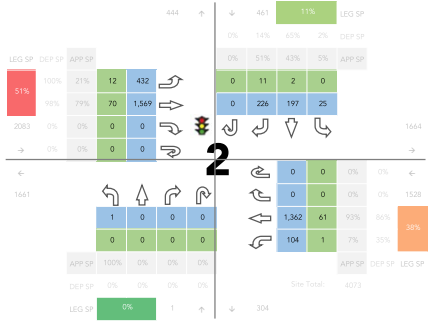
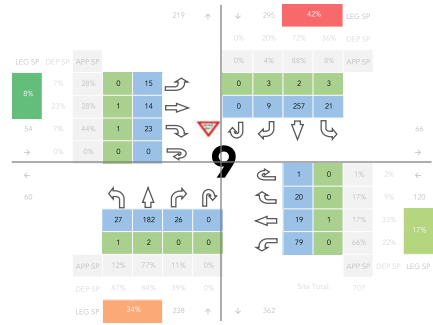
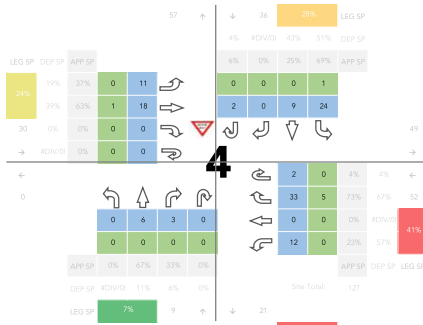
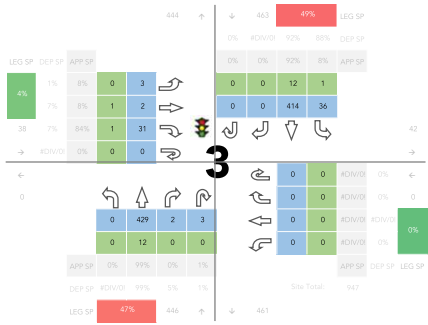
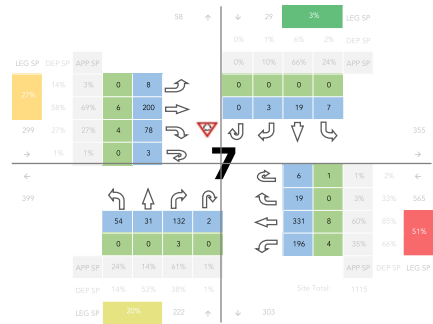
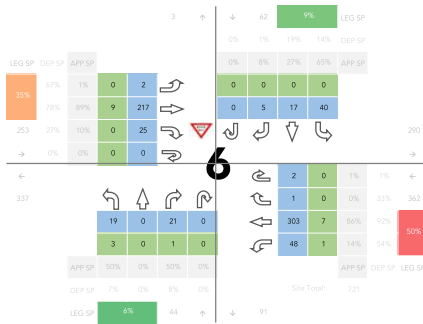
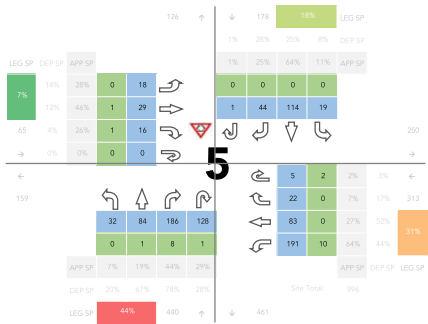
SSDA - DESIGN REVIEW



**REV 7**

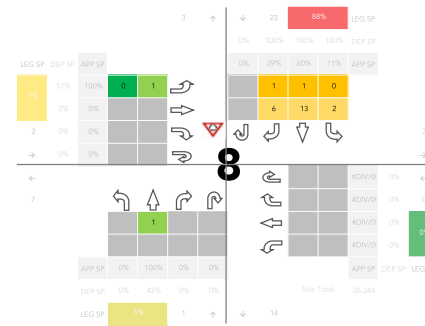
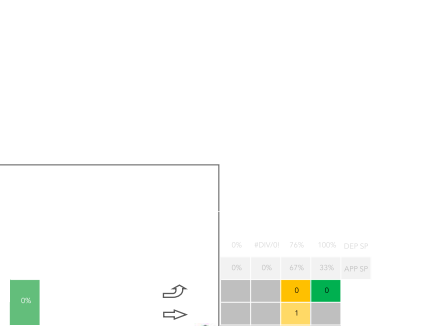
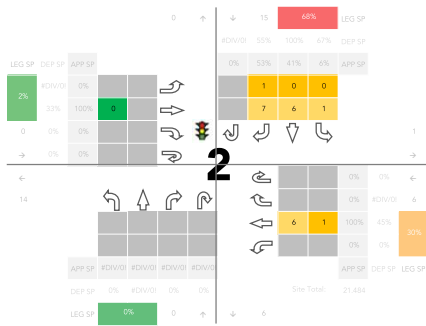
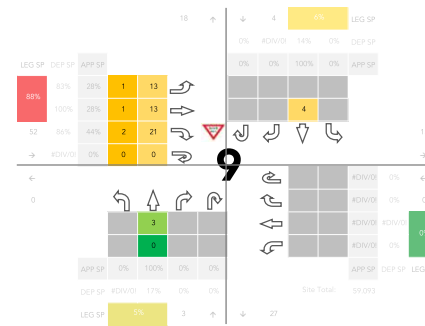
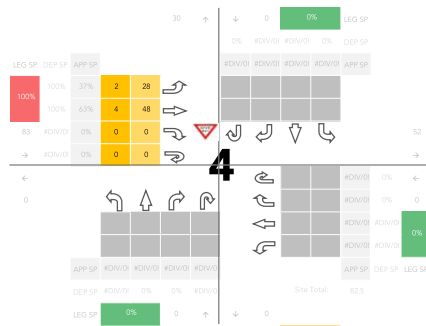
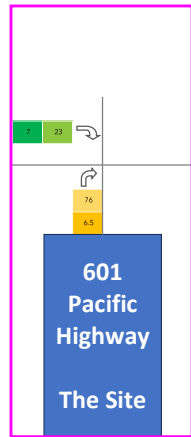
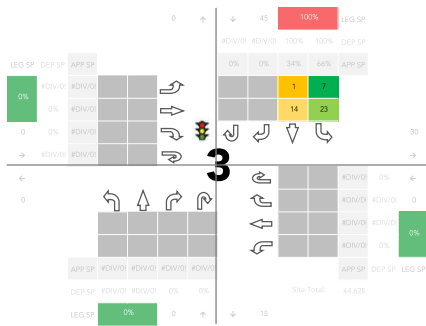
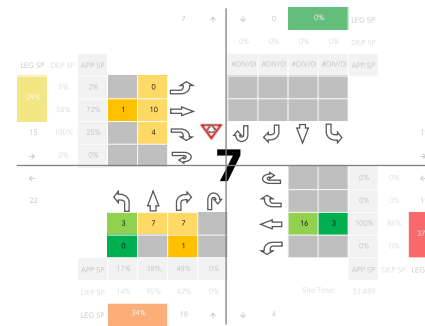
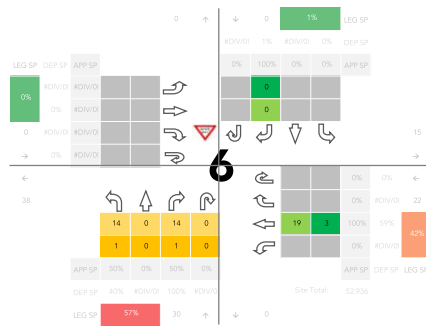
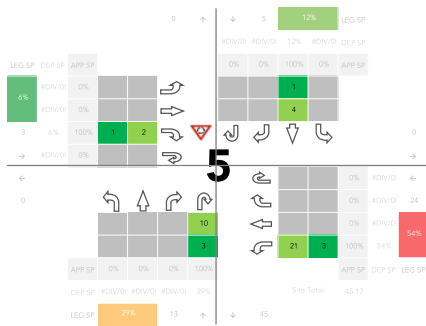
# Appendix 3. Stick Diagrams

EXISTING AM PEAK HOUR

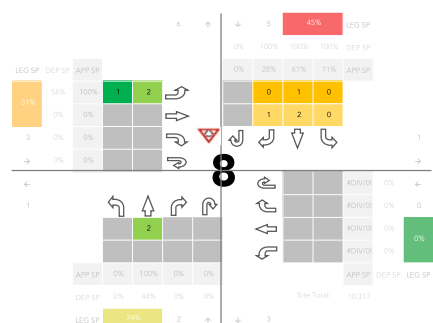
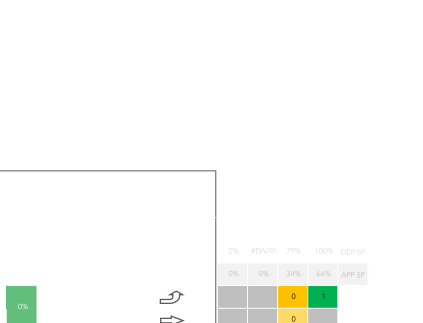
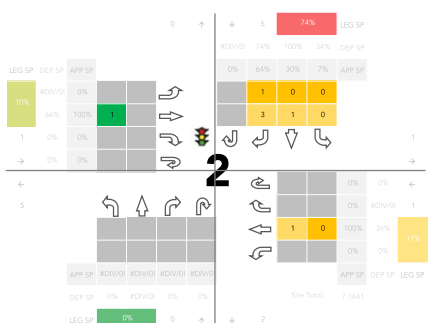
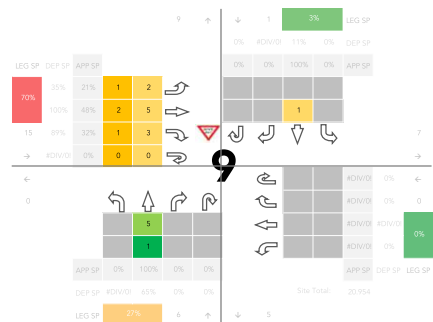
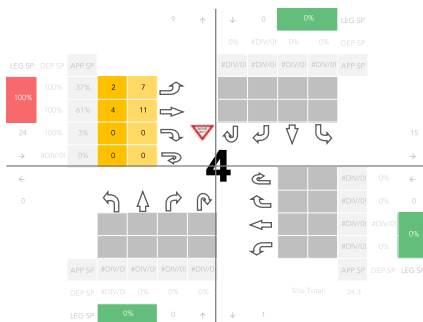
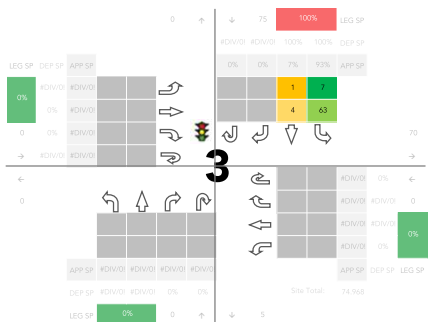
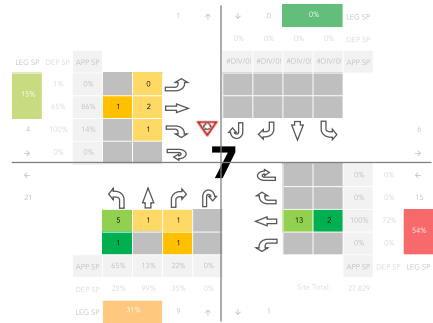
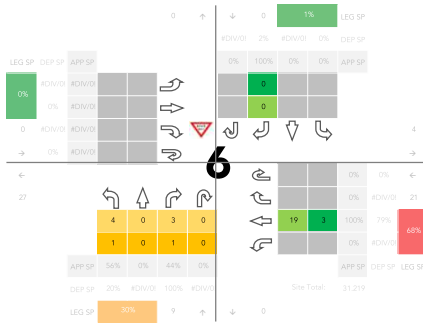
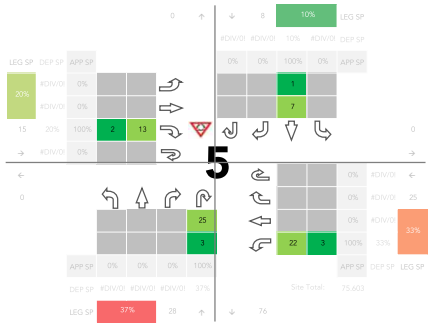




# DEVELOPMENT AM DISTRIBUTION



DEVELOPMENT PM DISTRIBUTION



7 63

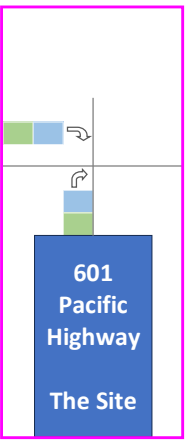
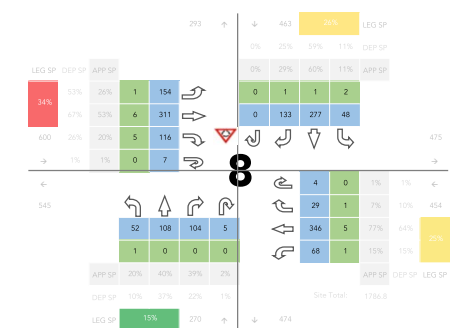
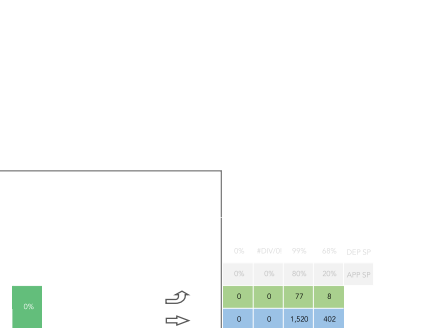
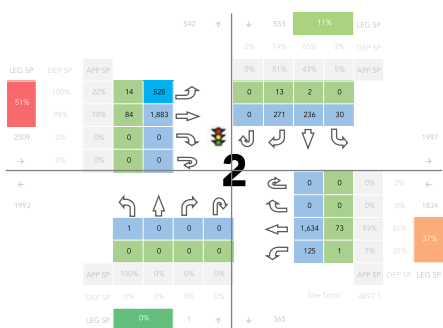
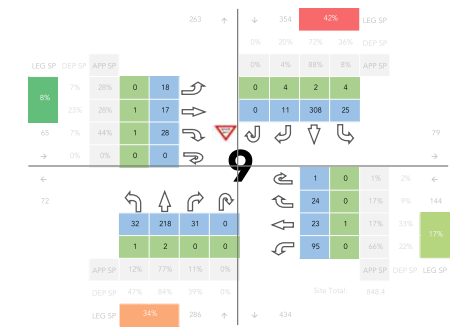
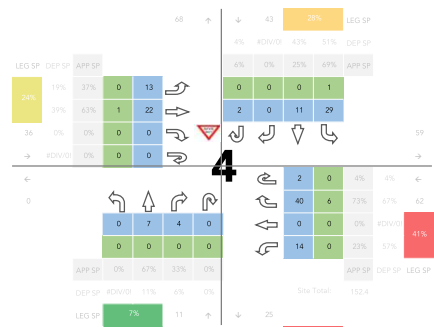
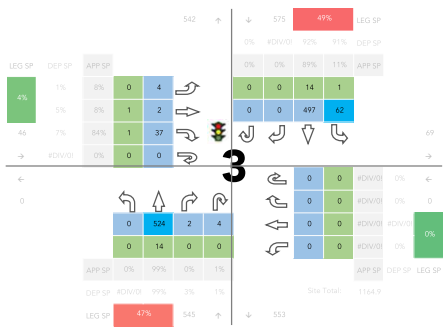
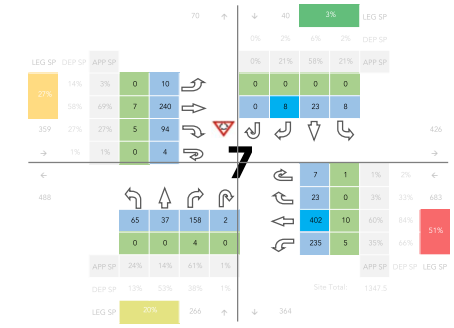
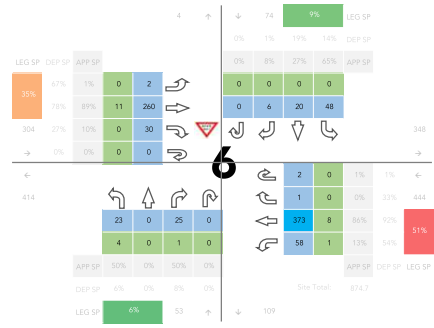
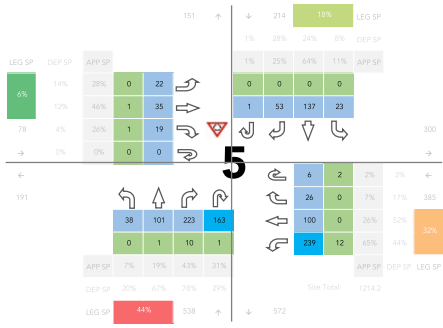
18

6.5

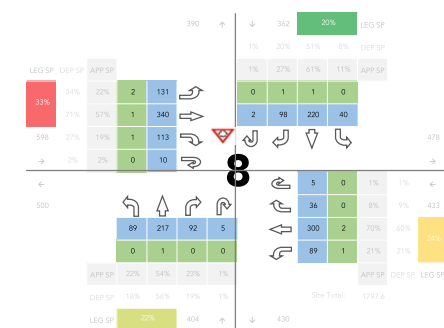
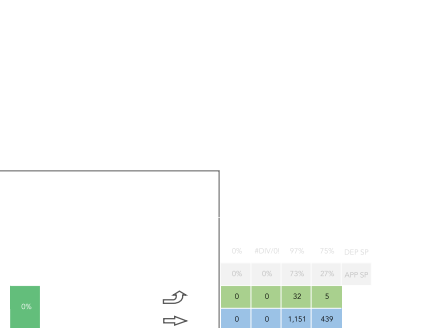
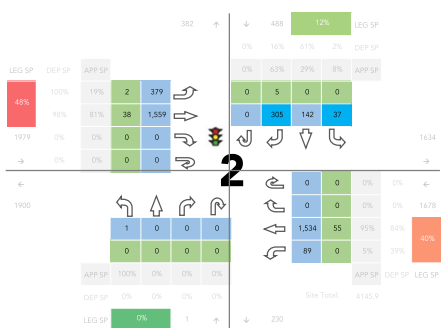
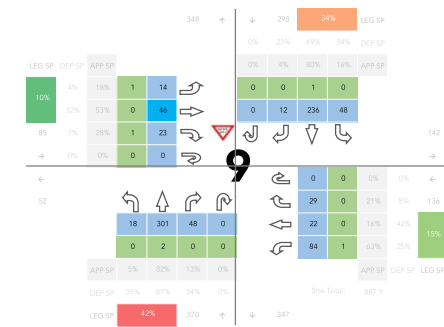
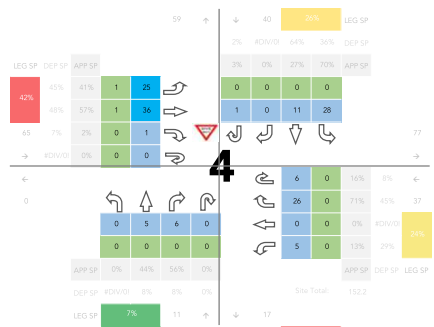
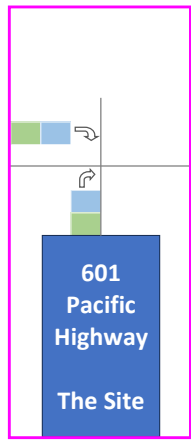
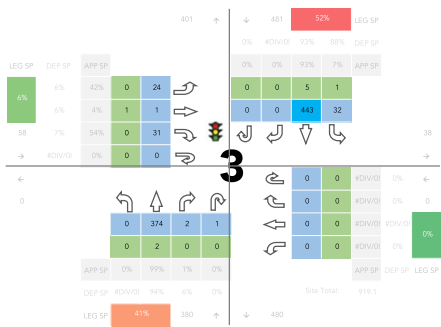
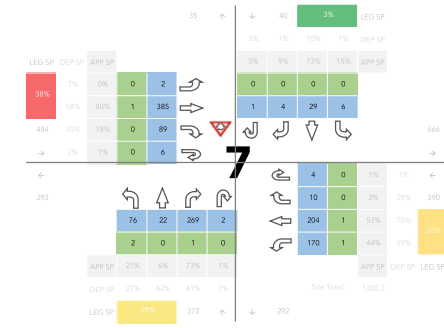
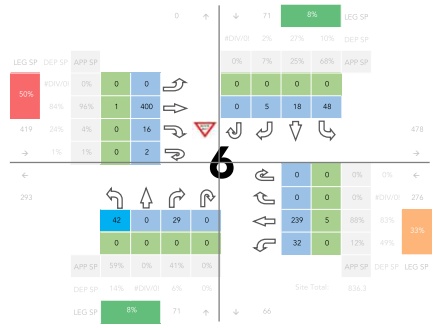
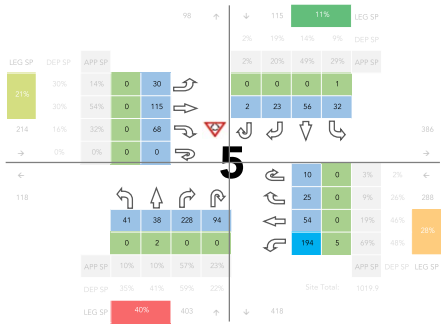
**601 Pacific Highway**

**The Site**

EXISTING AM PEAK HOUR



EXISTING PM PEAK HOUR



# Appendix 4. SIDRA Output

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Existing AM  
Peak Hour (Network Folder:  
General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]	v/c	sec		[ Veh. veh	[ Dist ]				km/h
			veh/h	%	veh/h	%				veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	111	1.0	111	1.0	0.431	15.2	LOS B	11.2	81.1	0.39	0.47	0.39	32.7
5	T1	All MCs	1498	4.3	1498	4.3	0.431	6.6	LOS A	11.3	82.0	0.36	0.35	0.36	42.8
Approach			1608	4.1	1608	4.1	0.431	7.2	LOS A	11.3	82.0	0.36	0.36	0.36	42.0
North: Christie Street															
7	L2	All MCs	26	0.0	26	0.0	0.541	6.0	LOS A	1.7	12.3	0.11	0.17	0.11	26.2
8	T1	All MCs	209	1.0	209	1.0	0.541	2.9	LOS A	1.7	12.3	0.11	0.17	0.11	36.9
9	R2	All MCs	249	4.6	249	4.6	0.541	11.6	LOS A	4.4	32.2	0.29	0.58	0.29	24.9
Approach			485	2.8	485	2.8	0.541	7.5	LOS A	4.4	32.2	0.21	0.38	0.21	28.4
West: Pacific Highway															
10	L2	All MCs	467	2.7	467	2.7	*0.735	8.7	LOS A	20.1	144.1	0.64	0.75	0.64	18.0
11	T1	All MCs	1725	4.3	1725	4.3	0.735	17.8	LOS B	34.8	252.4	0.70	0.64	0.70	22.1
Approach			2193	3.9	2193	3.9	0.735	15.9	LOS B	34.8	252.4	0.68	0.67	0.68	21.1
All Vehicles			4286	3.9	4286	3.9	0.735	11.7	LOS A	34.8	252.4	0.51	0.52	0.51	29.9
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	464	2.7	464	2.7	0.303	6.1	LOS A	6.8	49.0	0.54	0.39	0.54	16.1
Approach			464	2.7	464	2.7	0.303	6.1	LOS A	6.8	49.0	0.54	0.39	0.54	16.1
North: Christie Street															
7a	L1	All MCs	39	2.7	39	2.7	0.559	52.3	LOS D	14.3	102.8	0.93	0.79	0.93	4.9
8	T1	All MCs	448	2.8	448	2.8	0.559	47.8	LOS D	14.3	102.8	0.93	0.79	0.93	4.9
Approach			487	2.8	487	2.8	0.559	48.2	LOS D	14.3	102.8	0.93	0.79	0.93	4.9
West: Sergeants Lane															
10	L2	All MCs	3	0.0	3	0.0	0.010	26.7	LOS B	0.1	0.7	0.86	0.54	0.86	6.4
12a	R1	All MCs	3	33.3	3	33.3	0.140	32.7	LOS C	1.3	9.5	0.89	0.66	0.89	6.3
12	R2	All MCs	34	3.1	34	3.1	0.140	28.1	LOS B	1.3	9.5	0.89	0.66	0.89	6.3
Approach			40	5.3	40	5.3	0.140	28.4	LOS B	1.3	9.5	0.89	0.65	0.89	6.3
All Vehicles			992	2.9	992	2.9	0.559	27.7	LOS B	14.3	102.8	0.74	0.60	0.74	6.5

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
		ped/h	sec						sec	m	m/sec
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	118	61.4	LOS F	0.4	0.4	0.96	0.96	215.3	200.0	0.93
East: Pacific Highway											
P2	Full	217	61.7	LOS F	0.8	0.8	0.96	0.96	215.5	200.0	0.93
North: Christie Street											
P3	Full	322	62.0	LOS F	1.2	1.2	0.97	0.97	215.8	200.0	0.93
All Pedestrians		657	61.8	LOS F	1.2	1.2	0.97	0.97	215.6	200.0	0.93
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	400	29.5	LOS C	0.9	0.9	0.93	0.93	183.4	200.0	1.09
North: Christie Street											
P3	Full	59	29.1	LOS C	0.1	0.1	0.91	0.91	182.9	200.0	1.09
West: Sergeants Lane											
P4	Full	40	61.2	LOS F	0.1	0.1	0.96	0.96	215.1	200.0	0.93
All Pedestrians		499	32.0	LOS D	0.9	0.9	0.93	0.93	185.9	200.0	1.08

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: 1 [Pacific Highway - Albany Street (Site Folder: Existing AM Peak Hour)]

Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Existing - AM Peak

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
SouthEast: Pacific Highway															
22	T1	All MCs	1139	5.3	1139	5.3	0.431	8.2	LOS A	15.0	109.6	0.44	0.40	0.44	31.5
23b	R3	All MCs	168	1.9	168	1.9	*0.912	86.3	LOS F	12.9	91.7	1.00	0.99	1.38	5.9
Approach			1307	4.8	1307	4.8	0.912	18.3	LOS B	15.0	109.6	0.52	0.48	0.56	19.9
East: Albany Street															
4b	L3	All MCs	19	5.6	19	5.6	0.680	60.3	LOS E	14.8	104.9	0.98	0.84	0.99	13.0
6a	R1	All MCs	464	1.4	464	1.4	*0.680	58.3	LOS E	15.0	106.2	0.98	0.84	0.99	7.8
Approach			483	1.5	483	1.5	0.680	58.4	LOS E	15.0	106.2	0.98	0.84	0.99	8.1
NorthWest: Pacific Highway															
27a	L1	All MCs	360	2.0	360	2.0	0.241	6.0	LOS A	1.4	10.3	0.07	0.59	0.07	37.9
28	T1	All MCs	1401	4.8	1401	4.8	*0.671	10.5	LOS A	21.9	159.9	0.52	0.48	0.52	37.9
Approach			1761	4.2	1761	4.2	0.671	9.6	LOS A	21.9	159.9	0.43	0.50	0.43	37.9
All Vehicles			3552	4.1	3552	4.1	0.912	19.4	LOS B	21.9	159.9	0.54	0.54	0.56	23.6

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	[ Dist ] m					
SouthEast: Pacific Highway											
P5	Full	85	61.4	LOS F	0.3	0.3	0.96	0.96	215.2	200.0	0.93
East: Albany Street											
P2	Full	302	61.9	LOS F	1.1	1.1	0.97	0.97	215.8	200.0	0.93
All Pedestrians		387	61.8	LOS F	1.1	1.1	0.97	0.97	215.6	200.0	0.93

