SSD 10371

Trinity Grammar School, Summer Hill Campus - Renewal Project

Transport and Accessibility Assessment

Revision Record

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1 Executive Summary

This report supports a State Significant Development (SSD) Application for the Trinity Grammar School (TGS) Summer Hill Campus Renewal Project. This report assesses the Transport and Accessibility impacts that the Renewal Project has on the surrounding area.

Trinity Grammar School's Summer Hill Campus is located on Prospect Road, Summer Hill. The site is within Inner West Council's local government area. The project's purpose is to regenerate the campus by constructing new teaching, educational and sporting facilities and refurbishing infrastructure that supports the operation of the school. The project has been designed to facilitate a total of 2,100 students, an increase of approximately 400 students.

The main traffic issues identified in the investigation into the impacts of the renewal project are:

1. The potential for the increased student population to cause traffic congestion on local roads during pickup and drop-off times; and
2. The potential for the increased student population to have negative impacts on on-street parking in adjacent local roads.

1.1 Car park design

The school currently has two underground car parks that operate independently of each other, the main (Jubilee) carpark is open to all visitors and contains the pickup/drop off area and the southern carpark provides parking for school staff.

The layout of the carpark (Section 4.2) has been redesigned. The intent of the redesign is to reduce the potential for queuing to occur on Victoria Street. Meeting this intent is achieved by:

1. Reducing the number of spaces with access from the main circulation road.
   This will minimise the likelihood of a vehicle on the circulation road being delayed by a vehicle manoeuvring into or out of a parking space. Minimising this delay will reduce the time spent by each vehicle within the carpark thus relieving congestion.

2. Increasing the distance available for off street queuing (i.e. within the carpark).
   The revised car park layout provides approximately an additional 400m length of aisle and circulation road. This additional road increases the queuing capacity for off street queuing thus reducing the potential for queuing on Victoria Street.

3. Improving the efficiency of the drop off/pickup operation.
   The drop off/pick up area within the car park has been increased by approximately 70m. The 90-degree parking spaces opposite this area has also been removed. These spaces were a significant source of delays for vehicles using the drop off/pickup area. These two modifications will increase the efficiency of the carpark and reduce congestion.

The current and proposed car space numbers are shown in Table 1-1.

Table 1-1 Number of Car Spaces Provided

Carpark	Current	Proposed
Main (Jubilee)	221	147
Staff (Southern)	91	177
Main Entrance	5	5
Total	**317**	**329**

1.2 Travel management

It is recommended that the school adopt a travel demand approach to manage the proposed increase in students. A Green Travel Plan (Section 5) has been developed that contains initiatives and a framework to assist the school achieve a mode shift towards active and sustainable transport modes.

The existing carpark at the campus is substantial and does vastly exceed the size required by most Councils. It is proposed that the number of car spaces within the carpark is maintained and not increased. Increasing the number of car spaces within the car parks would provide more opportunity for additional private vehicle usage, contribute to greater congestion during the peak periods and increase the likelihood of queueing on local roads.

1.3 Servicing and maintenance access

Some adjustments to local infrastructure will be required to facilitate the project. Section 4.5 of this report outlines the proposed location of the new maintenance and delivery area. Access to this loading bay will be via the southern driveway. In order for this driveway to be used for this purpose the following adjustments will need to be made:

1. The 'left out' only requirement will need to be amended so that delivery vehicles can turn right exiting the driveway.
2. The traffic island near the exit to the driveway will need to be removed to allow delivery vehicles to turn right into the driveway. It is recommended that a painted island is installed to replace this facility.

The design and management approaches proposed in the Renewal Project proactively and responsibly resolve issues raised by the community regarding potential for on-street queuing, congestion and parking.

2 Introduction

This report supports a State Significant Development Application for the Trinity Grammar School Renewal Project. More specifically, this report responds to issues relating to Transport and Accessibility in accordance with Part 7 of the Secretary's Environmental Assessment Requirements (SEARs) issued on 26 September 2019.

2.1 Background

The project is for new teaching and educational facilities at the Trinity Grammar School' Summer Hill campus, as detailed below:

- New five (5) storey building at the heart of the Campus to accommodate modern, flexible teaching and learning spaces;
- Improve movement and flow for students, with better east-west and north-south links across the school grounds and between levels, including more accessible connections between the Junior School, ovals and car park, and providing strong visual and physical connections;
- Renewal and Refurbishment of existing teaching and learning facilities;
- Reconfiguration and connection of underground car park improve traffic flow for the school drop-off and pick-up zone and improve the safety of boys and visitors who enter the school grounds as pedestrians from Victoria Street;
- New multipurpose pavilion between Ovals 1 and 3 containing a multipurpose space and basketball court;
- Demolition of school-owned residences at 46, 48, 50 and 52 Seaview Street, improving the existing service, maintenance and delivery facilities;
- Improvement and extension to Junior School outdoor teaching area and outdoor assembly area.

One of the key objectives of the project is to improve site access, car parking and surrounding traffic functions in the precinct.

2.2 Secretary's Environmental Assessment Requirements

The Department of Planning, Industry and Environment (DPIE) issued a list of the Secretary's Environmental Assessment Requirements which inform the Environmental Impact Statement (EIS). Table 2-1 lists the SEARs that are specific to transport and accessibility.

Table 2-1: Response to SEARs

No.	SEAR	Section
1.	Accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development.	Section 3 & Section 6
2.	Details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area.	Section 6
3.	The adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development.	Section 5
4.	Measures to integrate the development with the existing/future public transport network.	Section 4 & Section 5
5.	The impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years). Intersections to be modelled include, but should not be limited to: • Prospect Road / Old Canterbury Road, • Old Canterbury Road / James Street, • Old Canterbury Road / Henson Street, and • Old Canterbury Road /Hurlstone Avenue.	Section 6
6.	The identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays	Section 4 & Section 5
7.	Details of travel demand management (TDM) measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site	Section 5

No.	SEAR	Section
8.	The existing and proposed walking and cycling access arrangements and connections to public transport services	Section 5
9.	The existing and proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones	Section 4
10.	Existing and proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance	Section 5
11.	Existing and proposed number of on-site car parking spaces for staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site	Section 4
12.	An assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development	Section 4
13.	An assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with Crime Prevention Through Environmental Design (CPTED)	Separate Report
14.	Emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times)	Section 4

No.	SEAR	Section
15.	The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: • assessment of cumulative impacts associated with other construction activities (if any) • an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity • details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process • details of anticipated peak hour and daily construction vehicle movements to and from the site • details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle • details of temporary cycling and pedestrian access during construction.	Section 7
16.	Relevant Policies and Guidelines: 1. Guide to Traffic Generating Developments (Roads and Maritime Services) 2. EIS Guidelines – Road and Related Facilities (DoPI) 3. Cycling Aspects of Austroads Guides 4. NSW Planning Guidelines for Walking and Cycling 5. Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development 6. Standards Australia AS2890.3 (Bicycle Parking Facilities).	Throughout Report

2.3 Policies & Guidelines

This report has been prepared with regard to the following policies and guidelines:

- Guide to Traffic Generating Developments (Roads and Maritime Services);
- EIS Guidelines – Road and Related Facilities;
- Cycling Aspects of Austroads Guides;
- NSW Planning Guidelines for Walking and Cycling;
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development;

- Australian Standard AS 2890 – Parking Facilities;
- Australian Standard AS2890.3 - Bicycle Parking Facilities;
- RTA (RMS) Guide to Traffic Generating Developments;
- Sydney's Walking Future – Connecting People and Places (December 2013);
- Going Places – An Integrated Transport Strategy for Inner West;
- Comprehensive Inner West DCP 2016 (for Ashbury, Ashfield, Croydon, Croydon Park, Haberfield, Hurlstone Park and Summer Hill); and
- Austroads Research report AP-R528-16 – Bicycle Parking Facilities.

2.4 Site Location

The location of the Renewal Project is within the existing grounds of the school's Summer Hill Campus on Victoria Street, Prospect Road and Seaview Street. The site is within Inner West Council. The site context is shown in Figure 2-1 and aerial view is shown in Figure 2-2.

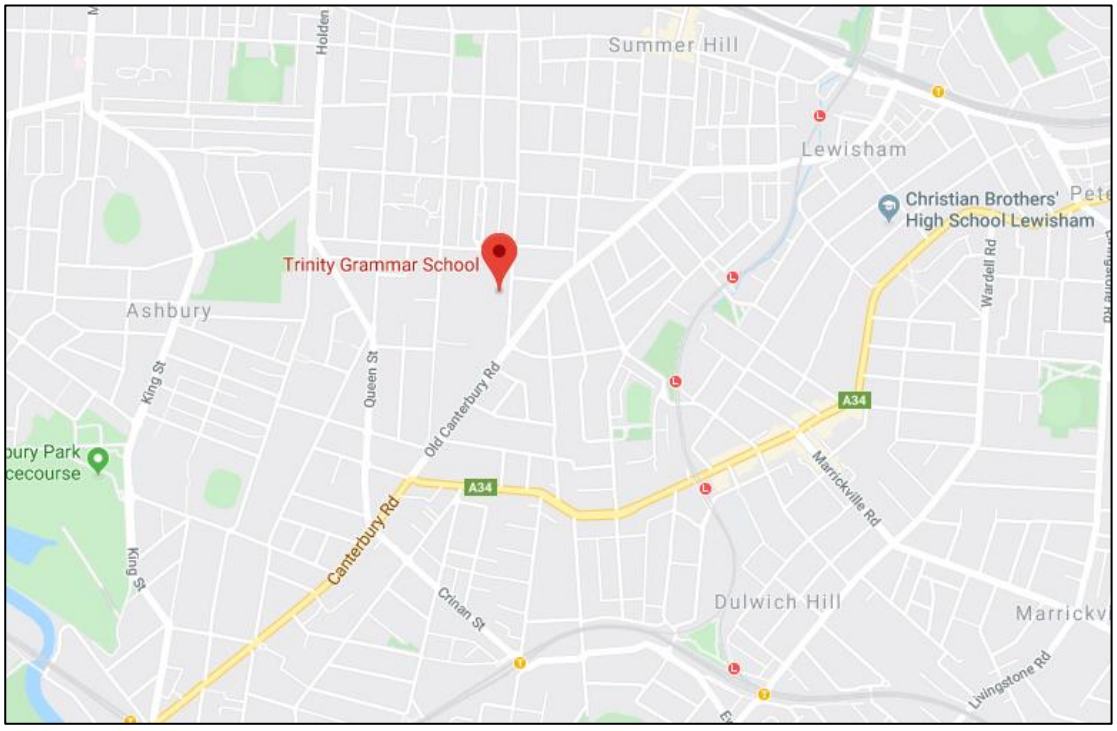


Figure 2-1 Site Location Context

Figure 2-2 Site Location Aerial View

2.5 Students

Students that attend the school come from all over the Sydney metropolitan area.

Table 2-2 presents a summary of the distance from school that students reside. Figure 2-3 presents a heat map of the locations that students reside.

Table 2-2 Distance students reside from School

	Distance (km)				
	0 – 5	5 – 10	10 - 15	15 – 20	>20
Junior	50.3%	35.0%	11.3%	3.4%	0.0%
Middle	46.4%	33.1%	13.0%	6.5%	1.0%
Senior	40.5%	32.6%	18.0%	6.4%	2.5%
Total	**44.9%**	**33.3%**	**14.6%**	**5.9%**	**1.4%**

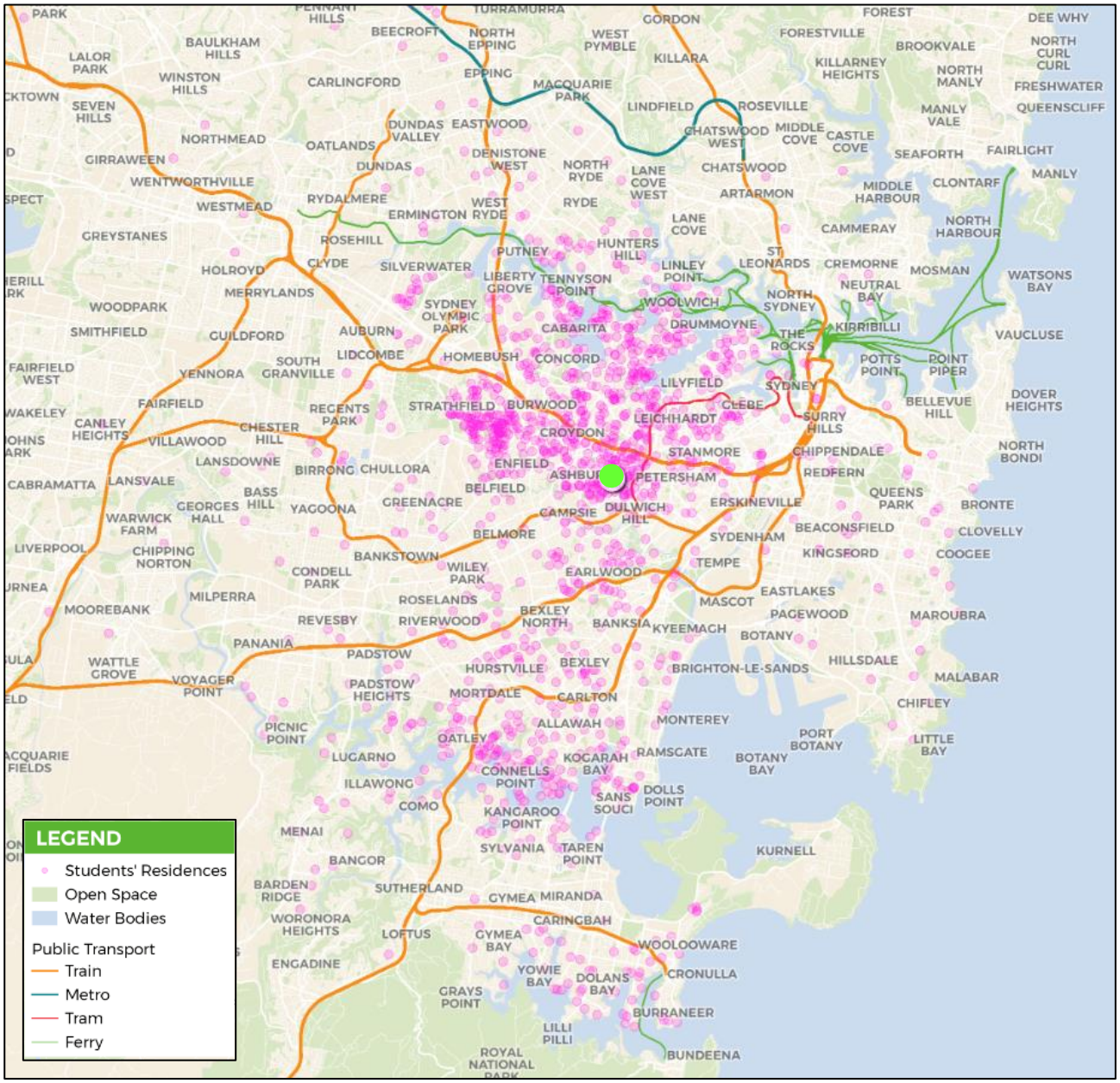


Figure 2-3 Heat Map - Location that students reside

3 Existing Conditions

3.1 Road Network

The subject site is on Prospect Road, Seaview Street and Victoria Street in Summer Hill. The site is adjacent to Yeo Park on the Southern side. The Jubilee car park (off Victoria Street) contains 221 car spaces and serves as the primary pick-up and drop-off point for parents. A smaller car park for staff parking is located about 50 metres to the south of the Jubilee car park entry and contains 91 parking spaces.

All the roads surrounding the site are local roads administered by Inner West Council (IWC). The characteristics of roads near the site are shown below in Table 3-1.

Table 3-1: Road Characteristics

Road	Speed Limit	Lanes	Road Authority
Prospect Road	50kph / 40kph school zone	2 (undivided)	Council
Seaview Street	50kph / 40kph school zone	2 (undivided)	Council
Victoria Street	50kph / 40kph school zone	2 (undivided)	Council

The surrounding street views are shown in Figure 3-1 to Figure 3-3.

Prospect Road is a 2-lane undivided street with a carriageway of approximately 12 metres. There is parallel parking on both the sides of the street. Two speed humps have been installed on Prospect Road out front of the school.

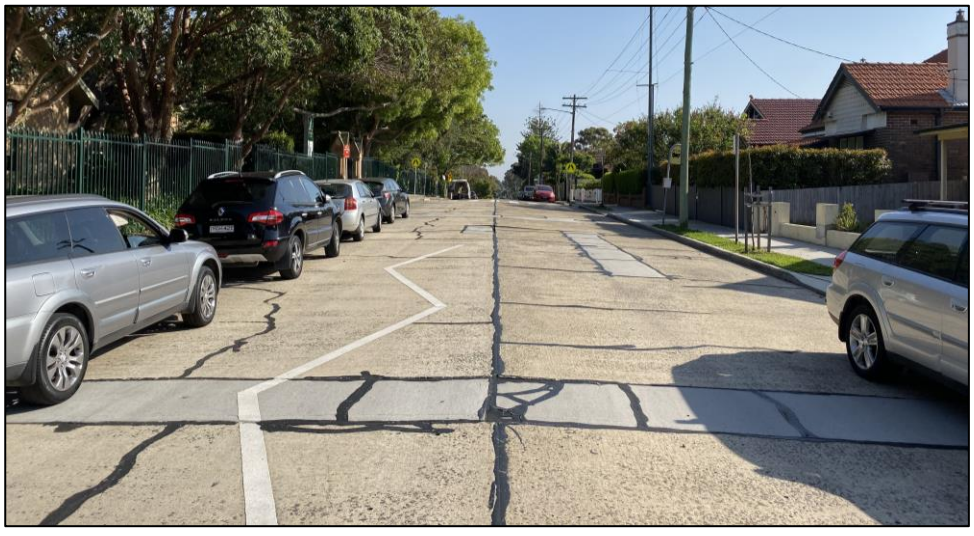


Figure 3-1 Prospect Road view

Seaview Street is a 2-lane undivided street with a carriageway of approximately 10 metres. There is parallel parking on both the sides of the street, however due to the narrow width of the roads, motorists generally only park on the southern side.

Figure 3-2 Seaview Street view

Victoria Street is a 2-lane undivided street with a carriageway of approximately 16 metres. There is parallel parking on both the sides of the street.

Figure 3-3 Victoria Street view

3.1.1 On Street Parking

The following parking restrictions exist roads surrounding the school:

Prospect Road (Between Hurlstone Avenue & Old Canterbury Road

- No Stopping both sides at various locations
- Public Bus Stop on both sides
- School Bus Zone 7.30AM – 8.30AM & 3.00PM-4.15PM School days only, on Western side near Hurlstone Avenue

Prospect Road (Between Seaview Street & Hurlstone Avenue

- Unrestricted both sides

Seaview Street (Between Prospect Road & Victoria Street)

- Unrestricted on the South Side
- No Stopping 7.30AM – 9.30AM & 2.30PM – 5.30PM School Days

Victoria Street (Between Seaview Street & Harland Street)

- Unrestricted on the West side
- Unrestricted on the East side between Seaview Street and Jubilee Car Park Entrance.
- School Bus Zone 7.30AM – 8.30AM & 3.00PM-4.15PM School days only, on East side between Jubilee Car Park Entrance and Harland Street.

Figure 3-4 shows the parking restrictions on streets around the school.

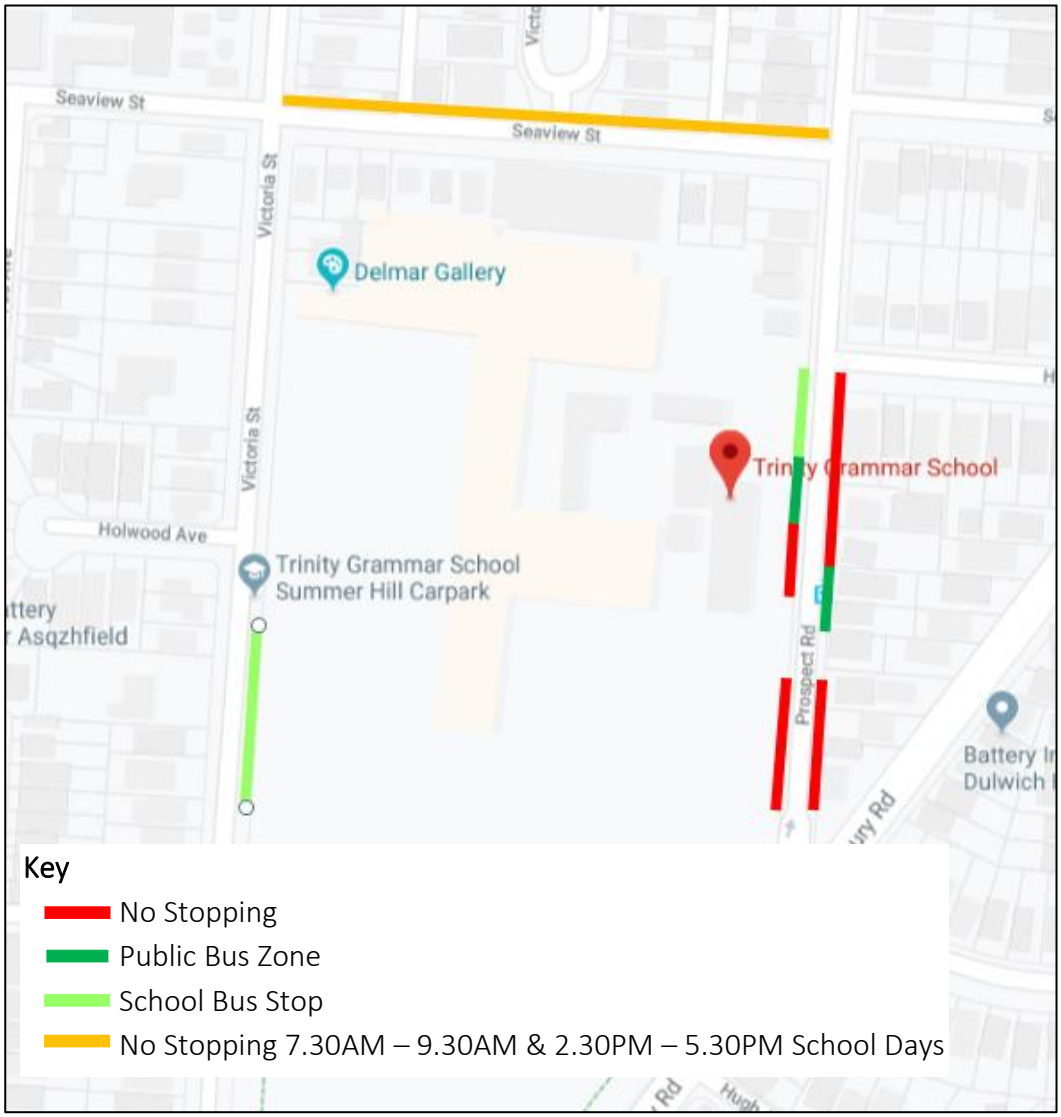


Figure 3-4 Parking Restrictions

3.2 Public Transport

The school is serviced by the public bus network, heavy rail and light rail.

The locations of the train stations and bus routes are shown in Figure 3-5.

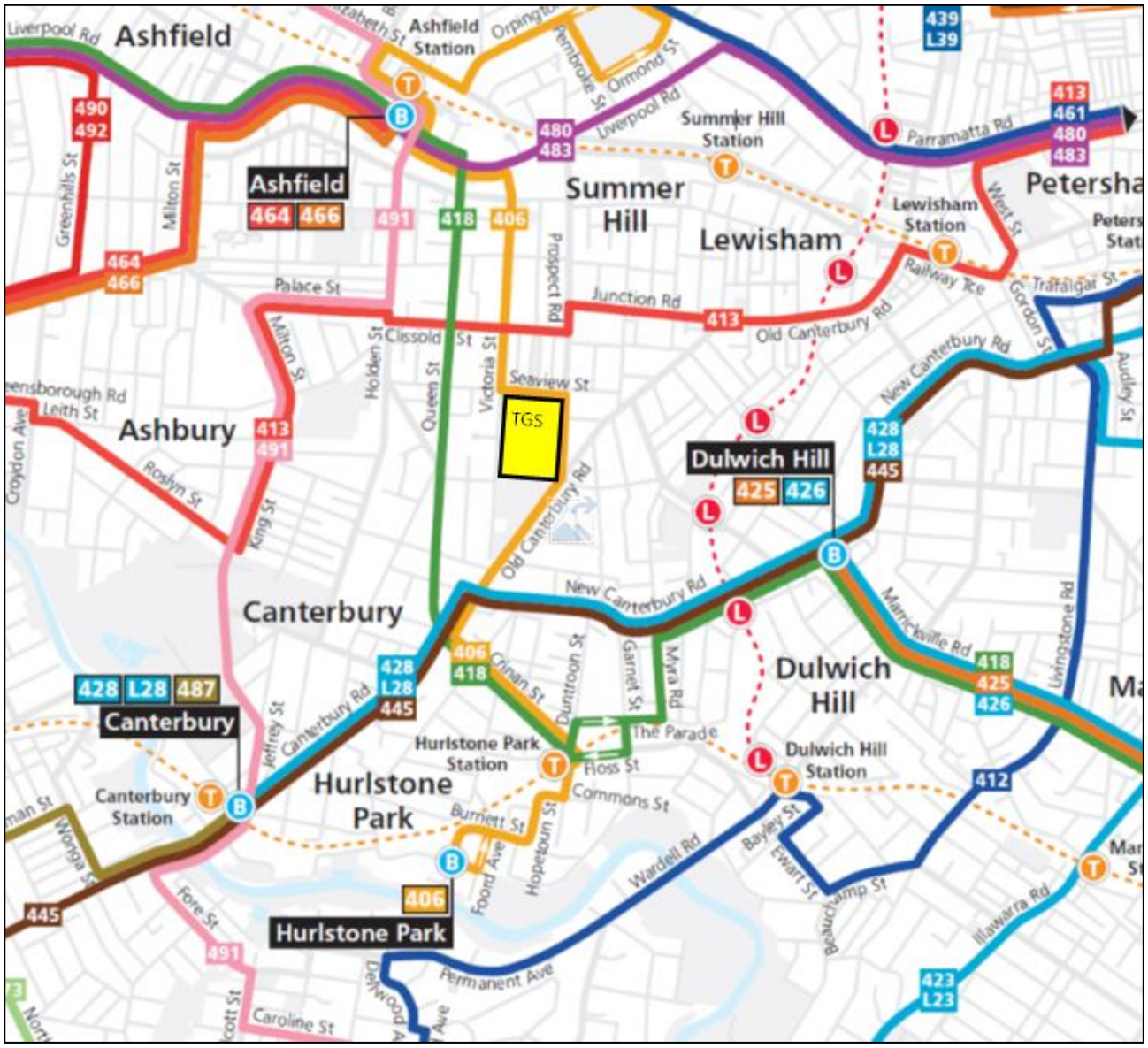


Figure 3-5 Public Transport Infrastructure

3.2.1 Bus Network

The school is serviced by the Sydney Buses 406 bus route (Hurlstone Park to Five Dock) that travels on Seaview and Prospect Streets, and by bus routes 418, 426 and 445 on nearby streets. A summary of the bus routes operating in proximity to Trinity Grammar School is provided in Table 3-2: Bus Routes.

Table 3-2: Bus Routes

Bus Route	Origin - Destination	Nearest Stop		Frequency (minutes)	
		Location	Distance to school (m)	Peak	Off-peak
406	Five Dock – Hurlstone Park	Prospect Rd Next to school	0	22 – 30	60 -83
418	Kingswood – Burwood (via Mascot, Sydenham & Dulwich Hill	Queen Street (at Armstrong St)	450	14 - 25	30
		Queen St (at Seaview St)	450		
428	Canterbury – City (Martin Place)	New Canterbury Rd after Old Canterbury Rd	800	8 – 15	15 - 30
445	Campsie – Balmain (via Leichhardt Marketplace)	New Canterbury Rd (at Old Canterbury Rd)	700	7 - 20	15 -30

3.2.2 Train Services

The school is serviced by two train lines on the metropolitan network; T2 Inner West Line and T3 Bankstown Line.

Summer Hill station on the T2 Inner West line is an approximately 1.6km walk to the school. This service operates between Parramatta and the city. Summer Hill Station is wheelchair accessible.

Hurlstone Park station on the T3 Bankstown Line is an approximately 1.6km walk to the school. This service operates between Liverpool or Lidcombe and the city. This station is not currently wheelchair accessible.

Hurlstone Park Station is one of 11 stations on this line to be upgraded to metro standards. It will be fully accessible with lifts and level access between the train and platform. Metro services will run at least every four minutes in the peak. The Metro is expected to commence operation in 2024.

3.2.3 Light Rail

The school is serviced by the Dulwich Hill Light Rail Line that operates between Dulwich Hill and the city. Arlington Station is an approximately 950m walk to the school. This station is wheelchair accessible.

3.3 School Operated Bus

The school operates a substantial bus network to meet the needs of students. The network for this service is shown in Figure 3-6.

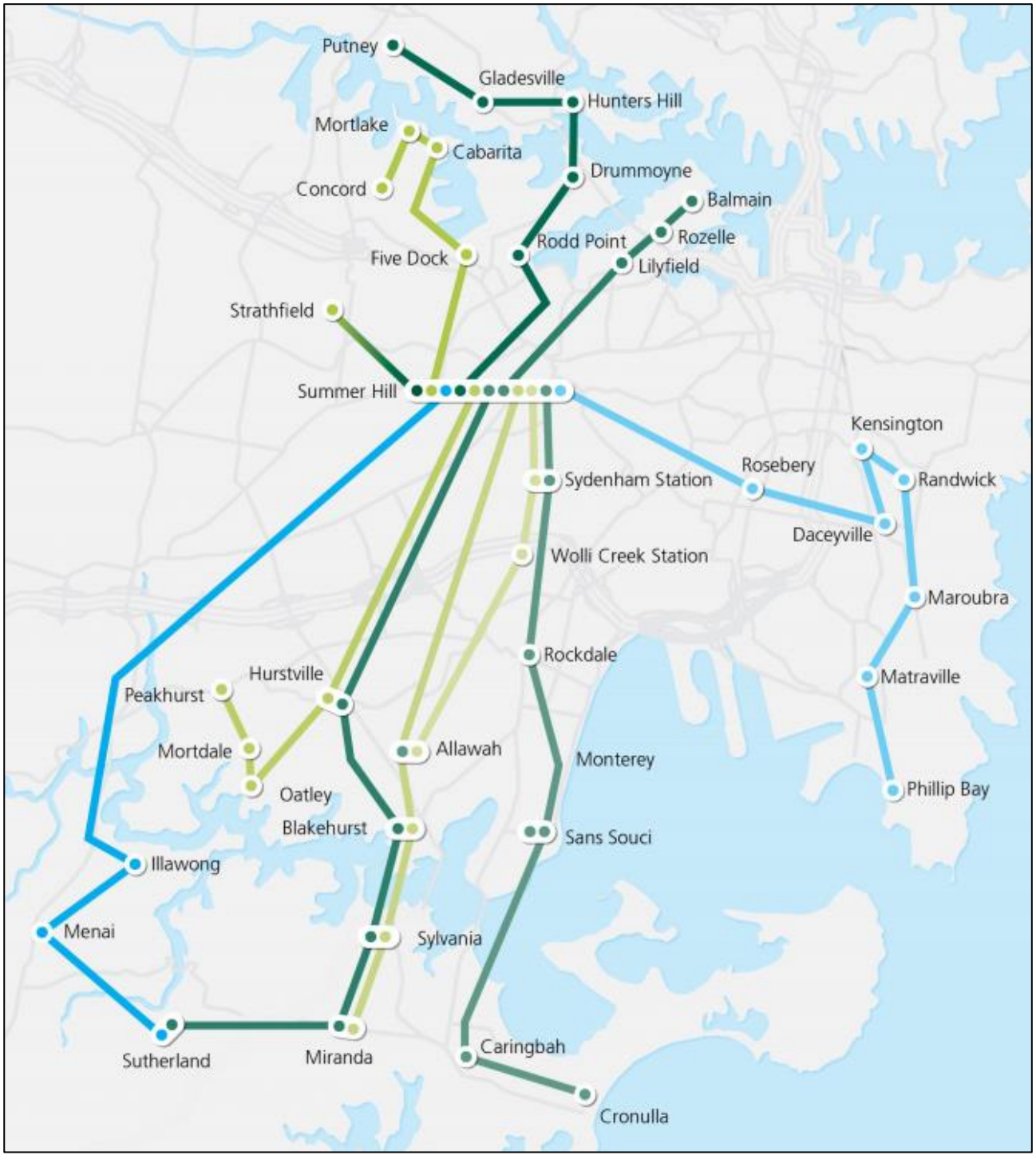


Figure 3-6 School operated bus network

The network contains eleven routes and stops at 39 locations. Generally, each route has one bus in the morning and one in the afternoon. The school has a mobile phone app that can provide notification updates on service changes. This service has a charge per trip.

Prior to bus departures in the afternoon, students are marshalled within the school grounds for each bus and escorted to their bus by school staff.

3.4 Pedestrian Facilities

All roads adjacent to the school have concrete paths on both sides.

There is a pedestrian (zebra) crossing on Prospect Road near the entrance to the school.

There is a signalised pedestrian crossing on Old Canterbury Road that provides a safe point for students to cross.

A pedestrian refuge island has recently been installed on Victoria Street at the southern end of the school (near Yeo Park).

A pedestrian refuge island has been provided on Queen Street near Seaview Street.

A pedestrian refuge island has been provided on Old Canterbury Road near Constitution Road. Students that use light rail may use this facility.

Figure 3-7 shows the pedestrian infrastructure in the vicinity of the school.

Figure 3-7 Pedestrian Infrastructure near school

3.5 Bicycle Facilities

The Ashfield Cycling Map produced by Inner West Council shows Prospect Road as an On-Road Cycle Route with Low/Medium Traffic. Prospect Road is well connected to wider network, refer Figure 3-10.

The school currently provides 1 bicycle rack for students. This rack is for 6 bicycles and is located in the North-East corner of the carpark under Oval 2. Refer Figure 3-8.

Figure 3-8 Student bicycle rack

Furthermore, the school provides 1 bicycle rack for staff. This rack is for 5 bicycles and is located in the secured staff carpark under Oval 3. Refer Figure 3-9.

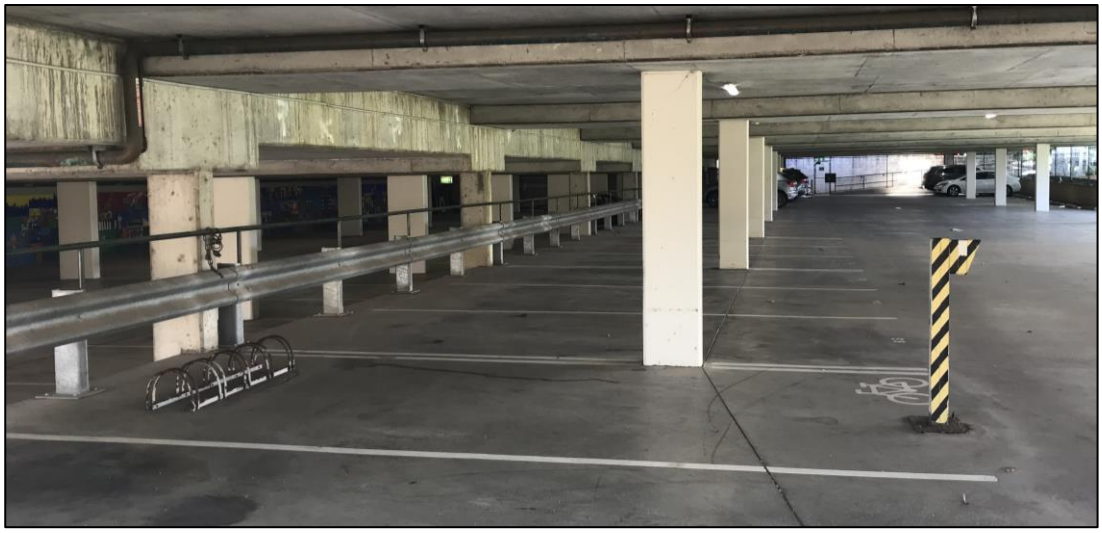


Figure 3-9 Staff bicycle rack

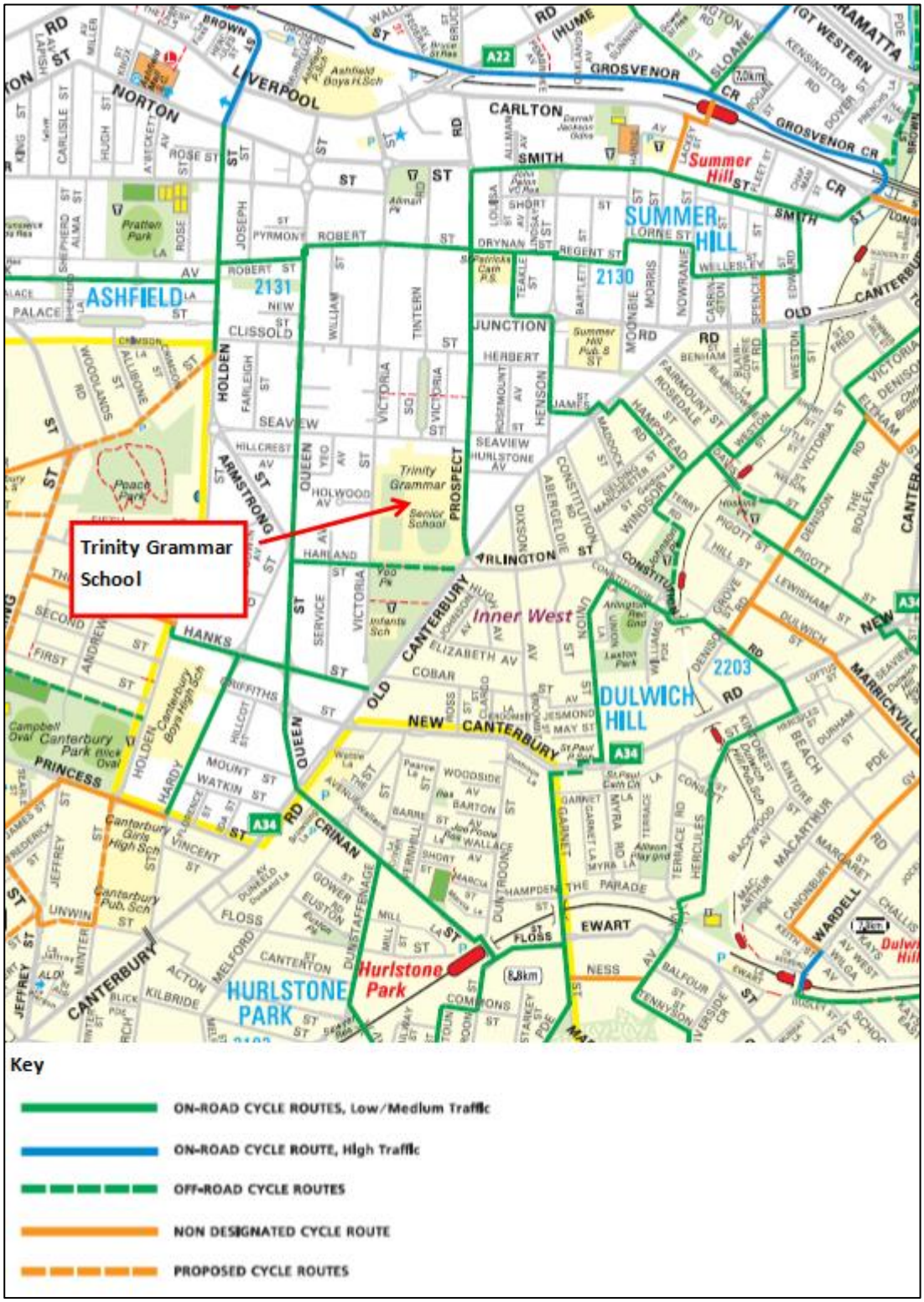


Figure 3-10 Extract from Ashfield Cycling Map

3.6 Parking (including Pickup & Drop off)

The school has three car parks as shown in Figure 3-11.

The Jubilee carpark and the staff carpark provide underground parking within the school grounds and are accessed from Victoria Street. These carparks are accessed from two separate driveways. Access to the Jubilee car park is via the Jubilee driveway between the two sports fields. The staff carpark is accessed via a driveway next to Yeo Park and is controlled by a boom gate with electronic access. These two carparks do not currently connect.

The Jubilee car park serves as the primary pick-up and drop-off point for parents.

A small car park of five designated spaces exists on the eastern side of the school to provide parking for the enrolment centre and other authorised parking. Table 3-3 summarises the number of car parking spaces currently with the school grounds.

Table 3-3 Current Number of Car Spaces

Carpark	No. of Spaces
Jubilee	221
Staff (Southern)	91
Main Entrance	5
Total	**317**

Figure 3-11 Car Park locations

4 Parking and Access

4.1 Car Parking Requirements

Inner West Council currently operate three Development Control Plans (DCP) relating to the former Councils of Ashfield, Leichhardt and Marrickville that were amalgamated in 2016. The Ashfield DCP is relevant to this project. The Ashfield DCP requirements for car parking in relation to schools are shown in Table 4-1

Table 4-1 Ashfield DCP - Car parking requirements for schools

Use	Rate	Additional requirements
Kindergarten/Pre-School/Childcare	1 space per 4 children	A temporary drop-off/pick-up area is to be provided on-site
Primary and Secondary Schools	Primary School 1 space per FTE staff Secondary School 1 space per FTE + 1 space per 8 x Year 12 students	Primary & Secondary School Pick-up/Set-down area at 1 per 40 students + Bus parking on site

Table 4-2 calculates the car parking spaces required by the Ashfield DCP for the school's target population of 2,100 students and the projected number of 321(Full time equivalent) staff required to service this population.

Table 4-2 Car Parking Calculations

Ashfield DCP Car Parking Requirements			
School	Number	Rate	Required Spaces
Staff			
Staff	321	1.00	321
Students			
Kindergarten	40	0.25	10
Junior	310	0.025	8
Senior	1470	0.025	37
Year 12	280	0.125	35
Total			**411**

The level of parking as stated in the DCP is considered excessive and is not consistent with government policies encouraging the use of active and sustainable transport. The requirement to provide one car parking space per staff encourages staff to drive to work and discourages the use active and sustainable transport.

Table 4-3 presents the parking requirements for the DCPs of the other former municipalities merged to form the new Inner West Council. The requirements of the Ashfield DCP are over twice the requirements of the other former Councils.

Table 4-3 Inner West Council DCP - Parking Requirements

Inner West DCP Car Parking Requirements								
Former Council		Staff (321)		Students (2,100)				Total
		Rate	Sub-Total	School	No.	Rate	Sub-Total	
Ashfield		1	321	Kindergarten	40	0.25	10	411
				Junior	310	0.025	8	
				Senior	1,470	0.025	37	
				Year 12	280	0.125	35	
Marrickville	Area 1	0.2	64	General	2,100	0.00	0	64
	Area 2	0.25	80					80
	Area 3	0.5	161					161
Leichhardt	Minimum	0.25	80	General	2,100	0.00	0	80
	Maximum	0.5	161					161

Inner West Council released a draft Integrated Transport Strategy in June 2019. The Strategy proposes a vision for transport in the future focused on active and sustainable transport modes. It considers important values for the future network and develops a set of principles. The strategy establishes a hierarchy that prioritises people and sustainable modes of transport over private and polluting vehicles. The Council has identified the following seven principles that will inform Council decision making and land use planning:

1. Plan land use to support active and sustainable transport for reduced travel times and distances
2. Improve safety, personal security, and provide equitable access for full community participation
3. Prioritise people in centres and main streets and revitalise key roads
4. Commit to active transport infrastructure, services and programs
5. Encourage shift to public transport and shared transport from private vehicles by providing attractive alternatives, and reduce the impact of congestion and parking
6. Manage a freight and goods delivery network to enhance efficiency and Inner West liveability
7. Harness technology to improve information, safety, travel choices and environmental outcomes

These seven principles clearly show that Inner West Council is committed to promoting active and sustainable transport over private vehicles. Providing 411 car parking spaces for the renewal project is not considered to be aligned with these principles.

The strategy also identifies revising the DCPs as a key action to achieve the intent of the strategy.

The Jubilee and staff carparks have a combined total of 312 parking spaces. Under the proposed arrangement, 324 car spaces are provided. A green travel plan and workplace travel plan have been developed to contribute to the efficient operation of the parking facility and surrounding road network.

4.2 Revised Car Parking Layout

The layout of the proposed car park is shown in Figure 4-1. The revised layout provides greater capacity for queuing vehicles and improved operational efficiency. Key features of the revised layout include:

- A connection between the Jubilee carpark and the staff carpark;
- An increased drop off/pick up area to approximately 170 metres;
- Reorientation of the parking spaces to reduce the number of spaces with direct access from the main circulating road.

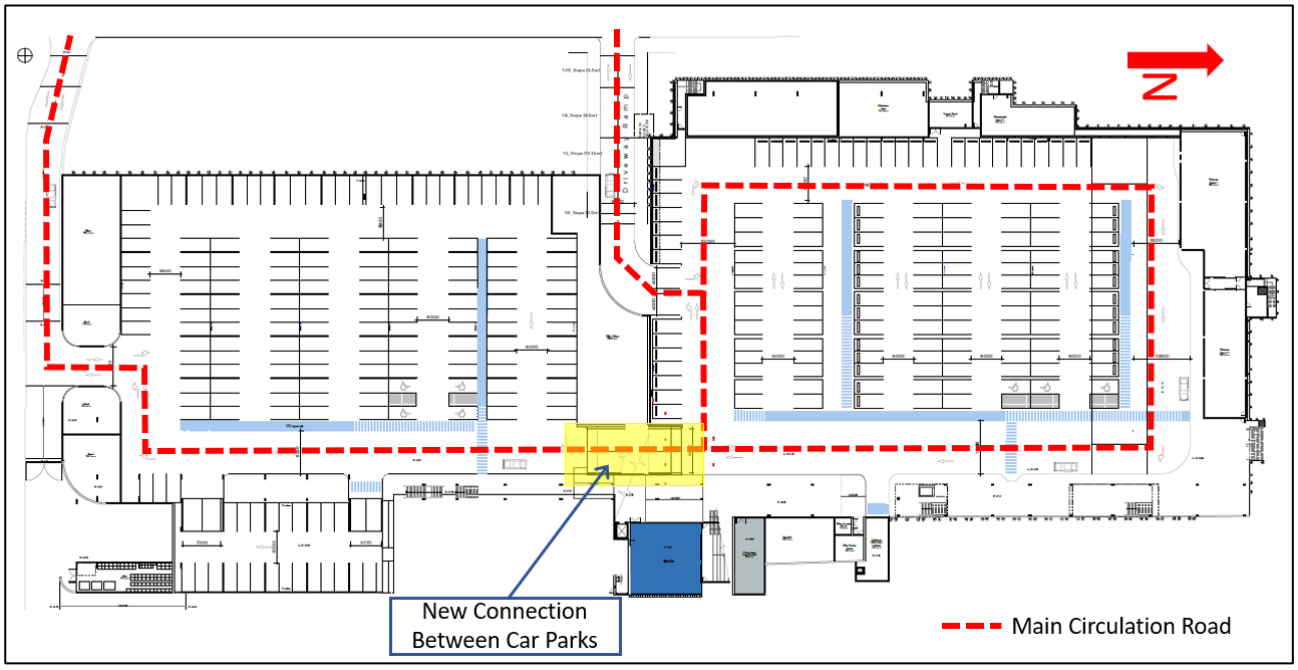


Figure 4-1 Revised Car Parking Layout

The intent of this design is to minimise disruption to the main circulation road. The revised layout significantly reduces the amount of car spaces with direct access to the main circulation road.

Under the current layout, traffic on the main circulation road is often delayed by drivers manoeuvring into or out of car spaces. This issue is exacerbated along the eastern side of the car park where drivers on the circulation road can be delayed by vehicles manoeuvring into car spaces on the western side and vehicles pulling into and out of the pick-up/drop off lane on the eastern side.

Removal of the parking spaces on the circulation road on the eastern side of the car park will improve the operational efficiency of the pick-up/drop off lane and reduce the overall time spent in the car park by drivers.

The revised layout also provides additional length of circulation road within the carpark. This will provide greater queueing capacity onsite within the car park and greatly reduce the likelihood that queues will extend onto driveway and the local road network.

It is proposed that the exit to southern access continue to operate as left out only. However, as delivery vehicles will now use this access, a treatment will need to be implemented to permit right turn exits by service and delivery vehicles.

The exit via the Jubilee driveway operates as left out only during peak times. This is to prevent the flow of traffic exiting the car park being blocked by queueing right turners. With the car parks now connected, it is considered appropriate to introduce the option of turning right out of the Jubilee driveway. Drivers exiting left into Victoria Street will have the option of turning left out of the southern entrance unimpeded or turning left out of the Jubilee driveway however they may have to queue behind right turners.

The drop off/pick up area will only be able to be accessed from the Jubilee driveway, Figure 4-2 shows the school's vehicles access points. It is proposed that the connection between the car parks is one way, from the Jubilee carpark to the staff car park.

A swept path analysis has been undertaken on the layout to confirm the facility is appropriate for its intended use. This analysis is contained is Appendix A.

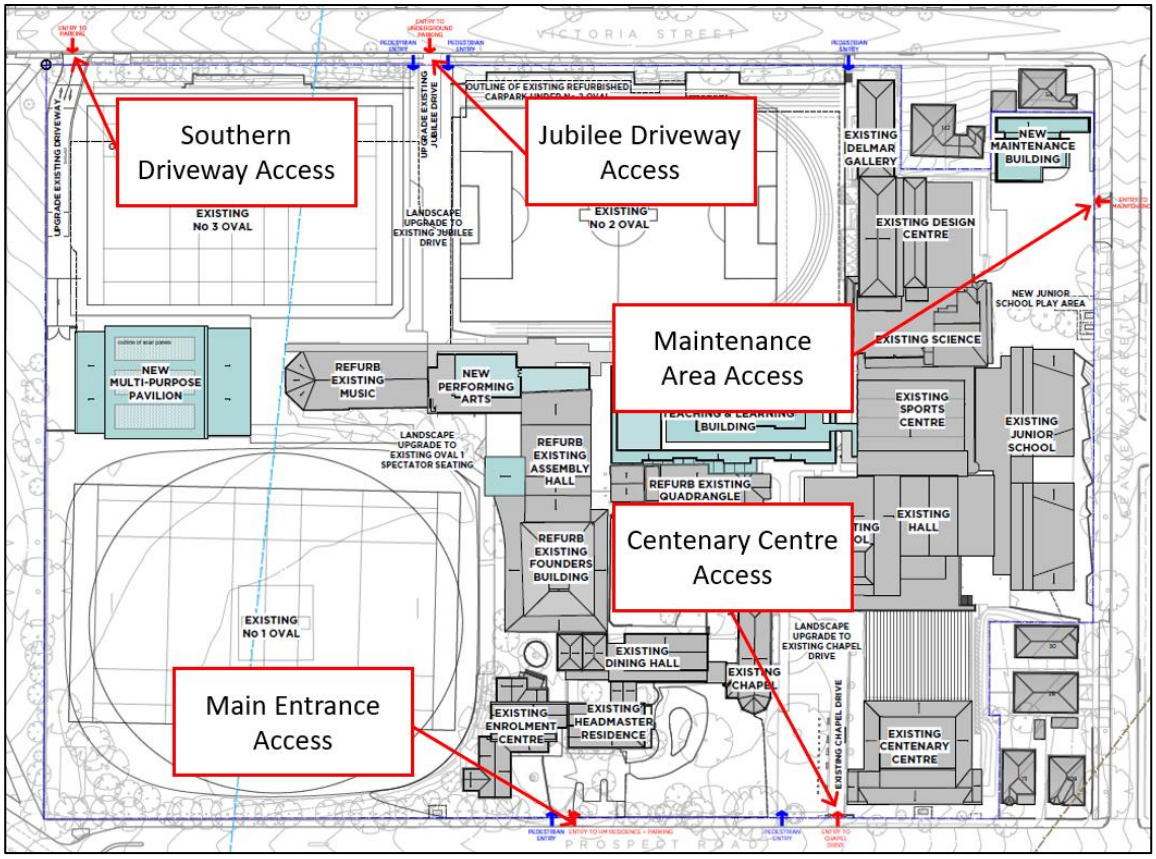


Figure 4-2 Proposed Vehicle Access Points

4.3 Bicycle Parking

Currently, less than 1% of staff and students ride to school. A very low amount of bike parking is provided. Six bicycle parks are provided for students and five are provided for staff. This limits the amount of staff and students that can safely store their bicycle. This is significantly less than recommended by Austroads Guidelines and the Ashfield Development Control Plan (DCP).

Table 2-2 shows that 78% of students live within 10 kms of the school. It is considered that cycling is a viable option for these students. There is significant opportunity for the number of students using this mode to increase.

A total of 37 bike parking spaces are proposed as detailed in Table 4-4. This amount of spaces is still less than recommended by the above guidelines and DCP, however due to the very low demand at present, it is considered appropriate for the initial development. The school should aim to increase the number of racks and encourage cycling as a mode of transport.

Table 4-4 Proposed bike parking provision

	Number	Rate	Bike Parks
Junior School	310	1 per 100 students	3
Senior School	1750	1 per 100 students	18
Staff	21	1 per 20 staff	16
Total			**37**

Bike parking facilities should be designed in accordance to Standards Australia AS2890.3 (Bicycle Parking Facilities) and should be provided in a well-lit, sheltered and secure location. The school should ensure that the shower facilities in the gym and aquatic centre are available for those that require use of an end of trip facility.

It is noted that cycling guidelines generally do not contain requirements to provide bicycle parking for students up to Year 4. Where appropriate, students should be encouraged to cycle to school from a young age. This will also assist in embedding in students the benefits of active living. For these students, adult supervision is required. Initiatives such as parent-run 'bike buses', where parents and younger students ride in a convoy together are an effective way of promoting cycling.

4.4 On-street Parking

An on-street parking study was undertaken for the area shown in Figure 4-3 on the 22 October 2019.

Figure 4-3 On-street Parking Study Area

The results of the parking study are presented in Table 4-5.

Table 4-5 Parking Study Results

Time	Local Roads (Capacity 449) (Green)		Old Canterbury Road (Capacity 113) (Blue)	
	No.	%	No.	%
6.00 – 7.00	195	43	22	19
7.00 – 8.00	196	44	23	20
8.00 – 9.00	208	46	23	20
9.00 – 10.00	198	44	25	22
10.00 – 11.00	212	47	21	19
11.00 – 12.00	220	49	20	18
12.00 – 13.00	210	47	22	19
13.00 – 14.00	214	48	21	19
14.00 – 15.00	211	47	18	16
15.00 – 16.00	207	46	24	21
16.00 – 17.00	227	51	29	26
17.00 – 18.00	256	57	29	26
18.00 – 19.00	217	48	17	15
19.00 – 20.00	210	47	20	18
20.00 – 21.00	213	47	21	19
21.00 – 22.00	185	41	16	14

It is noted that the parking study was undertaken whilst Year 12 students were in their exam period. Assuming a mode split of 5% for student drivers of a targeted student population of 2,100, a high estimate of the number of student cars that can be expected to be parked on-street is 105. Table 4-5 shows that this number can be accommodated on the local road network of the study area.

4.5 Maintenance & Delivery Vehicle Access

Two delivery and maintenance (including waste pick up) areas will be created to service the school.

The primary maintenance and delivery area will be at the southern end of the existing staff car park. Vehicles will access this area via the entrance near Yeo Park. Services vehicles will enter and exit the facility from Victoria Street in a forward direction. The location of the new maintenance and delivery area is shown in Figure 4-4.

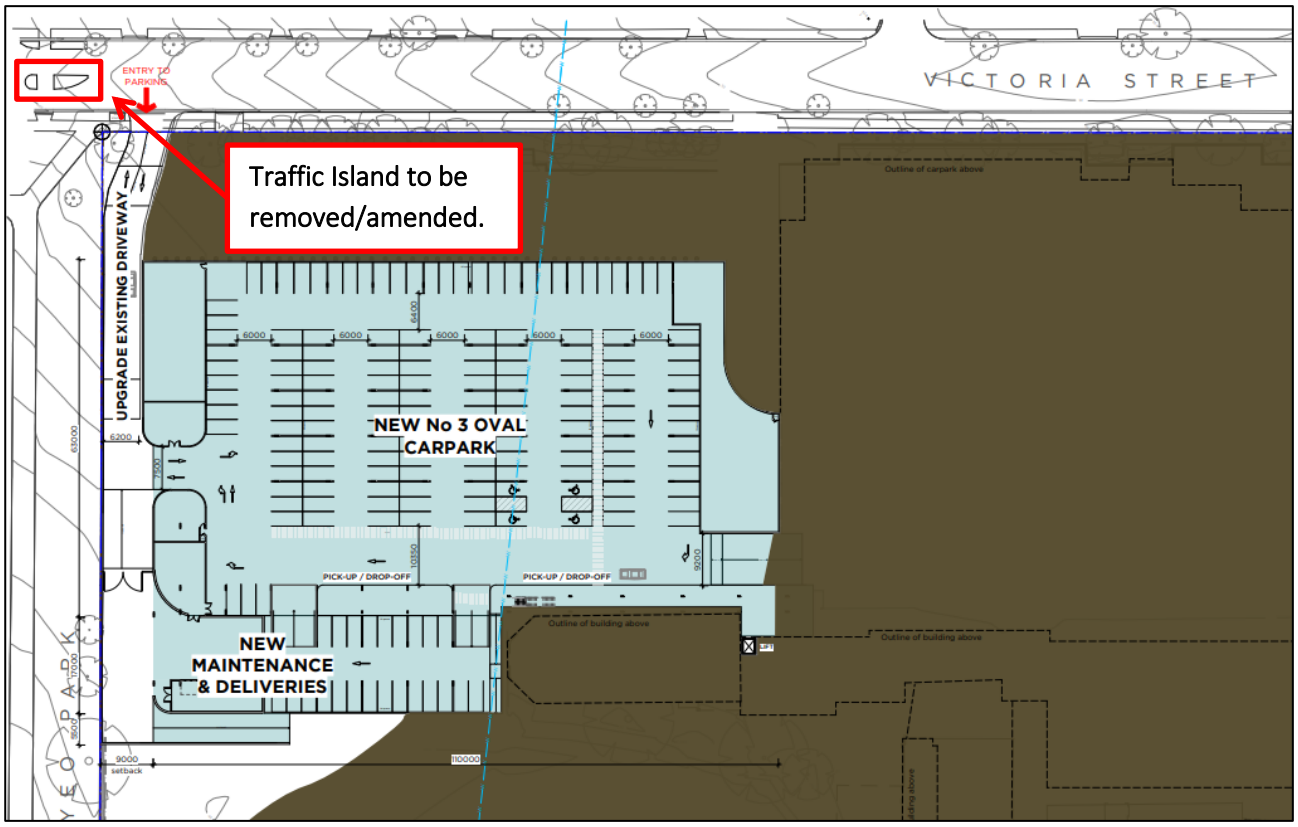


Figure 4-4 New Primary Maintenance & Delivery Area

In order for delivery vehicles to be able to use the new loading facility near Yeo Park the traffic island near the southern access will need to be removed. It is recommended that a painted island is installed to replace this facility. The left out only requirement will also need to be modified to permit delivery and service vehicles to turn right out of this driveway.

A secondary delivery and maintenance area will be created on Seaview Street, in the school owned properties of 48 and 50 Seaview Street. The location of these areas is shown in Figure 4-5.

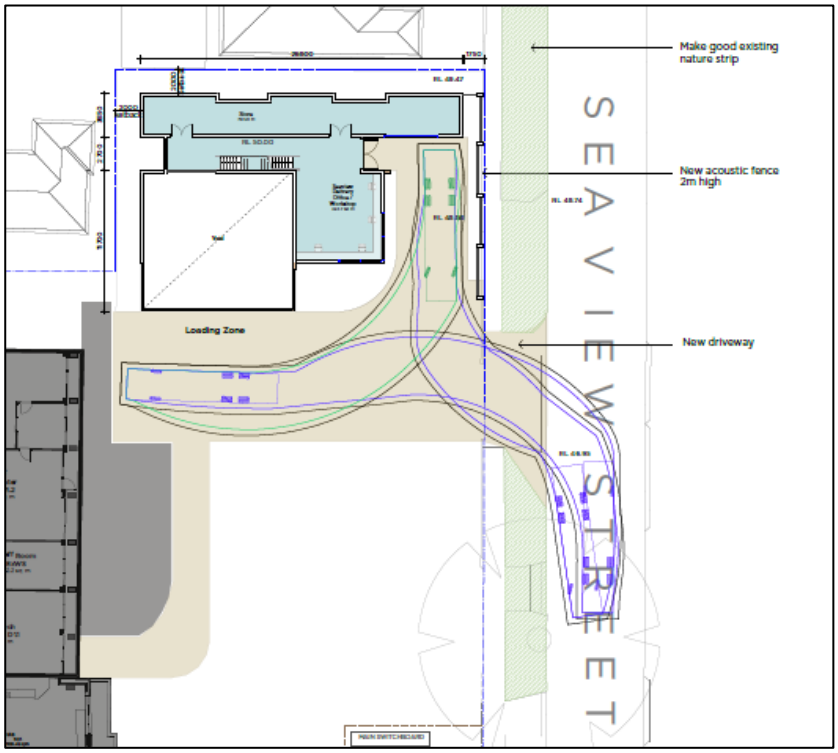


Figure 4-5 Seaview Street Maintenance Area

A swept analysis has been undertaken to confirm that delivery vehicles can appropriately access both facilities. This analysis is presented in Appendix A.

4.6 Emergency Vehicle Access

The fire brigade currently accesses the site through the main gates on Prospect Road. This is the closest point to the main Fire Indicator Panel (FIP) which is located near reception. Generally, firefighting vehicles are parked on Prospect Road and do not drive onto the school grounds. There is a secondary FIP at the rear of the Junior School. When access to the secondary FIP is required, a member of school staff will escort the fire brigade officer to the location. Access to the FIPs is provided by on-site security outside of school hours. These arrangements will not need to be amended as a result of the renewal project.