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

 Site: 4 [Atchison Street - Mitchell Street (Site Folder: Existing AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Existing - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	6	0.0	6	0.0	0.009	2.4	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
3	R2	All MCs	3	0.0	3	0.0	0.009	2.8	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
Approach			9	0.0	9	0.0	0.009	2.6	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
East: Atchison Street															
4	L2	All MCs	13	0.0	13	0.0	0.033	8.2	LOS A	0.1	1.1	0.05	0.62	0.05	14.6
6	R2	All MCs	40	13.2	40	13.2	0.033	4.7	LOS A	0.1	1.1	0.05	0.62	0.05	34.7
Approach			53	10.0	53	10.0	0.033	5.6	NA	0.1	1.1	0.05	0.62	0.05	22.1
North: Mitchell Street															
7	L2	All MCs	26	4.0	26	4.0	0.019	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	9	0.0	9	0.0	0.019	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			36	2.9	36	2.9	0.019	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.5
West: Atchison Street															
10	L2	All MCs	12	0.0	12	0.0	0.028	7.6	LOS A	0.1	0.6	0.11	1.00	0.11	29.2
11	T1	All MCs	20	5.3	20	5.3	0.028	7.8	LOS A	0.1	0.6	0.11	1.00	0.11	29.2
12	R2	All MCs	1	0.0	1	0.0	0.028	7.8	LOS A	0.1	0.6	0.11	1.00	0.11	13.5
Approach			33	3.2	33	3.2	0.028	7.7	LOS A	0.1	0.6	0.11	1.00	0.11	26.7
All Vehicles			131	5.6	131	5.6	0.033	5.8	NA	0.1	1.1	0.06	0.73	0.06	21.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 5 [Chandos Street - Christie Street (Site Folder: Existing AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Existing - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Christie Street															
1	L2	All MCs	34	0.0	34	0.0	0.574	5.1	LOS A	3.0	20.8	0.44	0.66	0.45	27.9
2	T1	All MCs	88	0.0	88	0.0	0.574	4.8	LOS A	3.0	20.8	0.44	0.66	0.45	41.1
3	R2	All MCs	196	0.0	196	0.0	0.574	8.1	LOS A	3.0	20.8	0.44	0.66	0.45	23.4
3u	U	All MCs	136	0.8	136	0.8	0.574	9.8	LOS A	3.0	20.8	0.44	0.66	0.45	23.4
Approach			454	0.2	454	0.2	0.574	7.7	LOS A	3.0	20.8	0.44	0.66	0.45	31.6
East: Chandos Street															
4	L2	All MCs	212	5.0	212	5.0	0.693	11.4	LOS A	4.7	34.1	0.87	0.76	1.05	28.2
5	T1	All MCs	87	0.0	87	0.0	0.693	11.2	LOS A	4.7	34.1	0.87	0.76	1.05	17.3
6	R2	All MCs	23	0.0	23	0.0	0.693	14.4	LOS A	4.7	34.1	0.87	0.76	1.05	43.4
6u	U	All MCs	7	28.6	7	28.6	0.693	17.5	LOS B	4.7	34.1	0.87	0.76	1.05	28.2
Approach			329	3.8	329	3.8	0.693	11.7	LOS A	4.7	34.1	0.87	0.76	1.05	25.4
North: Christie Street															
7	L2	All MCs	20	0.0	20	0.0	0.410	8.9	LOS A	1.9	13.1	0.72	0.67	0.75	45.0
8	T1	All MCs	120	0.0	120	0.0	0.410	8.9	LOS A	1.9	13.1	0.72	0.67	0.75	45.0
9	R2	All MCs	46	0.0	46	0.0	0.410	12.2	LOS A	1.9	13.1	0.72	0.67	0.75	29.3
9u	U	All MCs	1	0.0	1	0.0	0.410	13.8	LOS A	1.9	13.1	0.72	0.67	0.75	49.1
Approach			187	0.0	187	0.0	0.410	9.8	LOS A	1.9	13.1	0.72	0.67	0.75	39.3
West: Chandos Street															
10	L2	All MCs	19	0.0	19	0.0	0.124	7.3	LOS A	0.6	4.1	0.61	0.65	0.61	45.4
11	T1	All MCs	32	3.3	32	3.3	0.124	7.5	LOS A	0.6	4.1	0.61	0.65	0.61	23.9
12	R2	All MCs	18	5.9	18	5.9	0.124	10.7	LOS A	0.6	4.1	0.61	0.65	0.61	23.9
12u	U	All MCs	1	0.0	1	0.0	0.124	12.2	LOS A	0.6	4.1	0.61	0.65	0.61	13.5
Approach			69	3.0	69	3.0	0.124	8.3	LOS A	0.6	4.1	0.61	0.65	0.61	35.1
All Vehicles			1040	1.5	1040	1.5	0.693	9.4	LOS A	4.7	34.1	0.64	0.69	0.70	31.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: Existing AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Existing - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	23	13.6	23	13.6	0.084	9.7	LOS A	0.3	2.1	0.52	0.93	0.52	19.7
2	T1	All MCs	1	0.0	1	0.0	0.084	11.4	LOS A	0.3	2.1	0.52	0.93	0.52	34.8
3	R2	All MCs	23	4.5	23	4.5	0.084	13.9	LOS A	0.3	2.1	0.52	0.93	0.52	19.7
Approach			47	8.9	47	8.9	0.084	11.8	LOS A	0.3	2.1	0.52	0.93	0.52	20.5
East: Chandos Street															
4	L2	All MCs	52	2.0	52	2.0	0.191	5.6	LOS A	0.0	0.1	0.00	0.08	0.00	56.0
5	T1	All MCs	326	2.3	326	2.3	0.191	0.0	LOS A	0.0	0.1	0.00	0.08	0.00	56.0
6	R2	All MCs	1	0.0	1	0.0	0.191	5.8	LOS A	0.0	0.1	0.00	0.08	0.00	53.2
Approach			379	2.2	379	2.2	0.191	0.8	NA	0.0	0.1	0.00	0.08	0.00	55.9
North: Mitchell Street															
7	L2	All MCs	42	0.0	42	0.0	0.081	9.0	LOS A	0.3	2.1	0.44	0.88	0.44	40.0
8	T1	All MCs	18	0.0	18	0.0	0.081	12.3	LOS A	0.3	2.1	0.44	0.88	0.44	40.0
9	R2	All MCs	5	0.0	5	0.0	0.081	13.0	LOS A	0.3	2.1	0.44	0.88	0.44	40.0
Approach			65	0.0	65	0.0	0.081	10.2	LOS A	0.3	2.1	0.44	0.88	0.44	40.0
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.141	5.5	LOS A	0.2	1.8	0.12	0.14	0.12	52.9
11	T1	All MCs	238	4.0	238	4.0	0.141	0.0	LOS A	0.2	1.8	0.12	0.14	0.12	53.9
12	R2	All MCs	26	0.0	26	0.0	0.141	9.3	LOS A	0.2	1.8	0.12	0.14	0.12	53.9
Approach			266	3.6	266	3.6	0.141	1.0	NA	0.2	1.8	0.12	0.14	0.12	53.9
All Vehicles			758	2.9	758	2.9	0.191	2.3	NA	0.3	2.1	0.11	0.22	0.11	49.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: Existing AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Existing - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	57	0.0	57	0.0	0.290	6.9	LOS A	1.7	12.3	0.62	0.67	0.62	23.7
2	T1	All MCs	33	0.0	33	0.0	0.290	6.7	LOS A	1.7	12.3	0.62	0.67	0.62	34.3
3	R2	All MCs	142	2.2	142	2.2	0.290	9.8	LOS A	1.7	12.3	0.62	0.67	0.62	31.5
3u	U	All MCs	2	0.0	2	0.0	0.290	12.3	LOS A	1.7	12.3	0.62	0.67	0.62	23.7
Approach			234	1.4	234	1.4	0.290	8.7	LOS A	1.7	12.3	0.62	0.67	0.62	30.7
East: Chandos Street															
4	L2	All MCs	211	2.0	211	2.0	0.509	5.0	LOS A	4.2	29.8	0.46	0.49	0.46	33.5
5	T1	All MCs	357	2.4	357	2.4	0.509	4.8	LOS A	4.2	29.8	0.46	0.49	0.46	33.5
6	R2	All MCs	20	0.0	20	0.0	0.509	7.7	LOS A	4.2	29.8	0.46	0.49	0.46	38.1
6u	U	All MCs	7	14.3	7	14.3	0.509	10.7	LOS A	4.2	29.8	0.46	0.49	0.46	36.7
Approach			595	2.3	595	2.3	0.509	5.1	LOS A	4.2	29.8	0.46	0.49	0.46	33.9
North: Oxley Street															
7	L2	All MCs	7	0.0	7	0.0	0.041	6.8	LOS A	0.2	1.5	0.56	0.62	0.56	37.4
8	T1	All MCs	20	0.0	20	0.0	0.041	6.6	LOS A	0.2	1.5	0.56	0.62	0.56	34.2
9	R2	All MCs	3	0.0	3	0.0	0.041	9.5	LOS A	0.2	1.5	0.56	0.62	0.56	34.2
9u	U	All MCs	1	0.0	1	0.0	0.041	12.1	LOS A	0.2	1.5	0.56	0.62	0.56	39.6
Approach			32	0.0	32	0.0	0.041	7.1	LOS A	0.2	1.5	0.56	0.62	0.56	35.5
West: Chandos Street															
10	L2	All MCs	8	0.0	8	0.0	0.326	5.5	LOS A	2.1	15.1	0.50	0.56	0.50	38.1
11	T1	All MCs	217	2.9	217	2.9	0.326	5.4	LOS A	2.1	15.1	0.50	0.56	0.50	37.6
12	R2	All MCs	86	4.9	86	4.9	0.326	8.4	LOS A	2.1	15.1	0.50	0.56	0.50	33.5
12u	U	All MCs	3	0.0	3	0.0	0.326	10.9	LOS A	2.1	15.1	0.50	0.56	0.50	33.5
Approach			315	3.3	315	3.3	0.326	6.3	LOS A	2.1	15.1	0.50	0.56	0.50	36.8
All Vehicles			1175	2.3	1175	2.3	0.509	6.2	LOS A	4.2	29.8	0.51	0.55	0.51	34.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 8 [Albany Street - Oxley Street (Site Folder: Existing AM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Existing AM Peak Hour (Network Folder: General)]**

Existing - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Oxley Street															
1	L2	All MCs	46	2.3	46	2.3	0.306	7.6	LOS A	1.9	13.5	0.68	0.68	0.68	29.2
2	T1	All MCs	95	0.0	95	0.0	0.306	7.2	LOS A	1.9	13.5	0.68	0.68	0.68	29.2
3	R2	All MCs	92	0.0	92	0.0	0.306	10.0	LOS A	1.9	13.5	0.68	0.68	0.68	34.1
3u	U	All MCs	4	0.0	4	0.0	0.306	12.6	LOS A	1.9	13.5	0.68	0.68	0.68	34.8
Approach			237	0.4	237	0.4	0.306	8.5	LOS A	1.9	13.5	0.68	0.68	0.68	31.8
East: Albany Street															
4	L2	All MCs	61	1.7	61	1.7	0.528	10.4	LOS A	4.4	30.9	0.81	0.76	0.91	35.2
5	T1	All MCs	307	1.4	307	1.4	0.528	10.2	LOS A	4.4	30.9	0.81	0.76	0.91	29.6
6	R2	All MCs	26	4.0	26	4.0	0.528	13.2	LOS A	4.4	30.9	0.81	0.76	0.91	29.6
6u	U	All MCs	3	0.0	3	0.0	0.528	14.5	LOS A	4.4	30.9	0.81	0.76	0.91	35.3
Approach			398	1.6	398	1.6	0.528	10.5	LOS A	4.4	30.9	0.81	0.76	0.91	30.9
North: Oxley Street															
7	L2	All MCs	44	4.8	44	4.8	0.528	10.7	LOS A	4.4	31.2	0.80	0.76	0.90	31.4
8	T1	All MCs	244	0.4	244	0.4	0.528	10.3	LOS A	4.4	31.2	0.80	0.76	0.90	32.0
9	R2	All MCs	118	0.9	118	0.9	0.528	13.2	LOS A	4.4	31.2	0.80	0.76	0.90	22.1
9u	U	All MCs	1	0.0	1	0.0	0.528	14.7	LOS B	4.4	31.2	0.80	0.76	0.90	22.1
Approach			407	1.0	407	1.0	0.528	11.2	LOS A	4.4	31.2	0.80	0.76	0.90	29.9
West: Albany Street															
10	L2	All MCs	136	0.8	136	0.8	0.517	7.0	LOS A	3.8	26.9	0.56	0.64	0.56	32.6
11	T1	All MCs	278	1.9	278	1.9	0.517	6.8	LOS A	3.8	26.9	0.56	0.64	0.56	38.8
12	R2	All MCs	106	4.0	106	4.0	0.517	9.8	LOS A	3.8	26.9	0.56	0.64	0.56	36.9
12u	U	All MCs	6	0.0	6	0.0	0.517	11.1	LOS A	3.8	26.9	0.56	0.64	0.56	32.6
Approach			526	2.0	526	2.0	0.517	7.5	LOS A	3.8	26.9	0.56	0.64	0.56	37.2
All Vehicles			1568	1.4	1568	1.4	0.528	9.4	LOS A	4.4	31.2	0.70	0.71	0.75	33.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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


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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: Existing AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing AM Peak Hour (Network Folder: General)]

Existing - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	29	3.6	29	3.6	0.141	4.6	LOS A	0.3	1.9	0.13	0.20	0.13	41.1
2	T1	All MCs	194	1.1	194	1.1	0.141	0.0	LOS A	0.3	1.9	0.13	0.20	0.13	41.1
3	R2	All MCs	27	0.0	27	0.0	0.141	8.0	LOS A	0.3	1.9	0.13	0.20	0.13	41.4
Approach			251	1.3	251	1.3	0.141	1.4	NA	0.3	1.9	0.13	0.20	0.13	41.2
East: Atchison Street															
4	L2	All MCs	83	0.0	83	0.0	0.148	9.3	LOS A	0.6	4.0	0.45	0.91	0.45	32.0
5	T1	All MCs	20	0.0	20	0.0	0.148	11.5	LOS A	0.6	4.0	0.45	0.91	0.45	32.0
6	R2	All MCs	21	0.0	21	0.0	0.148	12.2	LOS A	0.6	4.0	0.45	0.91	0.45	32.0
Approach			124	0.0	124	0.0	0.148	10.1	LOS A	0.6	4.0	0.45	0.91	0.45	32.0
North: Oxley Street															
7	L2	All MCs	25	12.5	25	12.5	0.173	5.4	LOS A	0.2	1.1	0.05	0.10	0.05	46.3
8	T1	All MCs	273	0.8	273	0.8	0.173	0.0	LOS A	0.2	1.1	0.05	0.10	0.05	52.8
9	R2	All MCs	13	25.0	13	25.0	0.173	9.1	LOS A	0.2	1.1	0.05	0.10	0.05	52.8
Approach			311	2.7	311	2.7	0.173	0.8	NA	0.2	1.1	0.05	0.10	0.05	51.4
West: Atchison Street															
10	L2	All MCs	16	0.0	16	0.0	0.095	8.8	LOS A	0.3	2.4	0.50	0.93	0.50	30.3
11	T1	All MCs	16	6.7	16	6.7	0.095	12.0	LOS A	0.3	2.4	0.50	0.93	0.50	35.8
12	R2	All MCs	25	4.2	25	4.2	0.095	13.3	LOS A	0.3	2.4	0.50	0.93	0.50	30.3
Approach			57	3.7	57	3.7	0.095	11.7	LOS A	0.3	2.4	0.50	0.93	0.50	32.4
All Vehicles			742	1.8	742	1.8	0.173	3.4	NA	0.6	4.0	0.18	0.33	0.18	40.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Existing PM  
Peak Hour (Network Folder:  
General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back	Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h	%	veh/h	%				veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	78	0.0	78	0.0	*0.387	13.3	LOS A	9.0	64.9	0.35	0.37	0.35	35.4
5	T1	All MCs	1394	3.5	1394	3.5	0.387	5.1	LOS A	9.0	64.9	0.31	0.29	0.31	45.7
Approach			1472	3.3	1472	3.3	0.387	5.5	LOS A	9.0	64.9	0.31	0.30	0.31	45.2
North: Christie Street															
7	L2	All MCs	28	0.0	28	0.0	0.493	6.7	LOS A	1.6	11.2	0.13	0.30	0.13	21.6
8	T1	All MCs	124	0.0	124	0.0	*0.493	3.5	LOS A	1.6	11.2	0.13	0.30	0.13	33.2
9	R2	All MCs	267	1.6	267	1.6	0.493	10.3	LOS A	3.4	24.0	0.25	0.52	0.25	26.7
Approach			420	1.0	420	1.0	0.493	8.0	LOS A	3.4	24.0	0.20	0.44	0.20	27.9
West: Pacific Highway															
10	L2	All MCs	335	0.6	335	0.6	*0.490	7.2	LOS A	15.6	110.0	0.57	0.67	0.57	18.6
11	T1	All MCs	1401	2.4	1401	2.4	0.490	13.4	LOS A	17.9	127.9	0.52	0.48	0.52	26.9
Approach			1736	2.1	1736	2.1	0.490	12.2	LOS A	17.9	127.9	0.53	0.52	0.53	24.8
All Vehicles			3627	2.4	3627	2.4	0.493	9.0	LOS A	17.9	127.9	0.40	0.42	0.40	33.9
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	331	0.6	331	0.6	0.220	7.3	LOS A	5.5	38.8	0.64	0.39	0.64	14.2
Approach			331	0.6	331	0.6	0.220	7.3	LOS A	5.5	38.8	0.64	0.39	0.64	14.2
North: Christie Street															
7a	L1	All MCs	29	3.6	29	3.6	0.469	49.3	LOS D	10.9	77.2	0.91	0.77	0.91	5.2
8	T1	All MCs	384	1.1	384	1.1	0.469	44.8	LOS D	11.0	77.4	0.91	0.76	0.91	5.2
Approach			414	1.3	414	1.3	0.469	45.1	LOS D	11.0	77.4	0.91	0.76	0.91	5.2
West: Sergeants Lane															
10	L2	All MCs	21	0.0	21	0.0	0.064	24.9	LOS B	0.7	4.7	0.86	0.61	0.86	6.5
12a	R1	All MCs	2	50.0	2	50.0	0.092	29.8	LOS C	0.9	6.8	0.87	0.64	0.87	6.5
12	R2	All MCs	27	0.0	27	0.0	0.092	25.1	LOS B	0.9	6.8	0.87	0.64	0.87	6.5
Approach			51	2.1	51	2.1	0.092	25.2	LOS B	0.9	6.8	0.87	0.63	0.87	6.5
All Vehicles			795	1.1	795	1.1	0.469	28.1	LOS B	11.0	77.4	0.79	0.60	0.79	6.5

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
		ped/h	sec						sec	m	m/sec
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	119	56.9	LOS E	0.4	0.4	0.96	0.96	210.8	200.0	0.95
East: Pacific Highway											
P2	Full	237	57.2	LOS E	0.8	0.8	0.96	0.96	211.1	200.0	0.95
North: Christie Street											
P3	Full	249	57.2	LOS E	0.9	0.9	0.96	0.96	211.1	200.0	0.95
All Pedestrians		605	57.2	LOS E	0.9	0.9	0.96	0.96	211.0	200.0	0.95
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	383	27.2	LOS C	0.8	0.8	0.92	0.92	181.1	200.0	1.10
North: Christie Street											
P3	Full	55	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11
West: Sergeants Lane											
P4	Full	24	56.7	LOS E	0.1	0.1	0.95	0.95	210.5	200.0	0.95
All Pedestrians		462	28.7	LOS C	0.8	0.8	0.92	0.92	182.6	200.0	1.10

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: 1 [Pacific Highway - Albany Street (Site Folder: Existing PM Peak Hour)]

Network: N1 [Existing PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Existing PM Peak Hour

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
SouthEast: Pacific Highway															
22	T1	All MCs	1065	4.2	1065	4.2	0.426	9.9	LOS A	14.7	106.5	0.50	0.45	0.50	28.6
23b	R3	All MCs	131	0.0	131	0.0	*0.579	61.8	LOS E	7.7	53.7	0.98	0.80	0.98	8.0
Approach			1196	3.7	1196	3.7	0.579	15.6	LOS B	14.7	106.5	0.55	0.49	0.55	22.1
East: Albany Street															
4b	L3	All MCs	35	3.0	35	3.0	0.556	51.4	LOS D	12.6	88.9	0.94	0.82	0.94	14.6
6a	R1	All MCs	437	0.5	437	0.5	*0.556	49.4	LOS D	13.0	91.1	0.94	0.82	0.94	9.0
Approach			472	0.7	472	0.7	0.556	49.6	LOS D	13.0	91.1	0.94	0.82	0.94	9.5
NorthWest: Pacific Highway															
27a	L1	All MCs	389	1.1	389	1.1	0.270	6.4	LOS A	2.2	15.8	0.10	0.60	0.10	36.7
28	T1	All MCs	1038	2.7	1038	2.7	*0.564	19.2	LOS B	19.6	140.3	0.67	0.60	0.67	29.0
Approach			1427	2.3	1427	2.3	0.564	15.7	LOS B	19.6	140.3	0.52	0.60	0.52	30.1
All Vehicles			3095	2.6	3095	2.6	0.579	20.8	LOS B	19.6	140.3	0.59	0.59	0.59	22.0

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
SouthEast: Pacific Highway											
P5	Full	194	57.1	LOS E	0.7	0.7	0.96	0.96	211.0	200.0	0.95
East: Albany Street											
P2	Full	432	57.7	LOS E	1.5	1.5	0.97	0.97	211.5	200.0	0.95
All Pedestrians		625	57.5	LOS E	1.5	1.5	0.97	0.97	211.3	200.0	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.

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

 Site: 4 [Atchison Street - Mitchell Street (Site Folder: Existing PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing PM Peak Hour (Network Folder: General)]

Existing PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	4	0.0	4	0.0	0.009	2.3	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
3	R2	All MCs	5	0.0	5	0.0	0.009	2.6	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
Approach			9	0.0	9	0.0	0.009	2.5	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
East: Atchison Street															
4	L2	All MCs	4	0.0	4	0.0	0.016	8.2	LOS A	0.1	0.5	0.05	0.60	0.05	14.7
6	R2	All MCs	23	0.0	23	0.0	0.016	4.6	LOS A	0.1	0.5	0.05	0.60	0.05	35.4
Approach			27	0.0	27	0.0	0.016	5.2	NA	0.1	0.5	0.05	0.60	0.05	25.1
North: Mitchell Street															
7	L2	All MCs	24	0.0	24	0.0	0.018	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	9	0.0	9	0.0	0.018	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			34	0.0	34	0.0	0.018	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.7
West: Atchison Street															
10	L2	All MCs	15	7.1	15	7.1	0.034	7.8	LOS A	0.1	0.8	0.09	1.01	0.09	29.3
11	T1	All MCs	24	4.3	24	4.3	0.034	7.6	LOS A	0.1	0.8	0.09	1.01	0.09	29.3
12	R2	All MCs	1	0.0	1	0.0	0.034	7.8	LOS A	0.1	0.8	0.09	1.01	0.09	13.5
Approach			40	5.3	40	5.3	0.034	7.7	LOS A	0.1	0.8	0.09	1.01	0.09	27.2
All Vehicles			111	1.9	111	1.9	0.034	5.8	NA	0.1	0.8	0.06	0.78	0.06	23.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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# MOVEMENT SUMMARY

**Site: 5 [Chandos Street - Christie Street (Site Folder: Existing PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Existing PM Peak Hour (Network Folder: General)]**

Existing PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Christie Street															
1	L2	All MCs	36	0.0	36	0.0	0.340	4.3	LOS A	1.5	10.4	0.23	0.62	0.23	28.7
2	T1	All MCs	36	5.9	36	5.9	0.340	4.0	LOS A	1.5	10.4	0.23	0.62	0.23	41.5
3	R2	All MCs	200	0.0	200	0.0	0.340	7.3	LOS A	1.5	10.4	0.23	0.62	0.23	24.3
3u	U	All MCs	82	0.0	82	0.0	0.340	9.0	LOS A	1.5	10.4	0.23	0.62	0.23	24.3
Approach			354	0.6	354	0.6	0.340	7.0	LOS A	1.5	10.4	0.23	0.62	0.23	29.5
East: Chandos Street															
4	L2	All MCs	166	2.5	166	2.5	0.332	6.6	LOS A	1.7	12.2	0.50	0.58	0.50	35.4
5	T1	All MCs	47	0.0	47	0.0	0.332	6.6	LOS A	1.7	12.2	0.50	0.58	0.50	19.0
6	R2	All MCs	22	0.0	22	0.0	0.332	9.8	LOS A	1.7	12.2	0.50	0.58	0.50	47.5
6u	U	All MCs	8	0.0	8	0.0	0.332	11.4	LOS A	1.7	12.2	0.50	0.58	0.50	35.4
Approach			244	1.7	244	1.7	0.332	7.1	LOS A	1.7	12.2	0.50	0.58	0.50	31.8
North: Christie Street															
7	L2	All MCs	29	3.6	29	3.6	0.160	8.5	LOS A	0.8	5.9	0.62	0.65	0.62	45.6
8	T1	All MCs	49	0.0	49	0.0	0.160	8.4	LOS A	0.8	5.9	0.62	0.65	0.62	45.6
9	R2	All MCs	20	0.0	20	0.0	0.160	11.6	LOS A	0.8	5.9	0.62	0.65	0.62	29.5
9u	U	All MCs	2	0.0	2	0.0	0.160	13.2	LOS A	0.8	5.9	0.62	0.65	0.62	49.5
Approach			101	1.0	101	1.0	0.160	9.2	LOS A	0.8	5.9	0.62	0.65	0.62	40.9
West: Chandos Street															
10	L2	All MCs	26	0.0	26	0.0	0.253	6.9	LOS A	1.5	10.4	0.58	0.61	0.58	45.8
11	T1	All MCs	101	0.0	101	0.0	0.253	6.9	LOS A	1.5	10.4	0.58	0.61	0.58	24.8
12	R2	All MCs	60	0.0	60	0.0	0.253	10.1	LOS A	1.5	10.4	0.58	0.61	0.58	24.8
12u	U	All MCs	1	0.0	1	0.0	0.253	11.7	LOS A	1.5	10.4	0.58	0.61	0.58	13.7
Approach			188	0.0	188	0.0	0.253	7.9	LOS A	1.5	10.4	0.58	0.61	0.58	31.8
All Vehicles			887	0.8	887	0.8	0.340	7.5	LOS A	1.7	12.2	0.42	0.61	0.42	33.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: Existing PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing PM Peak Hour (Network Folder: General)]

Existing PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	28	0.0	28	0.0	0.082	8.3	LOS A	0.3	2.0	0.46	0.88	0.46	20.8
2	T1	All MCs	1	0.0	1	0.0	0.082	11.1	LOS A	0.3	2.0	0.46	0.88	0.46	35.6
3	R2	All MCs	25	0.0	25	0.0	0.082	12.9	LOS A	0.3	2.0	0.46	0.88	0.46	20.8
Approach			55	0.0	55	0.0	0.082	10.5	LOS A	0.3	2.0	0.46	0.88	0.46	21.4
East: Chandos Street															
4	L2	All MCs	28	0.0	28	0.0	0.122	5.5	LOS A	0.0	0.1	0.01	0.07	0.01	56.3
5	T1	All MCs	214	2.0	214	2.0	0.122	0.0	LOS A	0.0	0.1	0.01	0.07	0.01	56.3
6	R2	All MCs	1	0.0	1	0.0	0.122	6.5	LOS A	0.0	0.1	0.01	0.07	0.01	53.3
Approach			243	1.7	243	1.7	0.122	0.7	NA	0.0	0.1	0.01	0.07	0.01	56.3
North: Mitchell Street															
7	L2	All MCs	42	0.0	42	0.0	0.078	9.6	LOS A	0.3	2.0	0.47	0.90	0.47	39.9
8	T1	All MCs	16	0.0	16	0.0	0.078	11.8	LOS A	0.3	2.0	0.47	0.90	0.47	39.9
9	R2	All MCs	4	0.0	4	0.0	0.078	12.8	LOS A	0.3	2.0	0.47	0.90	0.47	39.9
Approach			62	0.0	62	0.0	0.078	10.4	LOS A	0.3	2.0	0.47	0.90	0.47	39.9
West: Chandos Street															
10	L2	All MCs	1	0.0	1	0.0	0.181	5.5	LOS A	0.1	0.8	0.04	0.04	0.04	54.1
11	T1	All MCs	352	0.3	352	0.3	0.181	0.0	LOS A	0.1	0.8	0.04	0.04	0.04	57.8
12	R2	All MCs	14	0.0	14	0.0	0.181	7.7	LOS A	0.1	0.8	0.04	0.04	0.04	57.8
Approach			366	0.3	366	0.3	0.181	0.3	NA	0.1	0.8	0.04	0.04	0.04	57.8
All Vehicles			726	0.7	726	0.7	0.181	2.1	NA	0.3	2.0	0.10	0.19	0.10	50.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: Existing PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Existing PM Peak Hour (Network Folder: General)]

Existing PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	68	3.1	68	3.1	0.327	5.6	LOS A	2.0	14.4	0.48	0.61	0.48	25.3
2	T1	All MCs	19	0.0	19	0.0	0.327	5.3	LOS A	2.0	14.4	0.48	0.61	0.48	35.4
3	R2	All MCs	237	0.4	237	0.4	0.327	8.3	LOS A	2.0	14.4	0.48	0.61	0.48	32.8
3u	U	All MCs	2	0.0	2	0.0	0.327	10.8	LOS A	2.0	14.4	0.48	0.61	0.48	25.3
Approach			326	1.0	326	1.0	0.327	7.5	LOS A	2.0	14.4	0.48	0.61	0.48	32.0
East: Chandos Street															
4	L2	All MCs	151	0.7	151	0.7	0.301	4.8	LOS A	1.9	13.7	0.36	0.48	0.36	34.3
5	T1	All MCs	180	0.6	180	0.6	0.301	4.6	LOS A	1.9	13.7	0.36	0.48	0.36	34.3
6	R2	All MCs	8	0.0	8	0.0	0.301	7.5	LOS A	1.9	13.7	0.36	0.48	0.36	38.6
6u	U	All MCs	3	0.0	3	0.0	0.301	10.1	LOS A	1.9	13.7	0.36	0.48	0.36	38.8
Approach			342	0.6	342	0.6	0.301	4.8	LOS A	1.9	13.7	0.36	0.48	0.36	34.6
North: Oxley Street															
7	L2	All MCs	5	0.0	5	0.0	0.055	8.4	LOS A	0.3	2.1	0.68	0.69	0.68	35.7
8	T1	All MCs	25	0.0	25	0.0	0.055	8.3	LOS A	0.3	2.1	0.68	0.69	0.68	31.9
9	R2	All MCs	3	0.0	3	0.0	0.055	11.2	LOS A	0.3	2.1	0.68	0.69	0.68	31.9
9u	U	All MCs	1	0.0	1	0.0	0.055	13.8	LOS A	0.3	2.1	0.68	0.69	0.68	37.9
Approach			35	0.0	35	0.0	0.055	8.7	LOS A	0.3	2.1	0.68	0.69	0.68	33.0
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.457	6.3	LOS A	3.2	22.6	0.62	0.59	0.62	37.7
11	T1	All MCs	339	0.3	339	0.3	0.457	6.1	LOS A	3.2	22.6	0.62	0.59	0.62	37.2
12	R2	All MCs	78	0.0	78	0.0	0.457	9.1	LOS A	3.2	22.6	0.62	0.59	0.62	32.8
12u	U	All MCs	5	0.0	5	0.0	0.457	11.7	LOS A	3.2	22.6	0.62	0.59	0.62	32.8
Approach			424	0.2	424	0.2	0.457	6.7	LOS A	3.2	22.6	0.62	0.59	0.62	36.6
All Vehicles			1127	0.6	1127	0.6	0.457	6.4	LOS A	3.2	22.6	0.50	0.57	0.50	34.7

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 8 [Albany Street - Oxley Street (Site Folder: Existing PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Existing PM Peak Hour (Network Folder: General)]**

Existing PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	78	0.0	78	0.0	0.429	7.4	LOS A	2.9	20.4	0.70	0.66	0.70	30.0
2	T1	All MCs	192	0.5	192	0.5	0.429	7.1	LOS A	2.9	20.4	0.70	0.66	0.70	30.0
3	R2	All MCs	81	0.0	81	0.0	0.429	9.9	LOS A	2.9	20.4	0.70	0.66	0.70	34.6
3u	U	All MCs	4	0.0	4	0.0	0.429	12.4	LOS A	2.9	20.4	0.70	0.66	0.70	35.4
Approach			355	0.3	355	0.3	0.429	7.8	LOS A	2.9	20.4	0.70	0.66	0.70	31.6
East: Albany Street															
4	L2	All MCs	79	1.3	79	1.3	0.459	8.4	LOS A	3.2	22.7	0.71	0.67	0.72	37.4
5	T1	All MCs	265	0.8	265	0.8	0.459	8.2	LOS A	3.2	22.7	0.71	0.67	0.72	32.6
6	R2	All MCs	32	0.0	32	0.0	0.459	11.0	LOS A	3.2	22.7	0.71	0.67	0.72	32.6
6u	U	All MCs	4	0.0	4	0.0	0.459	12.5	LOS A	3.2	22.7	0.71	0.67	0.72	37.5
Approach			380	0.8	380	0.8	0.459	8.6	LOS A	3.2	22.7	0.71	0.67	0.72	34.1
North: Oxley Street															
7	L2	All MCs	35	0.0	35	0.0	0.420	9.1	LOS A	2.9	20.4	0.75	0.71	0.75	33.5
8	T1	All MCs	194	0.5	194	0.5	0.420	8.8	LOS A	2.9	20.4	0.75	0.71	0.75	33.7
9	R2	All MCs	87	1.2	87	1.2	0.420	11.8	LOS A	2.9	20.4	0.75	0.71	0.75	24.1
9u	U	All MCs	2	0.0	2	0.0	0.420	13.2	LOS A	2.9	20.4	0.75	0.71	0.75	24.1
Approach			318	0.7	318	0.7	0.420	9.7	LOS A	2.9	20.4	0.75	0.71	0.75	31.9
West: Albany Street															
10	L2	All MCs	117	1.8	117	1.8	0.576	8.6	LOS A	4.7	33.3	0.68	0.72	0.73	30.5
11	T1	All MCs	299	0.4	299	0.4	0.576	8.4	LOS A	4.7	33.3	0.68	0.72	0.73	37.4
12	R2	All MCs	100	1.1	100	1.1	0.576	11.2	LOS A	4.7	33.3	0.68	0.72	0.73	35.8
12u	U	All MCs	8	0.0	8	0.0	0.576	12.7	LOS A	4.7	33.3	0.68	0.72	0.73	30.5
Approach			524	0.8	524	0.8	0.576	9.0	LOS A	4.7	33.3	0.68	0.72	0.73	35.9
All Vehicles			1577	0.7	1577	0.7	0.576	8.8	LOS A	4.7	33.3	0.71	0.69	0.72	33.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: Existing PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Existing PM Peak Hour (Network Folder: General)]

Existing PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	16	0.0	16	0.0	0.182	4.6	LOS A	0.4	2.6	0.13	0.17	0.13	42.0
2	T1	All MCs	266	0.8	266	0.8	0.182	0.0	LOS A	0.4	2.6	0.13	0.17	0.13	42.0
3	R2	All MCs	42	0.0	42	0.0	0.182	7.2	LOS A	0.4	2.6	0.13	0.17	0.13	41.8
Approach			324	0.6	324	0.6	0.182	1.2	NA	0.4	2.6	0.13	0.17	0.13	42.0
East: Atchison Street															
4	L2	All MCs	75	1.4	75	1.4	0.146	9.0	LOS A	0.6	3.9	0.43	0.89	0.43	31.8
5	T1	All MCs	19	0.0	19	0.0	0.146	11.7	LOS A	0.6	3.9	0.43	0.89	0.43	31.8
6	R2	All MCs	25	0.0	25	0.0	0.146	12.7	LOS A	0.6	3.9	0.43	0.89	0.43	31.8
Approach			119	0.9	119	0.9	0.146	10.2	LOS A	0.6	3.9	0.43	0.89	0.43	31.8
North: Oxley Street															
7	L2	All MCs	42	0.0	42	0.0	0.143	5.4	LOS A	0.1	0.8	0.05	0.15	0.05	47.8
8	T1	All MCs	208	0.5	208	0.5	0.143	0.0	LOS A	0.1	0.8	0.05	0.15	0.05	49.0
9	R2	All MCs	11	0.0	11	0.0	0.143	8.9	LOS A	0.1	0.8	0.05	0.15	0.05	49.0
Approach			261	0.4	261	0.4	0.143	1.2	NA	0.1	0.8	0.05	0.15	0.05	48.6
West: Atchison Street															
10	L2	All MCs	14	7.7	14	7.7	0.112	9.6	LOS A	0.4	2.8	0.53	0.97	0.53	30.2
11	T1	All MCs	32	0.0	32	0.0	0.112	11.6	LOS A	0.4	2.8	0.53	0.97	0.53	36.4
12	R2	All MCs	21	5.0	21	5.0	0.112	13.5	LOS A	0.4	2.8	0.53	0.97	0.53	30.2
Approach			66	3.2	66	3.2	0.112	11.8	LOS A	0.4	2.8	0.53	0.97	0.53	33.9
All Vehicles			771	0.8	771	0.8	0.182	3.5	NA	0.6	3.9	0.18	0.34	0.18	39.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development  
AM Peak Hour (Network Folder:  
General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back	Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h	%	veh/h	%				veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	111	1.0	111	1.0	0.433	15.0	LOS B	11.2	80.5	0.39	0.47	0.39	32.8
5	T1	All MCs	1505	4.3	1505	4.3	0.433	6.5	LOS A	11.3	82.2	0.36	0.35	0.36	42.9
Approach			1616	4.1	1616	4.1	0.433	7.1	LOS A	11.3	82.2	0.36	0.36	0.36	42.1
North: Christie Street															
7	L2	All MCs	27	0.0	27	0.0	0.560	6.5	LOS A	2.1	15.1	0.13	0.19	0.13	24.5
8	T1	All MCs	216	1.0	216	1.0	0.560	3.3	LOS A	2.1	15.1	0.13	0.19	0.13	35.6
9	R2	All MCs	258	4.9	258	4.9	0.560	10.8	LOS A	4.4	31.8	0.28	0.57	0.28	25.6
Approach			501	2.9	501	2.9	0.560	7.4	LOS A	4.4	31.8	0.21	0.39	0.21	28.6
West: Pacific Highway															
10	L2	All MCs	467	2.7	467	2.7	*0.737	8.7	LOS A	20.1	144.3	0.64	0.76	0.64	18.0
11	T1	All MCs	1725	4.3	1725	4.3	0.737	17.8	LOS B	34.9	252.9	0.70	0.65	0.70	22.1
Approach			2193	3.9	2193	3.9	0.737	15.9	LOS B	34.9	252.9	0.69	0.67	0.69	21.0
All Vehicles			4309	3.9	4309	3.9	0.737	11.6	LOS A	34.9	252.9	0.51	0.52	0.51	29.9
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	464	2.7	464	2.7	0.303	6.0	LOS A	6.8	49.0	0.53	0.39	0.53	16.3
Approach			464	2.7	464	2.7	0.303	6.0	LOS A	6.8	49.0	0.53	0.39	0.53	16.3
North: Christie Street															
7a	L1	All MCs	71	11.9	71	11.9	0.659	55.4	LOS D	14.1	102.8	0.95	0.82	0.95	4.8
8	T1	All MCs	464	2.9	464	2.9	0.659	51.4	LOS D	14.3	102.8	0.96	0.82	0.96	4.8
Approach			535	4.1	535	4.1	0.659	51.9	LOS D	14.3	102.8	0.96	0.82	0.96	4.8
West: Sergeants Lane															
10	L2	All MCs	3	0.0	3	0.0	0.010	26.7	LOS B	0.1	0.7	0.86	0.54	0.86	6.4
12a	R1	All MCs	3	33.3	3	33.3	0.138	32.6	LOS C	1.3	9.5	0.89	0.66	0.89	6.3
12	R2	All MCs	34	3.1	34	3.1	0.138	28.1	LOS B	1.3	9.5	0.89	0.66	0.89	6.3
Approach			40	5.3	40	5.3	0.138	28.3	LOS B	1.3	9.5	0.89	0.65	0.89	6.3
All Vehicles			1039	3.5	1039	3.5	0.659	30.5	LOS C	14.3	102.8	0.76	0.62	0.76	6.2

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
		ped/h	sec						sec	m	m/sec
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	118	61.4	LOS F	0.4	0.4	0.96	0.96	215.3	200.0	0.93
East: Pacific Highway											
P2	Full	217	61.7	LOS F	0.8	0.8	0.96	0.96	215.5	200.0	0.93
North: Christie Street											
P3	Full	322	62.0	LOS F	1.2	1.2	0.97	0.97	215.8	200.0	0.93
All Pedestrians		657	61.8	LOS F	1.2	1.2	0.97	0.97	215.6	200.0	0.93
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	400	29.5	LOS C	0.9	0.9	0.93	0.93	183.4	200.0	1.09
North: Christie Street											
P3	Full	59	29.1	LOS C	0.1	0.1	0.91	0.91	182.9	200.0	1.09
West: Sergeants Lane											
P4	Full	40	61.2	LOS F	0.1	0.1	0.96	0.96	215.1	200.0	0.93
All Pedestrians		499	32.0	LOS D	0.9	0.9	0.93	0.93	185.9	200.0	1.08

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: 1 [Pacific Highway - Albany Street (Site Folder: Development AM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Development AM Peak Hour (Network Folder: General)]**

Development - AM Peak

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]				[ Veh. veh	[ Dist ] m				
			veh/h	% veh/h	%	%	v/c	sec							km/h
SouthEast: Pacific Highway															
22	T1	All MCs	1139	5.3	1139	5.3	0.431	8.2	LOS A	15.0	109.6	0.44	0.40	0.44	31.5
23b	R3	All MCs	168	1.9	168	1.9	*0.912	86.3	LOS F	12.9	91.7	1.00	0.99	1.38	5.9
Approach			1307	4.8	1307	4.8	0.912	18.3	LOS B	15.0	109.6	0.52	0.48	0.56	19.9
East: Albany Street															
4b	L3	All MCs	19	5.6	19	5.6	*0.752	65.6	LOS E	16.0	115.7	1.00	0.88	1.06	12.5
6a	R1	All MCs	481	3.5	481	3.5	0.752	63.6	LOS E	16.1	116.1	1.00	0.88	1.06	7.5
Approach			500	3.6	500	3.6	0.752	63.7	LOS E	16.1	116.1	1.00	0.88	1.06	7.8
NorthWest: Pacific Highway															
27a	L1	All MCs	360	2.0	360	2.0	0.241	5.9	LOS A	1.3	9.6	0.06	0.59	0.06	38.0
28	T1	All MCs	1402	4.8	1402	4.8	*0.671	10.5	LOS A	22.0	160.4	0.52	0.48	0.52	37.9
Approach			1762	4.2	1762	4.2	0.671	9.6	LOS A	22.0	160.4	0.43	0.50	0.43	37.9
All Vehicles			3569	4.4	3569	4.4	0.912	20.3	LOS B	22.0	160.4	0.54	0.55	0.57	23.1

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	[ Dist ] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Highway											
P5	Full	85	61.4	LOS F	0.3	0.3	0.96	0.96	215.2	200.0	0.93
East: Albany Street											
P2	Full	302	61.9	LOS F	1.1	1.1	0.97	0.97	215.8	200.0	0.93
All Pedestrians		387	61.8	LOS F	1.1	1.1	0.97	0.97	215.6	200.0	0.93

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

 **Site: 4 [Atchison Street - Mitchell Street (Site Folder: Development AM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 **Network: N1 [Development AM Peak Hour (Network Folder: General)]**

Development - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	6	0.0	6	0.0	0.009	2.4	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
3	R2	All MCs	3	0.0	3	0.0	0.009	3.0	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
Approach			9	0.0	9	0.0	0.009	2.6	LOS A	0.0	0.2	0.15	0.90	0.15	9.7
East: Atchison Street															
4	L2	All MCs	13	0.0	13	0.0	0.033	8.2	LOS A	0.1	1.1	0.05	0.62	0.05	14.6
6	R2	All MCs	40	13.2	40	13.2	0.033	4.7	LOS A	0.1	1.1	0.05	0.62	0.05	34.7
Approach			53	10.0	53	10.0	0.033	5.6	NA	0.1	1.1	0.05	0.62	0.05	22.1
North: Mitchell Street															
7	L2	All MCs	26	4.0	26	4.0	0.019	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	9	0.0	9	0.0	0.019	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			36	2.9	36	2.9	0.019	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.5
West: Atchison Street															
10	L2	All MCs	43	4.9	43	4.9	0.104	7.8	LOS A	0.3	2.5	0.14	0.99	0.14	29.3
11	T1	All MCs	75	7.0	75	7.0	0.104	7.9	LOS A	0.3	2.5	0.14	0.99	0.14	29.3
12	R2	All MCs	1	0.0	1	0.0	0.104	7.9	LOS A	0.3	2.5	0.14	0.99	0.14	13.5
Approach			119	6.2	119	6.2	0.104	7.9	LOS A	0.3	2.5	0.14	0.99	0.14	28.5
All Vehicles			217	6.3	217	6.3	0.104	6.6	NA	0.3	2.5	0.10	0.83	0.10	23.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 5 [Chandos Street - Christie Street (Site Folder: Development AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development AM Peak Hour (Network Folder: General)]

Development - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Christie Street															
1	L2	All MCs	34	0.0	34	0.0	0.604	5.3	LOS A	3.4	23.7	0.47	0.67	0.48	27.7
2	T1	All MCs	88	0.0	88	0.0	0.604	5.0	LOS A	3.4	23.7	0.47	0.67	0.48	40.9
3	R2	All MCs	196	0.0	196	0.0	0.604	8.3	LOS A	3.4	23.7	0.47	0.67	0.48	23.1
3u	U	All MCs	149	2.8	149	2.8	0.604	10.0	LOS A	3.4	23.7	0.47	0.67	0.48	23.1
Approach			467	0.9	467	0.9	0.604	8.0	LOS A	3.4	23.7	0.47	0.67	0.48	31.2
East: Chandos Street															
4	L2	All MCs	237	5.8	237	5.8	0.780	14.0	LOS A	6.2	44.9	0.98	0.84	1.27	25.3
5	T1	All MCs	87	0.0	87	0.0	0.780	13.7	LOS A	6.2	44.9	0.98	0.84	1.27	16.5
6	R2	All MCs	23	0.0	23	0.0	0.780	16.9	LOS B	6.2	44.9	0.98	0.84	1.27	41.5
6u	U	All MCs	7	28.6	7	28.6	0.780	20.2	LOS B	6.2	44.9	0.98	0.84	1.27	25.3
Approach			355	4.5	355	4.5	0.780	14.2	LOS A	6.2	44.9	0.98	0.84	1.27	23.6
North: Christie Street															
7	L2	All MCs	20	0.0	20	0.0	0.435	9.4	LOS A	2.0	14.4	0.74	0.69	0.80	44.4
8	T1	All MCs	125	0.8	125	0.8	0.435	9.5	LOS A	2.0	14.4	0.74	0.69	0.80	44.4
9	R2	All MCs	46	0.0	46	0.0	0.435	12.6	LOS A	2.0	14.4	0.74	0.69	0.80	29.1
9u	U	All MCs	1	0.0	1	0.0	0.435	14.3	LOS A	2.0	14.4	0.74	0.69	0.80	48.8
Approach			193	0.5	193	0.5	0.435	10.2	LOS A	2.0	14.4	0.74	0.69	0.80	39.0
West: Chandos Street															
10	L2	All MCs	19	0.0	19	0.0	0.137	7.5	LOS A	0.6	4.5	0.63	0.66	0.63	45.1
11	T1	All MCs	32	3.3	32	3.3	0.137	7.6	LOS A	0.6	4.5	0.63	0.66	0.63	23.4
12	R2	All MCs	21	10.0	21	10.0	0.137	11.1	LOS A	0.6	4.5	0.63	0.66	0.63	23.4
12u	U	All MCs	1	0.0	1	0.0	0.137	12.4	LOS A	0.6	4.5	0.63	0.66	0.63	13.4
Approach			73	4.3	73	4.3	0.137	8.6	LOS A	0.6	4.5	0.63	0.66	0.63	34.3
All Vehicles			1087	2.2	1087	2.2	0.780	10.5	LOS A	6.2	44.9	0.70	0.73	0.80	30.7

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 6 [Chandos Street - Mitchell Street (Site Folder: Development AM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Development AM Peak Hour (Network Folder: General)]**

Development - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	39	10.8	39	10.8	0.145	9.8	LOS A	0.5	3.8	0.55	0.96	0.55	19.2
2	T1	All MCs	1	0.0	1	0.0	0.145	11.9	LOS A	0.5	3.8	0.55	0.96	0.55	34.4
3	R2	All MCs	39	5.4	39	5.4	0.145	14.8	LOS B	0.5	3.8	0.55	0.96	0.55	19.2
Approach			79	8.0	79	8.0	0.145	12.3	LOS A	0.5	3.8	0.55	0.96	0.55	19.6
East: Chandos Street															
4	L2	All MCs	52	2.0	52	2.0	0.203	5.6	LOS A	0.0	0.1	0.00	0.08	0.00	56.1
5	T1	All MCs	349	3.0	349	3.0	0.203	0.0	LOS A	0.0	0.1	0.00	0.08	0.00	56.1
6	R2	All MCs	1	0.0	1	0.0	0.203	5.8	LOS A	0.0	0.1	0.00	0.08	0.00	53.2
Approach			402	2.9	402	2.9	0.203	0.7	NA	0.0	0.1	0.00	0.08	0.00	56.1
North: Mitchell Street															
7	L2	All MCs	42	0.0	42	0.0	0.083	9.0	LOS A	0.3	2.1	0.44	0.88	0.44	39.8
8	T1	All MCs	18	0.0	18	0.0	0.083	12.6	LOS A	0.3	2.1	0.44	0.88	0.44	39.8
9	R2	All MCs	5	0.0	5	0.0	0.083	13.6	LOS A	0.3	2.1	0.44	0.88	0.44	39.8
Approach			65	0.0	65	0.0	0.083	10.4	LOS A	0.3	2.1	0.44	0.88	0.44	39.8
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.141	5.5	LOS A	0.3	1.8	0.12	0.15	0.12	52.8
11	T1	All MCs	238	4.0	238	4.0	0.141	0.0	LOS A	0.3	1.8	0.12	0.15	0.12	53.8
12	R2	All MCs	26	0.0	26	0.0	0.141	9.7	LOS A	0.3	1.8	0.12	0.15	0.12	53.8
Approach			266	3.6	266	3.6	0.141	1.0	NA	0.3	1.8	0.12	0.15	0.12	53.8
All Vehicles			813	3.4	813	3.4	0.203	2.7	NA	0.5	3.8	0.13	0.25	0.13	48.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: Development AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development AM Peak Hour (Network Folder: General)]

Development - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	60	0.0	60	0.0	0.322	7.2	LOS A	2.0	14.0	0.65	0.68	0.65	23.4
2	T1	All MCs	40	0.0	40	0.0	0.322	7.0	LOS A	2.0	14.0	0.65	0.68	0.65	34.1
3	R2	All MCs	151	2.8	151	2.8	0.322	10.1	LOS A	2.0	14.0	0.65	0.68	0.65	31.2
3u	U	All MCs	2	0.0	2	0.0	0.322	12.5	LOS A	2.0	14.0	0.65	0.68	0.65	23.4
Approach			253	1.7	253	1.7	0.322	8.9	LOS A	2.0	14.0	0.65	0.68	0.65	30.5
East: Chandos Street															
4	L2	All MCs	211	2.0	211	2.0	0.530	5.1	LOS A	4.5	32.2	0.48	0.49	0.48	33.3
5	T1	All MCs	377	3.1	377	3.1	0.530	4.9	LOS A	4.5	32.2	0.48	0.49	0.48	33.3
6	R2	All MCs	20	0.0	20	0.0	0.530	7.8	LOS A	4.5	32.2	0.48	0.49	0.48	38.0
6u	U	All MCs	7	14.3	7	14.3	0.530	10.8	LOS A	4.5	32.2	0.48	0.49	0.48	36.5
Approach			615	2.7	615	2.7	0.530	5.2	LOS A	4.5	32.2	0.48	0.49	0.48	33.7
North: Oxley Street															
7	L2	All MCs	7	0.0	7	0.0	0.042	6.9	LOS A	0.2	1.5	0.58	0.63	0.58	37.2
8	T1	All MCs	20	0.0	20	0.0	0.042	6.8	LOS A	0.2	1.5	0.58	0.63	0.58	34.0
9	R2	All MCs	3	0.0	3	0.0	0.042	9.7	LOS A	0.2	1.5	0.58	0.63	0.58	34.0
9u	U	All MCs	1	0.0	1	0.0	0.042	12.3	LOS A	0.2	1.5	0.58	0.63	0.58	39.4
Approach			32	0.0	32	0.0	0.042	7.3	LOS A	0.2	1.5	0.58	0.63	0.58	35.2
West: Chandos Street															
10	L2	All MCs	8	0.0	8	0.0	0.350	5.7	LOS A	2.3	16.6	0.53	0.57	0.53	37.9
11	T1	All MCs	228	3.2	228	3.2	0.350	5.6	LOS A	2.3	16.6	0.53	0.57	0.53	37.4
12	R2	All MCs	91	4.7	91	4.7	0.350	8.6	LOS A	2.3	16.6	0.53	0.57	0.53	33.2
12u	U	All MCs	3	0.0	3	0.0	0.350	11.1	LOS A	2.3	16.6	0.53	0.57	0.53	33.2
Approach			331	3.5	331	3.5	0.350	6.5	LOS A	2.3	16.6	0.53	0.57	0.53	36.6
All Vehicles			1229	2.7	1229	2.7	0.530	6.3	LOS A	4.5	32.2	0.53	0.56	0.53	34.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 8 [Albany Street - Oxley Street (Site Folder: Development AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development AM Peak Hour (Network Folder: General)]

Development - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	46	2.3	46	2.3	0.310	7.7	LOS A	1.9	13.7	0.69	0.69	0.69	29.1
2	T1	All MCs	96	0.0	96	0.0	0.310	7.3	LOS A	1.9	13.7	0.69	0.69	0.69	29.1
3	R2	All MCs	92	0.0	92	0.0	0.310	10.1	LOS A	1.9	13.7	0.69	0.69	0.69	34.0
3u	U	All MCs	4	0.0	4	0.0	0.310	12.6	LOS A	1.9	13.7	0.69	0.69	0.69	34.7
Approach			238	0.4	238	0.4	0.310	8.5	LOS A	1.9	13.7	0.69	0.69	0.69	31.7
East: Albany Street															
4	L2	All MCs	61	1.7	61	1.7	0.542	11.0	LOS A	4.6	32.7	0.83	0.78	0.95	34.6
5	T1	All MCs	307	1.4	307	1.4	0.542	10.8	LOS A	4.6	32.7	0.83	0.78	0.95	28.9
6	R2	All MCs	26	4.0	26	4.0	0.542	13.8	LOS A	4.6	32.7	0.83	0.78	0.95	28.9
6u	U	All MCs	3	0.0	3	0.0	0.542	15.0	LOS B	4.6	32.7	0.83	0.78	0.95	34.8
Approach			398	1.6	398	1.6	0.542	11.0	LOS A	4.6	32.7	0.83	0.78	0.95	30.2
North: Oxley Street															
7	L2	All MCs	46	4.5	46	4.5	0.562	11.3	LOS A	5.0	35.5	0.82	0.78	0.95	30.8
8	T1	All MCs	259	0.8	259	0.8	0.562	10.9	LOS A	5.0	35.5	0.82	0.78	0.95	31.3
9	R2	All MCs	125	1.7	125	1.7	0.562	13.8	LOS A	5.0	35.5	0.82	0.78	0.95	21.4
9u	U	All MCs	1	0.0	1	0.0	0.562	15.2	LOS B	5.0	35.5	0.82	0.78	0.95	21.4
Approach			432	1.5	432	1.5	0.562	11.8	LOS A	5.0	35.5	0.82	0.78	0.95	29.2
West: Albany Street															
10	L2	All MCs	137	0.8	137	0.8	0.519	7.0	LOS A	3.8	27.1	0.56	0.64	0.56	32.5
11	T1	All MCs	278	1.9	278	1.9	0.519	6.9	LOS A	3.8	27.1	0.56	0.64	0.56	38.7
12	R2	All MCs	106	4.0	106	4.0	0.519	9.8	LOS A	3.8	27.1	0.56	0.64	0.56	36.9
12u	U	All MCs	6	0.0	6	0.0	0.519	11.1	LOS A	3.8	27.1	0.56	0.64	0.56	32.5
Approach			527	2.0	527	2.0	0.519	7.5	LOS A	3.8	27.1	0.56	0.64	0.56	37.2
All Vehicles			1595	1.5	1595	1.5	0.562	9.7	LOS A	5.0	35.5	0.72	0.72	0.78	32.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: Development AM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Development AM Peak Hour (Network Folder: General)]