Ambulance access can be provided at several locations. All three sports ovals will have vehicle access that will provide for an ambulance to enter. Access can also be provided through both access points on Prospect Road and to the new loading dock off Victoria Street.

5 Green Travel Plan

A Green Travel Plan has been developed to facilitate a modal shift away from private vehicle use and towards active and sustainable transport. It is intended that this document addresses the requirements of a Green Travel Plan and a Workplace Travel Plan.

The plan is a collection of initiatives and actions to encourage travel behaviour change. The plan will provide students, staff and parents with information on sustainable transport and encourages them to make alternative transport choices than the use of a private vehicle. The implementation of the plan intends to reduce traffic congestion and parking problems.

The plan will contribute to a healthier and better quality of life for students and staff, and a reduction in air and noise pollution. The schools will benefit from more productive staff and students, cost savings and reduced demand for car parking.

The plan considers modal shift for both students and staff.

The Green Travel Plan is contained in Appendix D.

6 Traffic Impacts

6.1 Travel Modes

Table 6-1 presents a summary of the existing modes used by staff and students to travel to and from the school. This data was obtained from a survey undertaken in February 2020.

Table 6-1 Travel Mode Split

Mode of Travel	Student	Staff
Car (Passenger) - Pickup/Drop off	39%	2%
Car (Passenger) - With other student/staff driver	3%	1%
Car (Driver) - Park at School	5%	79%
Taxi/Uber	0%	0%
Light Rail	2%	1%
Train	7%	4%
Public Bus	9%	1%
Trinity Bus	28%	0%
Bicycle	0%	2%
Walk	7%	8%

6.2 Assessment of Existing and Future Traffic Conditions

The performance of the intersections has been assessed using the SIDRA Intersection Analysis Software. Performance criteria for intersections are based on the RTA (RMS) Guide to Traffic Generating Developments. A qualitative rating and its corresponding Level of Service (LoS) are applied to the average delay per vehicle as shown in Table 6-2.

Table 6-2 Level of Service for intersections with Sign Control

Level of Service (LoS)	Average Delay per Vehicle (seconds)	Description
A	Less than 10	Good operation
B	10 to 15	Acceptable delays and spare capacity
C	15 to 25	Satisfactory, but accident study required
D	25 to 35	Near capacity & accident study required
E	35 to 50	At capacity; requires other control mode
F	More than 50	At capacity; requires other control mode

Detailed SIDRA reports are provided in Appendix C.

6.3 Intersection Analysis – Main Road Intersections

The SEARs specifically required analysis of the following intersections:

1. Old Canterbury Road/Prospect Road;
2. Old Canterbury Road/Hurlstone Avenue;
3. Old Canterbury Road/Henson Street; and
4. Old Canterbury Road/James Street.

Refer Figure 6-1 for location of analysed intersections.

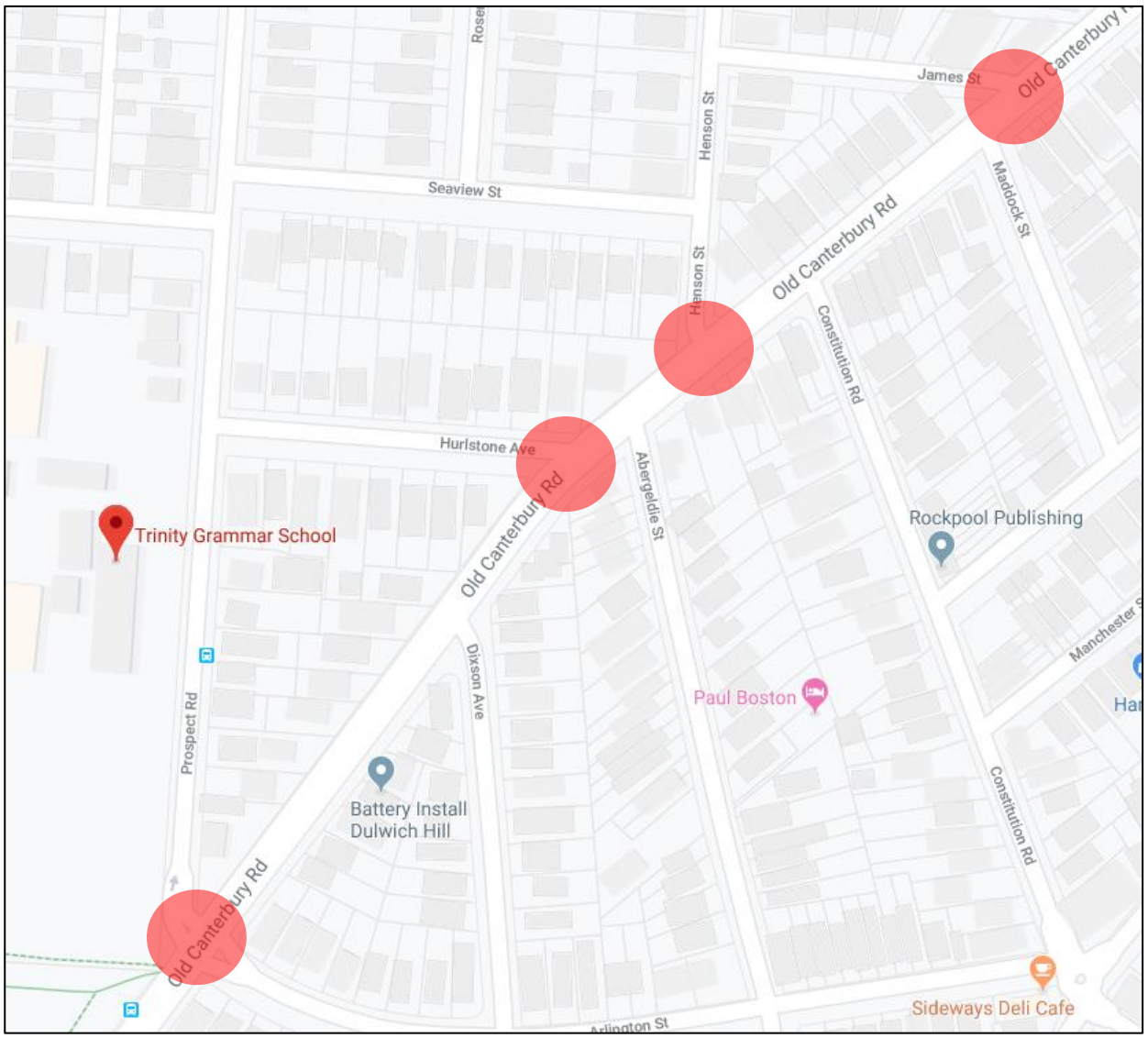


Figure 6-1 Location of Analysed Main Road Intersections

The peak hour traffic survey data for the analysed intersections is presented in Appendix B.

Traffic Surveys were conducted on Tuesday 4 February 2020.

6.3.1 Future Traffic Conditions

The future performance of these four intersections has been assessed using SIDRA Intersection Analysis Software.

The target student population for the school is 2,100 students (an increase of 445 students). Based on the current mode split for students, this is expected to generate an additional 196 vehicles trips in the peaks.

It is expected 321 (full time equivalent) staff will be required to service this student population (an increase of 44 staff). Based on the current mode split for staff, this is expected to generate an additional 36 vehicles trips in the peaks.

A combined total of 231 vehicles trips during the peaks are modelled for the future scenario.

Assumptions of the distribution of additional vehicle trips are presented in Figure 6-2.

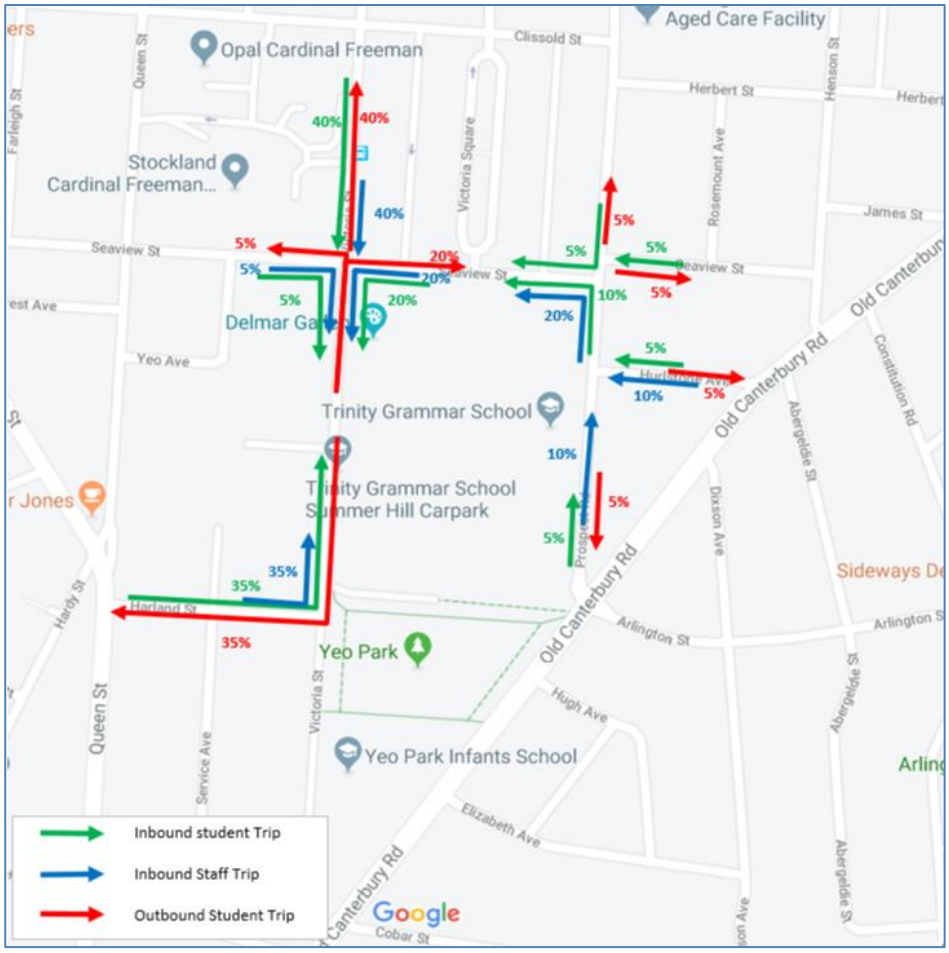


Figure 6-2 Assumed distribution of additional vehicles

6.3.2 Analysis of Old Canterbury Road/Prospect Road Intersection

The AM and PM peaks were found to be between 7.30 – 8.30 and 14.45 – 15.45 at the Old Canterbury Road/Prospect Road intersection.

Table 6-3 (AM) and Table 6-4 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-3 Summary of SIDRA Outputs for Old Canterbury Road/Prospect Road Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South East: Arlington Street	Left	0.03	6.2	A	0.03	6.3	A
North East: Old Canterbury Road	Left	0.10	5.5	A	0.11	5.5	A
	Through	0.52	2.9	A	0.53	3.2	A
	Right	0.52	21.1	C	0.53	21.5	C
North: Prospect Road	Left	2.55	>50.0	F	2.83	>50.0	F
	Right	2.55	>50.0	F	2.83	>50.0	F
South West: Old Canterbury Road	Left	0.91	5.5	A	0.09	5.5	A
	Through	0.46	0.1	A	0.46	0.1	A

The analysis of the current volumes indicates that turning out of Prospect Road during the AM peak can be difficult. The SIDRA analysis indicates that these movements can take longer than 50 seconds. The footage taken to obtain the counts has been reviewed and it was observed that vehicles turning right typically waited for 53 seconds during peak times and the longest a vehicle waited was 130 seconds. It was observed that vehicles turning left typically waited for 28 seconds during peak times and the longest a vehicle waited was 75 seconds.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

Table 6-4 Summary of SIDRA Outputs for Old Canterbury Road/Prospect Road Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South East: Arlington Street	Left	0.03	6.6	A	0.03	6.7	A
North East: Old Canterbury Road	Left	0.14	5.5	A	0.14	5.5	A
	Through	0.67	0.4	A	0.68	0.4	A
	Right	0.67	12.9	B	0.68	13.1	B
North: Prospect Road	Left	1.07	>50.0	F	1.27	>50.0	F
	Right	1.07	>50.0	F	1.27	>50.0	F
South West: Old Canterbury Road	Left	0.05	5.5	A	0.51	5.4	A
	Through	0.25	0.0	A	0.26	0.0	A

The analysis of the current volumes indicates that turning out of Prospect Road during the PM peak can be difficult. The SIDRA analysis indicates that these movements can take longer than 50 seconds. The footage taken to obtain the counts has been reviewed and it was observed that vehicles turning right typically waited for 38 seconds during peak times and the longest a vehicle waited was 170 seconds. It was observed that vehicles turning left typically waited for 14 seconds during peak times and the longest a vehicle waited was 90 seconds.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

6.3.3 Analysis of Old Canterbury Road/Hurlstone Avenue Intersection

The AM and PM peaks were found to be between 7.30 – 8.30 and 16.00 – 17.00 at the Old Canterbury Road/ Hurlstone Avenue intersection.

Table 6-5 (AM) and Table 6-6 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-5 Summary of SIDRA Outputs for Old Canterbury Road/Hurlstone Avenue Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	1.12	13.3	B	1.15	10.2	B
	Right	1.12	>50.0	F	1.15	>50.0	F
West: Hurlstone Avenue	Left	1.10	>50.0	F	1.15	>50.0	F
	Right	1.10	>50.0	F	1.15	>50.0	F
South West: Old Canterbury Road	Left	0.09	6.5	A	0.09	6.5	A
	Through	0.44	0.0	A	0.44	0.0	A

The analysis of the current volumes indicates that turning out of Hurlstone Avenue and turning right into Hurlstone Avenue during the AM peak can be difficult. The SIDRA analysis indicates that these movements can take longer than 50 seconds. The footage taken to obtain the counts has been reviewed and it was observed that vehicles turning right out of Hurlstone Avenue typically waited for 43 seconds during peak times and the longest a vehicle waited was 170 seconds. It was observed that vehicles turning left out of Hurlstone Avenue typically waited for 20 seconds during peak times and the longest a vehicle waited was 100 seconds. It was further observed that vehicles turning right into Hurlstone Avenue typically waited for 10 seconds during peak times and the longest a vehicle waited was 55 seconds.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

Table 6-6 Summary of SIDRA Outputs for Old Canterbury Road/Hurlstone Avenue Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	0.86	3.5	A	0.88	4.3	A
	Right	0.86	14.1	B	0.88	15.4	C
West: Hurlstone Avenue	Left	0.25	8.4	A	0.27	8.6	A
	Right	0.25	41.2	E	0.27	41.7	E
South West: Old Canterbury Road	Left	0.04	6.5	A	0.04	6.5	A
	Through	0.22	0.0	A	0.22	0.0	A

The analysis of the current volumes in the PM peak indicates that the current intersection configuration is providing a low level of service for vehicles turning right out of Hurlstone Avenue.

The analysis of the future volumes indicates that the current level of service is maintained for all movements except for the right turn Old Canterbury Road into Hurlstone Avenue. Under the future scenario, the right turn Old Canterbury Road into Hurlstone Avenue becomes level of service C, accordingly a review of accidents in the area has been carried out (Refer Section 6.5).

6.3.4 Analysis of Old Canterbury Road/Henson Street Intersection

The AM and PM peaks were found to be between 7.30 – 8.30 and 14.45 – 15.45 at the Old Canterbury Road/Henson Street intersection.

Table 6-7 (AM) and Table 6-8 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-7 Summary of SIDRA Outputs for Old Canterbury Road/Henson Street Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	1.21	39.8	E	1.21	39.8	E
	Right	1.21	>50.0	F	1.21	>50.0	F
North: Henson Street	Left	0.68	28.0	D	0.68	28.0	D
	Right	0.68	>50.0	F	0.68	>50.0	F
South West: Old Canterbury Road	Left	0.14	4.7	A	0.14	4.7	A
	Through	0.48	0.0	A	0.47	0.0	A

The analysis of the current volumes indicates that turning right out of Henson Street and right into Henson Street during the AM peak can be difficult. The SIDRA analysis indicates that these movements can take longer than 50 seconds. The footage taken to obtain the counts has been reviewed and it was observed that vehicles turning right out of Henson Street typically waited for 72 seconds during peak times and the longest a vehicle waited was 170 seconds. It was observed that vehicles turning right into Henson Street typically waited for 16 seconds during peak times and the longest a vehicle waited was 110 seconds.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

Table 6-8 Summary of SIDRA Outputs for Old Canterbury Road/Henson Street Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	0.90	4.4	A	0.90	4.4	A
	Right	0.90	17.1	C	0.90	17.1	C
North: Henson Street	Left	0.52	16.6	C	0.52	16.6	C
	Right	0.52	>50	F	0.52	>50	F
South West: Old Canterbury Road	Left	0.07	4.7	A	0.07	4.7	A
	Through	0.23	0.0	A	0.24	0.0	A

The analysis of the current volumes indicates that the current intersection configuration is providing a low level of service for vehicles turning right out of Henson Street during the PM peak period. The footage taken to obtain the counts has been reviewed and it was observed that vehicles turning right out of Henson Street typically waited for 40 seconds during peak times and the longest a vehicle waited was 150 seconds.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

6.3.5 Analysis of Old Canterbury Road/James Street Intersection

The AM and PM peaks were found to be between 7.30 – 8.30 and 16.00 – 17.00 at the Old Canterbury Road/ James Street intersection.

Table 6-9 (AM) and Table 6-10 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-9 Summary of SIDRA Outputs for Old Canterbury Road/James Street Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	0.42	1.6	A	0.42	1.6	A
	Right	0.42	11.5	B	0.42	11.5	B
West: James Street	Right	0.05	44.9	E	0.05	44.9	E
South West: Old Canterbury Road	Left	0.11	6.9	A	0.11	6.9	A
	Through	0.36	0.0	A	0.36	0.0	A

Table 6-10 Summary of SIDRA Outputs for Old Canterbury Road/James Street Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
North East: Old Canterbury Road	Through	0.66	0.2	A	0.66	0.2	A
	Right	0.66	6.9	A	0.66	6.9	A
West: James Street	Right	0.01	41.2	E	0.01	41.2	E
South West: Old Canterbury Road	Left	0.07	6.5	A	0.07	6.5	A
	Through	0.23	0.0	A	0.23	0.0	A

The analysis of the current volumes indicates that the current intersection configuration is providing a low level of service for vehicles turning right out of James Street in the AM and PM peak periods.

The analysis of the future volumes indicates that the current level of service is maintained for all movements.

6.4 Local Road Intersections

In addition to the intersections analysed in Section 6.3. The following intersections adjacent to the school were also analysed:

- Prospect Road/Seaview Street - East;
- Prospect Road/Seaview Street - West;
- Victoria Street/Seaview Street; and
- Victoria Street/Harland Street.

The method of assessment used to analyse these intersections was the same as detailed in Section 6.2. The additional trips were distributed as per Section 6.3.1.

The peak hour traffic survey data for the analysed intersections is presented in Appendix B.

The location of these intersections is show in Figure 6-3.

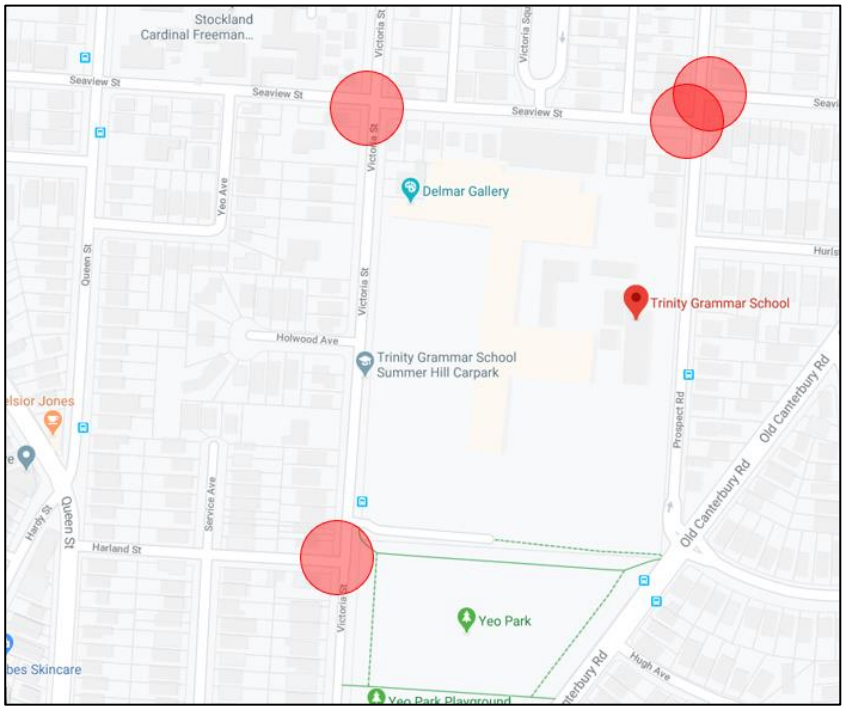


Figure 6-3 Local Road Intersections

6.4.1 Analysis of Prospect Road/Seaview Street – East Intersection

The AM and PM peaks were found to be between 7.45 – 8.45 and 15.30 – 16.30 at the Prospect Road/Seaview Street – East Intersection.

Table 6-11 (AM) and Table 6-12 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-11 Summary of SIDRA Outputs for Prospect Road/Seaview Street – East Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Prospect Road	Through	0.11	0.5	A	0.12	0.6	A
	Right	0.11	6.8	A	0.12	6.9	A
East: Seaview Street	Left	0.07	6.5	A	0.08	6.6	A
	Right	0.07	7.8	A	0.08	8.0	A
North: Prospect Road	Left	0.18	5.6	A	0.18	5.6	A
	Through	0.18	0.0	A	0.18	0.0	A

Table 6-12 Summary of SIDRA Outputs for Prospect Road/Seaview Street – East Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Prospect Road	Through	0.07	0.2	A	0.08	0.2	A
	Right	0.07	6.0	A	0.08	6.1	A
East: Seaview Street	Left	0.04	6.0	A	0.04	6.1	A
	Right	0.04	6.6	A	0.04	6.7	A
North: Prospect Road	Left	0.09	5.5	A	0.10	5.5	A
	Through	0.09	0.0	A	0.10	0.0	A

The analysis of the current volumes in both peaks indicates that the current intersection configuration is currently providing an adequate level of service and will continue to do once the school is fully developed.

6.4.2 Analysis of Prospect Road/Seaview Street – West Intersection

The AM and PM peaks were found to be between 7.45 – 8.45 and 15.30 – 16.30 at the Prospect Road/Seaview Street – West Intersection.

Table 6-13 (AM) and Table 6-14 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-13 Summary of SIDRA Outputs for Prospect Road/Seaview Street – West Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Prospect Road	Left	0.12	5.6	A	0.13	5.6	A
	Through	0.12	0.0	A	0.13	0.0	A
North: Prospect Road	Through	0.19	0.3	A	0.21	0.4	A
	Right	0.19	6.3	A	0.21	6.5	A
West: Seaview Street	Left	0.16	6.0	A	0.20	6.0	A
	Right	0.16	8.2	A	0.20	8.5	A

Table 6-14 Summary of SIDRA Outputs for Prospect Road/Seaview Street – West Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Prospect Road	Left	0.08	5.7	A	0.09	5.6	A
	Through	0.08	0.0	A	0.09	0.0	A
North: Prospect Road	Through	0.11	0.2	A	0.12	0.3	A
	Right	0.11	5.9	A	0.12	6.0	A
West: Seaview Street	Left	0.08	5.8	A	0.12	5.8	A
	Right	0.08	6.9	A	0.12	7.0	A

The analysis of the current volumes in both peaks indicates that the current intersection configuration is currently providing an adequate level of service and will continue to do once the school is fully developed.

6.4.3 Analysis of Victoria Street/Seaview Street Intersection

The AM and PM peaks were found to be between 7.45 – 8.45 and 15.30 – 16.30 at the Victoria Street/Seaview Street Intersection.

Table 6-15 (AM) and Table 6-16 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-15 Summary of SIDRA Outputs for Victoria Street/Seaview Street Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Victoria Street	Left	0.12	6.9	A	0.20	6.9	A
	Through	0.12	0.6	A	0.20	0.6	A
	Right	0.12	7.0	A	0.20	7.0	A
East: Seaview Street	Left	0.16	9.8	A	0.25	9.8	A
	Through	0.16	13.3	A	0.25	13.5	A
	Right	0.16	16.9	A	0.25	17.1	A
North: Victoria Street	Left	0.15	6.1	A	0.20	6.1	A
	Through	0.15	0.1	A	0.20	0.1	A
	Right	0.15	7.4	A	0.20	7.4	A
West: Seaview Street	Left	0.20	10.0	A	0.32	10.1	A
	Through	0.20	14.2	A	0.32	14.4	A
	Right	0.20	17.0	A	0.32	17.3	A

Table 6-16 Summary of SIDRA Outputs for Victoria Street/Seaview Street Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Victoria Street	Left	0.09	6.1	A	0.18	6.5	A
	Through	0.09	0.2	A	0.18	0.5	A
	Right	0.09	6.2	A	0.18	6.6	A
East: Seaview Street	Left	0.13	8.8	A	0.20	9.2	A
	Through	0.13	9.8	A	0.20	12.2	A
	Right	0.13	13.3	A	0.20	18.3	B
North: Victoria Street	Left	0.12	5.8	A	0.16	6.0	A
	Through	0.12	0.1	A	0.16	0.1	A
	Right	0.12	5.9	A	0.16	6.3	A
West: Seaview Street	Left	0.09	8.5	A	0.15	8.9	A
	Through	0.09	9.8	A	0.15	11.9	A
	Right	0.09	10.7	A	0.15	14.2	A

The analysis of the current volumes in both peaks indicates that the current intersection configuration is currently providing an adequate level of service and will continue to do once the school is fully developed.

6.4.4 Analysis of Victoria Street/Harland Street Intersection

The AM and PM peaks were found to be between 7.45 – 8.45 and 15.15 – 16.15 at the Victoria Street/Harland Street Intersection.

Table 6-17 (AM) and Table 6-18 (PM) present a summary of the SIDRA results for the current and future volumes applied to the existing intersection configuration.

Table 6-17 Summary of SIDRA Outputs for Victoria Street/Harland Street Intersection – AM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Victoria Street	Left	0.03	5.5	A	0.03	5.5	A
	Through	0.03	0.0	A	0.03	0.0	A
North: Victoria Street	Through	0.17	0.2	A	0.21	0.2	A
	Right	0.17	5.7	A	0.21	5.7	A
West: Harland Street	Left	0.15	5.7	A	0.20	5.7	A
	Right	0.15	7.1	A	0.20	7.7	A

Table 6-18 Summary of SIDRA Outputs for Victoria Street/Harland Street Intersection – PM Peak

Approach	Movement	Current			Future		
		Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)	Degree of Saturation (%)	Average Delay (sec)	Level of Service (LoS)
South: Victoria Street	Left	0.04	5.5	A	0.04	5.5	A
	Through	0.04	0.0	A	0.04	0.0	A
North: Victoria Street	Through	0.16	0.2	A	0.21	0.2	A
	Right	0.16	5.7	A	0.21	5.7	A
West: Harland Street	Left	0.07	5.7	A	0.12	5.7	A
	Right	0.07	6.8	A	0.12	7.3	A

The analysis of the current volumes in both peaks indicates that the current intersection configuration is currently providing an adequate level of service and will continue to do once the school is fully developed.

6.5 Crash History

A review of the crashes in streets surrounding the school has been undertaken. The data was obtained from the Centre for Road Safety and is for the 5-year period between 2014 and 2018. The details of the crashes is presented in Table 6-19 and the location of crashes is shown Figure 6-4.

Table 6-19 Crash Details

No.	Year	Severity	Crash Description	Location	Light	No. injury
1	2015	Non-casualty (towaway)	Left off road into object	Intersection	Dark	0
2	2018	Minor/Other injury	Cross traffic	Intersection	Daylight	1
3	2016	Non-casualty (towaway)	Left off road into object	T-Junction	Daylight	0
4	2014	Non-casualty (towaway)	Rear end	2-way undivided	Dusk	0
5	2014	Non-casualty (towaway)	Right near	Intersection	Daylight	0

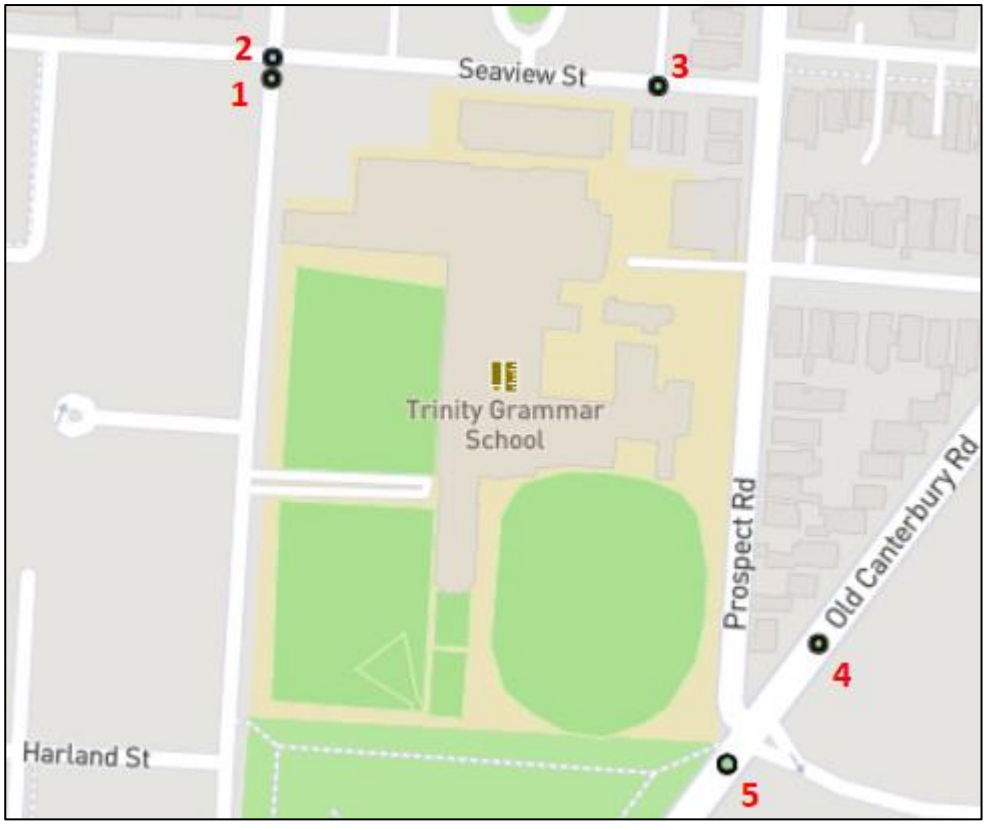


Figure 6-4 Crash locations

A review of the crash history is summarised below:

- The data does not demonstrate any discernible trends or patterns;

- There were two crashes at the intersection of Seaview Street and Victoria Street. They don't appear to be similar.
- Only one of the crashes resulted in a minor injury, none of the crashes resulted in a moderate injury, a serious injury or a fatality; and
- None of the crashes involved a pedestrian.