Development - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	29	3.6	29	3.6	0.143	4.6	LOS A	0.3	1.9	0.13	0.20	0.13	41.1
2	T1	All MCs	197	1.1	197	1.1	0.143	0.0	LOS A	0.3	1.9	0.13	0.20	0.13	41.1
3	R2	All MCs	27	0.0	27	0.0	0.143	8.0	LOS A	0.3	1.9	0.13	0.20	0.13	41.4
Approach			254	1.2	254	1.2	0.143	1.4	NA	0.3	1.9	0.13	0.20	0.13	41.2
East: Atchison Street															
4	L2	All MCs	83	0.0	83	0.0	0.168	9.3	LOS A	0.6	4.5	0.47	0.91	0.47	31.4
5	T1	All MCs	20	0.0	20	0.0	0.168	11.7	LOS A	0.6	4.5	0.47	0.91	0.47	31.4
6	R2	All MCs	28	3.7	28	3.7	0.168	13.2	LOS A	0.6	4.5	0.47	0.91	0.47	31.4
Approach			132	0.8	132	0.8	0.168	10.5	LOS A	0.6	4.5	0.47	0.91	0.47	31.4
North: Oxley Street															
7	L2	All MCs	25	12.5	25	12.5	0.175	5.4	LOS A	0.2	1.1	0.05	0.10	0.05	46.3
8	T1	All MCs	277	0.8	277	0.8	0.175	0.0	LOS A	0.2	1.1	0.05	0.10	0.05	52.9
9	R2	All MCs	13	25.0	13	25.0	0.175	9.2	LOS A	0.2	1.1	0.05	0.10	0.05	52.9
Approach			315	2.7	315	2.7	0.175	0.8	NA	0.2	1.1	0.05	0.10	0.05	51.5
West: Atchison Street															
10	L2	All MCs	31	3.4	31	3.4	0.192	9.1	LOS A	0.7	5.1	0.53	0.94	0.53	29.6
11	T1	All MCs	31	6.9	31	6.9	0.192	12.5	LOS A	0.7	5.1	0.53	0.94	0.53	35.3
12	R2	All MCs	49	6.4	49	6.4	0.192	14.2	LOS A	0.7	5.1	0.53	0.94	0.53	29.6
Approach			111	5.7	111	5.7	0.192	12.3	LOS A	0.7	5.1	0.53	0.94	0.53	31.8
All Vehicles			811	2.3	811	2.3	0.192	4.1	NA	0.7	5.1	0.21	0.38	0.21	38.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development  
PM Peak Hour (Network Folder:  
General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]				[ Veh. veh	[ Dist ]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	78	0.0	78	0.0	*0.387	13.3	LOS A	9.0	64.9	0.35	0.37	0.35	35.4
5	T1	All MCs	1395	3.5	1395	3.5	0.387	5.1	LOS A	9.0	64.9	0.31	0.29	0.31	45.8
Approach			1473	3.3	1473	3.3	0.387	5.5	LOS A	9.0	64.9	0.31	0.30	0.31	45.2
North: Christie Street															
7	L2	All MCs	28	0.0	28	0.0	0.500	7.6	LOS A	2.0	14.1	0.16	0.32	0.16	19.5
8	T1	All MCs	125	0.0	125	0.0	0.500	4.3	LOS A	2.0	14.1	0.16	0.32	0.16	31.2
9	R2	All MCs	272	1.9	272	1.9	0.500	9.7	LOS A	3.1	22.0	0.23	0.52	0.23	27.4
Approach			425	1.2	425	1.2	0.500	8.0	LOS A	3.1	22.0	0.21	0.45	0.21	28.0
West: Pacific Highway															
10	L2	All MCs	336	0.9	336	0.9	*0.491	7.3	LOS A	15.5	110.1	0.57	0.67	0.57	18.6
11	T1	All MCs	1401	2.4	1401	2.4	0.491	13.5	LOS A	17.9	128.2	0.52	0.48	0.52	26.9
Approach			1737	2.1	1737	2.1	0.491	12.3	LOS A	17.9	128.2	0.53	0.52	0.53	24.8
All Vehicles			3635	2.5	3635	2.5	0.500	9.0	LOS A	17.9	128.2	0.40	0.42	0.40	34.0
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	331	0.6	331	0.6	0.220	7.3	LOS A	5.5	38.8	0.64	0.39	0.64	14.2
Approach			331	0.6	331	0.6	0.220	7.3	LOS A	5.5	38.8	0.64	0.39	0.64	14.2
North: Christie Street															
7a	L1	All MCs	103	8.2	103	8.2	0.566	50.6	LOS D	13.2	95.7	0.94	0.81	0.94	5.0
8	T1	All MCs	389	1.4	389	1.4	*0.566	46.0	LOS D	13.6	96.0	0.94	0.80	0.94	5.1
Approach			493	2.8	493	2.8	0.566	47.0	LOS D	13.6	96.0	0.94	0.80	0.94	5.1
West: Sergeants Lane															
10	L2	All MCs	21	0.0	21	0.0	0.064	24.9	LOS B	0.7	4.7	0.86	0.61	0.86	6.5
12a	R1	All MCs	250	0.0	250	0.0	0.092	29.8	LOS C	0.9	6.8	0.87	0.64	0.87	6.5
12	R2	All MCs	27	0.0	27	0.0	0.092	25.1	LOS B	0.9	6.8	0.87	0.64	0.87	6.5
Approach			51	2.1	51	2.1	0.092	25.2	LOS B	0.9	6.8	0.87	0.63	0.87	6.5
All Vehicles			874	1.9	874	1.9	0.566	30.7	LOS C	13.6	96.0	0.82	0.64	0.82	6.2

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped	Dist ]			sec	m	m/sec
					ped	m					
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	119	56.9	LOS E	0.4	0.4	0.96	0.96	210.8	200.0	0.95
East: Pacific Highway											
P2	Full	237	57.2	LOS E	0.8	0.8	0.96	0.96	211.1	200.0	0.95
North: Christie Street											
P3	Full	249	57.2	LOS E	0.9	0.9	0.96	0.96	211.1	200.0	0.95
All Pedestrians		605	57.2	LOS E	0.9	0.9	0.96	0.96	211.0	200.0	0.95
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	383	27.2	LOS C	0.8	0.8	0.92	0.92	181.1	200.0	1.10
North: Christie Street											
P3	Full	55	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11
West: Sergeants Lane											
P4	Full	24	56.7	LOS E	0.1	0.1	0.95	0.95	210.5	200.0	0.95
All Pedestrians		462	28.7	LOS C	0.8	0.8	0.92	0.92	182.6	200.0	1.10

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: 1 [Pacific Highway - Albany Street (Site Folder: Development PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development PM Peak Hour (Network Folder: General)]

Development PM Peak Hour

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
SouthEast: Pacific Highway															
22	T1	All MCs	1065	4.2	1065	4.2	0.426	9.9	LOS A	14.7	106.5	0.50	0.45	0.50	28.6
23b	R3	All MCs	131	0.0	131	0.0	*0.579	61.8	LOS E	7.7	53.7	0.98	0.80	0.98	8.0
Approach			1196	3.7	1196	3.7	0.579	15.6	LOS B	14.7	106.5	0.55	0.49	0.55	22.1
East: Albany Street															
4b	L3	All MCs	35	3.0	35	3.0	0.557	51.4	LOS D	12.6	89.1	0.94	0.82	0.94	14.6
6a	R1	All MCs	438	0.5	438	0.5	*0.557	49.4	LOS D	13.0	91.3	0.94	0.82	0.94	9.0
Approach			473	0.7	473	0.7	0.557	49.6	LOS D	13.0	91.3	0.94	0.82	0.94	9.5
NorthWest: Pacific Highway															
27a	L1	All MCs	391	1.1	391	1.1	0.271	6.3	LOS A	2.2	15.5	0.10	0.60	0.10	36.8
28	T1	All MCs	1038	2.7	1038	2.7	*0.564	19.2	LOS B	19.6	140.3	0.67	0.60	0.67	29.0
Approach			1428	2.3	1428	2.3	0.564	15.7	LOS B	19.6	140.3	0.52	0.60	0.52	30.1
All Vehicles			3097	2.6	3097	2.6	0.579	20.8	LOS B	19.6	140.3	0.59	0.59	0.59	22.0

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
SouthEast: Pacific Highway											
P5	Full	194	57.1	LOS E	0.7	0.7	0.96	0.96	211.0	200.0	0.95
East: Albany Street											
P2	Full	432	57.7	LOS E	1.5	1.5	0.97	0.97	211.5	200.0	0.95
All Pedestrians		625	57.5	LOS E	1.5	1.5	0.97	0.97	211.3	200.0	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.

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 4 [Atchison Street - Mitchell Street (Site Folder: Development PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Development PM Peak Hour (Network Folder: General)]**

Development PM Peak Hour  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	4	0.0	4	0.0	0.009	2.3	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
3	R2	All MCs	5	0.0	5	0.0	0.009	2.7	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
Approach			9	0.0	9	0.0	0.009	2.5	LOS A	0.0	0.2	0.12	0.91	0.12	9.7
East: Atchison Street															
4	L2	All MCs	4	0.0	4	0.0	0.016	8.2	LOS A	0.1	0.5	0.05	0.60	0.05	14.7
6	R2	All MCs	23	0.0	23	0.0	0.016	4.6	LOS A	0.1	0.5	0.05	0.60	0.05	35.4
Approach			27	0.0	27	0.0	0.016	5.2	NA	0.1	0.5	0.05	0.60	0.05	25.1
North: Mitchell Street															
7	L2	All MCs	24	0.0	24	0.0	0.018	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	9	0.0	9	0.0	0.018	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			34	0.0	34	0.0	0.018	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.7
West: Atchison Street															
10	L2	All MCs	24	13.0	24	13.0	0.057	8.0	LOS A	0.2	1.4	0.09	1.03	0.09	29.3
11	T1	All MCs	40	13.2	40	13.2	0.057	8.1	LOS A	0.2	1.4	0.09	1.03	0.09	29.3
12	R2	All MCs	1	0.0	1	0.0	0.057	7.8	LOS A	0.2	1.4	0.09	1.03	0.09	13.5
Approach			65	12.9	65	12.9	0.057	8.0	LOS A	0.2	1.4	0.09	1.03	0.09	27.9
All Vehicles			136	6.2	136	6.2	0.057	6.4	NA	0.2	1.4	0.06	0.83	0.06	23.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 5 [Chandos Street - Christie Street (Site Folder: Development PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Development PM Peak Hour (Network Folder: General)]**

Development PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Christie Street															
1	L2	All MCs	36	0.0	36	0.0	0.423	4.3	LOS A	1.9	13.1	0.27	0.62	0.27	28.5
2	T1	All MCs	36	5.9	36	5.9	0.423	4.1	LOS A	1.9	13.1	0.27	0.62	0.27	41.3
3	R2	All MCs	200	0.0	200	0.0	0.423	7.3	LOS A	1.9	13.1	0.27	0.62	0.27	24.1
3u	U	All MCs	112	2.8	112	2.8	0.423	9.1	LOS A	1.9	13.1	0.27	0.62	0.27	24.1
Approach			383	1.4	383	1.4	0.423	7.2	LOS A	1.9	13.1	0.27	0.62	0.27	29.0
East: Chandos Street															
4	L2	All MCs	193	3.8	193	3.8	0.506	8.3	LOS A	2.6	18.7	0.66	0.64	0.71	32.7
5	T1	All MCs	47	0.0	47	0.0	0.506	8.2	LOS A	2.6	18.7	0.66	0.64	0.71	18.4
6	R2	All MCs	22	0.0	22	0.0	0.506	11.4	LOS A	2.6	18.7	0.66	0.64	0.71	46.1
6u	U	All MCs	8	0.0	8	0.0	0.506	13.0	LOS A	2.6	18.7	0.66	0.64	0.71	32.7
Approach			271	2.7	271	2.7	0.506	8.7	LOS A	2.6	18.7	0.66	0.64	0.71	30.2
North: Christie Street															
7	L2	All MCs	29	3.6	29	3.6	0.236	9.2	LOS A	1.0	7.6	0.68	0.68	0.68	44.6
8	T1	All MCs	58	12.7	58	12.7	0.236	9.7	LOS A	1.0	7.6	0.68	0.68	0.68	44.6
9	R2	All MCs	20	0.0	20	0.0	0.236	12.3	LOS A	1.0	7.6	0.68	0.68	0.68	29.1
9u	U	All MCs	2	0.0	2	0.0	0.236	13.9	LOS A	1.0	7.6	0.68	0.68	0.68	48.9
Approach			109	7.7	109	7.7	0.236	10.1	LOS A	1.0	7.6	0.68	0.68	0.68	40.4
West: Chandos Street															
10	L2	All MCs	26	0.0	26	0.0	0.337	7.4	LOS A	1.8	12.5	0.64	0.64	0.64	45.1
11	T1	All MCs	101	0.0	101	0.0	0.337	7.4	LOS A	1.8	12.5	0.64	0.64	0.64	23.7
12	R2	All MCs	76	2.8	76	2.8	0.337	10.7	LOS A	1.8	12.5	0.64	0.64	0.64	23.7
12u	U	All MCs	1	0.0	1	0.0	0.337	12.2	LOS A	1.8	12.5	0.64	0.64	0.64	13.5
Approach			204	1.0	204	1.0	0.337	8.6	LOS A	1.8	12.5	0.64	0.64	0.64	30.3
All Vehicles			967	2.4	967	2.4	0.506	8.3	LOS A	2.6	18.7	0.51	0.64	0.52	32.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: Development PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Development PM Peak Hour (Network Folder: General)]

Development PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	34	3.1	34	3.1	0.103	8.6	LOS A	0.4	2.6	0.49	0.90	0.49	20.3
2	T1	All MCs	1	0.0	1	0.0	0.103	11.5	LOS A	0.4	2.6	0.49	0.90	0.49	35.2
3	R2	All MCs	29	3.6	29	3.6	0.103	13.8	LOS A	0.4	2.6	0.49	0.90	0.49	20.3
Approach			64	3.3	64	3.3	0.103	11.0	LOS A	0.4	2.6	0.49	0.90	0.49	20.8
East: Chandos Street															
4	L2	All MCs	28	0.0	28	0.0	0.134	5.5	LOS A	0.0	0.1	0.01	0.07	0.01	56.6
5	T1	All MCs	237	3.1	237	3.1	0.134	0.0	LOS A	0.0	0.1	0.01	0.07	0.01	56.6
6	R2	All MCs	1	0.0	1	0.0	0.134	6.5	LOS A	0.0	0.1	0.01	0.07	0.01	53.4
Approach			266	2.8	266	2.8	0.134	0.6	NA	0.0	0.1	0.01	0.07	0.01	56.5
North: Mitchell Street															
7	L2	All MCs	42	0.0	42	0.0	0.079	9.6	LOS A	0.3	2.0	0.48	0.90	0.48	39.8
8	T1	All MCs	16	0.0	16	0.0	0.079	12.0	LOS A	0.3	2.0	0.48	0.90	0.48	39.8
9	R2	All MCs	4	0.0	4	0.0	0.079	13.2	LOS A	0.3	2.0	0.48	0.90	0.48	39.8
Approach			62	0.0	62	0.0	0.079	10.5	LOS A	0.3	2.0	0.48	0.90	0.48	39.8
West: Chandos Street															
10	L2	All MCs	1	0.0	1	0.0	0.181	5.5	LOS A	0.1	0.8	0.04	0.05	0.04	54.1
11	T1	All MCs	352	0.3	352	0.3	0.181	0.0	LOS A	0.1	0.8	0.04	0.05	0.04	57.7
12	R2	All MCs	14	0.0	14	0.0	0.181	8.1	LOS A	0.1	0.8	0.04	0.05	0.04	57.7
Approach			366	0.3	366	0.3	0.181	0.3	NA	0.1	0.8	0.04	0.05	0.04	57.7
All Vehicles			759	1.4	759	1.4	0.181	2.2	NA	0.4	2.6	0.10	0.20	0.10	50.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: Development PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [Development PM Peak Hour (Network Folder: General)]

Development PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Oxley Street															
1	L2	All MCs	75	4.2	75	4.2	0.345	5.8	LOS A	2.2	15.5	0.51	0.61	0.51	25.2
2	T1	All MCs	20	0.0	20	0.0	0.345	5.5	LOS A	2.2	15.5	0.51	0.61	0.51	35.3
3	R2	All MCs	239	0.9	239	0.9	0.345	8.4	LOS A	2.2	15.5	0.51	0.61	0.51	32.6
3u	U	All MCs	2	0.0	2	0.0	0.345	11.0	LOS A	2.2	15.5	0.51	0.61	0.51	25.2
Approach			336	1.6	336	1.6	0.345	7.7	LOS A	2.2	15.5	0.51	0.61	0.51	31.8
East: Chandos Street															
4	L2	All MCs	151	0.7	151	0.7	0.316	4.8	LOS A	2.1	14.7	0.37	0.48	0.37	34.3
5	T1	All MCs	196	1.6	196	1.6	0.316	4.6	LOS A	2.1	14.7	0.37	0.48	0.37	34.3
6	R2	All MCs	8	0.0	8	0.0	0.316	7.5	LOS A	2.1	14.7	0.37	0.48	0.37	38.5
6u	U	All MCs	3	0.0	3	0.0	0.316	10.1	LOS A	2.1	14.7	0.37	0.48	0.37	38.7
Approach			358	1.2	358	1.2	0.316	4.8	LOS A	2.1	14.7	0.37	0.48	0.37	34.5
North: Oxley Street															
7	L2	All MCs	5	0.0	5	0.0	0.055	8.5	LOS A	0.3	2.1	0.68	0.70	0.68	35.6
8	T1	All MCs	25	0.0	25	0.0	0.055	8.3	LOS A	0.3	2.1	0.68	0.70	0.68	31.8
9	R2	All MCs	3	0.0	3	0.0	0.055	11.3	LOS A	0.3	2.1	0.68	0.70	0.68	31.8
9u	U	All MCs	1	0.0	1	0.0	0.055	13.9	LOS A	0.3	2.1	0.68	0.70	0.68	37.8
Approach			35	0.0	35	0.0	0.055	8.8	LOS A	0.3	2.1	0.68	0.70	0.68	32.9
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.464	6.4	LOS A	3.3	23.3	0.63	0.60	0.63	37.6
11	T1	All MCs	342	0.6	342	0.6	0.464	6.2	LOS A	3.3	23.3	0.63	0.60	0.63	37.1
12	R2	All MCs	79	0.0	79	0.0	0.464	9.1	LOS A	3.3	23.3	0.63	0.60	0.63	32.7
12u	U	All MCs	5	0.0	5	0.0	0.464	11.7	LOS A	3.3	23.3	0.63	0.60	0.63	32.7
Approach			428	0.5	428	0.5	0.464	6.8	LOS A	3.3	23.3	0.63	0.60	0.63	36.5
All Vehicles			1157	1.0	1157	1.0	0.464	6.5	LOS A	3.3	23.3	0.52	0.57	0.52	34.6

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 8 [Albany Street - Oxley Street (Site Folder: Development PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [Development PM Peak Hour (Network Folder: General)]**

Development PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	78	0.0	78	0.0	0.432	7.4	LOS A	2.9	20.6	0.70	0.67	0.70	30.0
2	T1	All MCs	194	0.5	194	0.5	0.432	7.1	LOS A	2.9	20.6	0.70	0.67	0.70	30.0
3	R2	All MCs	81	0.0	81	0.0	0.432	9.9	LOS A	2.9	20.6	0.70	0.67	0.70	34.6
3u	U	All MCs	4	0.0	4	0.0	0.432	12.4	LOS A	2.9	20.6	0.70	0.67	0.70	35.4
Approach			357	0.3	357	0.3	0.432	7.9	LOS A	2.9	20.6	0.70	0.67	0.70	31.6
East: Albany Street															
4	L2	All MCs	79	1.3	79	1.3	0.461	8.5	LOS A	3.3	23.0	0.72	0.68	0.72	37.3
5	T1	All MCs	265	0.8	265	0.8	0.461	8.3	LOS A	3.3	23.0	0.72	0.68	0.72	32.5
6	R2	All MCs	32	0.0	32	0.0	0.461	11.1	LOS A	3.3	23.0	0.72	0.68	0.72	32.5
6u	U	All MCs	4	0.0	4	0.0	0.461	12.6	LOS A	3.3	23.0	0.72	0.68	0.72	37.4
Approach			380	0.8	380	0.8	0.461	8.6	LOS A	3.3	23.0	0.72	0.68	0.72	34.0
North: Oxley Street															
7	L2	All MCs	35	0.0	35	0.0	0.427	9.1	LOS A	3.0	20.9	0.76	0.71	0.76	33.4
8	T1	All MCs	197	1.1	197	1.1	0.427	8.9	LOS A	3.0	20.9	0.76	0.71	0.76	33.6
9	R2	All MCs	88	1.2	88	1.2	0.427	11.8	LOS A	3.0	20.9	0.76	0.71	0.76	24.1
9u	U	All MCs	2	0.0	2	0.0	0.427	13.3	LOS A	3.0	20.9	0.76	0.71	0.76	24.1
Approach			322	1.0	322	1.0	0.427	9.7	LOS A	3.0	20.9	0.76	0.71	0.76	31.8
West: Albany Street															
10	L2	All MCs	120	2.6	120	2.6	0.581	8.7	LOS A	4.8	34.1	0.69	0.72	0.74	30.3
11	T1	All MCs	299	0.4	299	0.4	0.581	8.5	LOS A	4.8	34.1	0.69	0.72	0.74	37.3
12	R2	All MCs	100	1.1	100	1.1	0.581	11.3	LOS A	4.8	34.1	0.69	0.72	0.74	35.7
12u	U	All MCs	8	0.0	8	0.0	0.581	12.8	LOS A	4.8	34.1	0.69	0.72	0.74	30.3
Approach			527	1.0	527	1.0	0.581	9.1	LOS A	4.8	34.1	0.69	0.72	0.74	35.8
All Vehicles			1586	0.8	1586	0.8	0.581	8.9	LOS A	4.8	34.1	0.71	0.70	0.73	33.7

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: Development PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N1 [Development PM Peak Hour (Network Folder: General)]

Development PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	16	0.0	16	0.0	0.185	4.6	LOS A	0.4	2.6	0.13	0.17	0.13	42.1
2	T1	All MCs	273	1.2	273	1.2	0.185	0.0	LOS A	0.4	2.6	0.13	0.17	0.13	42.1
3	R2	All MCs	42	0.0	42	0.0	0.185	7.2	LOS A	0.4	2.6	0.13	0.17	0.13	41.8
Approach			331	1.0	331	1.0	0.185	1.1	NA	0.4	2.6	0.13	0.17	0.13	42.0
East: Atchison Street															
4	L2	All MCs	75	1.4	75	1.4	0.147	9.0	LOS A	0.6	4.0	0.43	0.89	0.43	31.7
5	T1	All MCs	19	0.0	19	0.0	0.147	11.8	LOS A	0.6	4.0	0.43	0.89	0.43	31.7
6	R2	All MCs	25	0.0	25	0.0	0.147	13.0	LOS A	0.6	4.0	0.43	0.89	0.43	31.7
Approach			119	0.9	119	0.9	0.147	10.3	LOS A	0.6	4.0	0.43	0.89	0.43	31.7
North: Oxley Street															
7	L2	All MCs	42	0.0	42	0.0	0.143	5.4	LOS A	0.1	0.8	0.05	0.15	0.05	47.8
8	T1	All MCs	209	0.5	209	0.5	0.143	0.0	LOS A	0.1	0.8	0.05	0.15	0.05	49.0
9	R2	All MCs	11	0.0	11	0.0	0.143	9.0	LOS A	0.1	0.8	0.05	0.15	0.05	49.0
Approach			262	0.4	262	0.4	0.143	1.2	NA	0.1	0.8	0.05	0.15	0.05	48.6
West: Atchison Street															
10	L2	All MCs	17	12.5	17	12.5	0.145	10.0	LOS A	0.5	3.8	0.54	0.99	0.54	29.6
11	T1	All MCs	39	5.4	39	5.4	0.145	12.4	LOS A	0.5	3.8	0.54	0.99	0.54	35.4
12	R2	All MCs	25	8.3	25	8.3	0.145	14.2	LOS A	0.5	3.8	0.54	0.99	0.54	29.6
Approach			81	7.8	81	7.8	0.145	12.5	LOS A	0.5	3.8	0.54	0.99	0.54	33.1
All Vehicles			793	1.5	793	1.5	0.185	3.7	NA	0.6	4.0	0.19	0.35	0.19	39.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr AM Peak Hour (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back	Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h		veh/h					veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	133	0.8	132	0.8	* 0.464	11.9	LOS A	12.8	92.5	0.36	0.39	0.36	36.6
5	T1	All MCs	1797	4.3	1793	4.3	0.464	4.4	LOS A	12.8	92.5	0.32	0.31	0.32	47.0
Approach			1929	4.0	1925	4.0	0.464	4.9	LOS A	12.8	92.5	0.32	0.32	0.32	46.3
North: Christie Street															
7	L2	All MCs	32	0.0	21	0.0	0.704	16.2	LOS B	5.6	39.8	0.46	0.43	0.47	11.0
8	T1	All MCs	251	0.8	165	0.9	0.704	12.6	LOS A	5.6	39.8	0.46	0.43	0.47	21.0
9	R2	All MCs	299	4.6	198	4.7	0.704	29.5	LOS C	6.7	49.0	0.72	0.73	0.73	14.5
Approach			581	2.7	384	2.8	0.704	21.5	LOS B	6.7	49.0	0.59	0.58	0.60	16.3
West: Pacific Highway															
10	L2	All MCs	571	2.6	571	2.6	* 1.178	188.8	LOS F	101.0	727.2	1.00	1.65	2.12	2.4
11	T1	All MCs	2071	4.3	2071	4.3	1.178	206.9	LOS F	110.4	801.4	1.00	1.86	2.14	2.4
Approach			2641	3.9	2641	3.9	1.178	203.0	LOS F	110.4	801.4	1.00	1.81	2.14	2.4
All Vehicles			5152	3.8	4950	4.0	1.178	111.9	LOS F	110.4	801.4	0.71	1.13	1.31	5.7
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	566	2.6	476	2.6	0.418	11.2	LOS A	6.8	49.0	0.64	0.55	0.64	10.2
Approach			566	2.6	476	2.6	0.418	11.2	LOS A	6.8	49.0	0.64	0.55	0.64	10.2
North: Christie Street															
7a	L1	All MCs	66	1.6	63	1.6	1.466	517.8	LOS F	14.4	102.8	1.00	2.37	3.21	0.5
8	T1	All MCs	538	2.7	510	2.8	* 1.466	515.2	LOS F	14.4	102.8	1.00	2.27	3.23	0.5
Approach			604	2.6	573	2.7	1.466	515.4	LOS F	14.4	102.8	1.00	2.28	3.22	0.5
West: Sergeants Lane															
10	L2	All MCs	4	0.0	4	0.0	0.007	18.2	LOS B	0.1	0.9	0.70	0.46	0.70	7.2
12a	R1	All MCs	3	33.3	3	33.3	* 0.145	24.8	LOS B	1.4	10.1	0.75	0.59	0.75	7.1
12	R2	All MCs	40	2.6	40	2.6	0.145	20.2	LOS B	1.4	10.1	0.75	0.59	0.75	7.1
Approach			47	4.4	47	4.4	0.145	20.3	LOS B	1.4	10.1	0.74	0.57	0.74	7.1
All Vehicles			1218	2.7	1097	3.0	1.466	275.2	LOS F	14.4	102.8	0.83	1.45	2.00	0.8

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped	Dist ]			sec	m	m/sec
					ped	m					
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	118	61.9	LOS F	0.4	0.4	0.96	0.96	215.8	200.0	0.93
East: Pacific Highway											
P2	Full	217	62.2	LOS F	0.8	0.8	0.96	0.96	216.0	200.0	0.93
North: Christie Street											
P3	Full	322	62.5	LOS F	1.2	1.2	0.97	0.97	216.3	200.0	0.92
All Pedestrians		657	62.3	LOS F	1.2	1.2	0.97	0.97	216.1	200.0	0.93
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	400	28.8	LOS C	0.8	0.8	0.93	0.93	182.7	200.0	1.09
North: Christie Street											
P3	Full	59	28.4	LOS C	0.1	0.1	0.91	0.91	182.2	200.0	1.10
West: Sergeants Lane											
P4	Full	40	61.7	LOS F	0.1	0.1	0.96	0.96	215.6	200.0	0.93
All Pedestrians		499	31.4	LOS D	0.8	0.8	0.93	0.93	185.2	200.0	1.08

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: 1 [Pacific Highway - Albany Street (Site Folder: 10yr AM Peak Hour)]

Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Pacific Highway															
22	T1	All MCs	1366	5.2	1366	5.2	0.550	12.0	LOS A	22.6	165.2	0.55	0.51	0.55	26.3
23b	R3	All MCs	202	2.1	202	2.1	*0.803	72.1	LOS F	13.9	99.1	1.00	0.90	1.15	7.0
Approach			1568	4.8	1568	4.8	0.803	19.7	LOS B	22.6	165.2	0.61	0.56	0.63	19.3
East: Albany Street															
4b	L3	All MCs	22	4.8	22	4.8	0.797	69.6	LOS E	18.8	133.7	1.00	0.91	1.10	12.6
6a	R1	All MCs	557	1.3	553	1.3	*0.797	67.7	LOS E	19.0	134.4	1.00	0.91	1.10	7.6
Approach			579	1.5	574	1.5	0.797	67.8	LOS E	19.0	134.4	1.00	0.91	1.10	7.8
NorthWest: Pacific Highway															
27a	L1	All MCs	432	2.0	365	2.0	0.259	5.9	LOS A	1.0	6.9	0.04	0.58	0.04	38.3
28	T1	All MCs	1681	4.8	1423	4.8	*0.794	21.7	LOS B	33.6	244.8	0.81	0.73	0.81	27.2
Approach			2113	4.2	1789	4.3	0.794	18.4	LOS B	33.6	244.8	0.65	0.70	0.65	28.2
All Vehicles			4260	4.1	3932	4.4	0.803	26.2	LOS B	33.6	244.8	0.69	0.67	0.71	19.8

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped	Dist ]			sec	m	m/sec
SouthEast: Pacific Highway											
P5	Full	85	61.9	LOS F	0.3	0.3	0.96	0.96	215.7	200.0	0.93
East: Albany Street											
P2	Full	302	62.4	LOS F	1.1	1.1	0.97	0.97	216.3	200.0	0.92
All Pedestrians		387	62.3	LOS F	1.1	1.1	0.97	0.97	216.1	200.0	0.93

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 4 [Atchison Street - Mitchell Street (Site Folder: 10yr AM Peak Hour)]**

**Network: N1 [10yr AM Peak Hour (Network Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: Mitchell Street															
2	T1	All MCs	7	0.0	7	0.0	0.011	2.5	LOS A	0.0	0.3	0.16	0.89	0.16	9.7
3	R2	All MCs	4	0.0	4	0.0	0.011	2.8	LOS A	0.0	0.3	0.16	0.89	0.16	9.7
Approach			12	0.0	12	0.0	0.011	2.6	LOS A	0.0	0.3	0.16	0.89	0.16	9.7
East: Atchison Street															
4	L2	All MCs	15	0.0	14	0.0	0.038	8.2	LOS A	0.2	1.3	0.06	0.62	0.06	14.6
6	R2	All MCs	48	13.0	47	12.9	0.038	4.7	LOS A	0.2	1.3	0.06	0.62	0.06	34.7
Approach			63	10.0	61	9.9	0.038	5.5	NA	0.2	1.3	0.06	0.62	0.06	22.3
North: Mitchell Street															
7	L2	All MCs	32	3.3	30	3.5	0.022	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	12	0.0	11	0.0	0.022	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			43	2.4	42	2.5	0.022	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.6
West: Atchison Street															
10	L2	All MCs	14	0.0	9	0.0	0.023	7.6	LOS A	0.1	0.5	0.12	1.00	0.12	29.2
11	T1	All MCs	24	4.3	16	5.4	0.023	7.9	LOS A	0.1	0.5	0.12	1.00	0.12	29.2
12	R2	All MCs	1	0.0	1	0.0	0.023	7.9	LOS A	0.1	0.5	0.12	1.00	0.12	13.5
Approach			39	2.7	26	3.4	0.023	7.8	LOS A	0.1	0.5	0.12	1.00	0.12	27.1
All Vehicles			157	5.4	140	6.0	0.038	5.6	NA	0.2	1.3	0.06	0.71	0.06	21.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 5 [Chandos Street - Christie Street (Site Folder: 10yr AM Peak Hour)]

Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
South: Christie Street															
1	L2	All MCs	40	0.0	34	0.0	0.638	5.9	LOS A	3.9	27.5	0.50	0.70	0.53	27.0
2	T1	All MCs	107	1.0	90	1.0	0.638	5.6	LOS A	3.9	27.5	0.50	0.70	0.53	40.5
3	R2	All MCs	245	4.3	206	4.3	0.638	9.0	LOS A	3.9	27.5	0.50	0.70	0.53	22.3
3u	U	All MCs	173	0.6	145	0.6	0.638	10.6	LOS A	3.9	27.5	0.50	0.70	0.53	22.3
Approach			565	2.2	476	2.2	0.638	8.6	LOS A	3.9	27.5	0.50	0.70	0.53	30.4
East: Chandos Street															
4	L2	All MCs	264	4.8	261	4.8	0.887	19.9	LOS B	9.8	70.6	1.00	1.09	1.58	20.4
5	T1	All MCs	105	0.0	104	0.0	0.887	19.6	LOS B	9.8	70.6	1.00	1.09	1.58	14.8
6	R2	All MCs	27	0.0	27	0.0	0.887	22.8	LOS B	9.8	70.6	1.00	1.09	1.58	37.5
6u	U	All MCs	8	25.0	8	25.0	0.887	26.2	LOS B	9.8	70.6	1.00	1.09	1.58	20.4
Approach			405	3.6	400	3.6	0.887	20.2	LOS B	9.8	70.6	1.00	1.09	1.58	20.0
North: Christie Street															
7	L2	All MCs	24	0.0	24	0.0	0.509	10.4	LOS A	2.7	19.1	0.80	0.72	0.90	43.3
8	T1	All MCs	144	0.0	144	0.0	0.509	10.5	LOS A	2.7	19.1	0.80	0.72	0.90	43.3
9	R2	All MCs	56	0.0	56	0.0	0.509	13.7	LOS A	2.7	19.1	0.80	0.72	0.90	28.6
9u	U	All MCs	1	0.0	1	0.0	0.509	15.3	LOS B	2.7	19.1	0.80	0.72	0.90	48.1
Approach			225	0.0	225	0.0	0.509	11.3	LOS A	2.7	19.1	0.80	0.72	0.90	38.0
West: Chandos Street															
10	L2	All MCs	23	0.0	23	0.0	0.152	7.7	LOS A	0.7	5.3	0.65	0.66	0.65	45.0
11	T1	All MCs	38	2.8	38	2.8	0.152	7.8	LOS A	0.7	5.3	0.65	0.66	0.65	23.3
12	R2	All MCs	21	5.0	21	5.0	0.152	11.1	LOS A	0.7	5.3	0.65	0.66	0.65	23.3
12u	U	All MCs	1	0.0	1	0.0	0.152	12.6	LOS A	0.7	5.3	0.65	0.66	0.65	13.4
Approach			83	2.5	83	2.5	0.152	8.7	LOS A	0.7	5.3	0.65	0.66	0.65	34.8
All Vehicles			1279	2.3	1184	2.5	0.887	13.0	LOS A	9.8	70.6	0.74	0.83	0.96	28.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: 10yr AM Peak Hour)]

 Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Mitchell Street															
1	L2	All MCs	28	14.8	26	15.5	0.107	10.4	LOS A	0.4	2.7	0.58	0.97	0.58	18.3
2	T1	All MCs	1	0.0	1	0.0	0.107	12.8	LOS A	0.4	2.7	0.58	0.97	0.58	33.8
3	R2	All MCs	27	3.8	25	4.1	0.107	16.1	LOS B	0.4	2.7	0.58	0.97	0.58	18.3
Approach			57	9.3	52	9.7	0.107	13.2	LOS A	0.4	2.7	0.58	0.97	0.58	19.0
East: Chandos Street															
4	L2	All MCs	83	26.6	83	26.8	0.250	5.9	LOS A	0.0	0.1	0.00	0.10	0.00	56.0
5	T1	All MCs	401	2.1	398	2.1	0.250	0.0	LOS A	0.0	0.1	0.00	0.10	0.00	56.0
6	R2	All MCs	1	0.0	1	0.0	0.250	5.7	LOS A	0.0	0.1	0.00	0.10	0.00	53.2
Approach			485	6.3	481	6.3	0.250	1.0	NA	0.0	0.1	0.00	0.10	0.00	56.0
North: Mitchell Street															
7	L2	All MCs	51	0.0	51	0.0	0.107	9.1	LOS A	0.4	2.8	0.48	0.88	0.48	39.2
8	T1	All MCs	21	0.0	21	0.0	0.107	14.2	LOS A	0.4	2.8	0.48	0.88	0.48	39.2
9	R2	All MCs	6	0.0	6	0.0	0.107	14.5	LOS B	0.4	2.8	0.48	0.88	0.48	39.2
Approach			78	0.0	78	0.0	0.107	10.9	LOS A	0.4	2.8	0.48	0.88	0.48	39.2
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.152	5.5	LOS A	0.3	2.1	0.14	0.17	0.14	52.7
11	T1	All MCs	285	4.1	251	4.0	0.152	0.0	LOS A	0.3	2.1	0.14	0.17	0.14	53.5
12	R2	All MCs	32	0.0	28	0.0	0.152	11.2	LOS A	0.3	2.1	0.14	0.17	0.14	53.5
Approach			319	3.6	280	3.6	0.152	1.1	NA	0.3	2.1	0.14	0.17	0.14	53.5
All Vehicles			939	5.0	891	5.3	0.250	2.6	NA	0.4	2.8	0.12	0.24	0.12	49.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: 10yr AM Peak Hour)]

Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
			veh/h	%	veh/h	%	v/c	sec		m				km/h	
South: Oxley Street															
1	L2	All MCs	68	0.0	64	0.0	0.363	7.8	LOS A	2.3	16.4	0.72	0.71	0.72	22.4
2	T1	All MCs	39	0.0	37	0.0	0.363	7.6	LOS A	2.3	16.4	0.72	0.71	0.72	33.3
3	R2	All MCs	171	2.5	161	2.6	0.363	10.7	LOS A	2.3	16.4	0.72	0.71	0.72	30.5
3u	U	All MCs	2	0.0	2	0.0	0.363	13.2	LOS A	2.3	16.4	0.72	0.71	0.72	22.4
Approach			280	1.5	264	1.6	0.363	9.6	LOS A	2.3	16.4	0.72	0.71	0.72	29.7
East: Chandos Street															
4	L2	All MCs	253	2.1	253	2.1	0.625	5.4	LOS A	6.0	43.1	0.58	0.51	0.58	32.6
5	T1	All MCs	434	2.4	434	2.4	0.625	5.3	LOS A	6.0	43.1	0.58	0.51	0.58	32.6
6	R2	All MCs	24	0.0	24	0.0	0.625	8.1	LOS A	6.0	43.1	0.58	0.51	0.58	37.5
6u	U	All MCs	8	12.5	8	12.5	0.625	11.1	LOS A	6.0	43.1	0.58	0.51	0.58	36.2
Approach			719	2.3	719	2.3	0.625	5.5	LOS A	6.0	43.1	0.58	0.51	0.58	33.0
North: Oxley Street															
7	L2	All MCs	8	0.0	8	0.0	0.057	7.2	LOS A	0.3	2.1	0.60	0.65	0.60	36.7
8	T1	All MCs	24	0.0	24	0.0	0.057	7.0	LOS A	0.3	2.1	0.60	0.65	0.60	33.3
9	R2	All MCs	8	0.0	8	0.0	0.057	9.9	LOS A	0.3	2.1	0.60	0.65	0.60	33.3
9u	U	All MCs	1	0.0	1	0.0	0.057	12.5	LOS A	0.3	2.1	0.60	0.65	0.60	38.9
Approach			42	0.0	42	0.0	0.057	7.7	LOS A	0.3	2.1	0.60	0.65	0.60	34.4
West: Chandos Street															
10	L2	All MCs	11	0.0	10	0.0	0.368	5.8	LOS A	2.5	17.7	0.56	0.58	0.56	37.8
11	T1	All MCs	260	2.8	235	2.8	0.368	5.7	LOS A	2.5	17.7	0.56	0.58	0.56	37.3
12	R2	All MCs	104	5.1	94	4.9	0.368	8.7	LOS A	2.5	17.7	0.56	0.58	0.56	33.0
12u	U	All MCs	4	0.0	4	0.0	0.368	11.2	LOS A	2.5	17.7	0.56	0.58	0.56	33.0
Approach			379	3.3	342	3.3	0.368	6.6	LOS A	2.5	17.7	0.56	0.58	0.56	36.4
All Vehicles			1420	2.4	1367	2.5	0.625	6.6	LOS A	6.0	43.1	0.60	0.57	0.60	33.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 8 [Albany Street - Oxley Street (Site Folder: 10yr AM Peak Hour)]

Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: Oxley Street															
1	L2	All MCs	56	1.9	56	1.9	0.410	8.7	LOS A	2.8	19.7	0.79	0.74	0.80	27.6
2	T1	All MCs	114	0.0	114	0.0	0.410	8.3	LOS A	2.8	19.7	0.79	0.74	0.80	27.6
3	R2	All MCs	109	0.0	109	0.0	0.410	11.1	LOS A	2.8	19.7	0.79	0.74	0.80	33.0
3u	U	All MCs	5	0.0	5	0.0	0.410	13.7	LOS A	2.8	19.7	0.79	0.74	0.80	33.6
Approach			284	0.4	284	0.4	0.410	9.6	LOS A	2.8	19.7	0.79	0.74	0.80	30.4
East: Albany Street															
4	L2	All MCs	73	1.4	73	1.4	0.704	15.3	LOS B	7.9	56.2	0.95	0.93	1.31	30.6
5	T1	All MCs	369	1.4	369	1.4	0.704	15.1	LOS B	7.9	56.2	0.95	0.93	1.31	23.9
6	R2	All MCs	32	3.3	32	3.3	0.704	18.1	LOS B	7.9	56.2	0.95	0.93	1.31	23.9
6u	U	All MCs	4	0.0	4	0.0	0.704	19.4	LOS B	7.9	56.2	0.95	0.93	1.31	30.8
Approach			478	1.5	478	1.5	0.704	15.4	LOS B	7.9	56.2	0.95	0.93	1.31	25.4
North: Oxley Street															
7	L2	All MCs	53	4.0	51	3.9	0.654	14.0	LOS A	6.9	49.0	0.90	0.88	1.18	28.3
8	T1	All MCs	293	0.4	285	0.4	0.654	13.6	LOS A	6.9	49.0	0.90	0.88	1.18	28.7
9	R2	All MCs	141	0.7	137	0.7	0.654	16.5	LOS B	6.9	49.0	0.90	0.88	1.18	18.6
9u	U	All MCs	1	0.0	1	0.0	0.654	18.0	LOS B	6.9	49.0	0.90	0.88	1.18	18.6
Approach			487	0.9	474	0.8	0.654	14.5	LOS A	6.9	49.0	0.90	0.88	1.18	26.5
West: Albany Street															
10	L2	All MCs	163	0.6	146	0.6	0.589	7.9	LOS A	4.8	34.3	0.64	0.69	0.67	31.4
11	T1	All MCs	334	1.9	299	1.9	0.589	7.7	LOS A	4.8	34.3	0.64	0.69	0.67	37.9
12	R2	All MCs	127	4.1	114	4.2	0.589	10.7	LOS A	4.8	34.3	0.64	0.69	0.67	36.2
12u	U	All MCs	7	0.0	7	0.0	0.589	12.0	LOS A	4.8	34.3	0.64	0.69	0.67	31.4
Approach			632	2.0	566	2.0	0.589	8.4	LOS A	4.8	34.3	0.64	0.69	0.67	36.3
All Vehicles			1881	1.3	1802	1.4	0.704	12.0	LOS A	7.9	56.2	0.82	0.81	0.99	29.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: 10yr AM Peak Hour)]

 Network: N1 [10yr AM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: Oxley Street															
1	L2	All MCs	35	3.0	33	3.1	0.160	4.6	LOSA	0.3	2.3	0.14	0.21	0.14	40.8
2	T1	All MCs	232	0.9	219	0.9	0.160	0.0	LOSA	0.3	2.3	0.14	0.21	0.14	40.8
3	R2	All MCs	33	0.0	31	0.0	0.160	8.8	LOSA	0.3	2.3	0.14	0.21	0.14	41.3
Approach			299	1.1	283	1.1	0.160	1.5	NA	0.3	2.3	0.14	0.21	0.14	40.9
East: Atchison Street															
4	L2	All MCs	100	0.0	100	0.0	0.197	9.6	LOSA	0.8	5.4	0.50	0.92	0.50	31.1
5	T1	All MCs	25	4.2	25	4.2	0.197	13.2	LOSA	0.8	5.4	0.50	0.92	0.50	31.1
6	R2	All MCs	25	0.0	25	0.0	0.197	13.5	LOSA	0.8	5.4	0.50	0.92	0.50	31.1
Approach			151	0.7	151	0.7	0.197	10.8	LOSA	0.8	5.4	0.50	0.92	0.50	31.1
North: Oxley Street															
7	L2	All MCs	31	13.8	30	13.4	0.202	5.4	LOSA	0.2	1.4	0.06	0.11	0.06	46.0
8	T1	All MCs	326	0.6	318	0.6	0.202	0.0	LOSA	0.2	1.4	0.06	0.11	0.06	52.6
9	R2	All MCs	16	26.7	15	26.0	0.202	9.8	LOSA	0.2	1.4	0.06	0.11	0.06	52.6
Approach			373	2.8	363	2.7	0.202	0.9	NA	0.2	1.4	0.06	0.11	0.06	51.2
West: Atchison Street															
10	L2	All MCs	19	0.0	16	0.0	0.112	8.9	LOSA	0.4	2.8	0.55	0.94	0.55	29.0
11	T1	All MCs	19	5.6	16	5.9	0.112	12.9	LOSA	0.4	2.8	0.55	0.94	0.55	34.9
12	R2	All MCs	31	3.4	26	3.7	0.112	14.8	LOS B	0.4	2.8	0.55	0.94	0.55	29.0
Approach			68	3.1	59	3.3	0.112	12.7	LOSA	0.4	2.8	0.55	0.94	0.55	31.3
All Vehicles			891	1.9	855	2.0	0.202	3.6	NA	0.8	5.4	0.20	0.34	0.20	39.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr PM Peak Hour (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back [ Veh. veh ]	Of Queue [ Dist ]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]	v/c	sec							
			veh/h	%	veh/h	%									
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	94	0.0	94	0.0	0.465	15.2	LOS B	14.1	101.2	0.46	0.45	0.46	33.2
5	T1	All MCs	1673	3.5	1673	3.5	0.465	7.4	LOS A	14.1	101.2	0.43	0.40	0.43	41.6
Approach			1766	3.3	1766	3.3	0.465	7.8	LOS A	14.1	101.5	0.43	0.40	0.43	41.2
North: Christie Street															
7	L2	All MCs	39	0.0	39	0.0	0.675	5.7	LOS A	2.1	14.4	0.14	0.30	0.14	24.2
8	T1	All MCs	149	0.0	149	0.0	0.675	2.6	LOS A	2.1	14.4	0.14	0.30	0.14	35.5
9	R2	All MCs	326	1.6	326	1.6	0.675	11.2	LOS A	6.2	44.2	0.36	0.57	0.36	25.6
Approach			515	1.0	515	1.0	0.675	8.3	LOS A	6.2	44.2	0.28	0.47	0.28	27.5
West: Pacific Highway															
10	L2	All MCs	401	0.5	401	0.5	*0.901	23.4	LOS B	43.0	304.6	0.92	0.96	1.07	9.9
11	T1	All MCs	1681	2.4	1681	2.4	0.901	40.8	LOS C	43.7	312.1	0.90	0.94	1.05	11.6
Approach			2082	2.0	2082	2.0	0.901	37.4	LOS C	43.7	312.1	0.90	0.95	1.05	11.2
All Vehicles			4363	2.4	4363	2.4	0.901	22.0	LOS B	43.7	312.1	0.64	0.67	0.71	21.2
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	396	0.5	396	0.5	0.469	22.5	LOS B	7.0	49.0	0.92	0.75	0.92	5.7
Approach			396	0.5	396	0.5	0.469	22.5	LOS B	7.0	49.0	0.92	0.75	0.92	5.7
North: Christie Street															
7a	L1	All MCs	35	3.0	35	3.0	0.851	69.2	LOS E	14.5	102.8	1.00	1.00	1.18	4.1
8	T1	All MCs	472	1.1	472	1.1	0.851	66.3	LOS E	14.5	102.8	1.00	1.01	1.21	4.0
Approach			506	1.2	506	1.2	0.851	66.5	LOS E	14.5	102.8	1.00	1.01	1.21	4.0
West: Sergeants Lane															
10	L2	All MCs	25	0.0	25	0.0	0.031	10.8	LOS A	0.5	3.4	0.59	0.43	0.59	8.1
12a	R1	All MCs	2	50.0	2	50.0	0.071	15.9	LOS B	0.7	4.9	0.60	0.47	0.60	8.2
12	R2	All MCs	33	0.0	33	0.0	0.071	11.3	LOS A	0.7	4.9	0.60	0.47	0.60	8.2
Approach			60	1.8	60	1.8	0.071	11.2	LOS A	0.7	4.9	0.60	0.45	0.60	8.1
All Vehicles			962	1.0	962	1.0	0.851	44.9	LOS D	14.5	102.8	0.94	0.87	1.05	4.6

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped	Dist ]			sec	m	m/sec
					ped	m					
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	119	56.9	LOS E	0.4	0.4	0.96	0.96	210.8	200.0	0.95
East: Pacific Highway											
P2	Full	237	57.2	LOS E	0.8	0.8	0.96	0.96	211.1	200.0	0.95
North: Christie Street											
P3	Full	249	57.2	LOS E	0.9	0.9	0.96	0.96	211.1	200.0	0.95
All Pedestrians		605	57.2	LOS E	0.9	0.9	0.96	0.96	211.0	200.0	0.95
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	383	28.2	LOS C	0.8	0.8	0.92	0.92	182.0	200.0	1.10
North: Christie Street											
P3	Full	55	27.8	LOS C	0.1	0.1	0.91	0.91	181.6	200.0	1.10
West: Sergeants Lane											
P4	Full	24	56.7	LOS E	0.1	0.1	0.95	0.95	210.5	200.0	0.95
All Pedestrians		462	29.6	LOS C	0.8	0.8	0.92	0.92	183.5	200.0	1.09

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: 1 [Pacific Highway - Albany Street (Site Folder: 10yr PM Peak Hour)]

Network: N1 [10yr PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
SouthEast: Pacific Highway															
22	T1	All MCs	1278	4.1	1278	4.1	0.517	11.3	LOS A	19.7	142.4	0.55	0.50	0.55	26.6
23b	R3	All MCs	157	0.0	157	0.0	*0.696	64.2	LOS E	9.6	67.1	1.00	0.84	1.07	7.7
Approach			1435	3.7	1435	3.7	0.696	17.1	LOS B	19.7	142.4	0.60	0.54	0.61	20.8
East: Albany Street															
4b	L3	All MCs	41	2.6	41	2.6	*0.668	54.2	LOS D	15.6	110.2	0.97	0.84	0.97	14.4
6a	R1	All MCs	524	0.4	524	0.4	0.668	52.1	LOS D	15.8	111.1	0.96	0.84	0.96	8.9
Approach			565	0.6	565	0.6	0.668	52.3	LOS D	15.8	111.1	0.96	0.84	0.96	9.4
NorthWest: Pacific Highway															
27a	L1	All MCs	467	1.1	467	1.1	0.324	9.3	LOS A	7.6	53.7	0.29	0.66	0.29	31.1
28	T1	All MCs	1245	2.7	1245	2.7	*0.688	30.3	LOS C	30.7	220.0	0.88	0.78	0.88	22.4
Approach			1713	2.3	1713	2.3	0.688	24.6	LOS B	30.7	220.0	0.72	0.75	0.72	23.5
All Vehicles			3713	2.6	3713	2.6	0.696	25.9	LOS B	30.7	220.0	0.71	0.68	0.72	19.3

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	[ Dist ] m					
SouthEast: Pacific Highway											
P5	Full	194	57.1	LOS E	0.7	0.7	0.96	0.96	211.0	200.0	0.95
East: Albany Street											
P2	Full	432	57.7	LOS E	1.5	1.5	0.97	0.97	211.5	200.0	0.95
All Pedestrians		625	57.5	LOS E	1.5	1.5	0.97	0.97	211.3	200.0	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.