7 Construction Traffic Management Plan Framework

7.1 Overview

Each contractor appointed to undertake works for the renewal project will be required to prepare a Construction Traffic Management Plan (CTMP). All CTMPs prepared for works relating to this project shall be prepared in accordance with the Framework outlined in this section of the report.

7.2 Construction Staging

It is proposed that construction for the project is staged. The overall Project Manager shall consider traffic impacts when developing the Construction Management Plan. The project should be staged in a way that the impacts on the surrounding traffic and transport networks are minimised. Undertaking multiple construction activities that create traffic or transport conflicts must be avoided. Works shall be staged so that construction activities that generate significant traffic impacts do not occur at the same time.

7.3 Construction Traffic

It is anticipated that a variety of construction vehicles will be required to access the site for the duration of the project including articulated vehicles, heavy rigid vehicles, concrete trucks and truck and dogs.

Where it is expected that use of local roads will be required for heavy vehicle movements, Contractors must demonstrate that the local road network is suitable to facilitate these movements. Swept path analysis should be undertaken as required.

The following measures shall be implemented to ensure safety of the public and construction workers:

- All heavy vehicle movements shall be from the point access via the shortest appropriate route to the state road network and vice versa;
- Contractors shall restrict deliveries, including plant deliveries to outside of peak student pick-up and drop-off times;
- All heavy vehicles shall enter and exit in a forward direction;
- Construction vehicles shall not queue on public road network prior to the commencement of works;
- Where traffic controllers are used to facilitate heavy vehicle movements, priority shall be given to the public over construction vehicles;
- Truck loads shall be covered during transportation to or from the site;
- Loading and unloading should only within work sites and approved on-street Work Zones;
- Deliveries shall be coordinated to minimise the amount of construction vehicles on site at any one time;
- Neighbouring properties should be notified of construction works, timing and significant events; and

- Contractors shall repair and clean up any damage to the road network resulting from construction vehicle associated with the works.

7.4 Parking

Contractors shall provide parking within site compounds for construction vehicles, where possible.

Contractors shall encourage workers to travel to and from the site via active and sustainable transport to minimise to minimise single occupancy vehicle usage. Contractors shall provide information to workers on nearby public transport and walking and cycling facilities. Car-pooling amongst workers should also be promoted.

7.5 Work specific CTMPs

Contractors shall prepare CTMPs for their component of the project. As a minimum, a CTMP should include:

- A description of the works being undertaken;
- Details of the types of construction vehicles to be used and expected volumes;
- A Haulage Route Plan;
- Traffic control plans;
- Details of on-site car parking and access arrangements for construction vehicles, construction workers to and from the site, emergency vehicles and service vehicles;
- Initiatives to encourage construction workers to use active and sustainable transport;
- An assessment of the cumulative impacts associated with other nearby construction activities;
- An assessment of road safety at key locations subject to heavy vehicle construction traffic movements and high pedestrian activity;
- A construction program;
- Details of anticipated peak hour and daily construction vehicle movements to and from the site; and
- Details of temporary cycling and pedestrian access during construction.

If requested, CTMPs shall be reviewed and approved by Council and RMS.

7.6 Driver Code of Conduct

Drivers of construction vehicles for the project shall adhere to the following code of conduct:

- Queuing or marshalling on public roads is not permitted;
- All vehicles must enter and exit the site in a forward direction;
- Construction vehicles shall give way to pedestrians;
- Only approved routes are to be used; and
- Deliveries to be made within approved construction hours.

8 Summary

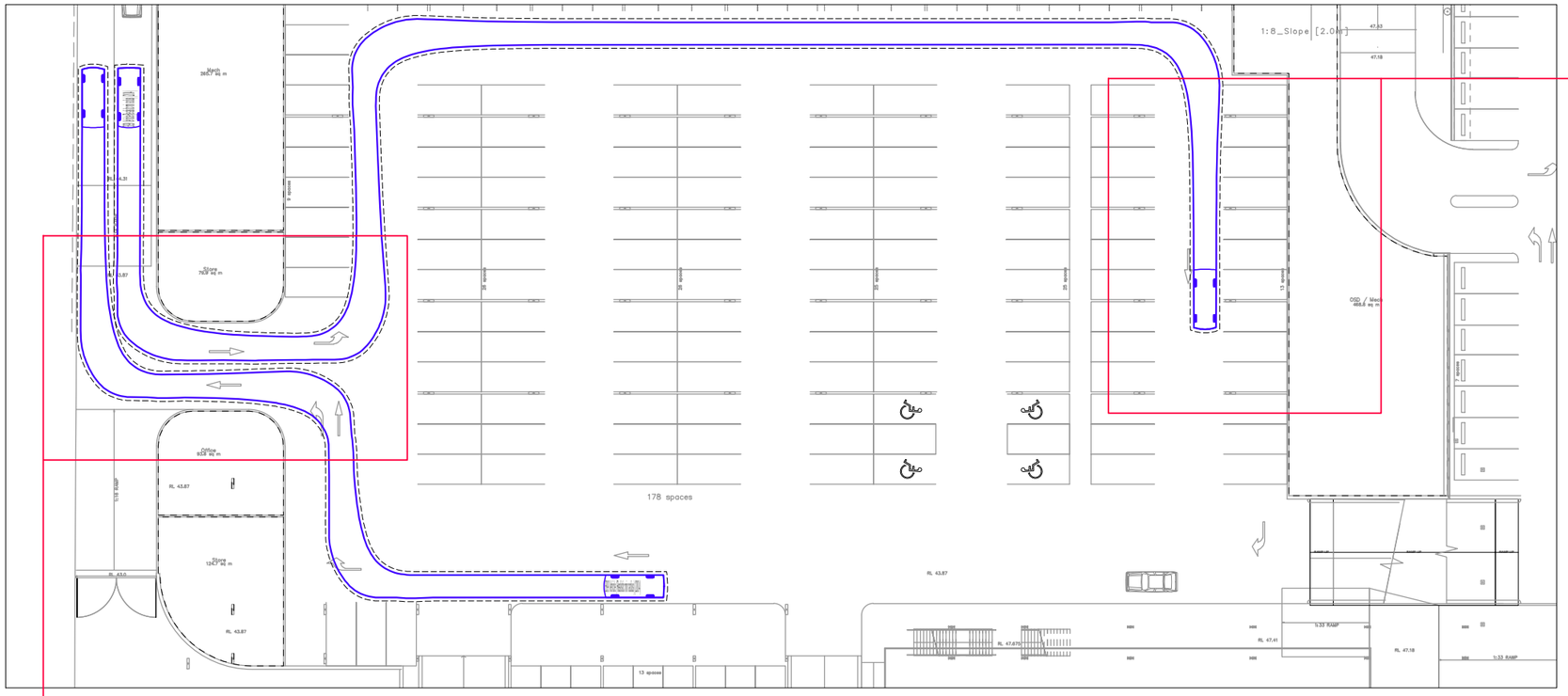
This Traffic and Accessibility Assessment has been carried out for the proposed Trinity Grammar School Renewal Project. When completed, the school will be capable of accommodating a student population of 2,100 students. The project will deliver significant upgrades, improving the facilities and ensuring the school can contribute to addressing the educational needs of the region.

The assessment concludes that:

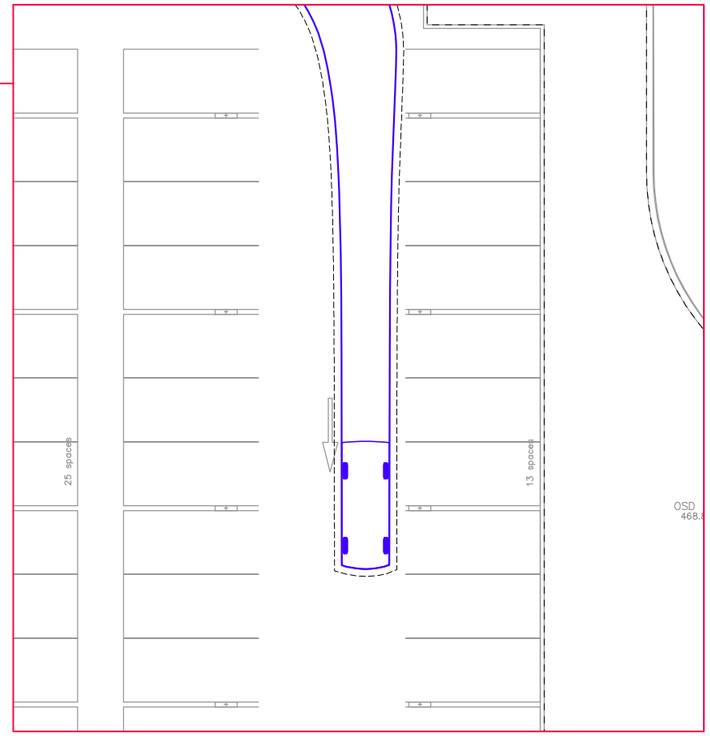
- The revised car park layout will improve the operation of the pickup and drop-off functions. Improving this operation will minimise impacts on the local road network.
- The school has significant opportunity to increase the number of trips to and from school using active and sustainable transport modes.
- The Level of Service of movements at nearby intersections does not decrease as a result of the project.

Appendix A Swept Path Analysis

1. Revised Car Park Layout (Southern Component)
2. Revised Car Park Layout (Northern Component)
3. Loading Bay Manoeuvres SRV
4. Loading Bay Manoeuvres MRV
5. Loading Bay Manoeuvres HRV
6. Loading Bay Driveway Entrance/Exit SRV
7. Loading Bay Driveway Entrance/Exit MRV
8. Loading Bay Driveway Entrance/Exit HRV
9. Seaview Street Maintenance Area



B99 - FULL SITE CIRCULATION (SCALE 1:500)



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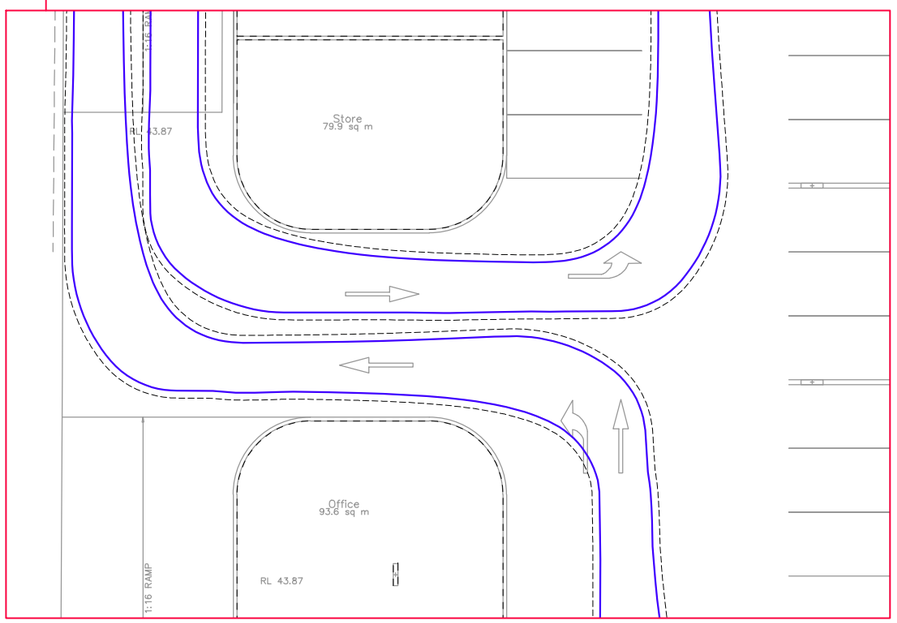

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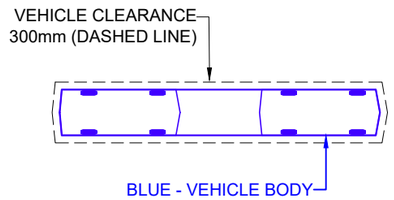

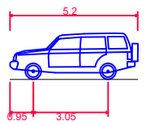

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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TRINITY GRAMMAR SCHOOL

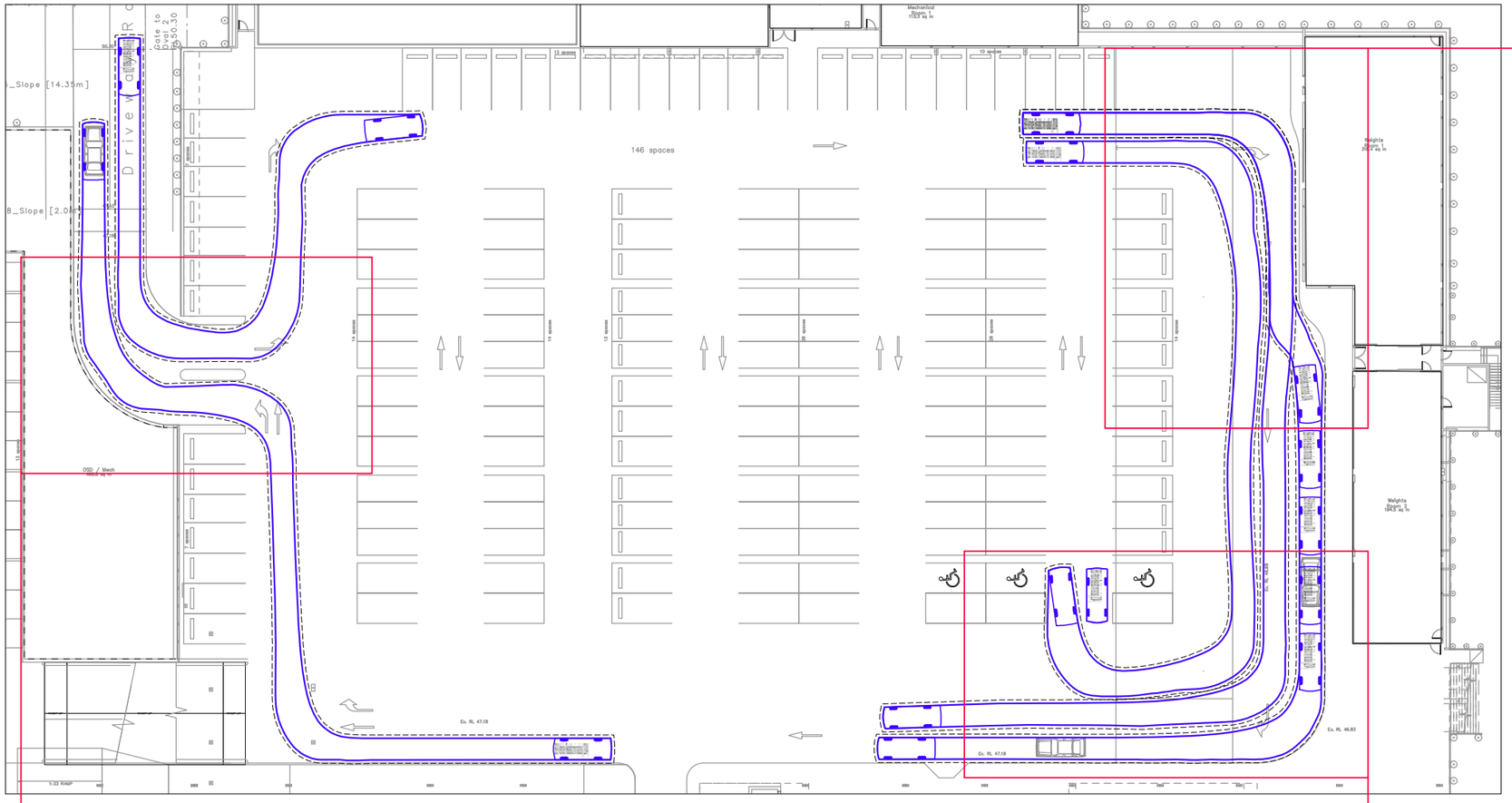
SWEPT PATH MOVEMENTS - CAR PARK OPTION 2 - OVAL
DESIGN VEHICLE - B99

TTM REFERENCE
19SYT0056 - SK01A

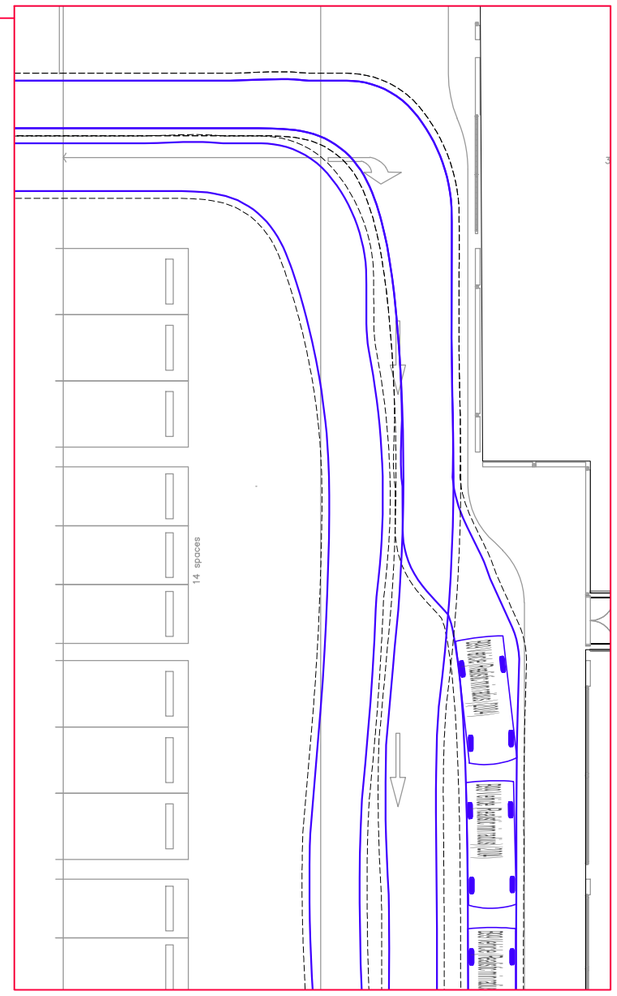
DRAWN LD CHECKED JK

DATE
10 Jan 2020

PRELIMINARY ADVICE ONLY
10 January 2020



B99 - FULL SITE CIRCULATION (SCALE 1:500)



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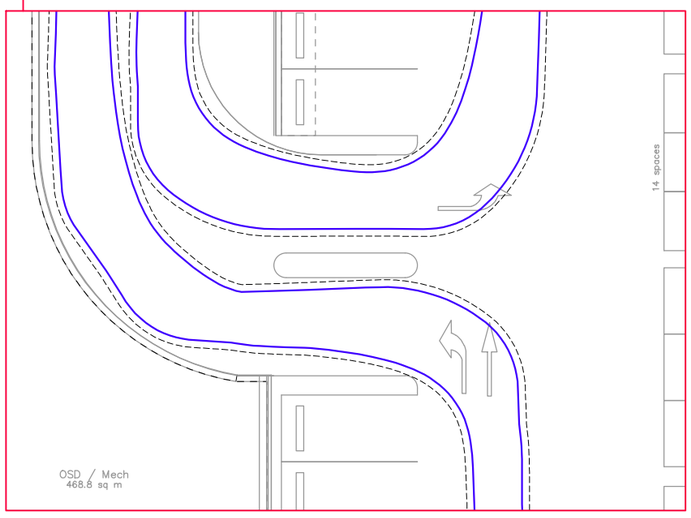

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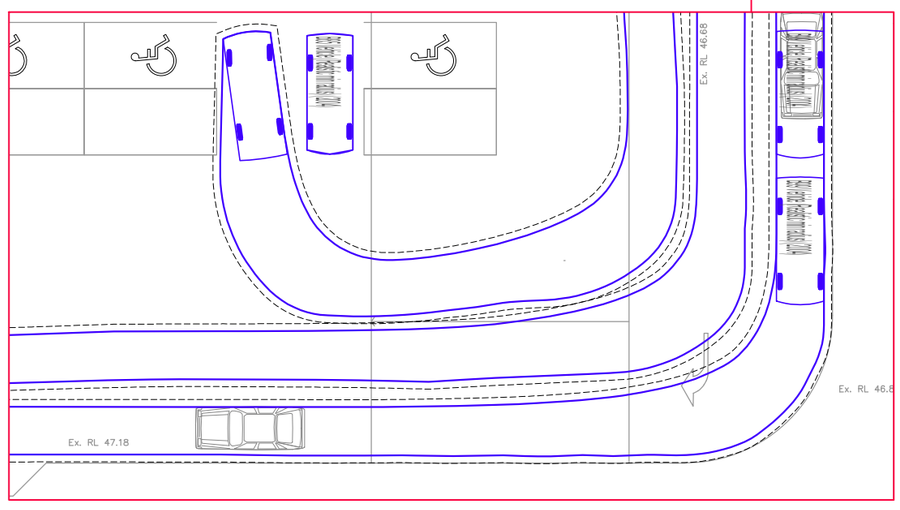

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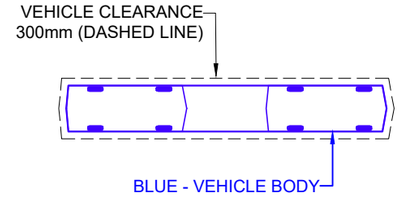

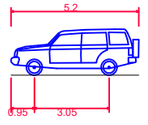

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
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Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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TRINITY GRAMMAR SCHOOL

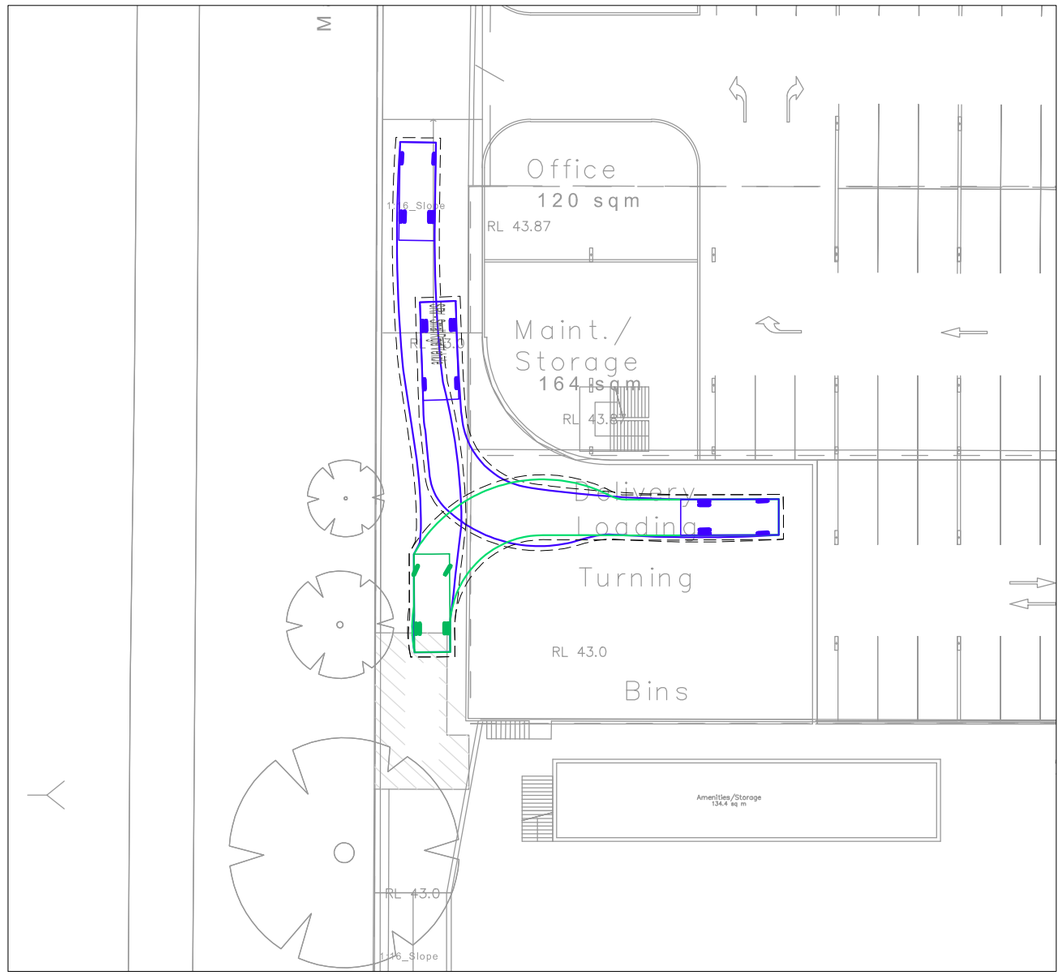
SWEPT PATH MOVEMENTS - CAR PARK OPTION 2 - OVAL
DESIGN VEHICLE - B99

TTM REFERENCE
19SYT0056 - SK02A

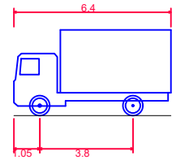
DRAWN LD
CHECKED JK

DATE
10 Jan 2020

PRELIMINARY ADVICE ONLY
10 January 2020



SRV ENTRY / EXIT MANOEUVRE
(FORWARD IN)



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m

PRELIMINARY ADVICE ONLY
11 November 2019

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
C	11-11-19	DRAWING LAYOUT AMENDED	ST	JK	JK
B	09-10-19	BASE LAYOUT UPDATED	ST	JK	MF
A	28-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT
BLOOMPARK CONSULTING

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PROJECT
TRINITY GRAMMER SCHOOL

DRAWING TITLE
LOADING BAY MANOEUVRE
SRV DESIGN VEHICLE

PROJECT NUMBER 19SYT0056	ORIGINAL SIZE A3
DRAWING NUMBER 19SYT0056-18	REVISION C
DATE 11 Nov 2019	SHEET 1 OF 1

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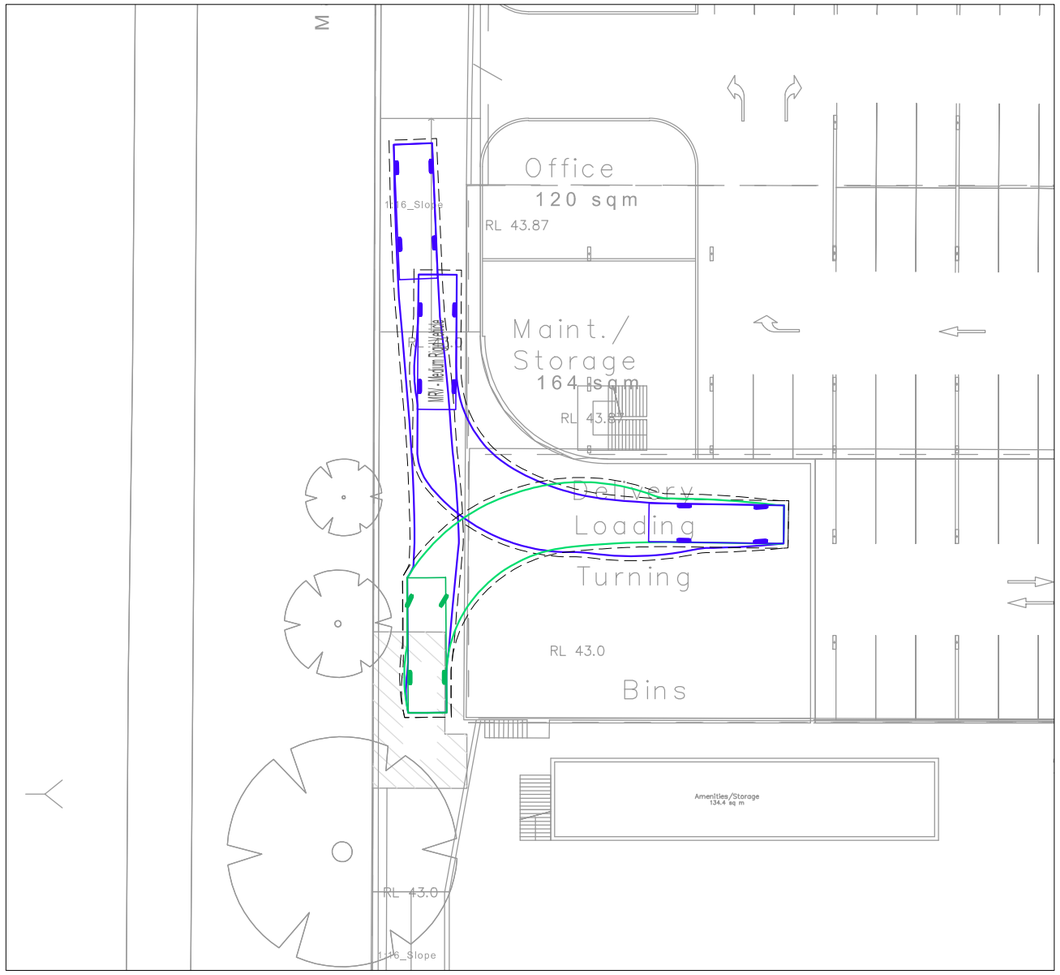
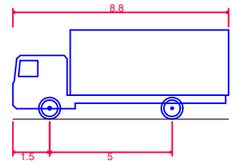


MRV ENTRY / EXIT MANOEUVRE
(FORWARD IN)



MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

PRELIMINARY
ADVICE ONLY
11 November 2019

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
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B	09-10-19	BASE LAYOUT UPDATED	ST	JK	MF
A	28-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT
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PROJECT
TRINITY GRAMMER SCHOOL

DRAWING TITLE
LOADING BAY MANOEUVRE
HMRV DESIGN VEHICLE

PROJECT NUMBER	19SYT0056
ORIGINAL SIZE	A3
DRAWING NUMBER	19SYT0056-17
REVISION	C
DATE	11 Nov 2019
SHEET	1 OF 1

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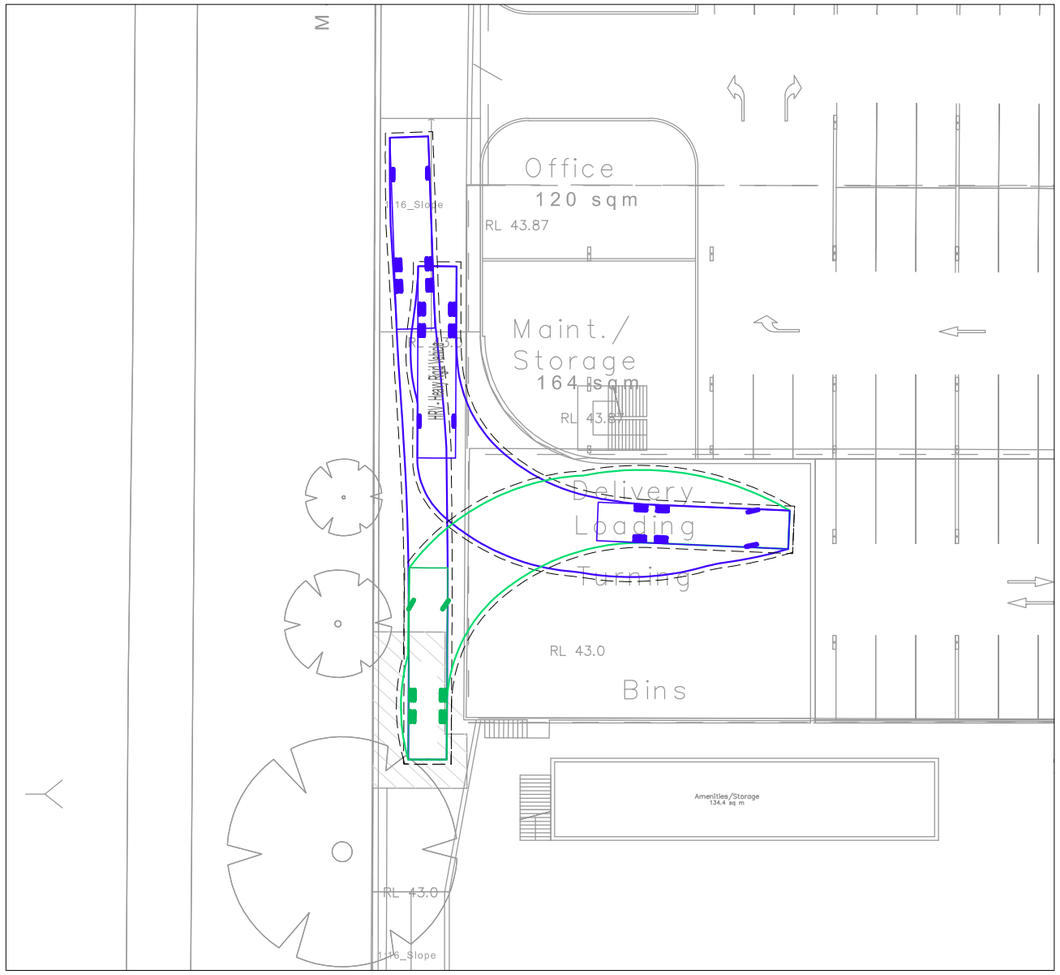

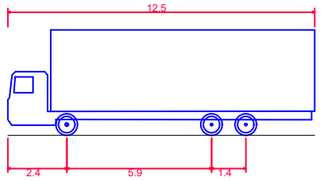

HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

HRV (12.5) ENTRY / EXIT MANOEUVRE (FORWARD IN)

PRELIMINARY ADVICE ONLY

11 November 2019

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
C	11-11-19	DRAWING LAYOUT AMENDED	ST	JK	JK
B	09-10-19	BASE LAYOUT UPDATED	ST	JK	MF
A	28-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT
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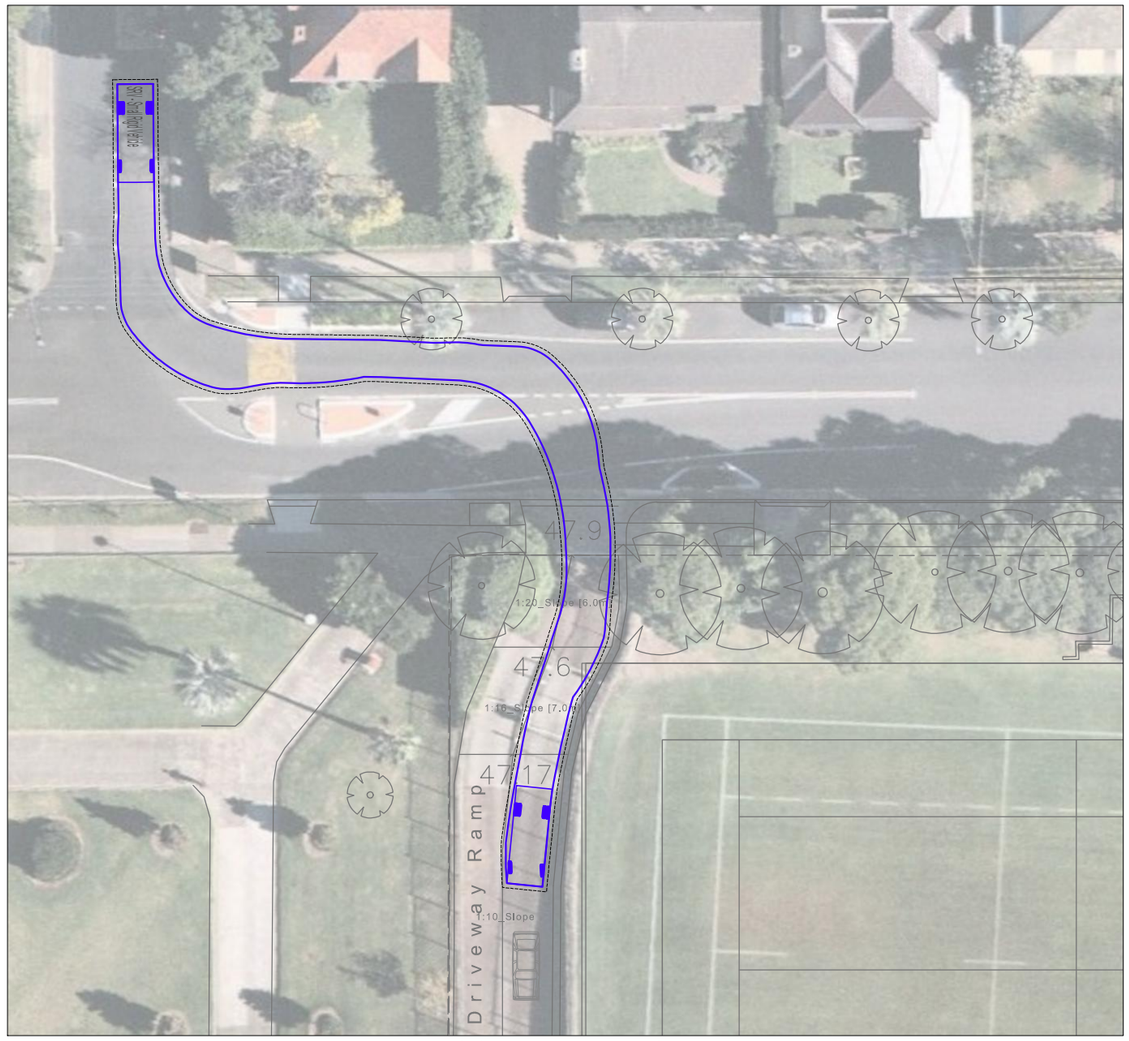
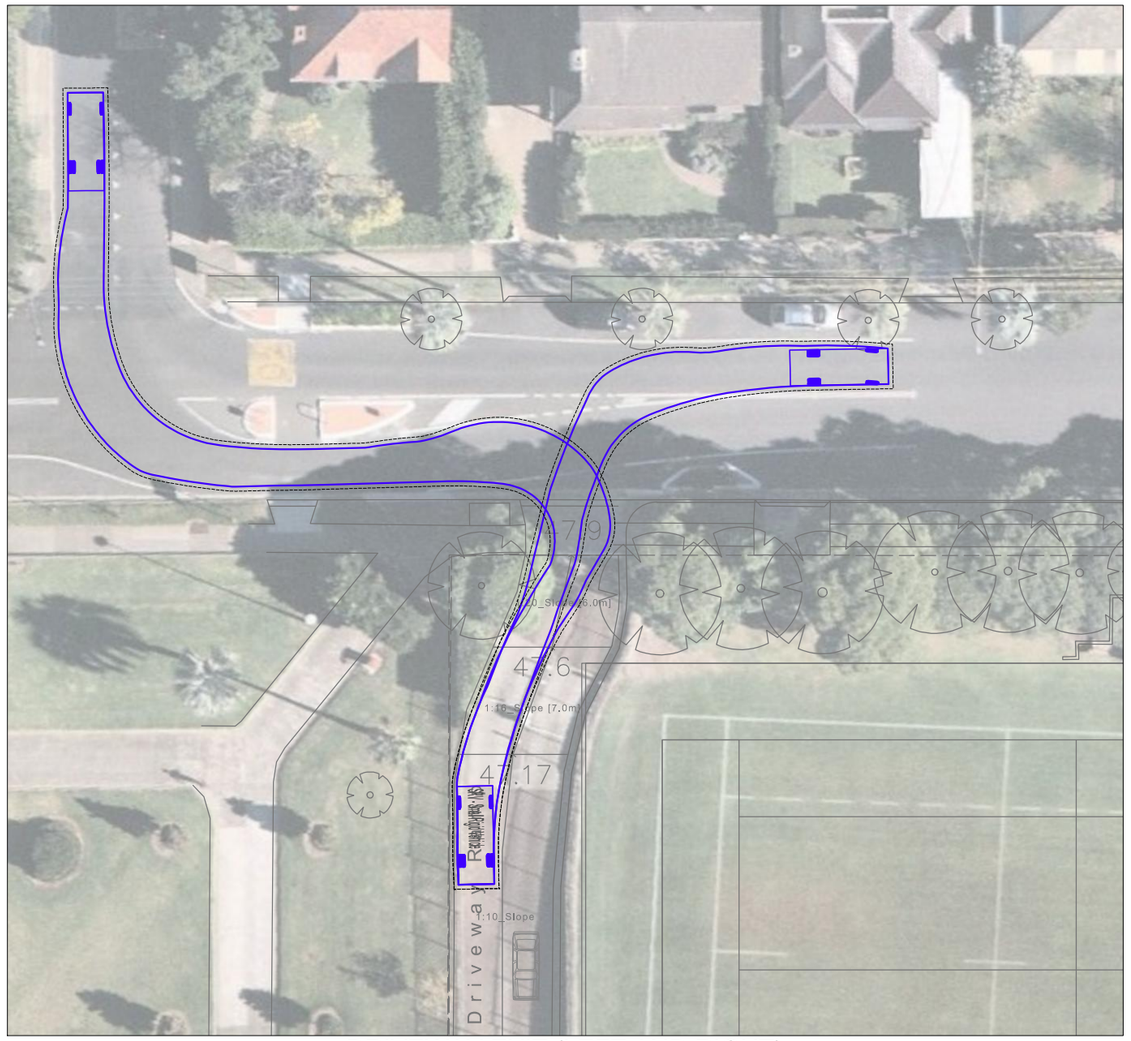
PROJECT
TRINITY GRAMMER SCHOOL

DRAWING TITLE
LOADING BAY MANOEUVRE
HRV (12.5m)DESIGN VEHICLE

PROJECT NUMBER	19SYT0056
ORIGINAL SIZE	A3
DRAWING NUMBER	19SYT0056-16
REVISION	C
DATE	11 Nov 2019
SHEET	1 OF 1



DRIVEWAY ENTRY



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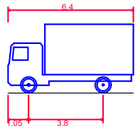

SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	21-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
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PROJECT
TRINITY GRAMMAR SCHOOL

DRAWING TITLE
ENTRY / EXIT DELIVERY DRIVEWAY MANOEUVRES
DESIGN VEHICLE - SRV

19SYT0056	A3
DRAWING NUMBER 19SYT0056-14	REVISION A
DATE 21 Aug 2019	SHEET 1 OF 1

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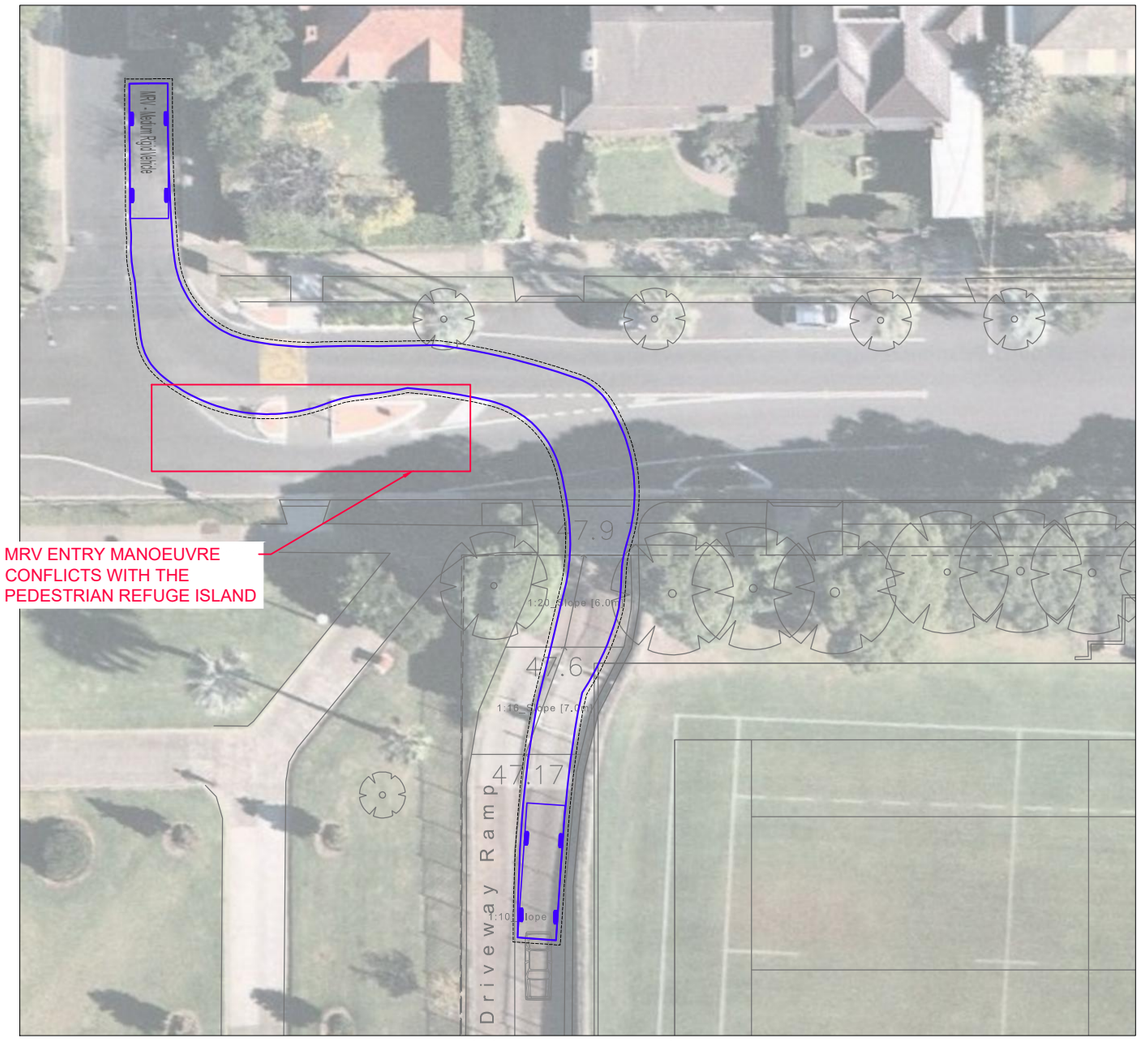
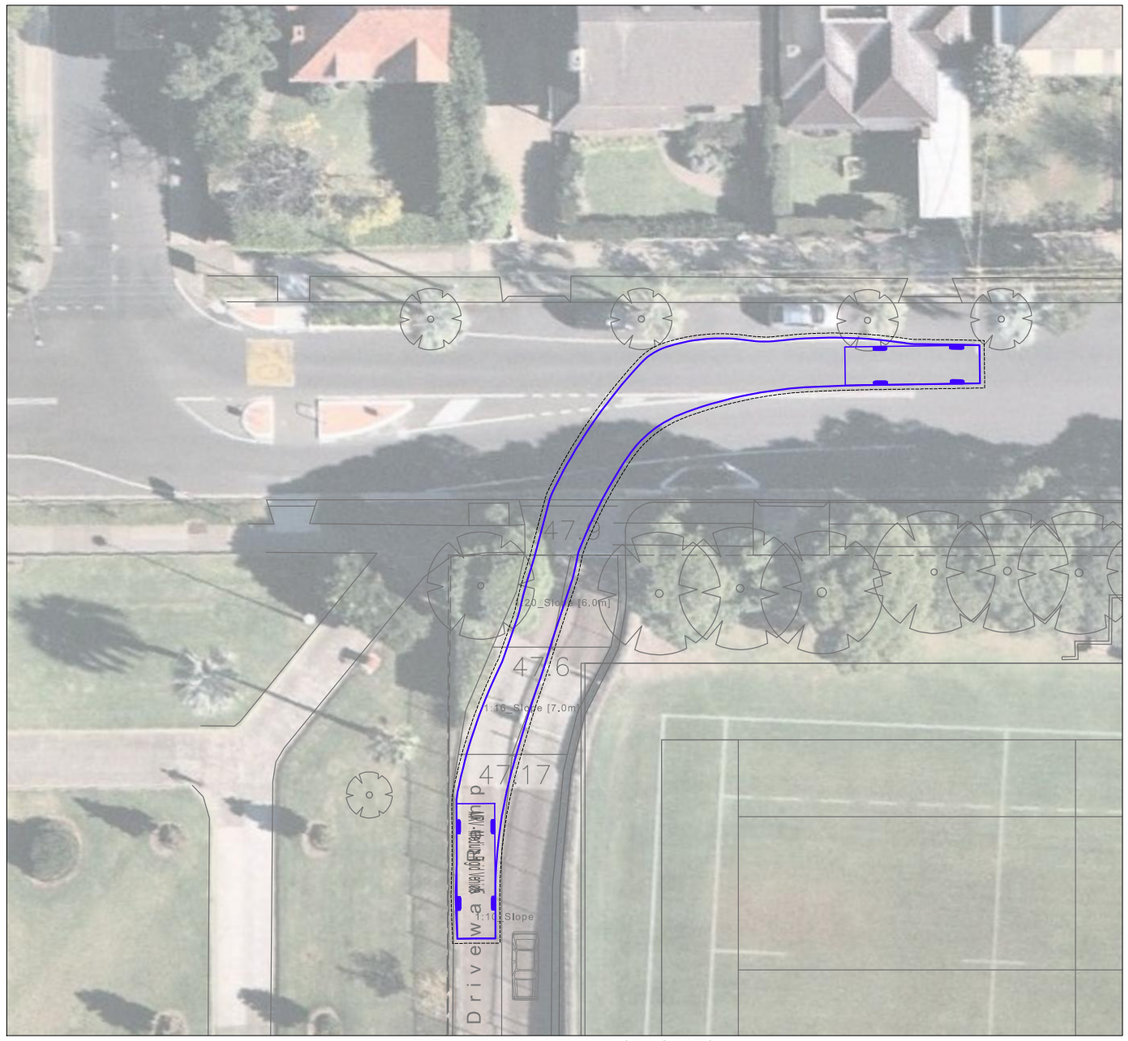
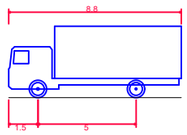


DRIVEWAY ENTRY



DRIVEWAY EXIT (RIGHT)



MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	11-11-19	DRAWING LAYOUT AMENDED	ST	JK	JK
A	21-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT
BLOOMPARK CONSULTING

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 5, Suite 501, 174 Pacific Highway
Greenwich NSW 2065
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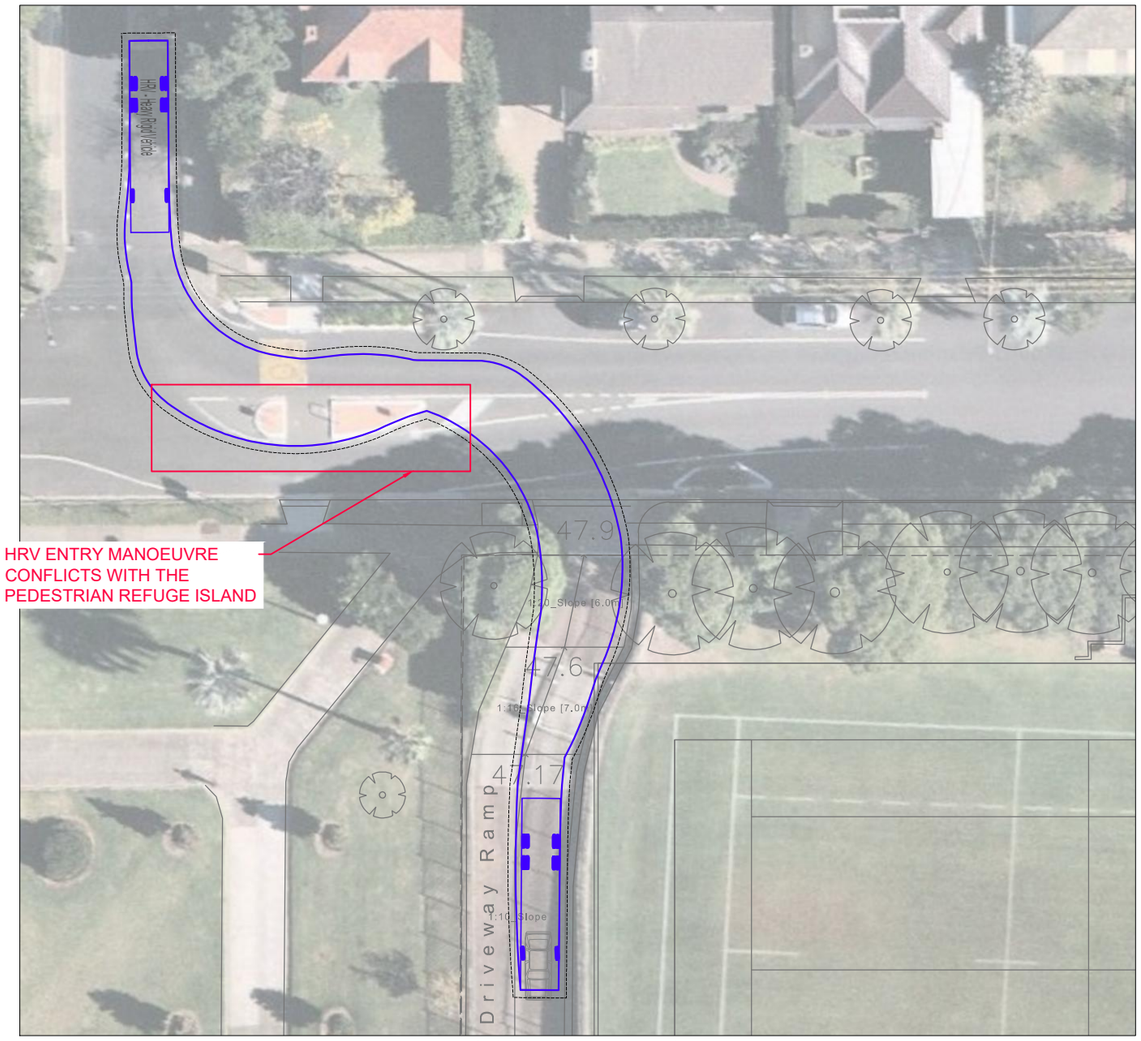
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT
TRINITY GRAMMAR SCHOOL

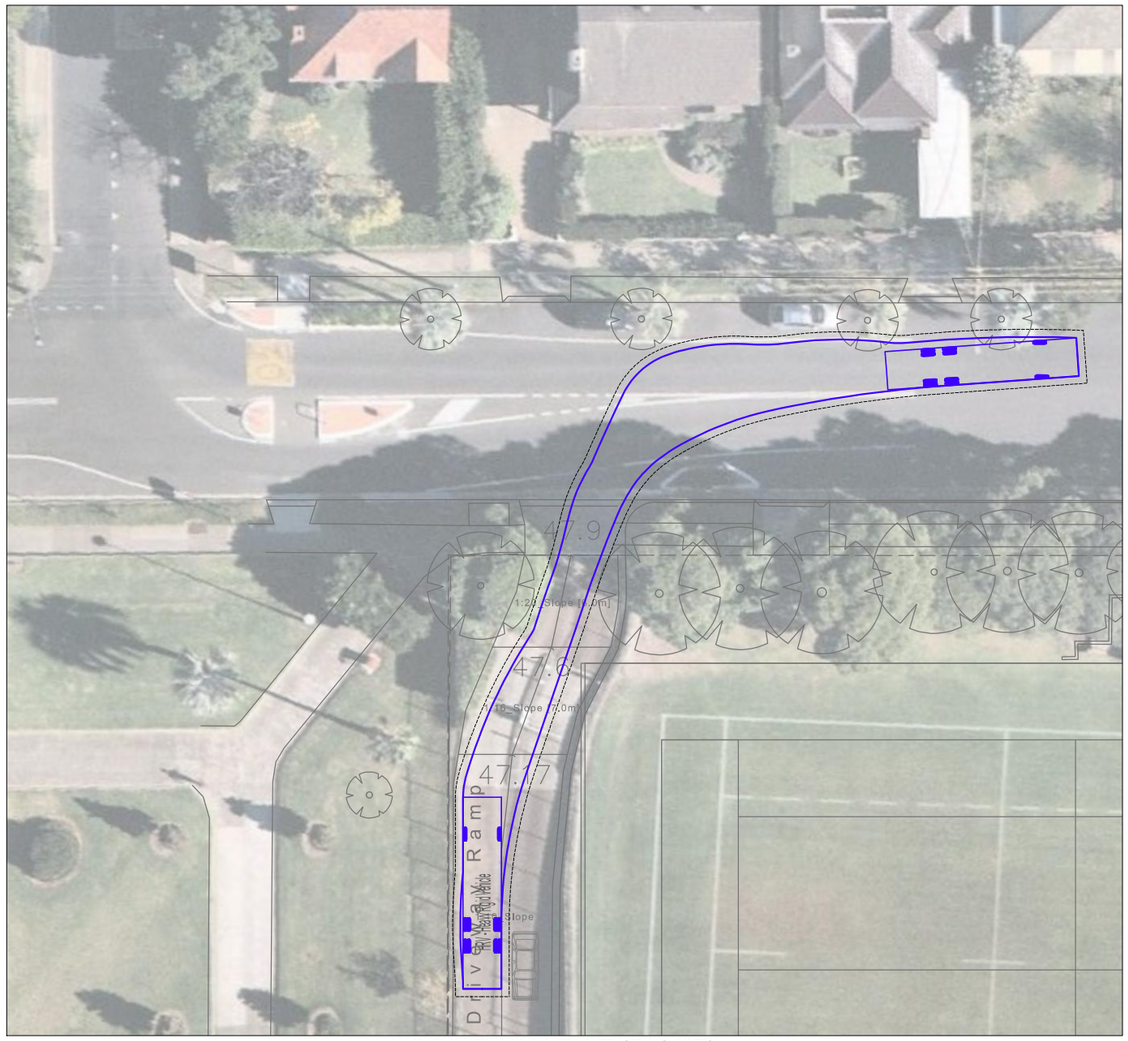
DRAWING TITLE
ENTRY / EXIT DELIVERY DRIVEWAY MANOEUVRES
DESIGN VEHICLE - MRV

19SYT0056	A3
DRAWING NUMBER 19SYT0056-13	REVISION B
DATE 11 Nov 2019	SHEET 1 OF 1

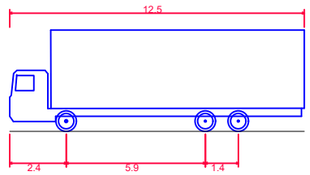
o:\synergy\projects\19syt\19syt0056 trinity grammar school -traffic assessment peer review\3 - plans\ttm\19.08.21\19syt0056-dg12-13_b.dwg



DRIVEWAY ENTRY



DRIVEWAY EXIT (RIGHT)



HRV 12.5m

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.450m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	11-11-19	DRAWING LAYOUT AMENDED	ST	JK	JK
A	21-08-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT
BLOOMPARK CONSULTING

TTM CONSULTING PTY LTD
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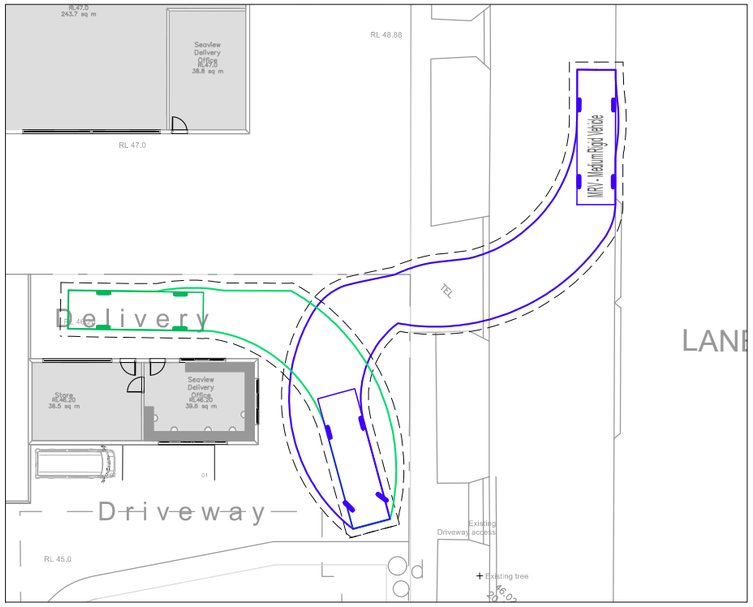
PROJECT
TRINITY GRAMMAR SCHOOL

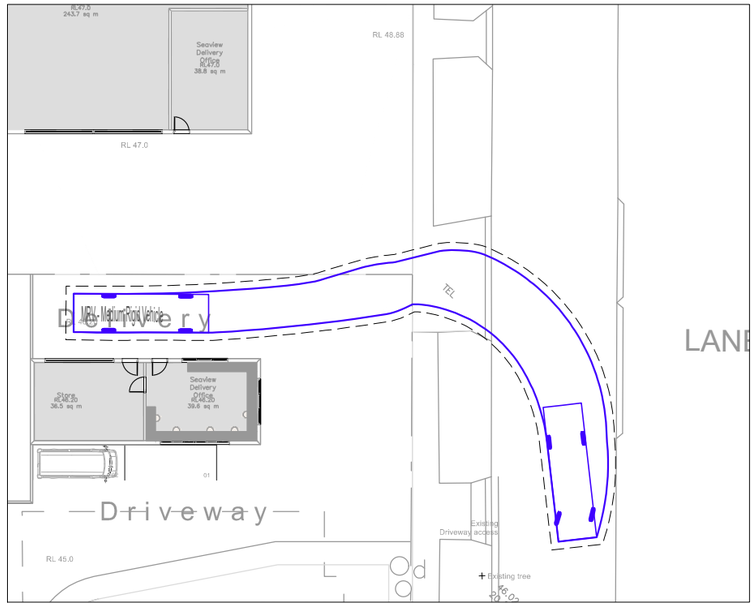
DRAWING TITLE
ENTRY / EXIT DELIVERY DRIVEWAY MANOEUVRES
DESIGN VEHICLE - HRV (12.5m)

19SYT0056	A3
DRAWING NUMBER 19SYT0056-12	REVISION B
DATE 11 Nov 2019	SHEET 1 OF 1

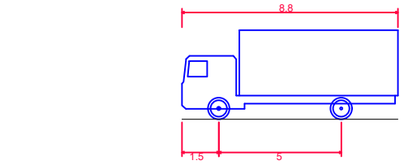
o:\synergy\projects\19syt\19syt0056 trinity grammar school -traffic assessment peer review\3 - plans\ttm\19.08.21\19syt0056-dg12-13_b.dwg



MRV ENTRY MANOEUVRE 1 (REVERSE IN)