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 4 [Atchison Street - Mitchell Street (Site Folder: 10yr PM Peak Hour)]**

**Network: N1 [10yr PM Peak Hour (Network Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	5	0.0	5	0.0	0.011	2.4	LOS A	0.0	0.3	0.13	0.91	0.13	9.7
3	R2	All MCs	6	0.0	6	0.0	0.011	2.8	LOS A	0.0	0.3	0.13	0.91	0.13	9.7
Approach			12	0.0	12	0.0	0.011	2.6	LOS A	0.0	0.3	0.13	0.91	0.13	9.7
East: Atchison Street															
4	L2	All MCs	5	0.0	5	0.0	0.019	8.2	LOS A	0.1	0.6	0.06	0.60	0.06	14.7
6	R2	All MCs	27	0.0	27	0.0	0.019	4.6	LOS A	0.1	0.6	0.06	0.60	0.06	35.3
Approach			33	0.0	33	0.0	0.019	5.2	NA	0.1	0.6	0.06	0.60	0.06	24.8
North: Mitchell Street															
7	L2	All MCs	29	0.0	29	0.0	0.022	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	12	0.0	12	0.0	0.022	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			41	0.0	41	0.0	0.022	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.7
West: Atchison Street															
10	L2	All MCs	27	3.8	27	3.8	0.056	7.7	LOS A	0.2	1.3	0.11	0.99	0.11	29.3
11	T1	All MCs	39	2.7	39	2.7	0.056	7.6	LOS A	0.2	1.3	0.11	0.99	0.11	29.3
12	R2	All MCs	1	0.0	1	0.0	0.056	7.8	LOS A	0.2	1.3	0.11	0.99	0.11	13.5
Approach			67	3.1	67	3.1	0.056	7.7	LOS A	0.2	1.3	0.11	0.99	0.11	28.0
All Vehicles			153	1.4	153	1.4	0.056	6.1	NA	0.2	1.3	0.07	0.80	0.07	23.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 5 [Chandos Street - Christie Street (Site Folder: 10yr PM Peak Hour)]**

**Network: N1 [10yr PM Peak Hour (Network Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
South: Christie Street															
1	L2	All MCs	43	0.0	43	0.0	0.479	4.5	LOS A	2.3	16.0	0.28	0.63	0.28	28.4
2	T1	All MCs	42	5.0	42	5.0	0.479	4.3	LOS A	2.3	16.0	0.28	0.63	0.28	41.3
3	R2	All MCs	240	0.0	240	0.0	0.479	7.5	LOS A	2.3	16.0	0.28	0.63	0.28	24.0
3u	U	All MCs	99	0.0	99	0.0	0.479	9.2	LOS A	2.3	16.0	0.28	0.63	0.28	24.0
Approach			424	0.5	424	0.5	0.479	7.3	LOS A	2.3	16.0	0.28	0.63	0.28	29.2
East: Chandos Street															
4	L2	All MCs	209	2.5	209	2.5	0.595	8.9	LOS A	3.5	24.5	0.73	0.65	0.80	31.6
5	T1	All MCs	57	0.0	57	0.0	0.595	8.8	LOS A	3.5	24.5	0.73	0.65	0.80	18.2
6	R2	All MCs	26	0.0	26	0.0	0.595	12.0	LOS A	3.5	24.5	0.73	0.65	0.80	45.5
6u	U	All MCs	11	0.0	11	0.0	0.595	13.6	LOS A	3.5	24.5	0.73	0.65	0.80	31.6
Approach			303	1.7	303	1.7	0.595	9.3	LOS A	3.5	24.5	0.73	0.65	0.80	29.4
North: Christie Street															
7	L2	All MCs	35	3.0	35	3.0	0.263	9.9	LOS A	1.2	8.7	0.73	0.67	0.73	44.1
8	T1	All MCs	59	0.0	59	0.0	0.263	9.8	LOS A	1.2	8.7	0.73	0.67	0.73	44.1
9	R2	All MCs	24	0.0	24	0.0	0.263	13.0	LOS A	1.2	8.7	0.73	0.67	0.73	28.9
9u	U	All MCs	2	0.0	2	0.0	0.263	14.6	LOS B	1.2	8.7	0.73	0.67	0.73	48.6
Approach			120	0.9	120	0.9	0.263	10.5	LOS A	1.2	8.7	0.73	0.67	0.73	39.6
West: Chandos Street															
10	L2	All MCs	32	0.0	32	0.0	0.379	8.0	LOS A	2.3	15.9	0.71	0.63	0.71	44.6
11	T1	All MCs	121	0.0	121	0.0	0.379	8.1	LOS A	2.3	15.9	0.71	0.63	0.71	22.8
12	R2	All MCs	72	0.0	72	0.0	0.379	11.3	LOS A	2.3	15.9	0.71	0.63	0.71	22.8
12u	U	All MCs	1	0.0	1	0.0	0.379	12.9	LOS A	2.3	15.9	0.71	0.63	0.71	13.3
Approach			225	0.0	225	0.0	0.379	9.1	LOS A	2.3	15.9	0.71	0.63	0.71	29.9
All Vehicles			1073	0.8	1073	0.8	0.595	8.6	LOS A	3.5	24.5	0.54	0.64	0.57	31.6

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: 10yr PM Peak Hour)]

 Network: N1 [10yr PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
South: Mitchell Street															
1	L2	All MCs	44	0.0	44	0.0	0.124	8.6	LOS A	0.4	3.1	0.52	0.90	0.52	19.9
2	T1	All MCs	1	0.0	1	0.0	0.124	12.8	LOS A	0.4	3.1	0.52	0.90	0.52	35.0
3	R2	All MCs	31	0.0	31	0.0	0.124	15.2	LOS B	0.4	3.1	0.52	0.90	0.52	19.9
Approach			76	0.0	76	0.0	0.124	11.3	LOS A	0.4	3.1	0.52	0.90	0.52	20.4
East: Chandos Street															
4	L2	All MCs	34	0.0	34	0.0	0.146	5.5	LOS A	0.0	0.1	0.01	0.07	0.01	56.4
5	T1	All MCs	257	2.0	257	2.0	0.146	0.0	LOS A	0.0	0.1	0.01	0.07	0.01	56.4
6	R2	All MCs	1	0.0	1	0.0	0.146	7.0	LOS A	0.0	0.1	0.01	0.07	0.01	53.3
Approach			292	1.8	292	1.8	0.146	0.7	NA	0.0	0.1	0.01	0.07	0.01	56.3
North: Mitchell Street															
7	L2	All MCs	51	0.0	51	0.0	0.108	10.1	LOS A	0.4	2.7	0.53	0.94	0.53	38.8
8	T1	All MCs	19	0.0	19	0.0	0.108	13.4	LOS A	0.4	2.7	0.53	0.94	0.53	38.8
9	R2	All MCs	5	0.0	5	0.0	0.108	15.0	LOS B	0.4	2.7	0.53	0.94	0.53	38.8
Approach			75	0.0	75	0.0	0.108	11.3	LOS A	0.4	2.7	0.53	0.94	0.53	38.8
West: Chandos Street															
10	L2	All MCs	1	0.0	1	0.0	0.218	5.5	LOS A	0.2	1.1	0.04	0.05	0.04	54.1
11	T1	All MCs	422	0.2	422	0.2	0.218	0.0	LOS A	0.2	1.1	0.04	0.05	0.04	57.6
12	R2	All MCs	17	0.0	17	0.0	0.218	8.5	LOS A	0.2	1.1	0.04	0.05	0.04	57.6
Approach			440	0.2	440	0.2	0.218	0.3	NA	0.2	1.1	0.04	0.05	0.04	57.6
All Vehicles			882	0.7	882	0.7	0.218	2.3	NA	0.4	3.1	0.11	0.21	0.11	49.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: 10yr PM Peak Hour)]

Network: N1 [10yr PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: Oxley Street															
1	L2	All MCs	82	2.6	82	2.6	0.410	6.0	LOS A	2.8	19.5	0.56	0.63	0.56	24.7
2	T1	All MCs	23	0.0	23	0.0	0.410	5.8	LOS A	2.8	19.5	0.56	0.63	0.56	35.0
3	R2	All MCs	284	0.4	284	0.4	0.410	8.7	LOS A	2.8	19.5	0.56	0.63	0.56	32.3
3u	U	All MCs	2	0.0	2	0.0	0.410	11.3	LOS A	2.8	19.5	0.56	0.63	0.56	24.7
Approach			392	0.8	392	0.8	0.410	8.0	LOS A	2.8	19.5	0.56	0.63	0.56	31.5
East: Chandos Street															
4	L2	All MCs	180	0.6	180	0.6	0.372	5.0	LOS A	2.6	18.3	0.43	0.50	0.43	33.8
5	T1	All MCs	216	0.5	216	0.5	0.372	4.8	LOS A	2.6	18.3	0.43	0.50	0.43	33.8
6	R2	All MCs	11	0.0	11	0.0	0.372	7.8	LOS A	2.6	18.3	0.43	0.50	0.43	38.2
6u	U	All MCs	4	0.0	4	0.0	0.372	10.4	LOS A	2.6	18.3	0.43	0.50	0.43	38.4
Approach			411	0.5	411	0.5	0.372	5.0	LOS A	2.6	18.3	0.43	0.50	0.43	34.0
North: Oxley Street															
7	L2	All MCs	6	0.0	6	0.0	0.079	10.0	LOS A	0.5	3.2	0.76	0.74	0.76	34.3
8	T1	All MCs	31	0.0	31	0.0	0.079	9.8	LOS A	0.5	3.2	0.76	0.74	0.76	30.0
9	R2	All MCs	4	0.0	4	0.0	0.079	12.7	LOS A	0.5	3.2	0.76	0.74	0.76	30.0
9u	U	All MCs	1	0.0	1	0.0	0.079	15.3	LOS B	0.5	3.2	0.76	0.74	0.76	36.4
Approach			42	0.0	42	0.0	0.079	10.2	LOS A	0.5	3.2	0.76	0.74	0.76	31.1
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.580	8.0	LOS A	5.1	35.9	0.75	0.69	0.82	36.5
11	T1	All MCs	406	0.3	406	0.3	0.580	7.8	LOS A	5.1	35.9	0.75	0.69	0.82	35.9
12	R2	All MCs	94	0.0	94	0.0	0.580	10.7	LOS A	5.1	35.9	0.75	0.69	0.82	31.1
12u	U	All MCs	6	0.0	6	0.0	0.580	13.3	LOS A	5.1	35.9	0.75	0.69	0.82	31.1
Approach			508	0.2	508	0.2	0.580	8.4	LOS A	5.1	35.9	0.75	0.69	0.82	35.3
All Vehicles			1353	0.5	1353	0.5	0.580	7.3	LOS A	5.1	35.9	0.60	0.61	0.63	33.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 8 [Albany Street - Oxley Street (Site Folder: 10yr PM Peak Hour)]

Network: N1 [10yr PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: Oxley Street															
1	L2	All MCs	94	0.0	94	0.0	0.562	9.9	LOS A	4.9	34.5	0.83	0.79	0.96	26.5
2	T1	All MCs	229	0.5	229	0.5	0.562	9.6	LOS A	4.9	34.5	0.83	0.79	0.96	26.5
3	R2	All MCs	97	0.0	97	0.0	0.562	12.4	LOS A	4.9	34.5	0.83	0.79	0.96	32.2
3u	U	All MCs	5	0.0	5	0.0	0.562	15.0	LOS B	4.9	34.5	0.83	0.79	0.96	32.8
Approach			425	0.2	425	0.2	0.562	10.4	LOS A	4.9	34.5	0.83	0.79	0.96	28.4
East: Albany Street															
4	L2	All MCs	95	1.1	95	1.1	0.601	11.5	LOS A	5.7	39.9	0.85	0.80	1.02	34.0
5	T1	All MCs	318	0.7	318	0.7	0.601	11.3	LOS A	5.7	39.9	0.85	0.80	1.02	28.0
6	R2	All MCs	38	0.0	38	0.0	0.601	14.1	LOS A	5.7	39.9	0.85	0.80	1.02	28.0
6u	U	All MCs	5	0.0	5	0.0	0.601	15.6	LOS B	5.7	39.9	0.85	0.80	1.02	34.1
Approach			456	0.7	456	0.7	0.601	11.6	LOS A	5.7	39.9	0.85	0.80	1.02	29.8
North: Oxley Street															
7	L2	All MCs	42	0.0	42	0.0	0.567	12.7	LOS A	5.2	36.4	0.89	0.84	1.07	29.7
8	T1	All MCs	233	0.5	233	0.5	0.567	12.4	LOS A	5.2	36.4	0.89	0.84	1.07	29.8
9	R2	All MCs	104	1.0	104	1.0	0.567	15.4	LOS B	5.2	36.4	0.89	0.84	1.07	19.7
9u	U	All MCs	2	0.0	2	0.0	0.567	16.8	LOS B	5.2	36.4	0.89	0.84	1.07	19.7
Approach			381	0.6	381	0.6	0.567	13.3	LOS A	5.2	36.4	0.89	0.84	1.07	27.8
West: Albany Street															
10	L2	All MCs	140	1.5	140	1.5	0.742	12.3	LOS A	8.5	59.9	0.79	0.90	1.02	25.4
11	T1	All MCs	359	0.3	359	0.3	0.742	12.1	LOS A	8.5	59.9	0.79	0.90	1.02	33.2
12	R2	All MCs	120	0.9	120	0.9	0.742	15.0	LOS B	8.5	59.9	0.79	0.90	1.02	31.9
12u	U	All MCs	11	0.0	11	0.0	0.742	16.4	LOS B	8.5	59.9	0.79	0.90	1.02	25.4
Approach			629	0.7	629	0.7	0.742	12.8	LOS A	8.5	59.9	0.79	0.90	1.02	31.6
All Vehicles			1892	0.6	1892	0.6	0.742	12.1	LOS A	8.5	59.9	0.83	0.84	1.02	29.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 9 [Atchison Street - Oxley Street (Site Folder: 10yr PM Peak Hour)]

 Network: N1 [10yr PM Peak Hour (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr PM Peak Hour  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Oxley Street															
1	L2	All MCs	19	0.0	19	0.0	0.219	4.6	LOS A	0.5	3.3	0.15	0.19	0.15	41.7
2	T1	All MCs	319	0.7	319	0.7	0.219	0.0	LOS A	0.5	3.3	0.15	0.19	0.15	41.7
3	R2	All MCs	51	0.0	51	0.0	0.219	7.9	LOS A	0.5	3.3	0.15	0.19	0.15	41.6
Approach			388	0.5	388	0.5	0.219	1.3	NA	0.5	3.3	0.15	0.19	0.15	41.7
East: Atchison Street															
4	L2	All MCs	89	1.2	89	1.2	0.198	9.3	LOS A	0.8	5.4	0.50	0.90	0.50	30.6
5	T1	All MCs	23	0.0	23	0.0	0.198	13.2	LOS A	0.8	5.4	0.50	0.90	0.50	30.6
6	R2	All MCs	31	0.0	31	0.0	0.198	14.9	LOS B	0.8	5.4	0.50	0.90	0.50	30.6
Approach			143	0.7	143	0.7	0.198	11.1	LOS A	0.8	5.4	0.50	0.90	0.50	30.6
North: Oxley Street															
7	L2	All MCs	51	0.0	51	0.0	0.171	5.4	LOS A	0.1	1.0	0.06	0.16	0.06	47.7
8	T1	All MCs	249	0.4	249	0.4	0.171	0.0	LOS A	0.1	1.0	0.06	0.16	0.06	48.7
9	R2	All MCs	13	0.0	13	0.0	0.171	10.0	LOS A	0.1	1.0	0.06	0.16	0.06	48.7
Approach			313	0.3	313	0.3	0.171	1.3	NA	0.1	1.0	0.06	0.16	0.06	48.4
West: Atchison Street															
10	L2	All MCs	16	6.7	16	6.7	0.176	9.9	LOS A	0.6	4.4	0.59	1.01	0.59	28.4
11	T1	All MCs	48	0.0	48	0.0	0.176	13.0	LOS A	0.6	4.4	0.59	1.01	0.59	35.0
12	R2	All MCs	25	4.2	25	4.2	0.176	15.7	LOS B	0.6	4.4	0.59	1.01	0.59	28.4
Approach			89	2.4	89	2.4	0.176	13.2	LOS A	0.6	4.4	0.59	1.01	0.59	32.7
All Vehicles			934	0.7	934	0.7	0.219	3.9	NA	0.8	5.4	0.21	0.36	0.21	38.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 135 seconds (CCG User-Given Cycle Time)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h		veh/h					veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	133	0.8	132	0.8	* 0.480	11.6	LOS A	12.3	89.0	0.35	0.38	0.35	36.9
5	T1	All MCs	1804	4.3	1799	4.3	0.480	5.0	LOS A	13.2	95.7	0.34	0.33	0.34	45.9
Approach			1937	4.1	1931	4.1	0.480	5.4	LOS A	13.2	95.7	0.34	0.33	0.34	45.3
North: Christie Street															
7	L2	All MCs	33	0.0	22	0.0	0.636	15.3	LOS B	5.0	35.6	0.41	0.38	0.41	11.6
8	T1	All MCs	257	0.8	170	0.8	0.636	11.7	LOS A	5.0	35.6	0.41	0.38	0.41	21.8
9	R2	All MCs	307	4.8	204	4.9	0.636	24.1	LOS B	6.7	49.0	0.60	0.69	0.60	16.6
Approach			597	2.8	396	2.9	0.636	18.3	LOS B	6.7	49.0	0.50	0.54	0.50	18.1
West: Pacific Highway															
10	L2	All MCs	571	2.6	571	2.6	* 1.215	219.6	LOS F	109.3	786.4	1.00	1.74	2.28	2.0
11	T1	All MCs	2071	4.3	2071	4.3	1.215	239.3	LOS F	116.5	845.3	1.00	1.97	2.29	2.1
Approach			2641	3.9	2641	3.9	1.215	235.1	LOS F	116.5	845.3	1.00	1.92	2.29	2.1
All Vehicles			5175	3.8	4969	4.0	1.215	128.5	LOS F	116.5	845.3	0.70	1.19	1.39	5.0
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	566	2.6	469	2.6	0.406	11.2	LOS A	6.8	49.0	0.65	0.55	0.65	10.3
Approach			566	2.6	469	2.6	0.406	11.2	LOS A	6.8	49.0	0.65	0.55	0.65	10.3
North: Christie Street															
7a	L1	All MCs	98	8.6	93	8.7	1.492	541.6	LOS F	14.2	102.8	1.00	2.43	3.29	0.5
8	T1	All MCs	554	2.9	524	2.9	* 1.492	538.7	LOS F	14.3	102.8	1.00	2.34	3.30	0.5
Approach			652	3.7	617	3.8	1.492	539.1	LOS F	14.3	102.8	1.00	2.35	3.30	0.5
West: Sergeants Lane															
10	L2	All MCs	4	0.0	4	0.0	0.007	18.1	LOS B	0.1	0.8	0.71	0.46	0.71	7.2
12a	R1	All MCs	3	33.3	3	33.3	* 0.149	24.6	LOS B	1.3	9.8	0.75	0.59	0.75	7.1
12	R2	All MCs	40	2.6	40	2.6	0.149	20.1	LOS B	1.3	9.8	0.75	0.59	0.75	7.1
Approach			47	4.4	47	4.4	0.149	20.2	LOS B	1.3	9.8	0.75	0.58	0.75	7.1
All Vehicles			1265	3.2	1133	3.6	1.492	299.1	LOS F	14.3	102.8	0.84	1.53	2.09	0.8

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
		ped/h	sec						sec	m	m/sec
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	118	61.9	LOS F	0.4	0.4	0.96	0.96	215.8	200.0	0.93
East: Pacific Highway											
P2	Full	217	62.2	LOS F	0.8	0.8	0.96	0.96	216.0	200.0	0.93
North: Christie Street											
P3	Full	322	62.5	LOS F	1.2	1.2	0.97	0.97	216.3	200.0	0.92
All Pedestrians		657	62.3	LOS F	1.2	1.2	0.97	0.97	216.1	200.0	0.93
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	400	28.6	LOS C	0.8	0.8	0.93	0.93	182.5	200.0	1.10
North: Christie Street											
P3	Full	59	28.2	LOS C	0.1	0.1	0.91	0.91	182.1	200.0	1.10
West: Sergeants Lane											
P4	Full	40	61.7	LOS F	0.1	0.1	0.96	0.96	215.6	200.0	0.93
All Pedestrians		499	31.2	LOS D	0.8	0.8	0.93	0.93	185.1	200.0	1.08

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: 1 [Pacific Highway - Albany Street (Site Folder: 10yr AM Peak Hour with Development)]

Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

10yr - AM Peak with Development

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
SouthEast: Pacific Highway															
22	T1	All MCs	1366	5.2	1366	5.2	0.557	12.6	LOS A	23.2	169.8	0.57	0.52	0.57	25.6
23b	R3	All MCs	202	2.1	202	2.1	* 0.768	69.5	LOS E	13.5	96.5	1.00	0.88	1.11	7.3
Approach			1568	4.8	1568	4.8	0.768	20.0	LOS B	23.2	169.8	0.62	0.57	0.64	19.2
East: Albany Street															
4b	L3	All MCs	22	4.8	22	4.8	0.784	68.1	LOS E	18.8	133.2	1.00	0.90	1.08	12.9
6a	R1	All MCs	564	1.5	559	1.4	* 0.784	66.1	LOS E	18.9	133.9	1.00	0.90	1.08	7.8
Approach			586	1.6	581	1.6	0.784	66.2	LOS E	18.9	133.9	1.00	0.90	1.08	8.0
NorthWest: Pacific Highway															
27a	L1	All MCs	432	2.0	355	2.0	0.254	11.2	LOS A	7.3	51.6	0.34	0.67	0.34	28.4
28	T1	All MCs	1682	4.8	1382	4.8	* 0.796	33.1	LOS C	33.6	244.8	0.92	0.84	0.92	21.2
Approach			2114	4.2	1736	4.3	0.796	28.6	LOS C	33.6	244.8	0.80	0.80	0.80	21.8
All Vehicles			4268	4.1	3885	4.5	0.796	30.7	LOS C	33.6	244.8	0.76	0.72	0.78	17.6

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[ Ped ped	Dist ] m					
SouthEast: Pacific Highway											
P5	Full	85	61.9	LOS F	0.3	0.3	0.96	0.96	215.7	200.0	0.93
East: Albany Street											
P2	Full	302	62.4	LOS F	1.1	1.1	0.97	0.97	216.3	200.0	0.92
All Pedestrians		387	62.3	LOS F	1.1	1.1	0.97	0.97	216.1	200.0	0.93

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

 Site: 4 [Atchison Street - Mitchell Street (Site Folder: 10yr AM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

10yr - AM Peak with Development  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	7	0.0	7	0.0	0.011	2.5	LOS A	0.0	0.3	0.17	0.89	0.17	9.7
3	R2	All MCs	4	0.0	4	0.0	0.011	3.1	LOS A	0.0	0.3	0.17	0.89	0.17	9.7
Approach			12	0.0	12	0.0	0.011	2.7	LOS A	0.0	0.3	0.17	0.89	0.17	9.7
East: Atchison Street															
4	L2	All MCs	15	0.0	14	0.0	0.038	8.2	LOS A	0.2	1.3	0.06	0.62	0.06	14.6
6	R2	All MCs	48	13.0	47	12.9	0.038	4.7	LOS A	0.2	1.3	0.06	0.62	0.06	34.7
Approach			63	10.0	61	9.9	0.038	5.5	NA	0.2	1.3	0.06	0.62	0.06	22.3
North: Mitchell Street															
7	L2	All MCs	32	3.3	30	3.5	0.022	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	12	0.0	11	0.0	0.022	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			43	2.4	41	2.5	0.022	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.6
West: Atchison Street															
10	L2	All MCs	45	4.7	37	3.7	0.088	7.8	LOS A	0.3	2.1	0.14	0.99	0.14	29.2
11	T1	All MCs	79	6.7	64	5.7	0.088	7.9	LOS A	0.3	2.1	0.14	0.99	0.14	29.2
12	R2	All MCs	1	0.0	1	0.0	0.088	7.9	LOS A	0.3	2.1	0.14	0.99	0.14	13.5
Approach			125	5.9	101	4.9	0.088	7.9	LOS A	0.3	2.1	0.14	0.99	0.14	28.6
All Vehicles			243	6.1	215	6.9	0.088	6.4	NA	0.3	2.1	0.09	0.80	0.09	23.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 5 [Chandos Street - Christie Street (Site Folder: 10yr AM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

10yr - AM Peak with Development  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Christie Street															
1	L2	All MCs	40	0.0	33	0.0	0.657	6.1	LOS A	4.1	29.4	0.52	0.71	0.55	26.8
2	T1	All MCs	107	1.0	89	1.0	0.657	5.8	LOS A	4.1	29.4	0.52	0.71	0.55	40.3
3	R2	All MCs	245	4.3	203	4.3	0.657	9.1	LOS A	4.1	29.4	0.52	0.71	0.55	22.0
3u	U	All MCs	186	2.3	157	2.6	0.657	10.8	LOS A	4.1	29.4	0.52	0.71	0.55	22.0
Approach			579	2.7	482	2.8	0.657	8.8	LOS A	4.1	29.4	0.52	0.71	0.55	30.0
East: Chandos Street															
4	L2	All MCs	289	5.5	284	5.4	0.975	36.1	LOS C	16.4	118.5	1.00	1.56	2.36	13.3
5	T1	All MCs	105	0.0	104	0.0	0.975	35.7	LOS C	16.4	118.5	1.00	1.56	2.36	11.7
6	R2	All MCs	27	0.0	27	0.0	0.975	38.9	LOS C	16.4	118.5	1.00	1.56	2.36	29.7
6u	U	All MCs	8	25.0	8	25.0	0.975	42.5	LOS D	16.4	118.5	1.00	1.56	2.36	13.3
Approach			431	4.2	423	4.1	0.975	36.3	LOS C	16.4	118.5	1.00	1.56	2.36	14.2
North: Christie Street															
7	L2	All MCs	24	0.0	24	0.0	0.534	10.9	LOS A	2.9	20.6	0.83	0.74	0.95	42.8
8	T1	All MCs	149	0.7	149	0.7	0.534	11.0	LOS A	2.9	20.6	0.83	0.74	0.95	42.8
9	R2	All MCs	56	0.0	56	0.0	0.534	14.2	LOS A	2.9	20.6	0.83	0.74	0.95	28.4
9u	U	All MCs	1	0.0	1	0.0	0.534	15.8	LOS B	2.9	20.6	0.83	0.74	0.95	47.7
Approach			231	0.5	231	0.5	0.534	11.8	LOS A	2.9	20.6	0.83	0.74	0.95	37.7
West: Chandos Street															
10	L2	All MCs	23	0.0	23	0.0	0.165	7.8	LOS A	0.8	5.7	0.66	0.67	0.66	44.8
11	T1	All MCs	38	2.8	38	2.8	0.165	7.9	LOS A	0.8	5.7	0.66	0.67	0.66	23.0
12	R2	All MCs	24	8.7	24	8.7	0.165	11.4	LOS A	0.8	5.7	0.66	0.67	0.66	23.0
12u	U	All MCs	1	0.0	1	0.0	0.165	12.7	LOS A	0.8	5.7	0.66	0.67	0.66	13.3
Approach			86	3.7	86	3.7	0.165	8.9	LOS A	0.8	5.7	0.66	0.67	0.66	34.2
All Vehicles			1326	2.9	1223	3.1	0.975	18.9	LOS B	16.4	118.5	0.75	1.01	1.26	24.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: 10yr AM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

 Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

10yr - AM Peak with Development  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	44	11.9	40	11.8	0.170	10.4	LOS A	0.6	4.3	0.60	0.99	0.60	17.8
2	T1	All MCs	1	0.0	1	0.0	0.170	13.4	LOS A	0.6	4.3	0.60	0.99	0.60	33.3
3	R2	All MCs	43	4.9	39	4.4	0.170	17.1	LOS B	0.6	4.3	0.60	0.99	0.60	17.8
Approach			88	8.3	79	8.1	0.170	13.7	LOS A	0.6	4.3	0.60	0.99	0.60	18.2
East: Chandos Street															
4	L2	All MCs	83	26.6	83	26.8	0.262	5.9	LOS A	0.0	0.1	0.00	0.10	0.00	56.2
5	T1	All MCs	424	2.7	420	2.8	0.262	0.0	LOS A	0.0	0.1	0.00	0.10	0.00	56.2
6	R2	All MCs	1	0.0	1	0.0	0.262	5.7	LOS A	0.0	0.1	0.00	0.10	0.00	53.3
Approach			508	6.6	504	6.7	0.262	1.0	NA	0.0	0.1	0.00	0.10	0.00	56.2
North: Mitchell Street															
7	L2	All MCs	51	0.0	51	0.0	0.110	9.1	LOS A	0.4	2.8	0.49	0.88	0.49	39.0
8	T1	All MCs	21	0.0	21	0.0	0.110	14.6	LOS B	0.4	2.8	0.49	0.88	0.49	39.0
9	R2	All MCs	6	0.0	6	0.0	0.110	15.1	LOS B	0.4	2.8	0.49	0.88	0.49	39.0
Approach			78	0.0	78	0.0	0.110	11.1	LOS A	0.4	2.8	0.49	0.88	0.49	39.0
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.151	5.5	LOS A	0.3	2.2	0.15	0.17	0.15	52.7
11	T1	All MCs	285	4.1	248	4.0	0.151	0.0	LOS A	0.3	2.2	0.15	0.17	0.15	53.4
12	R2	All MCs	32	0.0	27	0.0	0.151	11.6	LOS A	0.3	2.2	0.15	0.17	0.15	53.4
Approach			319	3.6	277	3.6	0.151	1.2	NA	0.3	2.2	0.15	0.17	0.15	53.4
All Vehicles			994	5.3	938	5.6	0.262	2.9	NA	0.6	4.3	0.14	0.26	0.14	48.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: 10yr AM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