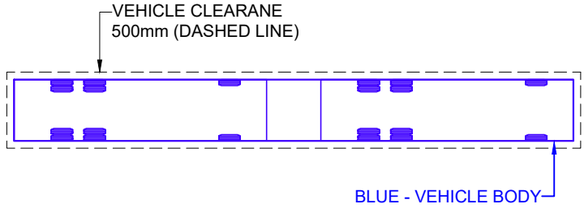


MRV EXIT MANOEUVRE

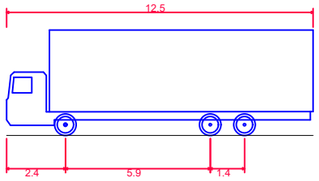


MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

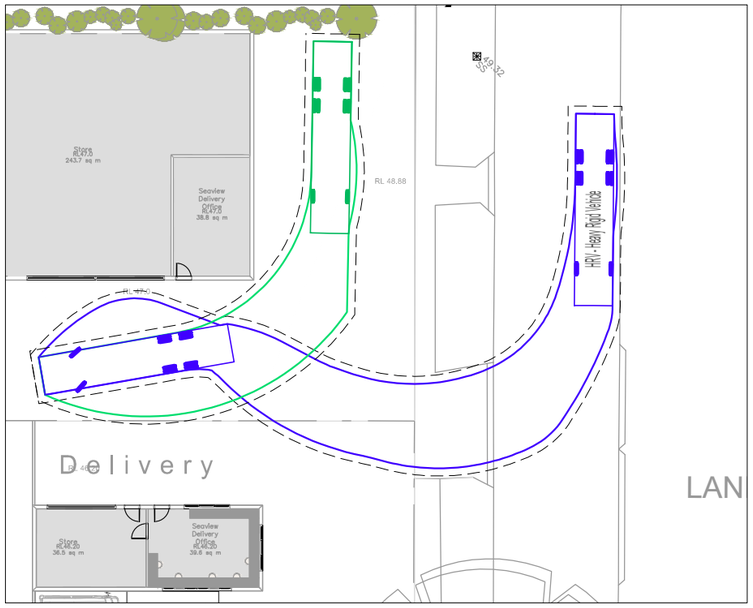


SWEPT PATH ANALYSIS - VEHICLE PROFILE

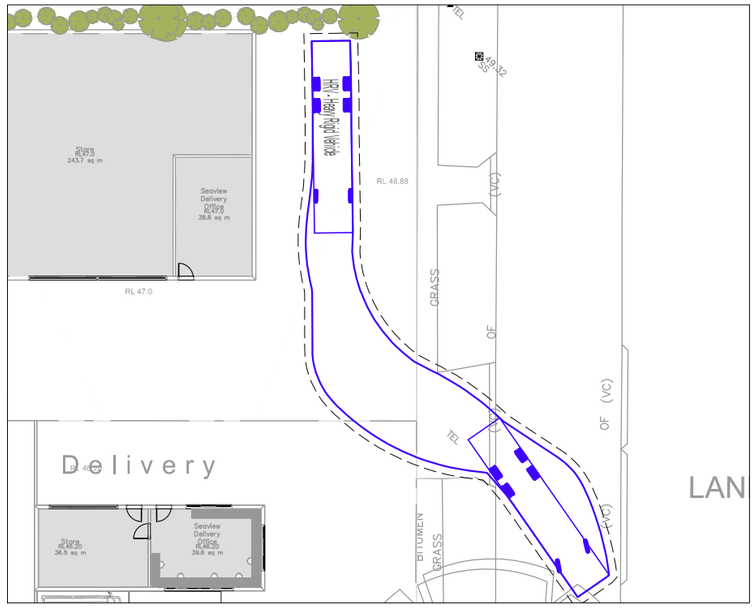


HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



HRV (12.5)ENTRY MANOEUVRE 1 (REVERSE IN)



HRV (12.5) EXIT MANOEUVRE

PRELIMINARY ADVICE ONLY

6 September 2019

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-09-19	ORIGINAL ISSUE	ST	JK	MF

SCALE 0 4 8 12 16 20m

SCALE 1:400 AT ORIGINAL SIZE

NORTH

CLIENT: BLOOMPARK CONSULTING

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E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT: **TRINITY GRAMMER SCHOOL**

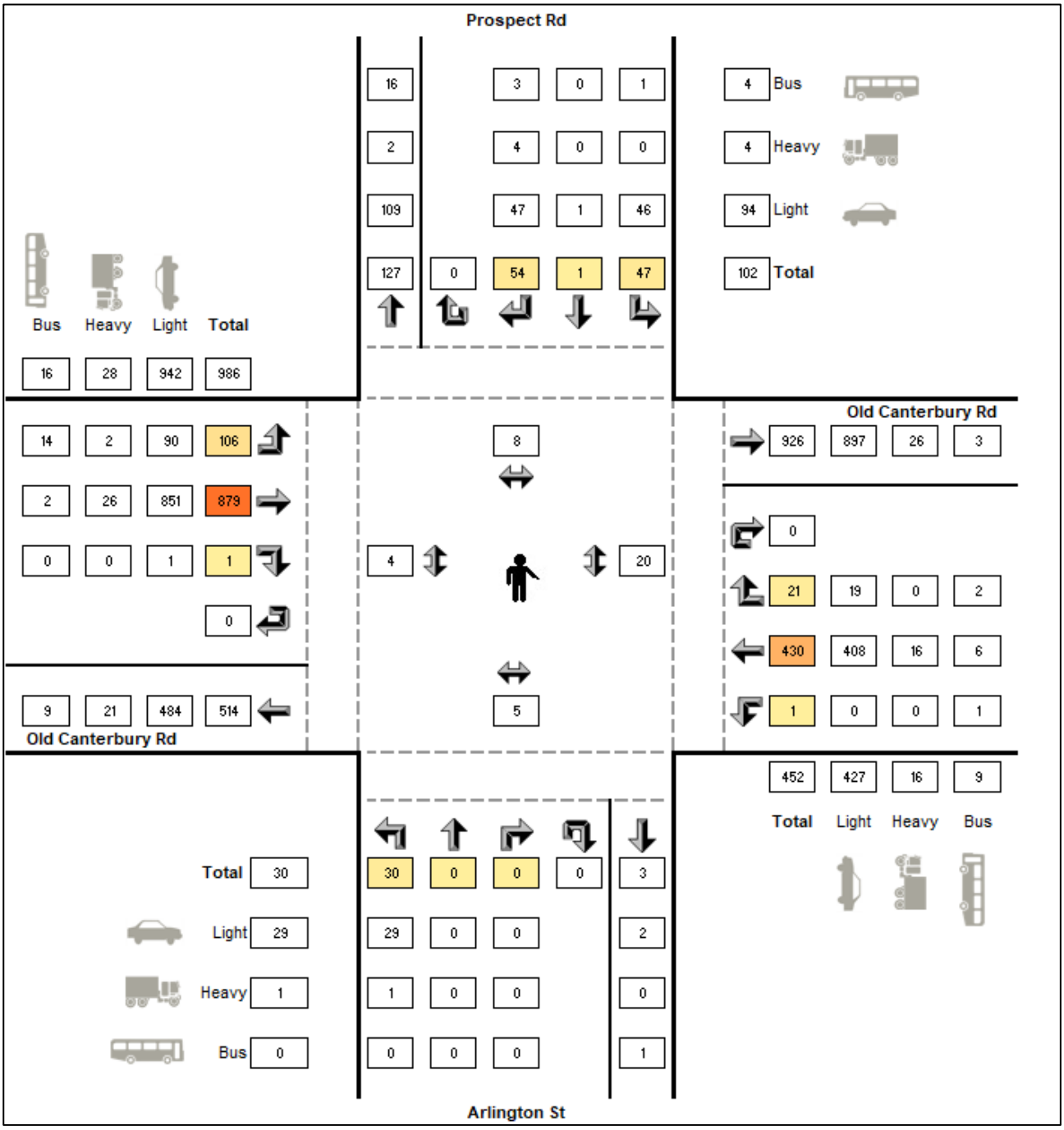
DRAWING TITLE: **SEAVIEW MAINTANCE OPTIONS MANOEUVRES**
HRV (12.5m) / MRV DESIGN VEHICLE

PROJECT NUMBER: 19SYT0056	ORIGINAL SIZE: A3
DRAWING NUMBER: 19SYT0056-25	REVISION: A
DATE: 6 Sep 2019	SHEET: 1 OF 1

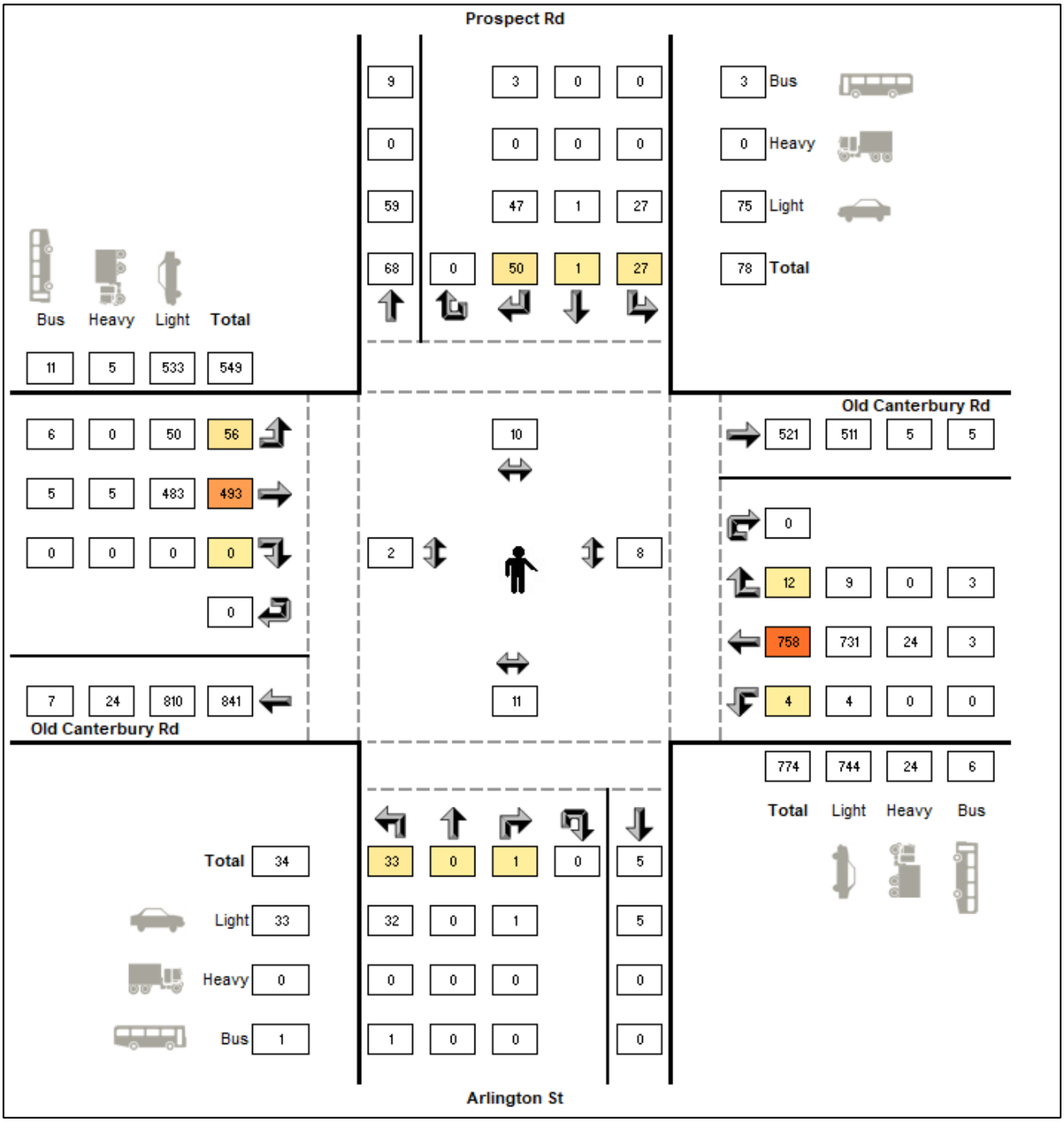
\\ttmfps01.ttm.local\synergy\sy\synergy\projects\19syt\19syt0056 trinity grammar school -traffic assessment peer review\3 - plans\ttm19.09.05\19syt0056-dg25_a.dwg

Appendix B Peak Hour Traffic Data

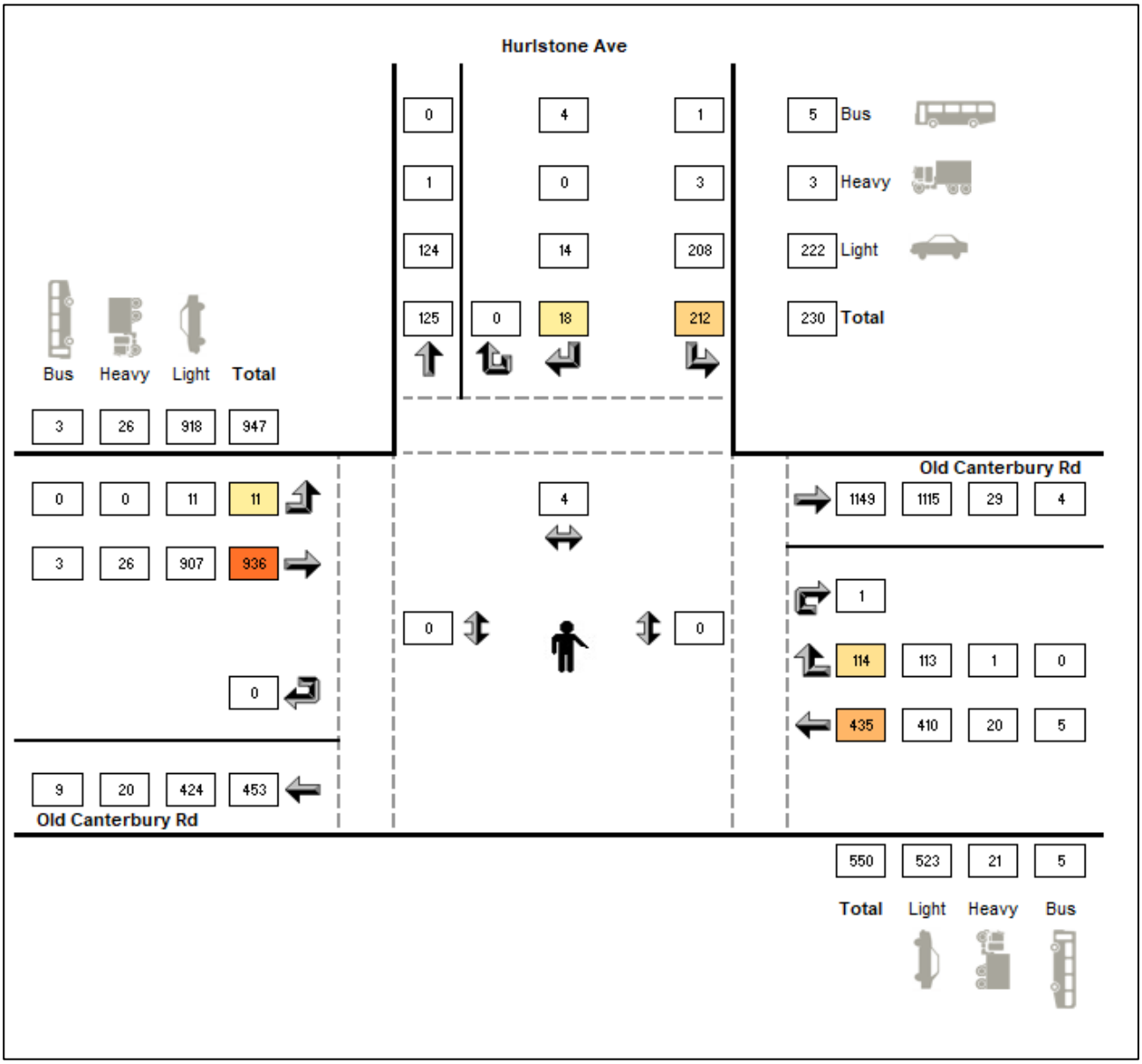
1. AM Peak - Old Canterbury Road/Prospect Road intersection (7.30 – 8.30)
2. PM Peak - Old Canterbury Road/Prospect Road intersection (14.45 – 15.45)
3. AM Peak - Old Canterbury Road/Hurlstone Avenue intersection (7.30 – 8.30)
4. PM Peak - Old Canterbury Road/Hurlstone Avenue intersection (16.00 – 17.00)
5. AM Peak - Old Canterbury Road/Henson Street intersection (7.30 – 8.30)
6. PM Peak - Old Canterbury Road/Henson Street intersection (14.45 – 15.45)
7. AM Peak - Old Canterbury Road/James Street intersection (7.30 – 8.30)
8. PM Peak - Old Canterbury Road/James Street intersection (16.00 – 17.00)
9. AM Peak - Prospect Road/Seaview Street – East (7.45 – 8.45)
10. PM Peak - Prospect Road/Seaview Street – East (15.30 – 16.30)
11. AM Peak - Prospect Road/Seaview Street – West (7.45 – 8.45)
12. PM Peak - Prospect Road/Seaview Street – West (15.30 – 16.30)
13. AM Peak - Victoria Street/Seaview Street (7.45 – 8.45)
14. PM Peak - Victoria Street/Seaview Street (15.30 – 16.30)
15. AM Peak - Victoria Street/Harland Street (7.45 – 8.45)
16. PM Peak - Victoria Street/Harland Street (15.a5 – 16.15)



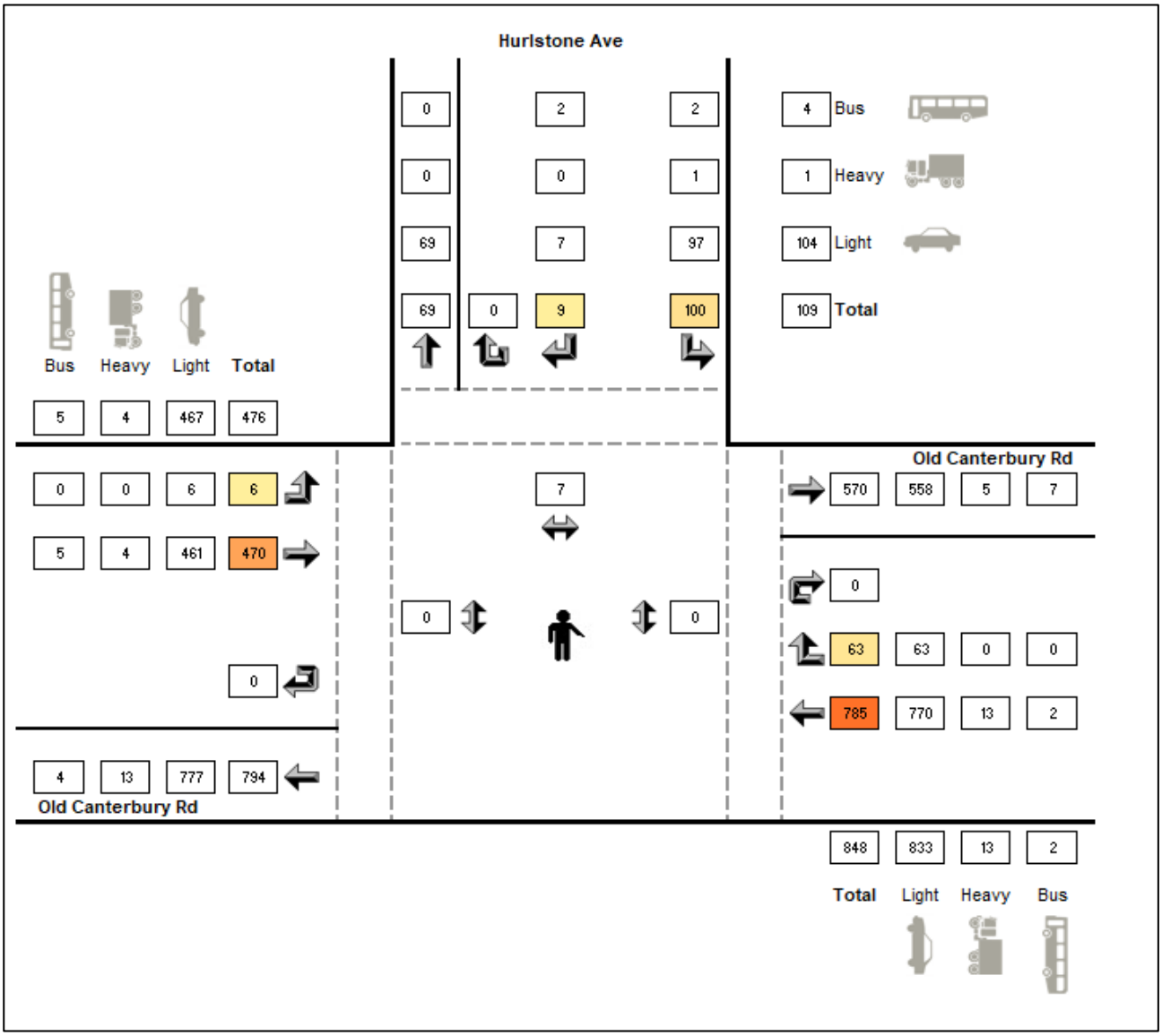
1. AM Peak - Old Canterbury Road/Prospect Road intersection (7.30 – 8.30)



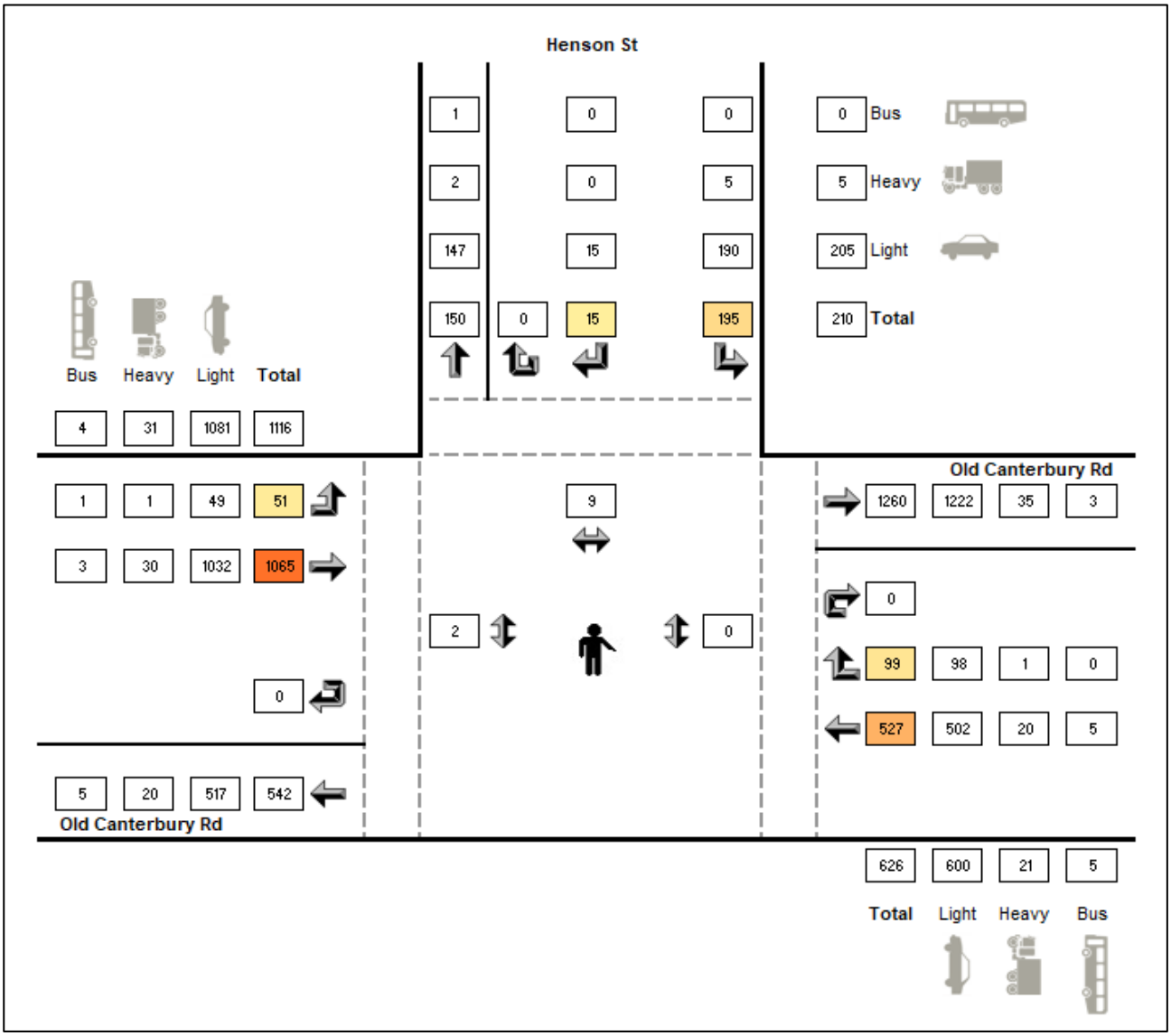
2. PM Peak - Old Canterbury Road/Prospect Road intersection (14.45 – 15.45)



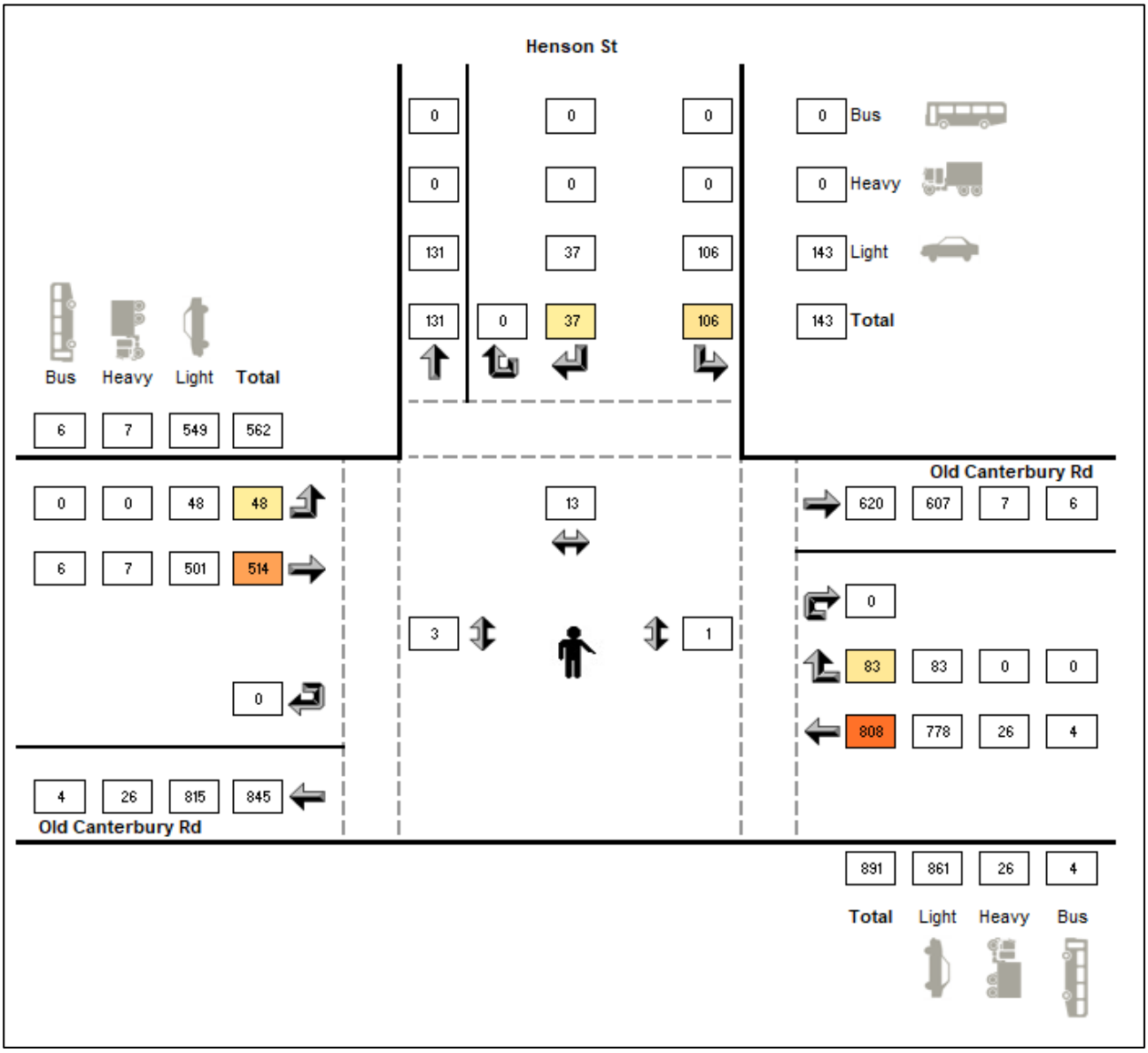
3. AM Peak - Old Canterbury Road/Hurlstone Avenue intersection (7.30 – 8.30)



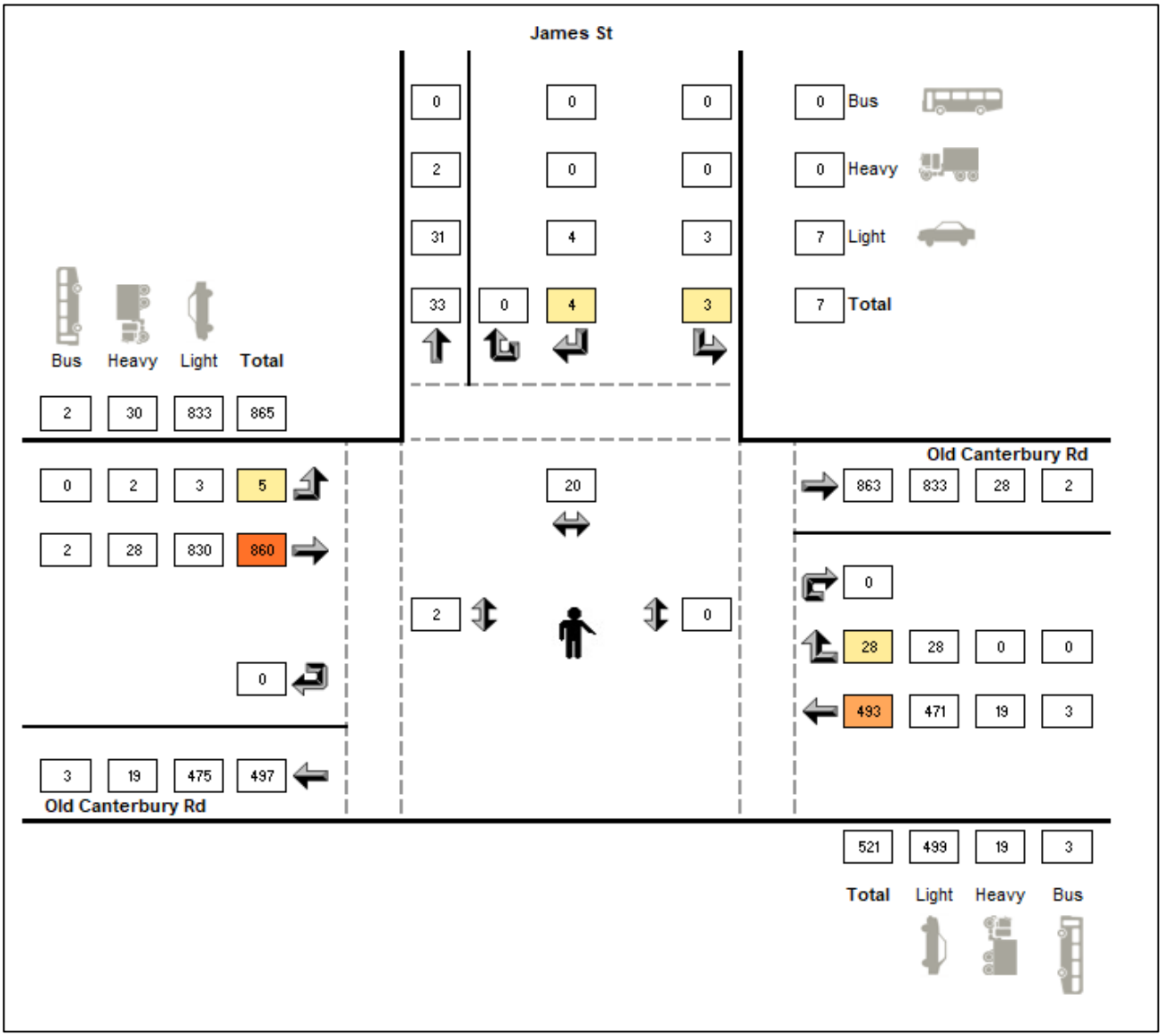
4. PM Peak - Old Canterbury Road/Hurlstone Avenue intersection (16.00 – 17.00)