10yr - AM Peak with Development  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Oxley Street															
1	L2	All MCs	72	0.0	67	0.0	0.396	8.1	LOS A	2.6	18.3	0.75	0.73	0.75	22.1
2	T1	All MCs	46	0.0	43	0.0	0.396	7.9	LOS A	2.6	18.3	0.75	0.73	0.75	33.0
3	R2	All MCs	179	2.9	168	2.9	0.396	11.0	LOS A	2.6	18.3	0.75	0.73	0.75	30.2
3u	U	All MCs	2	0.0	2	0.0	0.396	13.5	LOS A	2.6	18.3	0.75	0.73	0.75	22.1
Approach			299	1.8	280	1.7	0.396	9.9	LOS A	2.6	18.3	0.75	0.73	0.75	29.5
East: Chandos Street															
4	L2	All MCs	253	2.1	253	2.1	0.646	5.5	LOS A	6.5	46.2	0.60	0.52	0.60	32.4
5	T1	All MCs	454	3.0	454	3.0	0.646	5.4	LOS A	6.5	46.2	0.60	0.52	0.60	32.4
6	R2	All MCs	24	0.0	24	0.0	0.646	8.2	LOS A	6.5	46.2	0.60	0.52	0.60	37.4
6u	U	All MCs	8	12.5	8	12.5	0.646	11.2	LOS A	6.5	46.2	0.60	0.52	0.60	36.1
Approach			739	2.7	739	2.7	0.646	5.6	LOS A	6.5	46.2	0.60	0.52	0.60	32.8
North: Oxley Street															
7	L2	All MCs	8	0.0	8	0.0	0.058	7.3	LOS A	0.3	2.1	0.61	0.66	0.61	36.6
8	T1	All MCs	24	0.0	24	0.0	0.058	7.1	LOS A	0.3	2.1	0.61	0.66	0.61	33.1
9	R2	All MCs	8	0.0	8	0.0	0.058	10.1	LOS A	0.3	2.1	0.61	0.66	0.61	33.1
9u	U	All MCs	1	0.0	1	0.0	0.058	12.7	LOS A	0.3	2.1	0.61	0.66	0.61	38.7
Approach			42	0.0	42	0.0	0.058	7.9	LOS A	0.3	2.1	0.61	0.66	0.61	34.2
West: Chandos Street															
10	L2	All MCs	11	0.0	9	0.0	0.387	6.0	LOS A	2.6	18.9	0.58	0.59	0.58	37.7
11	T1	All MCs	272	3.1	243	2.9	0.387	5.9	LOS A	2.6	18.9	0.58	0.59	0.58	37.1
12	R2	All MCs	108	4.9	97	4.7	0.387	8.9	LOS A	2.6	18.9	0.58	0.59	0.58	32.8
12u	U	All MCs	4	0.0	4	0.0	0.387	11.4	LOS A	2.6	18.9	0.58	0.59	0.58	32.8
Approach			395	3.5	353	3.3	0.387	6.8	LOS A	2.6	18.9	0.58	0.59	0.58	36.3
All Vehicles			1475	2.6	1414	2.8	0.646	6.8	LOS A	6.5	46.2	0.63	0.58	0.63	33.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 8 [Albany Street - Oxley Street (Site Folder: 10yr AM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]

10yr - AM Peak with Development  
 Site Category: (None)  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	56	1.9	56	1.9	0.415	8.9	LOS A	2.9	20.2	0.79	0.74	0.81	27.5
2	T1	All MCs	115	0.0	115	0.0	0.415	8.4	LOS A	2.9	20.2	0.79	0.74	0.81	27.5
3	R2	All MCs	109	0.0	109	0.0	0.415	11.3	LOS A	2.9	20.2	0.79	0.74	0.81	32.8
3u	U	All MCs	5	0.0	5	0.0	0.415	13.8	LOS A	2.9	20.2	0.79	0.74	0.81	33.5
Approach			285	0.4	285	0.4	0.415	9.7	LOS A	2.9	20.2	0.79	0.74	0.81	30.3
East: Albany Street															
4	L2	All MCs	73	1.4	73	1.4	0.715	16.1	LOS B	8.3	59.2	0.97	0.95	1.35	29.9
5	T1	All MCs	369	1.4	369	1.4	0.715	15.9	LOS B	8.3	59.2	0.97	0.95	1.35	23.2
6	R2	All MCs	32	3.3	32	3.3	0.715	18.9	LOS B	8.3	59.2	0.97	0.95	1.35	23.2
6u	U	All MCs	4	0.0	4	0.0	0.715	20.1	LOS B	8.3	59.2	0.97	0.95	1.35	30.1
Approach			478	1.5	478	1.5	0.715	16.2	LOS B	8.3	59.2	0.97	0.95	1.35	24.7
North: Oxley Street															
7	L2	All MCs	55	3.8	53	3.8	0.666	14.3	LOS A	7.6	53.4	0.92	0.87	1.20	28.0
8	T1	All MCs	307	0.7	298	0.6	0.666	13.9	LOS A	7.6	53.4	0.92	0.87	1.20	28.3
9	R2	All MCs	148	1.4	143	1.2	0.666	16.9	LOS B	7.6	53.4	0.92	0.87	1.20	18.3
9u	U	All MCs	1	0.0	1	0.0	0.666	18.3	LOS B	7.6	53.4	0.92	0.87	1.20	18.3
Approach			512	1.2	495	1.1	0.666	14.8	LOS B	7.6	53.4	0.92	0.87	1.20	26.2
West: Albany Street															
10	L2	All MCs	164	0.6	144	0.6	0.580	7.8	LOS A	4.5	32.0	0.58	0.70	0.60	31.7
11	T1	All MCs	334	1.9	293	1.9	0.580	7.6	LOS A	4.5	32.0	0.58	0.70	0.60	38.2
12	R2	All MCs	127	4.1	112	4.2	0.580	10.6	LOS A	4.5	32.0	0.58	0.70	0.60	36.4
12u	U	All MCs	7	0.0	6	0.0	0.580	11.9	LOS A	4.5	32.0	0.58	0.70	0.60	31.7
Approach			633	2.0	556	2.0	0.580	8.3	LOS A	4.5	32.0	0.58	0.70	0.60	36.6
All Vehicles			1907	1.4	1814	1.5	0.715	12.4	LOS A	8.3	59.2	0.81	0.82	1.00	29.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 9 [Atchison Street - Oxley Street (Site Folder: 10yr AM Peak Hour with Development)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N101 [10yr AM Peak Hour with Development (Network Folder: General)]**

10yr - AM Peak with Development  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	35	3.0	33	3.1	0.161	4.6	LOS A	0.3	2.3	0.14	0.21	0.14	40.9
2	T1	All MCs	235	0.9	220	0.9	0.161	0.0	LOS A	0.3	2.3	0.14	0.21	0.14	40.9
3	R2	All MCs	33	0.0	31	0.0	0.161	8.8	LOS A	0.3	2.3	0.14	0.21	0.14	41.3
Approach			302	1.0	283	1.1	0.161	1.5	NA	0.3	2.3	0.14	0.21	0.14	41.0
East: Atchison Street															
4	L2	All MCs	100	0.0	100	0.0	0.200	9.6	LOS A	0.8	5.5	0.51	0.92	0.51	30.9
5	T1	All MCs	25	4.2	25	4.2	0.200	13.2	LOS A	0.8	5.5	0.51	0.92	0.51	30.9
6	R2	All MCs	25	0.0	25	0.0	0.200	14.0	LOS A	0.8	5.5	0.51	0.92	0.51	30.9
Approach			151	0.7	151	0.7	0.200	10.9	LOS A	0.8	5.5	0.51	0.92	0.51	30.9
North: Oxley Street															
7	L2	All MCs	31	13.8	30	13.4	0.204	5.4	LOS A	0.2	1.4	0.06	0.11	0.06	46.1
8	T1	All MCs	331	0.6	321	0.6	0.204	0.0	LOS A	0.2	1.4	0.06	0.11	0.06	52.6
9	R2	All MCs	16	26.7	15	25.9	0.204	9.9	LOS A	0.2	1.4	0.06	0.11	0.06	52.6
Approach			377	2.8	366	2.7	0.204	0.8	NA	0.2	1.4	0.06	0.11	0.06	51.2
West: Atchison Street															
10	L2	All MCs	34	3.1	29	2.3	0.205	9.1	LOS A	0.7	5.3	0.58	0.95	0.58	28.5
11	T1	All MCs	34	6.3	29	5.6	0.205	13.3	LOS A	0.7	5.3	0.58	0.95	0.58	34.5
12	R2	All MCs	55	5.8	47	4.9	0.205	15.6	LOS B	0.7	5.3	0.58	0.95	0.58	28.5
Approach			122	5.2	106	4.4	0.205	13.2	LOS A	0.7	5.3	0.58	0.95	0.58	30.7
All Vehicles			952	2.2	905	2.3	0.205	4.2	NA	0.8	5.5	0.22	0.37	0.22	38.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

# CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCG1]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	[ Total HV ]	[ Total HV ]	[ Total HV ]	v/c	sec		[ Veh. veh	[ Dist ]				km/h
			veh/h	%	veh/h	%				veh	m				
Site: 2 [Pacific Highway - Christie Street]															
East: Pacific Highway															
4	L2	All MCs	94	0.0	94	0.0	0.477	16.5	LOS B	15.2	109.1	0.50	0.48	0.50	31.8
5	T1	All MCs	1674	3.5	1674	3.5	0.477	8.5	LOS A	15.3	110.1	0.47	0.43	0.47	39.9
Approach			1767	3.3	1767	3.3	0.477	8.9	LOS A	15.3	110.1	0.47	0.43	0.47	39.4
North: Christie Street															
7	L2	All MCs	39	0.0	39	0.0	0.635	7.0	LOS A	2.7	19.0	0.18	0.33	0.18	20.8
8	T1	All MCs	151	0.0	151	0.0	0.635	3.8	LOS A	2.7	19.0	0.18	0.33	0.18	32.5
9	R2	All MCs	331	1.9	331	1.9	0.635	10.1	LOS A	5.1	36.5	0.30	0.56	0.30	26.8
Approach			520	1.2	520	1.2	0.635	8.0	LOS A	5.1	36.5	0.26	0.47	0.26	27.8
West: Pacific Highway															
10	L2	All MCs	401	0.5	401	0.5	*0.918	27.6	LOS B	44.7	316.1	0.95	1.01	1.14	8.9
11	T1	All MCs	1682	2.4	1682	2.4	0.918	47.3	LOS D	47.3	338.2	0.94	1.00	1.12	10.2
Approach			2083	2.1	2083	2.1	0.918	43.5	LOS D	47.3	338.2	0.94	1.01	1.13	9.9
All Vehicles			4371	2.5	4371	2.5	0.918	25.3	LOS B	47.3	338.2	0.67	0.71	0.76	19.4
Site: 3 [Sergeant Street - Christie Street]															
South: Christie Street															
2	T1	All MCs	396	0.5	396	0.5	0.459	21.9	LOS B	7.0	49.0	0.91	0.74	0.91	5.8
Approach			396	0.5	396	0.5	0.459	21.9	LOS B	7.0	49.0	0.91	0.74	0.91	5.8
North: Christie Street															
7a	L1	All MCs	108	7.8	108	7.8	0.872	72.4	LOS F	14.2	102.8	1.00	1.01	1.22	3.9
8	T1	All MCs	477	1.3	477	1.3	0.872	68.8	LOS E	14.5	102.8	1.00	1.04	1.23	3.9
Approach			585	2.5	585	2.5	0.872	69.4	LOS E	14.5	102.8	1.00	1.03	1.23	3.9
West: Sergeants Lane															
10	L2	All MCs	25	0.0	25	0.0	0.031	11.2	LOS A	0.5	3.5	0.60	0.44	0.60	8.1
12a	R1	All MCs	250	0.0	250	0.0	0.056	16.1	LOS B	0.7	5.1	0.61	0.47	0.61	8.1
12	R2	All MCs	33	0.0	33	0.0	0.056	11.5	LOS A	0.7	5.1	0.61	0.47	0.61	8.1
Approach			60	1.8	60	1.8	0.056	11.5	LOS A	0.7	5.1	0.60	0.46	0.60	8.1
All Vehicles			1041	1.7	1041	1.7	0.872	48.0	LOS D	14.5	102.8	0.94	0.89	1.07	4.5

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped	Dist ]			sec	m	m/sec
					ped	m					
Site: 2 [Pacific Highway - Christie Street]											
South: Christie Street											
P1	Full	119	56.9	LOS E	0.4	0.4	0.96	0.96	210.8	200.0	0.95
East: Pacific Highway											
P2	Full	237	57.2	LOS E	0.8	0.8	0.96	0.96	211.1	200.0	0.95
North: Christie Street											
P3	Full	249	57.2	LOS E	0.9	0.9	0.96	0.96	211.1	200.0	0.95
All Pedestrians		605	57.2	LOS E	0.9	0.9	0.96	0.96	211.0	200.0	0.95
Site: 3 [Sergeant Street - Christie Street]											
South: Christie Street											
P1	Full	383	28.4	LOS C	0.8	0.8	0.92	0.92	182.3	200.0	1.10
North: Christie Street											
P3	Full	55	28.1	LOS C	0.1	0.1	0.91	0.91	181.9	200.0	1.10
West: Sergeants Lane											
P4	Full	24	56.7	LOS E	0.1	0.1	0.95	0.95	210.5	200.0	0.95
All Pedestrians		462	29.9	LOS C	0.8	0.8	0.92	0.92	183.7	200.0	1.09

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: 1 [Pacific Highway - Albany Street (Site Folder: 10yr PM Peak Hour with Development)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]**

10yr PM Peak Hour with Development

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Pacific Highway															
22	T1	All MCs	1278	4.1	1278	4.1	0.517	11.3	LOS A	19.7	142.4	0.55	0.50	0.55	26.6
23b	R3	All MCs	157	0.0	157	0.0	*0.696	64.2	LOS E	9.6	67.1	1.00	0.84	1.07	7.7
Approach			1435	3.7	1435	3.7	0.696	17.1	LOS B	19.7	142.4	0.60	0.54	0.61	20.8
East: Albany Street															
4b	L3	All MCs	41	2.6	41	2.6	*0.671	54.3	LOS D	15.7	110.5	0.97	0.84	0.97	14.4
6a	R1	All MCs	525	0.4	525	0.4	0.671	52.2	LOS D	15.9	111.4	0.96	0.84	0.96	8.9
Approach			566	0.6	566	0.6	0.671	52.4	LOS D	15.9	111.4	0.96	0.84	0.96	9.4
NorthWest: Pacific Highway															
27a	L1	All MCs	468	1.3	468	1.3	0.325	9.0	LOS A	7.1	50.4	0.28	0.66	0.28	31.7
28	T1	All MCs	1245	2.7	1245	2.7	*0.688	29.9	LOS C	30.5	218.5	0.88	0.78	0.88	22.6
Approach			1714	2.3	1714	2.3	0.688	24.2	LOS B	30.5	218.5	0.71	0.75	0.71	23.7
All Vehicles			3715	2.6	3715	2.6	0.696	25.7	LOS B	30.5	218.5	0.71	0.68	0.71	19.4

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

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

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped	Dist ]			sec	m	m/sec
					ped	m					
SouthEast: Pacific Highway											
P5	Full	194	57.1	LOS E	0.7	0.7	0.96	0.96	211.0	200.0	0.95
East: Albany Street											
P2	Full	432	57.7	LOS E	1.5	1.5	0.97	0.97	211.5	200.0	0.95
All Pedestrians		625	57.5	LOS E	1.5	1.5	0.97	0.97	211.3	200.0	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.

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

**Site: 4 [Atchison Street - Mitchell Street (Site Folder: 10yr PM Peak Hour with Development)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]**

10yr PM Peak Hour with Development  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
2	T1	All MCs	5	0.0	5	0.0	0.011	2.4	LOS A	0.0	0.3	0.14	0.90	0.14	9.7
3	R2	All MCs	6	0.0	6	0.0	0.011	2.8	LOS A	0.0	0.3	0.14	0.90	0.14	9.7
Approach			12	0.0	12	0.0	0.011	2.6	LOS A	0.0	0.3	0.14	0.90	0.14	9.7
East: Atchison Street															
4	L2	All MCs	5	0.0	5	0.0	0.019	8.2	LOS A	0.1	0.6	0.06	0.60	0.06	14.7
6	R2	All MCs	27	0.0	27	0.0	0.019	4.6	LOS A	0.1	0.6	0.06	0.60	0.06	35.3
Approach			33	0.0	33	0.0	0.019	5.2	NA	0.1	0.6	0.06	0.60	0.06	24.8
North: Mitchell Street															
7	L2	All MCs	29	0.0	29	0.0	0.022	4.6	LOS A	0.0	0.0	0.00	0.61	0.00	28.5
8	T1	All MCs	12	0.0	12	0.0	0.022	6.5	LOS A	0.0	0.0	0.00	0.61	0.00	36.8
Approach			41	0.0	41	0.0	0.022	5.1	NA	0.0	0.0	0.00	0.61	0.00	32.7
West: Atchison Street															
10	L2	All MCs	37	8.6	37	8.6	0.080	7.9	LOS A	0.3	2.0	0.10	1.02	0.10	29.2
11	T1	All MCs	55	9.6	55	9.6	0.080	8.0	LOS A	0.3	2.0	0.10	1.02	0.10	29.2
12	R2	All MCs	1	0.0	1	0.0	0.080	7.8	LOS A	0.3	2.0	0.10	1.02	0.10	13.5
Approach			93	9.1	93	9.1	0.080	7.9	LOS A	0.3	2.0	0.10	1.02	0.10	28.3
All Vehicles			178	4.7	178	4.7	0.080	6.4	NA	0.3	2.0	0.07	0.84	0.07	24.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 5 [Chandos Street - Christie Street (Site Folder: 10yr PM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]

10yr PM Peak Hour with Development  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Christie Street															
1	L2	All MCs	43	0.0	43	0.0	0.534	4.6	LOS A	2.7	19.4	0.32	0.63	0.32	28.2
2	T1	All MCs	42	5.0	42	5.0	0.534	4.4	LOS A	2.7	19.4	0.32	0.63	0.32	41.2
3	R2	All MCs	240	0.0	240	0.0	0.534	7.6	LOS A	2.7	19.4	0.32	0.63	0.32	23.8
3u	U	All MCs	128	2.5	128	2.5	0.534	9.3	LOS A	2.7	19.4	0.32	0.63	0.32	23.8
Approach			454	1.2	454	1.2	0.534	7.5	LOS A	2.7	19.4	0.32	0.63	0.32	28.7
East: Chandos Street															
4	L2	All MCs	236	3.6	236	3.6	0.698	11.3	LOS A	4.8	34.0	0.87	0.73	1.04	28.1
5	T1	All MCs	57	0.0	57	0.0	0.698	11.2	LOS A	4.8	34.0	0.87	0.73	1.04	17.3
6	R2	All MCs	26	0.0	26	0.0	0.698	14.4	LOS A	4.8	34.0	0.87	0.73	1.04	43.4
6u	U	All MCs	11	0.0	11	0.0	0.698	16.0	LOS B	4.8	34.0	0.87	0.73	1.04	28.1
Approach			329	2.6	329	2.6	0.698	11.7	LOS A	4.8	34.0	0.87	0.73	1.04	27.1
North: Christie Street															
7	L2	All MCs	35	3.0	35	3.0	0.306	10.6	LOS A	1.4	10.1	0.77	0.69	0.77	43.3
8	T1	All MCs	67	1.6	67	1.6	0.306	10.5	LOS A	1.4	10.1	0.77	0.69	0.77	43.3
9	R2	All MCs	24	0.0	24	0.0	0.306	13.7	LOS A	1.4	10.1	0.77	0.69	0.77	28.6
9u	U	All MCs	2	0.0	2	0.0	0.306	15.3	LOS B	1.4	10.1	0.77	0.69	0.77	48.1
Approach			128	1.6	128	1.6	0.306	11.2	LOS A	1.4	10.1	0.77	0.69	0.77	39.3
West: Chandos Street															
10	L2	All MCs	32	0.0	32	0.0	0.439	8.8	LOS A	2.7	18.9	0.76	0.66	0.78	43.7
11	T1	All MCs	121	0.0	121	0.0	0.439	8.9	LOS A	2.7	18.9	0.76	0.66	0.78	21.5
12	R2	All MCs	87	2.4	87	2.4	0.439	12.2	LOS A	2.7	18.9	0.76	0.66	0.78	21.5
12u	U	All MCs	1	0.0	1	0.0	0.439	13.7	LOS A	2.7	18.9	0.76	0.66	0.78	13.1
Approach			241	0.9	241	0.9	0.439	10.1	LOS A	2.7	18.9	0.76	0.66	0.78	28.2
All Vehicles			1153	1.6	1153	1.6	0.698	9.7	LOS A	4.8	34.0	0.62	0.67	0.67	30.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

 Site: 6 [Chandos Street - Mitchell Street (Site Folder: 10yr PM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

■ ■ Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]

10yr PM Peak Hour with Development  
Site Category: (None)  
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Mitchell Street															
1	L2	All MCs	49	2.1	49	2.1	0.151	8.8	LOS A	0.5	3.8	0.55	0.91	0.55	19.3
2	T1	All MCs	1	0.0	1	0.0	0.151	13.2	LOS A	0.5	3.8	0.55	0.91	0.55	34.5
3	R2	All MCs	35	3.0	35	3.0	0.151	16.5	LOS B	0.5	3.8	0.55	0.91	0.55	19.3
Approach			85	2.5	85	2.5	0.151	12.0	LOS A	0.5	3.8	0.55	0.91	0.55	19.7
East: Chandos Street															
4	L2	All MCs	34	0.0	34	0.0	0.159	5.5	LOS A	0.0	0.1	0.01	0.07	0.01	56.6
5	T1	All MCs	280	3.0	280	3.0	0.159	0.0	LOS A	0.0	0.1	0.01	0.07	0.01	56.6
6	R2	All MCs	1	0.0	1	0.0	0.159	6.9	LOS A	0.0	0.1	0.01	0.07	0.01	53.4
Approach			315	2.7	315	2.7	0.159	0.6	NA	0.0	0.1	0.01	0.07	0.01	56.6
North: Mitchell Street															
7	L2	All MCs	51	0.0	51	0.0	0.109	10.1	LOS A	0.4	2.8	0.53	0.94	0.53	38.7
8	T1	All MCs	19	0.0	19	0.0	0.109	13.7	LOS A	0.4	2.8	0.53	0.94	0.53	38.7
9	R2	All MCs	5	0.0	5	0.0	0.109	15.5	LOS B	0.4	2.8	0.53	0.94	0.53	38.7
Approach			75	0.0	75	0.0	0.109	11.4	LOS A	0.4	2.8	0.53	0.94	0.53	38.7
West: Chandos Street															
10	L2	All MCs	1	0.0	1	0.0	0.219	5.5	LOS A	0.2	1.1	0.05	0.05	0.05	54.1
11	T1	All MCs	422	0.2	422	0.2	0.219	0.0	LOS A	0.2	1.1	0.05	0.05	0.05	57.6
12	R2	All MCs	17	0.0	17	0.0	0.219	8.8	LOS A	0.2	1.1	0.05	0.05	0.05	57.6
Approach			440	0.2	440	0.2	0.219	0.4	NA	0.2	1.1	0.05	0.05	0.05	57.5
All Vehicles			915	1.3	915	1.3	0.219	2.4	NA	0.5	3.8	0.12	0.21	0.12	49.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# MOVEMENT SUMMARY

Site: 7 [Chandos Street - Oxley Street (Site Folder: 10yr PM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]

10yr PM Peak Hour with Development  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	[ Dist ] m				
South: Oxley Street															
1	L2	All MCs	88	3.6	88	3.6	0.430	6.3	LOS A	2.9	20.8	0.59	0.64	0.59	24.5
2	T1	All MCs	24	0.0	24	0.0	0.430	6.0	LOS A	2.9	20.8	0.59	0.64	0.59	34.8
3	R2	All MCs	286	0.7	286	0.7	0.430	8.9	LOS A	2.9	20.8	0.59	0.64	0.59	32.1
3u	U	All MCs	2	0.0	2	0.0	0.430	11.5	LOS A	2.9	20.8	0.59	0.64	0.59	24.5
Approach			401	1.3	401	1.3	0.430	8.2	LOS A	2.9	20.8	0.59	0.64	0.59	31.3
East: Chandos Street															
4	L2	All MCs	180	0.6	180	0.6	0.387	5.0	LOS A	2.8	19.5	0.44	0.50	0.44	33.7
5	T1	All MCs	232	1.4	232	1.4	0.387	4.9	LOS A	2.8	19.5	0.44	0.50	0.44	33.7
6	R2	All MCs	11	0.0	11	0.0	0.387	7.8	LOS A	2.8	19.5	0.44	0.50	0.44	38.2
6u	U	All MCs	4	0.0	4	0.0	0.387	10.4	LOS A	2.8	19.5	0.44	0.50	0.44	38.3
Approach			426	1.0	426	1.0	0.387	5.1	LOS A	2.8	19.5	0.44	0.50	0.44	34.0
North: Oxley Street															
7	L2	All MCs	6	0.0	6	0.0	0.080	10.1	LOS A	0.5	3.2	0.76	0.74	0.76	34.2
8	T1	All MCs	31	0.0	31	0.0	0.080	9.9	LOS A	0.5	3.2	0.76	0.74	0.76	29.9
9	R2	All MCs	4	0.0	4	0.0	0.080	12.8	LOS A	0.5	3.2	0.76	0.74	0.76	29.9
9u	U	All MCs	1	0.0	1	0.0	0.080	15.4	LOS B	0.5	3.2	0.76	0.74	0.76	36.4
Approach			42	0.0	42	0.0	0.080	10.3	LOS A	0.5	3.2	0.76	0.74	0.76	31.0
West: Chandos Street															
10	L2	All MCs	2	0.0	2	0.0	0.590	8.1	LOS A	5.3	37.3	0.76	0.70	0.84	36.3
11	T1	All MCs	409	0.5	409	0.5	0.590	8.0	LOS A	5.3	37.3	0.76	0.70	0.84	35.7
12	R2	All MCs	95	0.0	95	0.0	0.590	10.9	LOS A	5.3	37.3	0.76	0.70	0.84	30.8
12u	U	All MCs	6	0.0	6	0.0	0.590	13.5	LOS A	5.3	37.3	0.76	0.70	0.84	30.8
Approach			513	0.4	513	0.4	0.590	8.6	LOS A	5.3	37.3	0.76	0.70	0.84	35.1
All Vehicles			1382	0.8	1382	0.8	0.590	7.4	LOS A	5.3	37.3	0.61	0.62	0.64	33.6

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 8 [Albany Street - Oxley Street (Site Folder: 10yr PM Peak Hour with Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]

10yr PM Peak Hour with Development  
Site Category: (None)  
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	94	0.0	94	0.0	0.566	10.0	LOS A	5.0	34.9	0.83	0.79	0.96	26.5
2	T1	All MCs	232	0.5	232	0.5	0.566	9.7	LOS A	5.0	34.9	0.83	0.79	0.96	26.5
3	R2	All MCs	97	0.0	97	0.0	0.566	12.5	LOS A	5.0	34.9	0.83	0.79	0.96	32.1
3u	U	All MCs	5	0.0	5	0.0	0.566	15.0	LOS B	5.0	34.9	0.83	0.79	0.96	32.7
Approach			427	0.2	427	0.2	0.566	10.4	LOS A	5.0	34.9	0.83	0.79	0.96	28.4
East: Albany Street															
4	L2	All MCs	95	1.1	95	1.1	0.604	11.6	LOS A	5.7	40.4	0.85	0.81	1.03	33.9
5	T1	All MCs	318	0.7	318	0.7	0.604	11.4	LOS A	5.7	40.4	0.85	0.81	1.03	27.9
6	R2	All MCs	38	0.0	38	0.0	0.604	14.2	LOS A	5.7	40.4	0.85	0.81	1.03	27.9
6u	U	All MCs	5	0.0	5	0.0	0.604	15.7	LOS B	5.7	40.4	0.85	0.81	1.03	34.0
Approach			456	0.7	456	0.7	0.604	11.8	LOS A	5.7	40.4	0.85	0.81	1.03	29.7
North: Oxley Street															
7	L2	All MCs	42	0.0	42	0.0	0.576	12.8	LOS A	5.3	37.5	0.89	0.85	1.09	29.5
8	T1	All MCs	236	0.9	236	0.9	0.576	12.6	LOS A	5.3	37.5	0.89	0.85	1.09	29.5
9	R2	All MCs	105	1.0	105	1.0	0.576	15.6	LOS B	5.3	37.5	0.89	0.85	1.09	19.5
9u	U	All MCs	2	0.0	2	0.0	0.576	17.0	LOS B	5.3	37.5	0.89	0.85	1.09	19.5
Approach			385	0.8	385	0.8	0.576	13.5	LOS A	5.3	37.5	0.89	0.85	1.09	27.5
West: Albany Street															
10	L2	All MCs	143	2.2	143	2.2	0.749	12.6	LOS A	8.7	61.6	0.81	0.91	1.05	25.1
11	T1	All MCs	359	0.3	359	0.3	0.749	12.3	LOS A	8.7	61.6	0.81	0.91	1.05	33.0
12	R2	All MCs	120	0.9	120	0.9	0.749	15.2	LOS B	8.7	61.6	0.81	0.91	1.05	31.7
12u	U	All MCs	11	0.0	11	0.0	0.749	16.6	LOS B	8.7	61.6	0.81	0.91	1.05	25.1
Approach			633	0.8	633	0.8	0.749	13.0	LOS A	8.7	61.6	0.81	0.91	1.05	31.3
All Vehicles			1901	0.7	1901	0.7	0.749	12.2	LOS A	8.7	61.6	0.84	0.85	1.03	29.6

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

# MOVEMENT SUMMARY

**Site: 9 [Atchison Street - Oxley Street (Site Folder: 10yr PM Peak Hour with Development)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

**Network: N1 [10yr PM Peak Hour with Development (Network Folder: General)]**

10yr PM Peak Hour with Development  
 Site Category: (None)  
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[ Total HV ] veh/h	%	[ Total HV ] veh/h	%				[ Veh. veh	Dist ] m				
South: Oxley Street															
1	L2	All MCs	19	0.0	19	0.0	0.223	4.6	LOS A	0.5	3.3	0.14	0.19	0.14	41.8
2	T1	All MCs	325	1.0	325	1.0	0.223	0.0	LOS A	0.5	3.3	0.14	0.19	0.14	41.8
3	R2	All MCs	51	0.0	51	0.0	0.223	8.0	LOS A	0.5	3.3	0.14	0.19	0.14	41.7
Approach			395	0.8	395	0.8	0.223	1.2	NA	0.5	3.3	0.14	0.19	0.14	41.7
East: Atchison Street															
4	L2	All MCs	89	1.2	89	1.2	0.201	9.3	LOS A	0.8	5.5	0.50	0.90	0.50	30.5
5	T1	All MCs	23	0.0	23	0.0	0.201	13.3	LOS A	0.8	5.5	0.50	0.90	0.50	30.5
6	R2	All MCs	31	0.0	31	0.0	0.201	15.3	LOS B	0.8	5.5	0.50	0.90	0.50	30.5
Approach			143	0.7	143	0.7	0.201	11.2	LOS A	0.8	5.5	0.50	0.90	0.50	30.5
North: Oxley Street															
7	L2	All MCs	51	0.0	51	0.0	0.172	5.4	LOS A	0.1	1.0	0.06	0.16	0.06	47.7
8	T1	All MCs	251	0.4	251	0.4	0.172	0.0	LOS A	0.1	1.0	0.06	0.16	0.06	48.7
9	R2	All MCs	13	0.0	13	0.0	0.172	10.1	LOS A	0.1	1.0	0.06	0.16	0.06	48.7
Approach			314	0.3	314	0.3	0.172	1.3	NA	0.1	1.0	0.06	0.16	0.06	48.4
West: Atchison Street															
10	L2	All MCs	19	11.1	19	11.1	0.217	10.4	LOS A	0.8	5.7	0.61	1.02	0.63	27.6
11	T1	All MCs	56	3.8	56	3.8	0.217	13.9	LOS A	0.8	5.7	0.61	1.02	0.63	34.0
12	R2	All MCs	29	7.1	29	7.1	0.217	16.7	LOS B	0.8	5.7	0.61	1.02	0.63	27.6
Approach			104	6.1	104	6.1	0.217	14.1	LOS A	0.8	5.7	0.61	1.02	0.63	31.7
All Vehicles			956	1.2	956	1.2	0.223	4.1	NA	0.8	5.7	0.22	0.37	0.22	38.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 18 November 2025 13:11:54

Project: P:\Projects\_2023\0801\_STKD\_601 Pacific Hwy, St Leonards\03 WIP\07 SIDRA\23-0801\_ptcT\_SIDRA\_01.sip9

# **Appendix 5. Travel Access Guide (TAG)**



The site's residents, staff and visitors are encouraged to use public and active transport when travelling to and from 601 Pacific Highway.