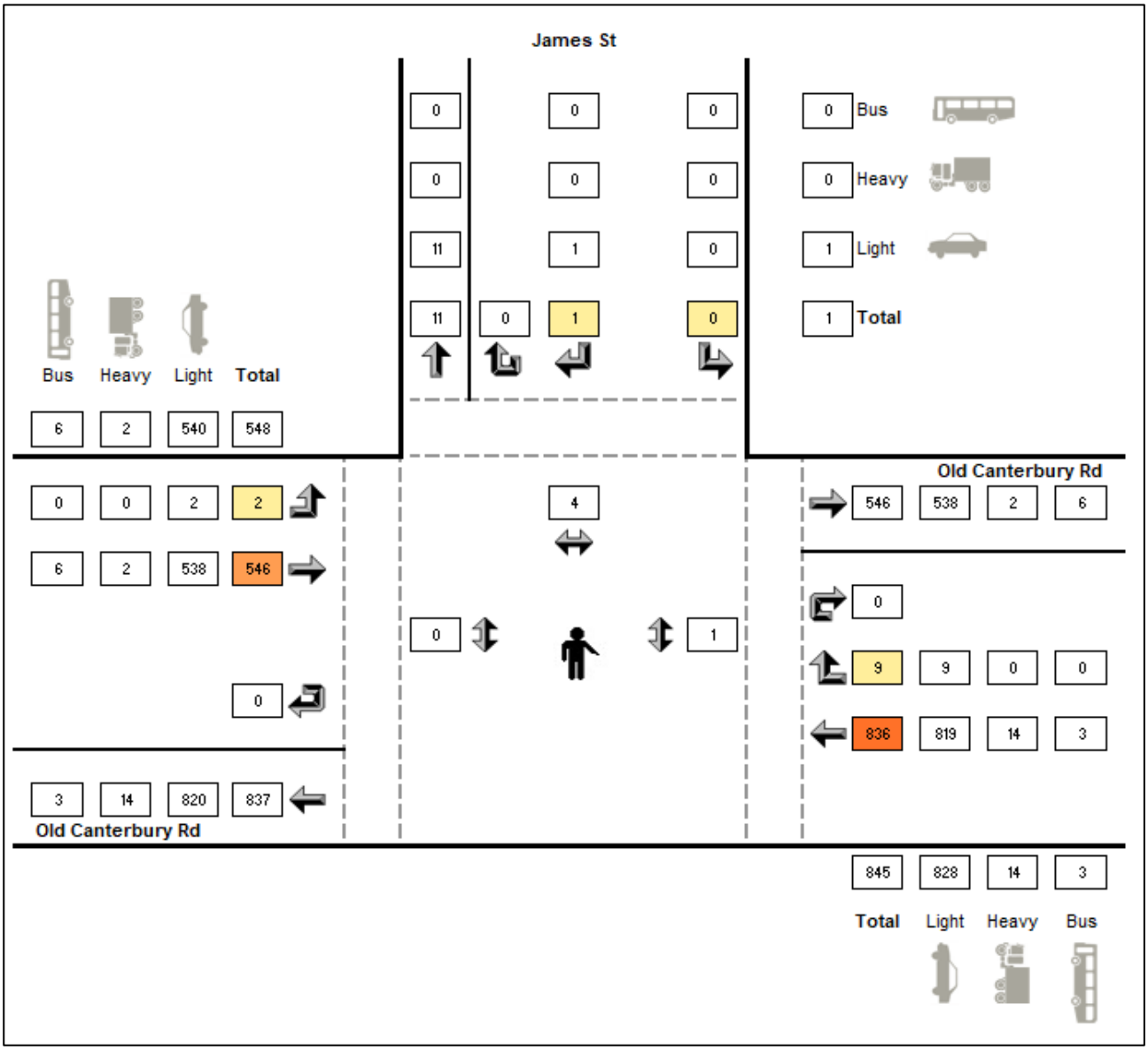
5. AM Peak - Old Canterbury Road/Henson Street intersection (7.30 – 8.30)



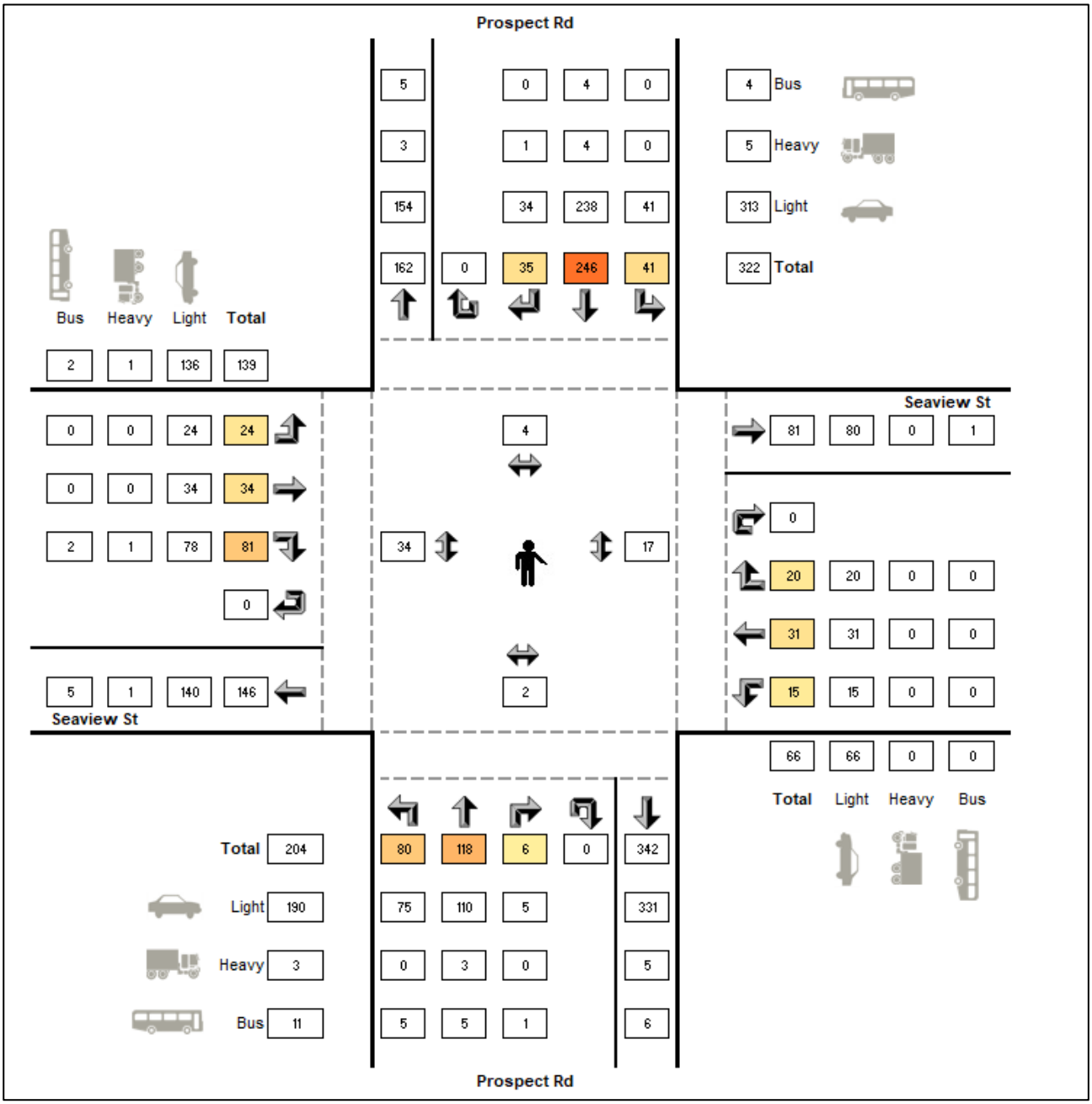
6. PM Peak - Old Canterbury Road/Henson Street intersection (14.45 – 15.45)



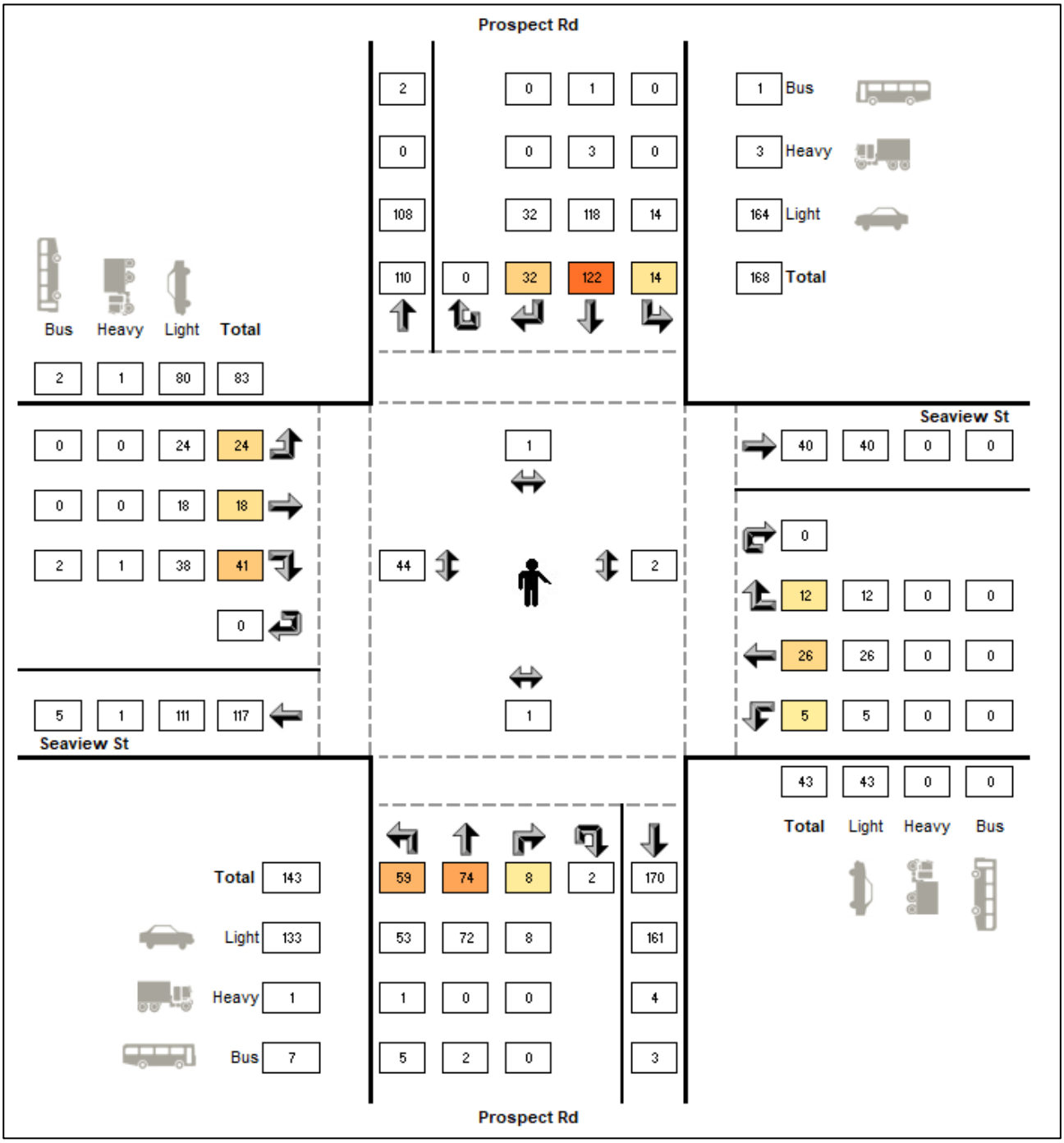
7. AM Peak - Old Canterbury Road/James Street intersection (7.30 – 8.30)



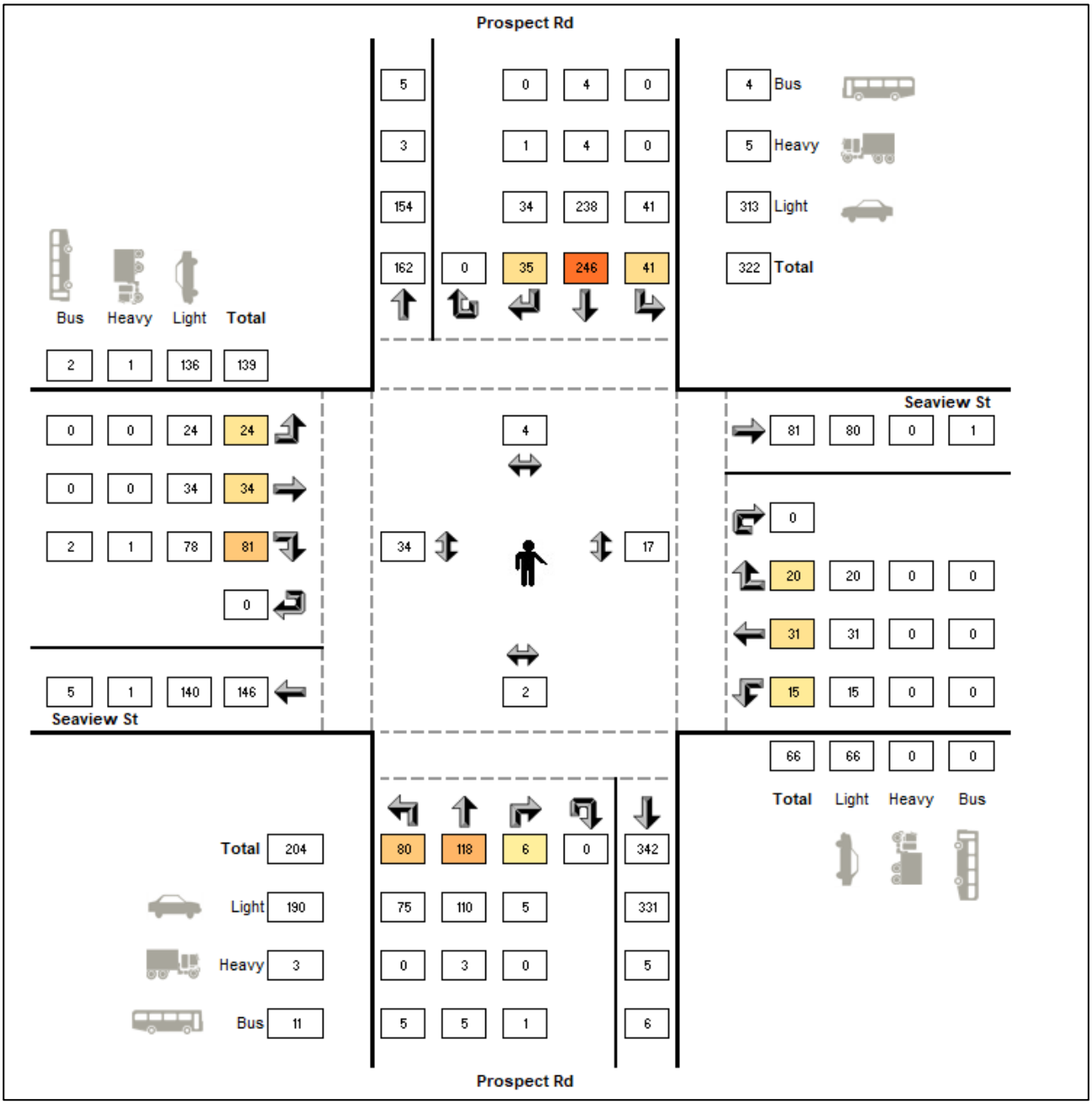
8. PM Peak - Old Canterbury Road/James Street intersection (16.00 – 17.00)



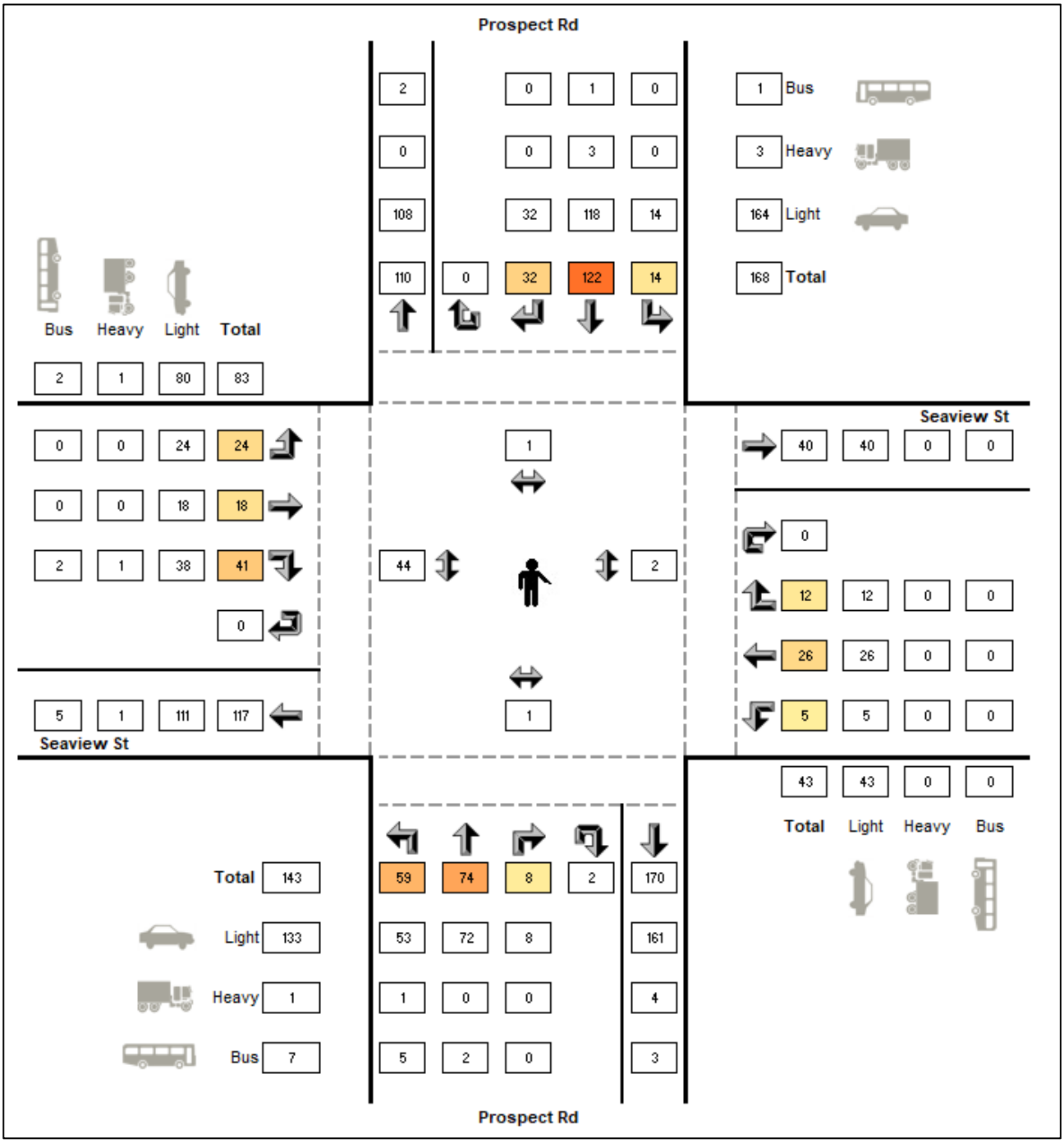
9. AM Peak - Prospect Road/Seaview Street – East (7.45 – 8.45)



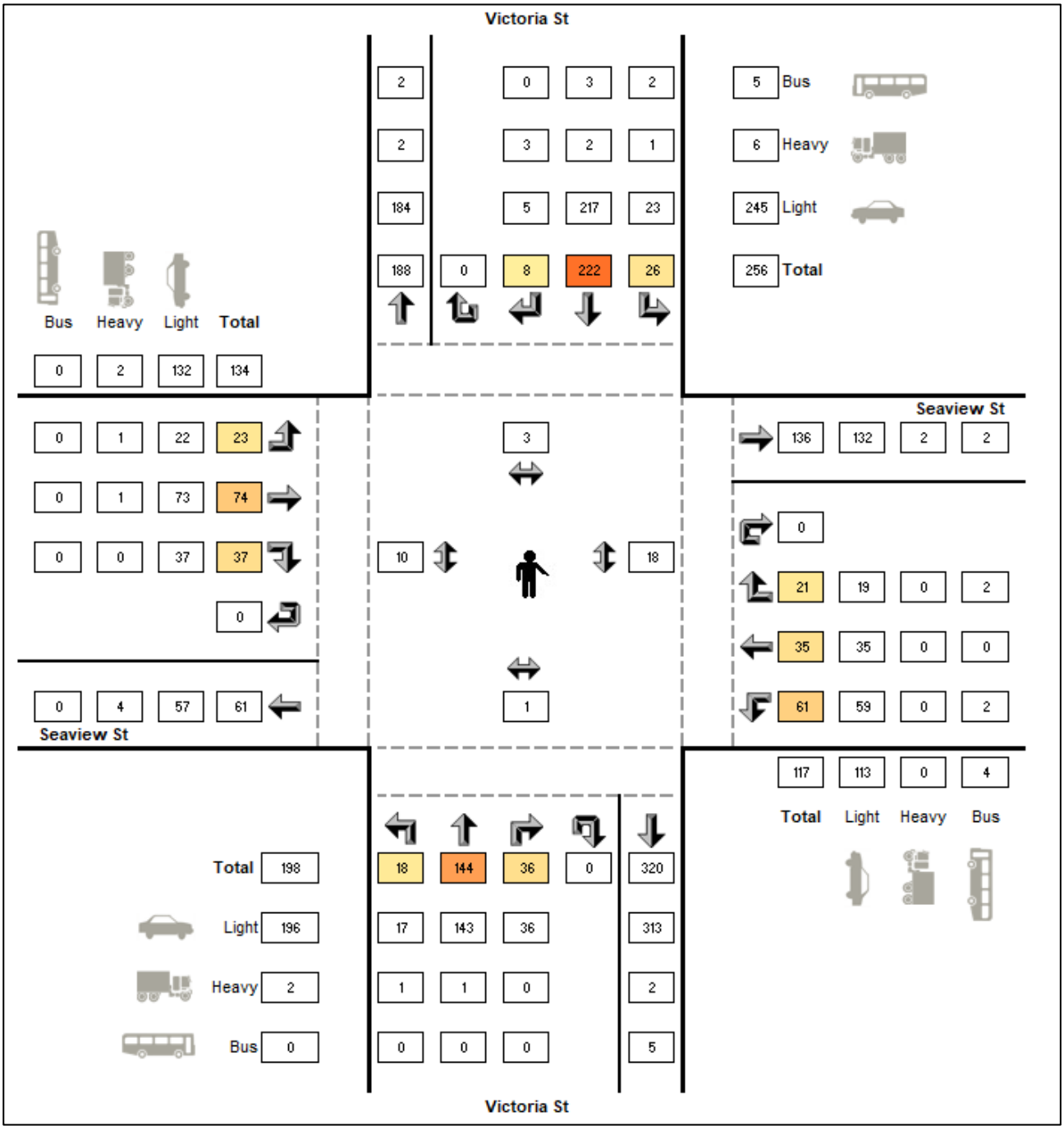
10. PM Peak - Prospect Road/Seaview Street – East (15.30 – 16.30)



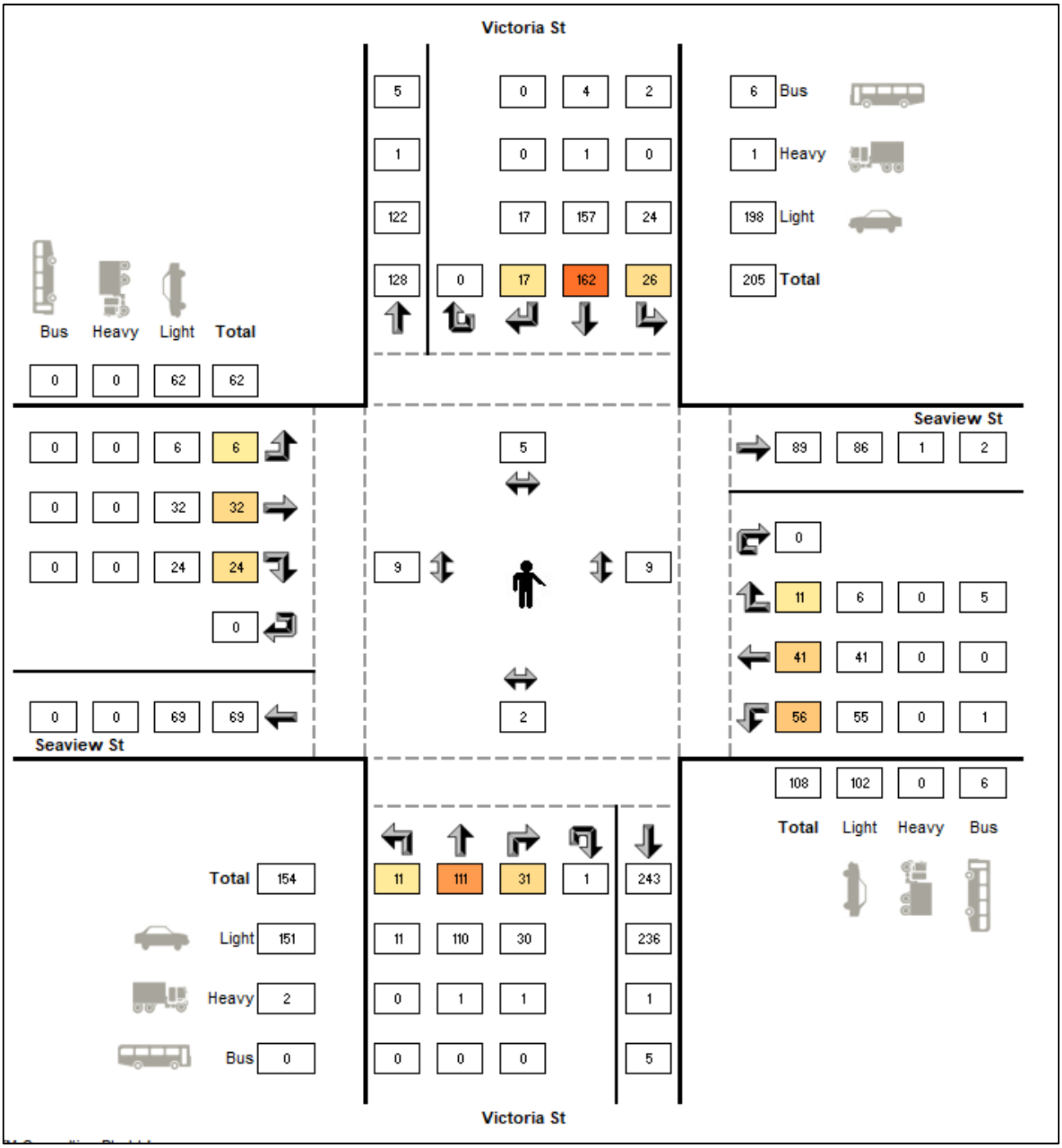
11. AM Peak - Prospect Road/Seaview Street – West (7.45 – 8.45)



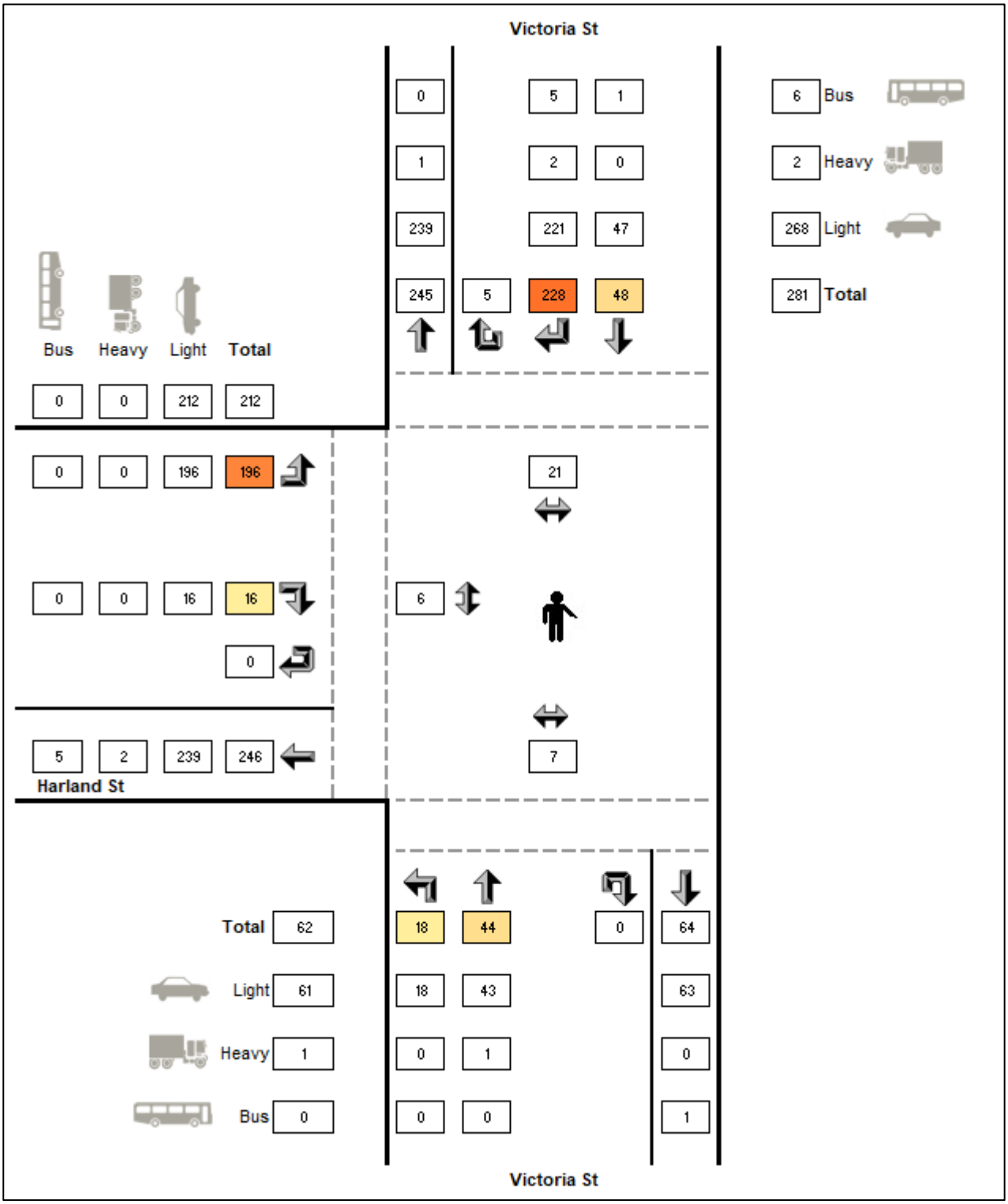
12. PM Peak - Prospect Road/Seaview Street – West (15.30 – 16.30)