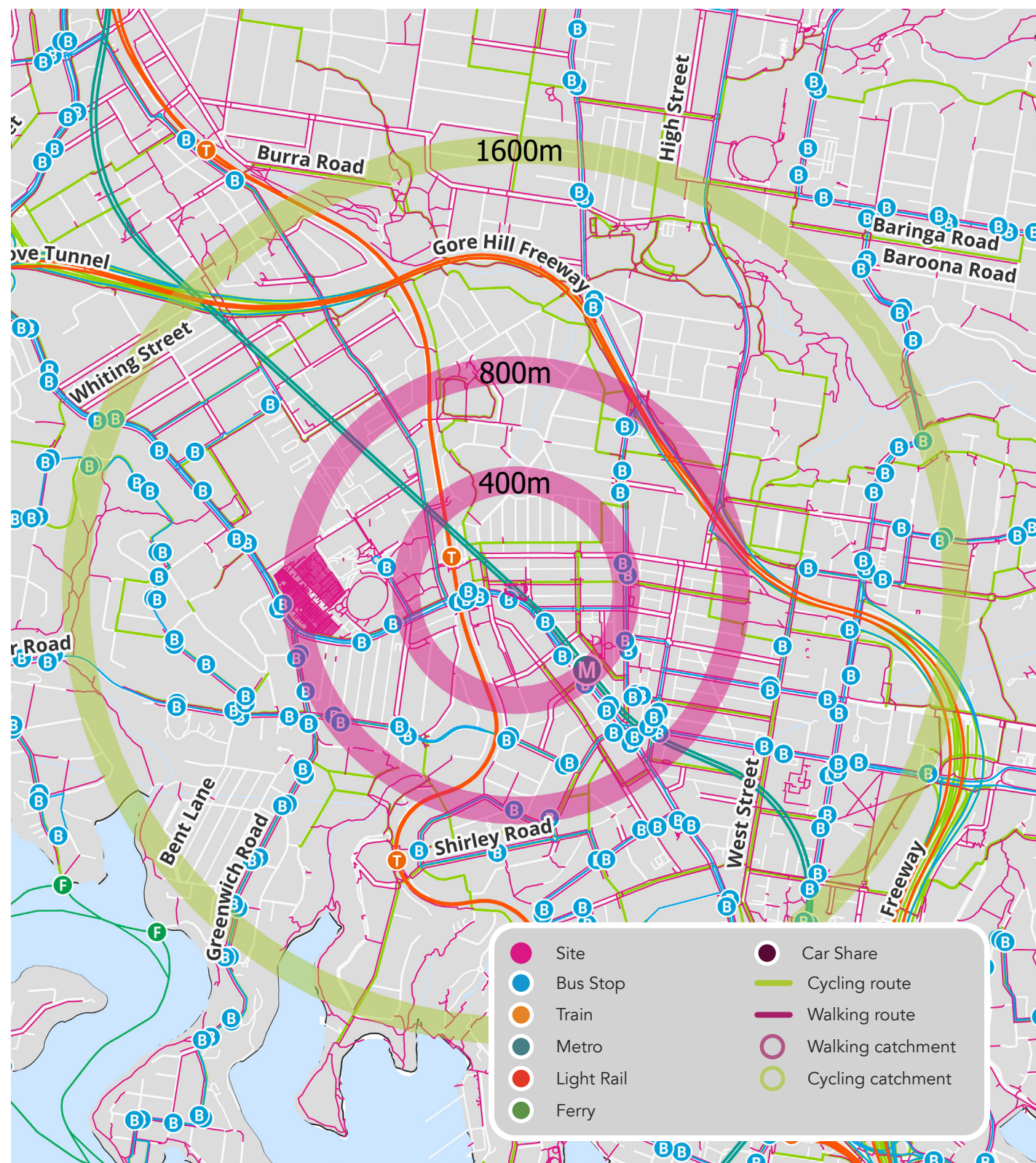
Plan your journey by accessing [transport.info](http://transport.info), downloading the Opal app for smartphones or calling 131500 for Transport for NSW up-to-date timetables and maps.



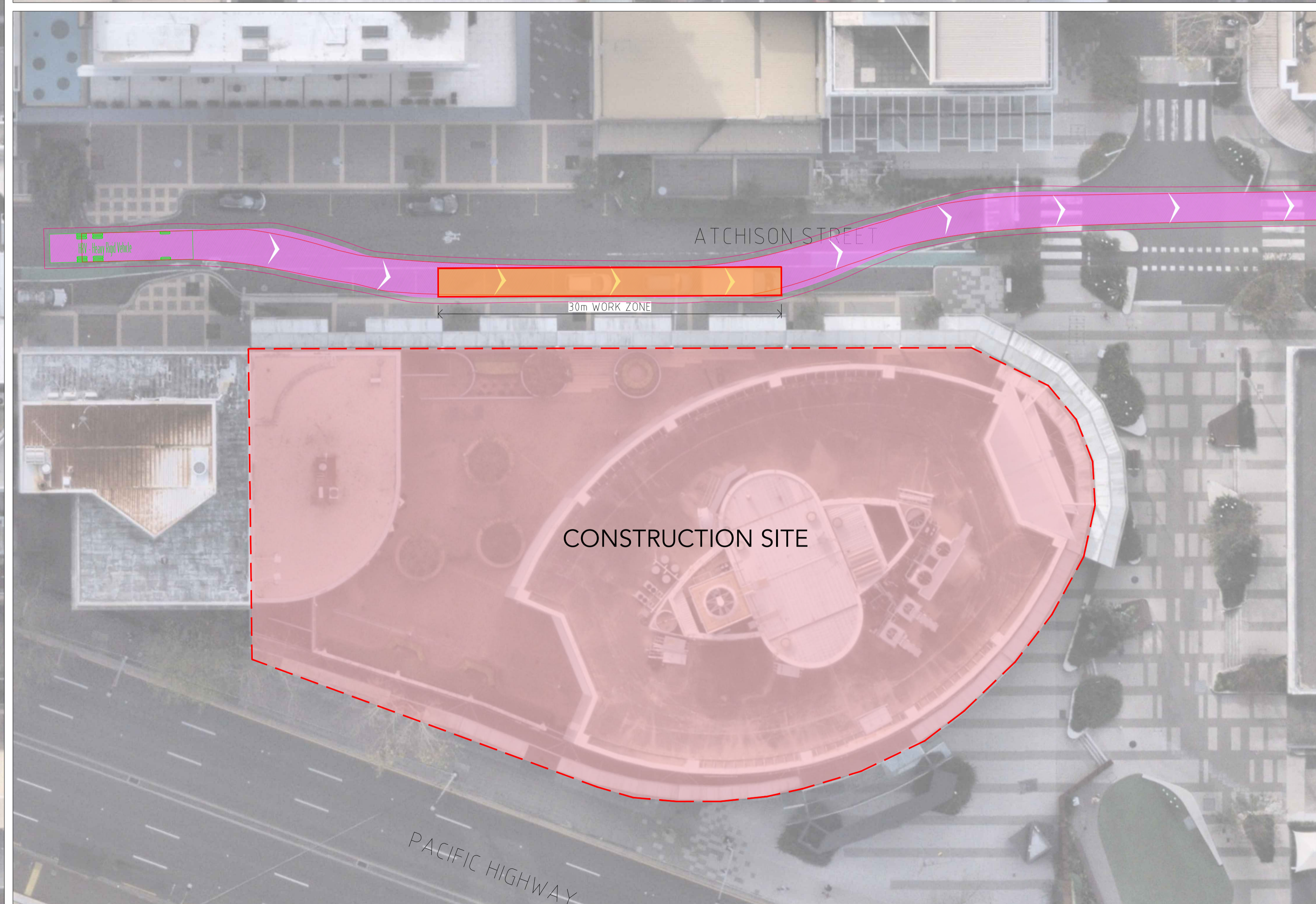
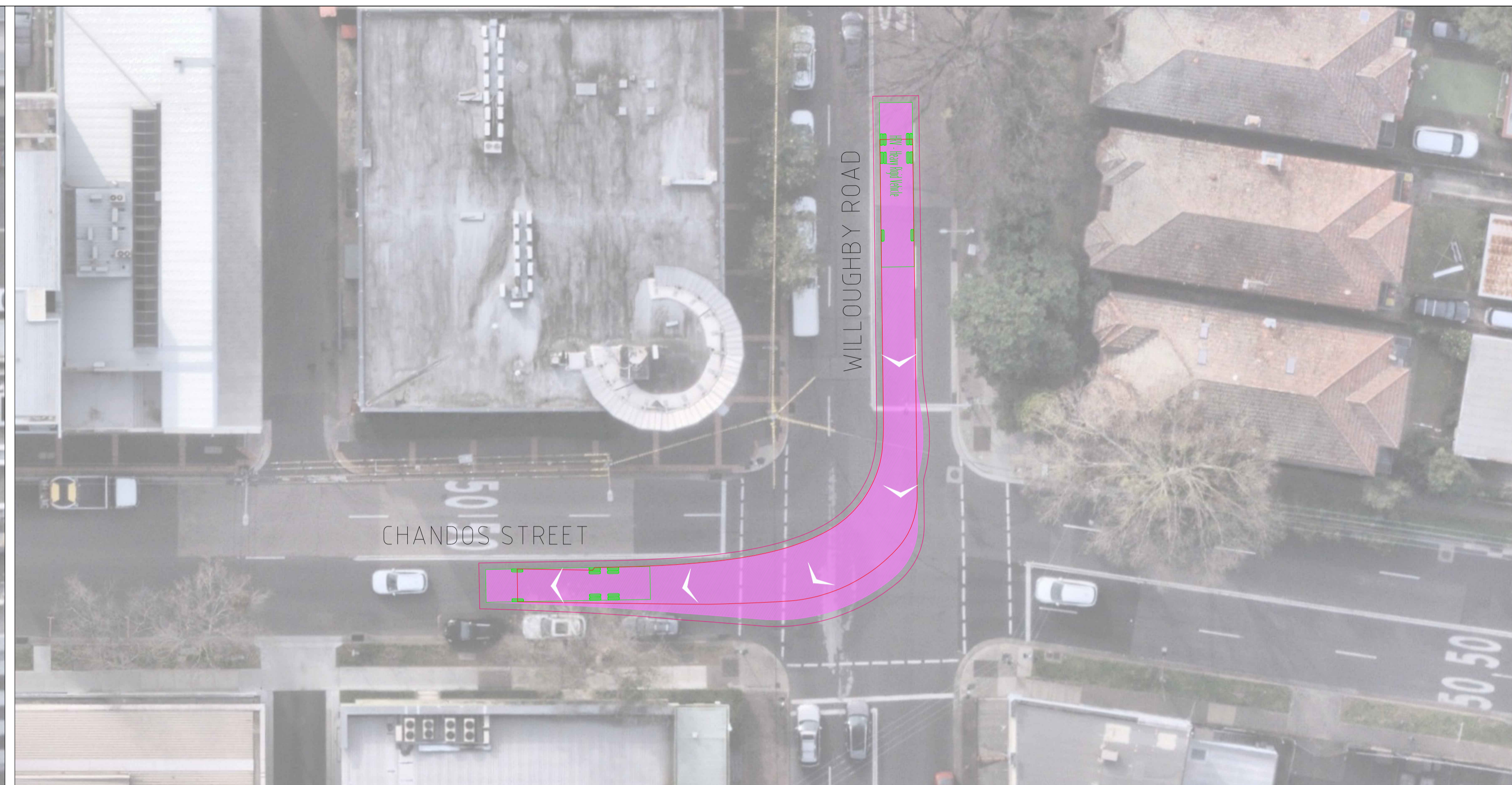
There are abundant bicycle paths around the development. Bicycle parking facilities are available within the site for staff and visitors. End-of-Trip facilities including lockers, showers and change rooms are provided for staff use.



There are a variety of restaurants, shops, supermarkets within a short walk from the development.



# **Appendix 6. Construction Vehicle Swept Paths**



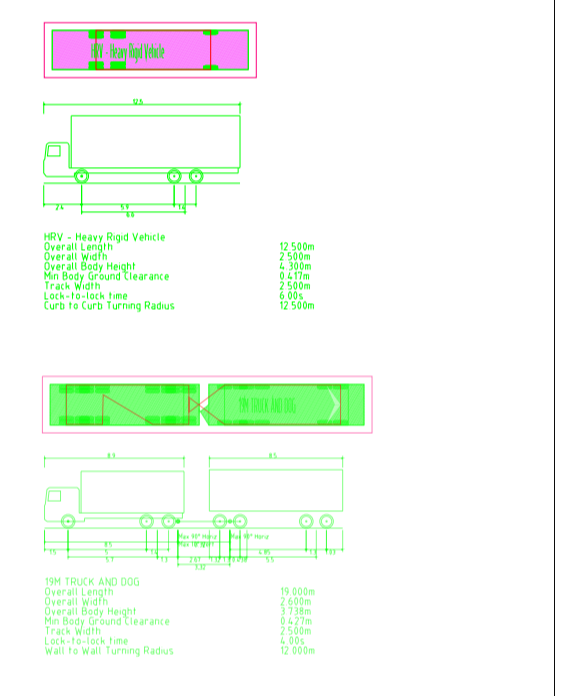
**TYPICAL DISCLAIMERS**  
**AERIAL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation. It is the responsibility of the contractor to ensure that the proposed vehicle routes and accesses are suitable for the anticipated vehicles.  
 All swept paths performed by ptc. using aerial imagery/scaled pdf are indicative and should be used for preliminary purposes only.

**NOT FOR CONSTRUCTION**  
 These drawings have been prepared for information only and are not issue for construction

- TRAFFIC GUIDANCE SCHEMES**
- All signs to be clearly visible throughout the works and monitored.
  - Signs can be mounted if required on posts to be visible above parked cars. Signs to be coordinated on site to ensure they are clearly visible.
  - All signs to be size A.
  - All signs to be visible when workers are in the area and covered when workers are not present.
  - Signs to be in accordance with RMS Traffic Control at Worksites (TCAWS) Manual and AS1742.3 Traffic Control for Works on roads.
  - RMS/Council approvals to be obtained prior to implementation.
  - This TGS is based on TCAWS Manual and is to be set up by qualified traffic controllers (Yellow card). Any alterations on site to this TGS is to be documented and re-recorded by qualified personnel with a Red/Orange card.

**SWEPT PATHS**  
 The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

**VEHICLE PROFILE**



**DRAWING KEY**

REV	DATE	DESCRIPTION	CP	JAJ	DRAWN	REVIEWED
P1	14.10.25	FOR INFORMATION	CP	JAJ		

**PROJECT**  
 601 PACIFIC HIGHWAY, ST LEONARD

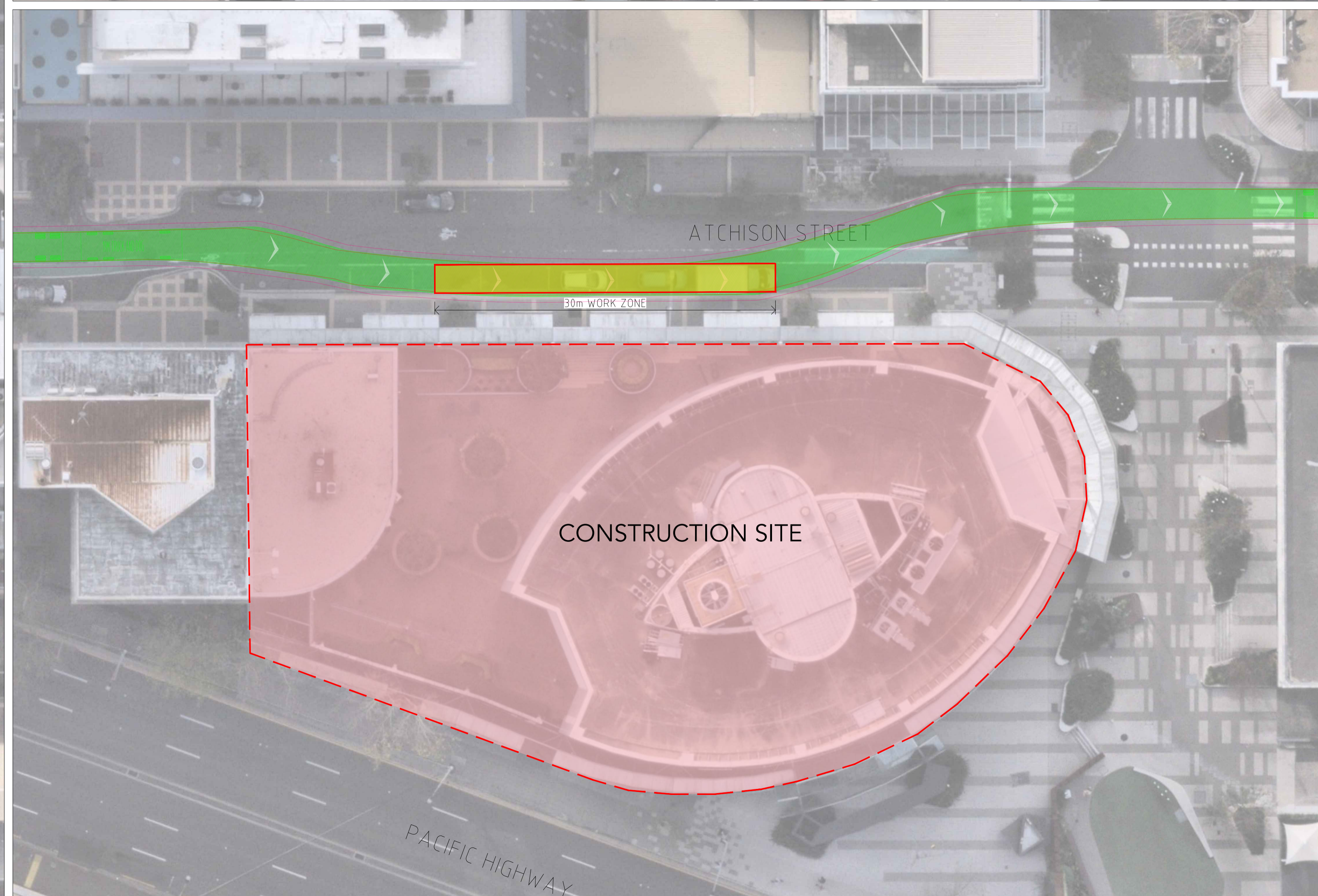
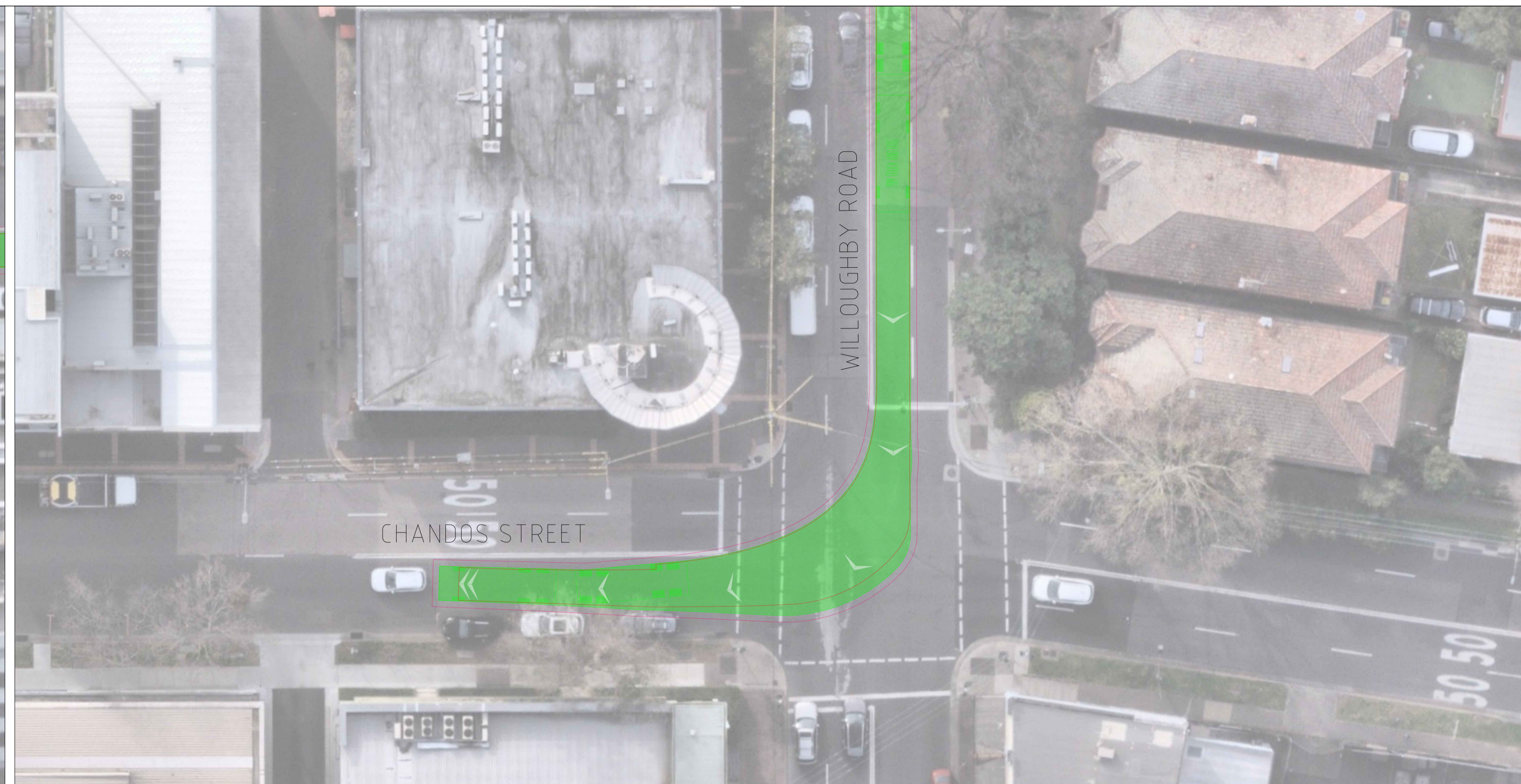
**DRAWING TITLE**  
 SWEEP PATH ASSESSMENT  
 12.5m HRV APPROACHING AND ACCESSING SITE.

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 +61 2 8920 0800  
 ptcconsultants.co

**CLIENT** STOCKLAND  
**DRAWING #** PTC-001  
**PROJECT #** 23-0801  
**SCALE** 1 : 250 @ A1  
 1 : 500 @ A3  
**PRELIMINARY**

**REV P1**





**TYPICAL DISCLAIMERS**

**AERIAL IMAGERY / SCALED PDF**  
 This swept path assessment has been completed utilising aerial imagery/scaled pdf in the absence of detailed survey. It should be noted that aerial imagery/scaled pdf can have an element of error, and all swept paths are preliminary and shall be verified using survey data or site validation.  
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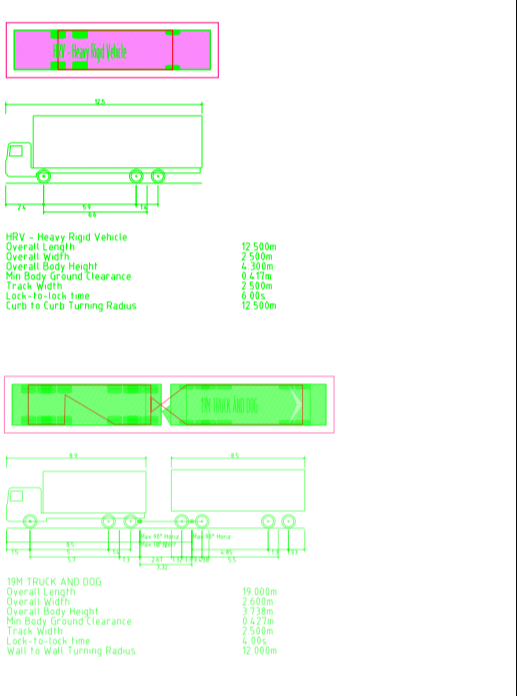
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**VEHICLE PROFILE**



**DRAWING KEY**

REV	DATE	DESCRIPTION	CP	JAJ	DRAWN	REVIEWED
P1	14.10.25	FOR INFORMATION	CP	JAJ		

**PROJECT**

601 PACIFIC HIGHWAY, ST LEONARD

**DRAWING TITLE**

SWEPT PATH ASSESSMENT  
 19.0m TRUCK AND DOG  
 APPROACHING AND ACCESSING SITE.

**ptc.** Suite 502, 1 James Place  
 North Sydney NSW 2060  
 +61 2 8920 0800  
 ptcconsultants.co

CLIENT STOCKLAND

DRAWING # PTC-003

PROJECT # 23-0801

SCALE 1 : 250 @ A1  
 1 : 500 @ A3

PRELIMINARY

**REV P1**