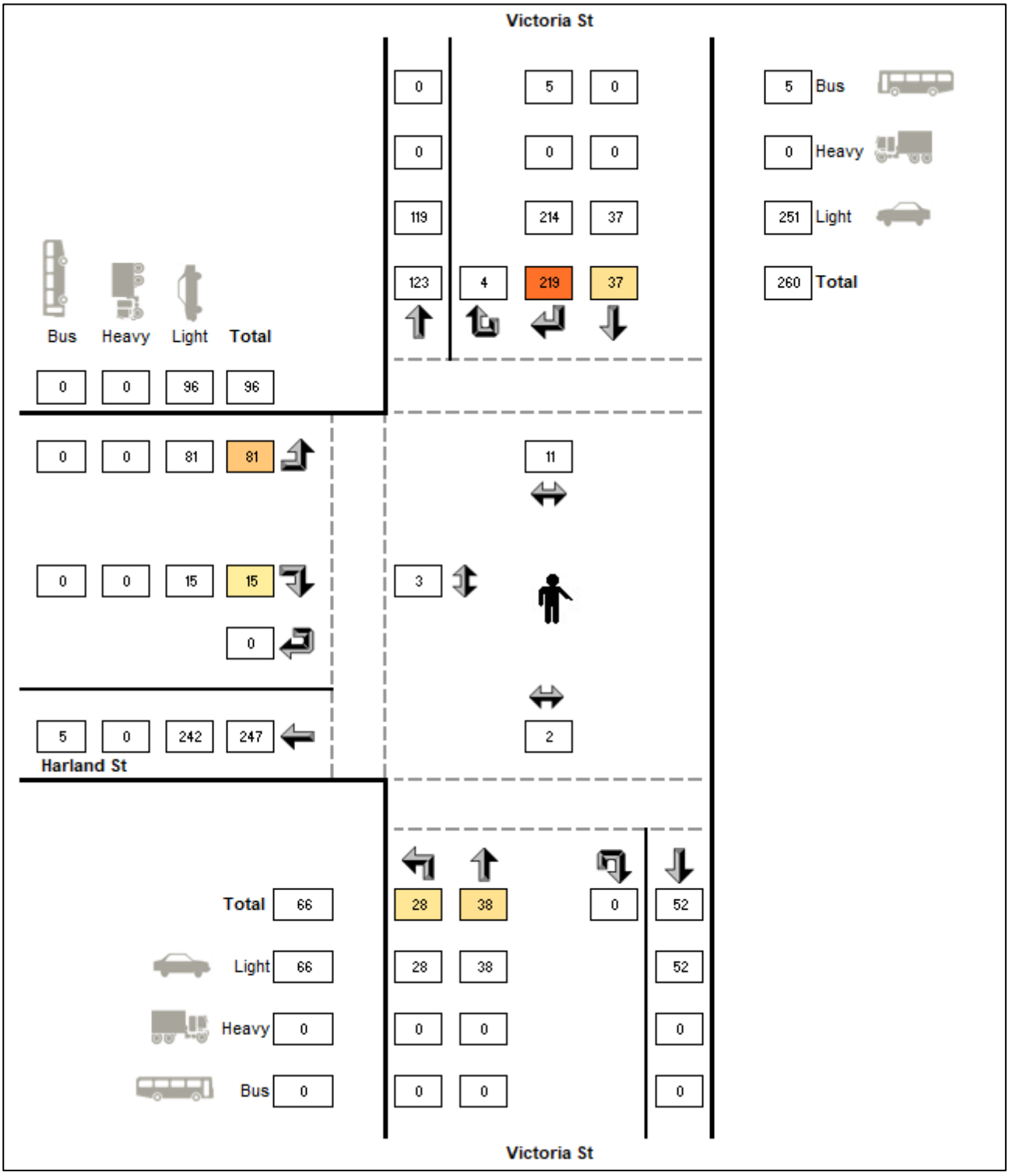
13. AM Peak - Victoria Street/Seaview Street (7.45 – 8.45)



14. PM Peak - Victoria Street/Seaview Street (15.30 – 16.30)



15. AM Peak - Victoria Street/Harland Street (7.45 – 8.45)



16. PM Peak - Victoria Street/Harland Street (15.a5 – 16.15)

Appendix C SIDRA Analysis Results

1. Current conditions - Old Canterbury Road/Prospect Road intersection (AM Peak)
2. Future scenario - Old Canterbury Road/Prospect Road intersection (AM Peak)
3. Current conditions - Old Canterbury Road/Prospect Road intersection (PM Peak)
4. Future scenario - Old Canterbury Road/Prospect Road intersection (PM Peak)
5. Current conditions - Old Canterbury Road/Hurlstone Avenue intersection (AM Peak)
6. Future scenario - Old Canterbury Road/Hurlstone Avenue intersection (AM Peak)
7. Current conditions - Old Canterbury Road/Hurlstone Avenue intersection (PM Peak)
8. Future scenario - Old Canterbury Road/Hurlstone Avenue intersection (PM Peak)
9. Current conditions - Old Canterbury Road/Henson Street intersection (AM Peak)
10. Future scenario - Old Canterbury Road/Henson Street intersection (AM Peak)
11. Current conditions - Old Canterbury Road/Henson Street intersection (PM Peak)
12. Future scenario - Old Canterbury Road/Henson Street intersection (PM Peak)
13. Current conditions - Old Canterbury Road/James Street intersection (AM Peak)
14. Future scenario - Old Canterbury Road/James Street intersection (AM Peak)
15. Current conditions - Old Canterbury Road/James Street intersection (PM Peak)
16. Future scenario - Old Canterbury Road/James Street intersection (PM Peak)
17. Current conditions - Prospect Road/Seaview Street – East (AM Peak)
18. Future scenario - Prospect Road/Seaview Street – East (AM Peak)
19. Current conditions - Prospect Road/Seaview Street – East (PM Peak)
20. Future scenario - Prospect Road/Seaview Street – East (PM Peak)
21. Current conditions - Prospect Road/Seaview Street – West (AM Peak)
22. Future scenario - Prospect Road/Seaview Street – West (AM Peak)
23. Current conditions - Prospect Road/Seaview Street – West (PM Peak)
24. Future scenario - Prospect Road/Seaview Street – West (PM Peak)
25. Current conditions - Victoria Street/Seaview Street (AM Peak)
26. Future scenario - Victoria Street/Seaview Street (AM Peak)
27. Current conditions - Victoria Street/Seaview Street (PM Peak)
28. Future scenario - Victoria Street/Seaview Street (PM Peak)
29. Current conditions - Victoria Street/Harland Street (AM Peak)
30. Future scenario - Victoria Street/Harland Street (AM Peak)
31. Current conditions - Victoria Street/Harland Street (PM Peak)
32. Future scenario - Victoria Street/Harland Street (PM Peak)

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Prospect Rd - AM peak]

Base Case: Old Canterbury Rd-Prospect Rd - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Arlington St												
21	L2	32	3.3	0.028	6.2	LOS A	0.1	0.7	0.26	0.56	0.26	51.7
Approach		32	3.3	0.028	6.2	LOS A	0.1	0.7	0.26	0.56	0.26	51.7
NorthEast: Old Canterbury Road												
24	L2	1	0.0	0.104	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
25	T1	453	5.1	0.519	2.9	LOS A	1.4	10.6	0.18	0.04	0.27	55.6
26b	R3	22	9.5	0.519	21.1	LOS C	1.4	10.6	0.31	0.06	0.47	50.1
Approach		476	5.3	0.519	3.7	NA	1.4	10.6	0.18	0.04	0.28	55.3
North: Prospect Road												
7b	L3	49	2.1	2.552	1486.5	LOS F	51.0	381.1	1.00	2.46	6.24	1.7
9a	R1	57	13.0	2.552	1573.2	LOS F	51.0	381.1	1.00	2.46	6.24	2.2
Approach		106	7.9	2.552	1532.9	LOS F	51.0	381.1	1.00	2.46	6.24	1.9
SouthWest: Old Canterbury Road												
30a	L1	112	15.1	0.091	5.5	LOS A	0.0	0.0	0.00	0.41	0.00	54.0
31	T1	925	3.2	0.457	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach		1037	4.5	0.457	0.7	NA	0.0	0.0	0.00	0.06	0.00	58.8
All Vehicles		1651	4.9	2.552	100.3	NA	51.0	381.1	0.12	0.22	0.49	18.5

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Prospect Rd - AM peak]

Scenario 1: Old Canterbury Rd-Prospect Rd - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Arlington St												
21	L2	32	3.3	0.028	6.3	LOS A	0.1	0.7	0.26	0.56	0.26	51.6
Approach		32	3.3	0.028	6.3	LOS A	0.1	0.7	0.26	0.56	0.26	51.6
NorthEast: Old Canterbury Road												
24	L2	1	0.0	0.106	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
25	T1	453	5.1	0.530	3.2	LOS A	1.6	11.9	0.19	0.04	0.30	55.1
26b	R3	25	8.4	0.530	21.5	LOS C	1.6	11.9	0.34	0.07	0.53	49.4
Approach		479	5.3	0.530	4.2	NA	1.6	11.9	0.20	0.04	0.31	54.8
North: Prospect Road												
7b	L3	54	2.0	2.832	1733.0	LOS F	59.3	440.8	1.00	2.42	6.19	1.4
9a	R1	63	11.7	2.832	1815.6	LOS F	59.3	440.8	1.00	2.42	6.19	1.9
Approach		117	7.2	2.832	1777.6	LOS F	59.3	440.8	1.00	2.42	6.19	1.7
SouthWest: Old Canterbury Road												
30a	L1	123	13.7	0.092	5.5	LOS A	0.0	0.0	0.00	0.44	0.00	53.8
31	T1	925	3.2	0.462	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach		1048	4.4	0.462	0.7	NA	0.0	0.0	0.00	0.07	0.00	58.7
All Vehicles		1675	4.8	2.832	125.5	NA	59.3	440.8	0.13	0.24	0.52	15.8

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Prospect Rd - PM peak]

Base Case: Old Canterbury Rd-Prospect Rd - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Arlington St												
21	L2	35	3.0	0.034	6.6	LOS A	0.1	0.9	0.33	0.59	0.33	51.4
Approach		35	3.0	0.034	6.6	LOS A	0.1	0.9	0.33	0.59	0.33	51.4
NorthEast: Old Canterbury Road												
24	L2	4	0.0	0.135	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
25	T1	798	3.6	0.674	0.4	LOS A	0.5	3.9	0.04	0.01	0.08	59.2
26b	R3	13	25.0	0.674	12.9	LOS B	0.5	3.9	0.06	0.02	0.11	54.6
Approach		815	3.9	0.674	0.6	NA	0.5	3.9	0.04	0.01	0.08	59.1
North: Prospect Road												
7b	L3	28	0.0	1.075	207.6	LOS F	13.1	94.5	1.00	1.33	2.81	8.0
9a	R1	53	6.0	1.075	335.0	LOS F	13.1	94.5	1.00	1.33	2.81	10.2
Approach		81	3.9	1.075	290.3	LOS F	13.1	94.5	1.00	1.33	2.81	9.5
SouthWest: Old Canterbury Road												
30a	L1	59	10.7	0.050	5.5	LOS A	0.0	0.0	0.00	0.38	0.00	54.4
31	T1	519	2.0	0.252	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		578	2.9	0.252	0.6	NA	0.0	0.0	0.00	0.06	0.00	58.9
All Vehicles		1508	3.5	1.075	16.3	NA	13.1	94.5	0.08	0.12	0.20	44.1

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Prospect Rd - PM peak]

Scenario 1: Old Canterbury Rd-Prospect Rd - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Arlington St												
21	L2	26	4.0	0.026	6.7	LOS A	0.1	0.7	0.33	0.58	0.33	51.4
Approach		26	4.0	0.026	6.7	LOS A	0.1	0.7	0.33	0.58	0.33	51.4
NorthEast: Old Canterbury Road												
24	L2	1	0.0	0.136	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
25	T1	798	3.6	0.679	0.4	LOS A	0.6	4.0	0.04	0.01	0.08	59.2
26b	R3	13	25.0	0.679	13.1	LOS B	0.6	4.0	0.06	0.02	0.11	54.6
Approach		812	3.9	0.679	0.6	NA	0.6	4.0	0.04	0.01	0.08	59.1
North: Prospect Road												
7b	L3	30	0.0	1.270	338.2	LOS F	22.3	160.2	1.00	1.56	3.60	5.7
9a	R1	65	4.9	1.270	452.0	LOS F	22.3	160.2	1.00	1.56	3.60	7.4
Approach		95	3.3	1.270	415.8	LOS F	22.3	160.2	1.00	1.56	3.60	6.8
SouthWest: Old Canterbury Road												
30a	L1	69	9.1	0.051	5.4	LOS A	0.0	0.0	0.00	0.44	0.00	54.0
31	T1	519	2.0	0.257	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		588	2.9	0.257	0.7	NA	0.0	0.0	0.00	0.07	0.00	58.8
All Vehicles		1521	3.5	1.270	26.7	NA	22.3	160.2	0.09	0.14	0.27	37.4

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Hurlstone Ave - AM peak]

Base Case: Old Canterbury Rd-Hurlstone Ave - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	458	5.7	1.118	13.3	LOS B	15.4	110.0	0.08	0.16	0.59	35.4
26a	R1	120	0.9	1.118	166.2	LOS F	15.4	110.0	1.00	1.96	7.17	4.6
Approach		578	4.7	1.118	45.1	NA	15.4	110.0	0.27	0.54	1.96	17.3
West: Hurlstone Avenue												
10a	L1	223	1.9	1.106	150.2	LOS F	23.1	166.3	1.00	2.66	7.43	4.8
12b	R3	19	22.2	1.106	200.3	LOS F	23.1	166.3	1.00	2.66	7.43	7.8
Approach		242	3.5	1.106	154.1	NA	23.1	166.3	1.00	2.66	7.43	5.1
SouthWest: Old Canterbury Road												
30b	L3	12	0.0	0.087	6.5	LOS A	0.0	0.0	0.00	0.05	0.00	56.0
31	T1	985	3.1	0.435	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach		997	3.1	0.435	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.6
All Vehicles		1817	3.7	1.118	34.9	NA	23.1	166.3	0.22	0.53	1.61	20.6

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Hurlstone Ave - AM peak]

Scenario 1: Old Canterbury Rd-Hurlstone Ave - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	458	5.7	1.152	10.2	LOS B	17.8	126.4	0.05	0.13	0.44	39.2
26a	R1	134	0.8	1.152	191.2	LOS F	17.8	126.4	1.00	2.36	8.08	4.0
Approach		592	4.6	1.152	51.2	NA	17.8	126.4	0.27	0.63	2.17	15.7
West: Hurlstone Avenue												
10a	L1	231	1.8	1.153	185.0	LOS F	28.8	207.5	1.00	2.99	8.68	4.0
12b	R3	21	20.0	1.153	230.6	LOS F	28.8	207.5	1.00	2.99	8.68	6.5
Approach		252	3.3	1.153	188.8	NA	28.8	207.5	1.00	2.99	8.68	4.2
SouthWest: Old Canterbury Road												
30b	L3	12	0.0	0.087	6.5	LOS A	0.0	0.0	0.00	0.05	0.00	56.0
31	T1	985	3.1	0.435	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach		997	3.1	0.435	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.6
All Vehicles		1841	3.6	1.153	42.4	NA	28.8	207.5	0.22	0.62	1.89	18.0

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Hurlstone Ave - PM peak]

Base Case: Old Canterbury Rd-Hurlstone Ave - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	826	1.9	0.859	3.5	LOS A	4.1	29.4	0.15	0.06	0.49	49.8
26a	R1	66	0.0	0.859	14.1	LOS B	4.1	29.4	0.25	0.10	0.82	37.9
Approach		893	1.8	0.859	4.3	NA	4.1	29.4	0.16	0.06	0.52	48.9
West: Hurlstone Avenue												
10a	L1	105	3.0	0.247	8.4	LOS A	0.9	6.5	0.60	0.83	0.64	30.3
12b	R3	9	22.2	0.247	41.2	LOS E	0.9	6.5	0.60	0.83	0.64	35.4
Approach		115	4.6	0.247	11.1	NA	0.9	6.5	0.60	0.83	0.64	30.9
SouthWest: Old Canterbury Road												
30b	L3	6	0.0	0.043	6.5	LOS A	0.0	0.0	0.00	0.05	0.00	56.0
31	T1	495	1.9	0.217	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach		501	1.9	0.217	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1508	2.0	0.859	3.4	NA	4.1	29.4	0.14	0.10	0.36	50.3

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Hurlstone Ave - PM peak]

Scenario 1: Old Canterbury Rd-Hurlstone Ave - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	826	1.9	0.877	4.3	LOS A	5.1	36.2	0.17	0.07	0.60	48.0
26a	R1	77	0.0	0.877	15.4	LOS C	5.1	36.2	0.29	0.12	1.02	35.3
Approach		903	1.7	0.877	5.2	NA	5.1	36.2	0.18	0.08	0.64	46.9
West: Hurlstone Avenue												
10a	L1	119	2.6	0.267	8.6	LOS A	1.0	7.3	0.60	0.84	0.66	30.4
12b	R3	9	22.2	0.267	41.7	LOS E	1.0	7.3	0.60	0.84	0.66	35.5
Approach		129	4.1	0.267	11.1	NA	1.0	7.3	0.60	0.84	0.66	30.9
SouthWest: Old Canterbury Road												
30b	L3	6	0.0	0.043	6.5	LOS A	0.0	0.0	0.00	0.05	0.00	56.0
31	T1	495	1.9	0.217	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
Approach		501	1.9	0.217	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1533	2.0	0.877	4.0	NA	5.1	36.2	0.16	0.12	0.43	48.9

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Henson St - AM peak]

Base Case: Old Canterbury Rd-Henson St - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	555	4.7	1.212	39.8	LOS E	26.4	188.9	0.17	0.33	1.94	16.0
26b	R3	104	1.0	1.212	236.8	LOS F	26.4	188.9	1.00	1.92	11.20	7.2
Approach		659	4.2	1.212	70.9	NA	26.4	188.9	0.30	0.58	3.40	11.8
North: Henson Street												
7b	L3	205	2.6	0.681	28.0	LOS D	6.8	48.9	0.64	1.12	1.63	27.5
9a	R1	16	0.0	0.681	160.5	LOS F	6.8	48.9	0.64	1.12	1.63	23.6
Approach		221	2.4	0.681	37.5	LOS E	6.8	48.9	0.64	1.12	1.63	27.3
SouthWest: Old Canterbury Road												
30a	L1	54	3.9	0.142	4.7	LOS A	0.0	0.0	0.00	0.12	0.00	53.1
31	T1	1121	3.1	0.473	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.1
Approach		1175	3.1	0.473	0.2	NA	0.0	0.0	0.00	0.03	0.00	58.6
All Vehicles		2055	3.4	1.212	26.9	NA	26.4	188.9	0.17	0.32	1.27	23.7

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Henson St - AM peak]

Scenario 1: Old Canterbury Rd-Henson St - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	555	4.7	1.212	39.8	LOS E	26.4	188.9	0.17	0.33	1.94	16.0
26b	R3	104	1.0	1.212	236.8	LOS F	26.4	188.9	1.00	1.92	11.20	7.2
Approach		659	4.2	1.212	70.9	NA	26.4	188.9	0.30	0.58	3.40	11.8
North: Henson Street												
7b	L3	205	2.6	0.681	28.0	LOS D	6.8	48.9	0.64	1.12	1.63	27.5
9a	R1	16	0.0	0.681	160.5	LOS F	6.8	48.9	0.64	1.12	1.63	23.6
Approach		221	2.4	0.681	37.5	LOS E	6.8	48.9	0.64	1.12	1.63	27.3
SouthWest: Old Canterbury Road												
30a	L1	54	3.9	0.142	4.7	LOS A	0.0	0.0	0.00	0.12	0.00	53.1
31	T1	1121	3.1	0.473	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.1
Approach		1175	3.1	0.473	0.2	NA	0.0	0.0	0.00	0.03	0.00	58.6
All Vehicles		2055	3.4	1.212	26.9	NA	26.4	188.9	0.17	0.32	1.27	23.7

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-Henson St - PM peak]

Base Case: Old Canterbury Rd-Henson St - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	851	3.7	0.901	4.4	LOS A	5.5	39.2	0.17	0.10	0.74	44.3
26b	R3	87	0.0	0.901	17.1	LOS C	5.5	39.2	0.29	0.17	1.24	44.8
Approach		938	3.4	0.901	5.6	NA	5.5	39.2	0.18	0.11	0.79	44.4
North: Henson Street												
7b	L3	112	0.0	0.520	16.6	LOS C	3.1	21.7	0.38	0.72	0.67	31.8
9a	R1	39	0.0	0.520	60.5	LOS F	3.1	21.7	0.38	0.72	0.67	27.2
Approach		151	0.0	0.520	28.0	LOS D	3.1	21.7	0.38	0.72	0.67	30.6
SouthWest: Old Canterbury Road												
30a	L1	51	0.0	0.071	4.7	LOS A	0.0	0.0	0.00	0.22	0.00	52.0
31	T1	541	2.5	0.237	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.8
Approach		592	2.3	0.237	0.4	NA	0.0	0.0	0.00	0.05	0.00	57.7
All Vehicles		1680	2.7	0.901	5.8	NA	5.5	39.2	0.14	0.14	0.50	44.4

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-Henson St - PM peak]

Scenario 1: Old Canterbury Rd-Henson St - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	851	3.7	0.901	4.4	LOS A	5.5	39.2	0.17	0.10	0.74	44.3
26b	R3	87	0.0	0.901	17.1	LOS C	5.5	39.2	0.29	0.17	1.24	44.8
Approach		938	3.4	0.901	5.6	NA	5.5	39.2	0.18	0.11	0.79	44.4
North: Henson Street												
7b	L3	112	0.0	0.520	16.6	LOS C	3.1	21.7	0.38	0.72	0.67	31.8
9a	R1	39	0.0	0.520	60.5	LOS F	3.1	21.7	0.38	0.72	0.67	27.2
Approach		151	0.0	0.520	28.0	LOS D	3.1	21.7	0.38	0.72	0.67	30.6
SouthWest: Old Canterbury Road												
30a	L1	51	0.0	0.071	4.7	LOS A	0.0	0.0	0.00	0.22	0.00	52.0
31	T1	541	2.5	0.237	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.8
Approach		592	2.3	0.237	0.4	NA	0.0	0.0	0.00	0.05	0.00	57.7
All Vehicles		1680	2.7	0.901	5.8	NA	5.5	39.2	0.14	0.14	0.50	44.4

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-James St - AM peak]

Base Case: Old Canterbury Rd-James St - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	519	4.5	0.424	1.6	LOS A	1.2	8.5	0.16	0.03	0.23	51.1
26a	R1	29	0.0	0.424	11.5	LOS B	1.2	8.5	0.23	0.05	0.33	41.0
Approach		548	4.2	0.424	2.1	NA	1.2	8.5	0.17	0.03	0.23	50.6
West: James Street												
12b	R3	4	0.0	0.048	44.9	LOS E	0.1	1.0	0.92	0.97	0.92	16.5
Approach		4	0.0	0.048	44.9	LOS E	0.1	1.0	0.92	0.97	0.92	16.5
SouthWest: Old Canterbury Road												
30b	L3	5	40.0	0.110	6.9	LOS A	0.0	0.0	0.00	0.02	0.00	49.6
31	T1	905	3.5	0.368	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		911	3.7	0.368	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles		1463	3.9	0.424	1.0	NA	1.2	8.5	0.06	0.02	0.09	55.4

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-James St - AM peak]

Scenario 1: Old Canterbury Rd-James St - AM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	519	4.5	0.424	1.6	LOS A	1.2	8.5	0.16	0.03	0.23	51.1
26a	R1	29	0.0	0.424	11.5	LOS B	1.2	8.5	0.23	0.05	0.33	41.0
Approach		548	4.2	0.424	2.1	NA	1.2	8.5	0.17	0.03	0.23	50.6
West: James Street												
12b	R3	4	0.0	0.048	44.9	LOS E	0.1	1.0	0.92	0.97	0.92	16.5
Approach		4	0.0	0.048	44.9	LOS E	0.1	1.0	0.92	0.97	0.92	16.5
SouthWest: Old Canterbury Road												
30b	L3	5	40.0	0.110	6.9	LOS A	0.0	0.0	0.00	0.02	0.00	49.6
31	T1	905	3.5	0.368	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		911	3.7	0.368	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles		1463	3.9	0.424	1.0	NA	1.2	8.5	0.06	0.02	0.09	55.4

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

MOVEMENT SUMMARY

Site: 101 [Base Case: Old Canterbury Rd-James St - PM peak]

Base Case: Old Canterbury Rd-James St - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	880	2.0	0.659	0.2	LOS A	0.3	2.2	0.02	0.01	0.04	58.7
26a	R1	9	0.0	0.659	6.9	LOS A	0.3	2.2	0.03	0.01	0.06	50.8
Approach		889	2.0	0.659	0.3	NA	0.3	2.2	0.02	0.01	0.04	58.6
West: James Street												
12b	R3	1	0.0	0.011	41.2	LOS E	0.0	0.2	0.91	0.97	0.91	17.5
Approach		1	0.0	0.011	41.2	LOS E	0.0	0.2	0.91	0.97	0.91	17.5
SouthWest: Old Canterbury Road												
30b	L3	2	0.0	0.069	6.5	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
31	T1	575	1.5	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		577	1.5	0.230	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		1467	1.8	0.659	0.2	NA	0.3	2.2	0.01	0.00	0.03	58.9

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

MOVEMENT SUMMARY

Site: 101 [Scenario 1: Old Canterbury Rd-James St - PM peak]

Scenario 1: Old Canterbury Rd-James St - PM peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Old Canterbury Road												
25	T1	880	2.0	0.659	0.2	LOS A	0.3	2.2	0.02	0.01	0.04	58.7
26a	R1	9	0.0	0.659	6.9	LOS A	0.3	2.2	0.03	0.01	0.06	50.8
Approach		889	2.0	0.659	0.3	NA	0.3	2.2	0.02	0.01	0.04	58.6
West: James Street												
12b	R3	1	0.0	0.011	41.2	LOS E	0.0	0.2	0.91	0.97	0.91	17.5
Approach		1	0.0	0.011	41.2	LOS E	0.0	0.2	0.91	0.97	0.91	17.5
SouthWest: Old Canterbury Road												
30b	L3	2	0.0	0.069	6.5	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
31	T1	575	1.5	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		577	1.5	0.230	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		1467	1.8	0.659	0.2	NA	0.3	2.2	0.01	0.00	0.03	58.9

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

MOVEMENT SUMMARY

Site: 101 [Prospect - Seaview East AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
2	T1	149	5.6	0.113	0.5	LOS A	0.3	2.5	0.22	0.14	0.22	57.9
3	R2	42	2.5	0.113	6.8	LOS A	0.3	2.5	0.22	0.14	0.22	55.8
Approach		192	4.9	0.113	1.9	NA	0.3	2.5	0.22	0.14	0.22	57.5
East: Seaview Street												
4	L2	48	0.0	0.066	6.5	LOS A	0.2	1.7	0.38	0.63	0.38	52.5
6	R2	21	0.0	0.066	7.8	LOS A	0.2	1.7	0.38	0.63	0.38	52.0
Approach		69	0.0	0.066	6.9	LOS A	0.2	1.7	0.38	0.63	0.38	52.3
North: Prospect Road												
7	L2	43	0.0	0.178	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.7
8	T1	296	3.2	0.178	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.3
Approach		339	2.8	0.178	0.7	NA	0.0	0.0	0.00	0.08	0.00	59.0
All Vehicles		600	3.2	0.178	1.8	NA	0.3	2.5	0.11	0.16	0.11	57.7

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

MOVEMENT SUMMARY

Site: 2 [Scenario1: Prospect - Seaview East AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
2	T1	160	5.3	0.127	0.6	LOS A	0.4	3.1	0.25	0.16	0.25	57.7
3	R2	53	2.0	0.127	6.9	LOS A	0.4	3.1	0.25	0.16	0.25	55.6
Approach		213	4.5	0.127	2.1	NA	0.4	3.1	0.25	0.16	0.25	57.1
East: Seaview Street												
4	L2	59	0.0	0.075	6.6	LOS A	0.3	1.9	0.39	0.64	0.39	52.4
6	R2	21	0.0	0.075	8.0	LOS A	0.3	1.9	0.39	0.64	0.39	51.9
Approach		80	0.0	0.075	7.0	LOS A	0.3	1.9	0.39	0.64	0.39	52.3
North: Prospect Road												
7	L2	43	0.0	0.183	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.7
8	T1	306	3.1	0.183	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		349	2.7	0.183	0.7	NA	0.0	0.0	0.00	0.07	0.00	59.1
All Vehicles		642	3.0	0.183	2.0	NA	0.4	3.1	0.13	0.17	0.13	57.5

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

MOVEMENT SUMMARY

Site: 101 [Prospect - Seaview East PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
2	T1	103	2.0	0.072	0.2	LOS A	0.2	1.3	0.13	0.13	0.13	58.3
3	R2	27	0.0	0.072	6.0	LOS A	0.2	1.3	0.13	0.13	0.13	56.2
Approach		131	1.6	0.072	1.4	NA	0.2	1.3	0.13	0.13	0.13	57.9
East: Seaview Street												
4	L2	33	0.0	0.036	6.0	LOS A	0.1	0.9	0.26	0.57	0.26	52.8
6	R2	13	0.0	0.036	6.6	LOS A	0.1	0.9	0.26	0.57	0.26	52.3
Approach		45	0.0	0.036	6.2	LOS A	0.1	0.9	0.26	0.57	0.26	52.7
North: Prospect Road												
7	L2	15	0.0	0.092	5.5	LOS A	0.0	0.0	0.00	0.05	0.00	57.9
8	T1	162	2.6	0.092	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach		177	2.4	0.092	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.4
All Vehicles		353	1.8	0.092	1.5	NA	0.2	1.3	0.08	0.14	0.08	57.9

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

MOVEMENT SUMMARY

Site: 2 [Scenario1: Prospect - Seaview East PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
2	T1	114	1.9	0.084	0.2	LOS A	0.2	1.8	0.16	0.15	0.16	58.0
3	R2	38	0.0	0.084	6.1	LOS A	0.2	1.8	0.16	0.15	0.16	55.9
Approach		152	1.4	0.084	1.7	NA	0.2	1.8	0.16	0.15	0.16	57.5
East: Seaview Street												
4	L2	43	0.0	0.044	6.1	LOS A	0.2	1.1	0.27	0.57	0.27	52.8
6	R2	13	0.0	0.044	6.7	LOS A	0.2	1.1	0.27	0.57	0.27	52.3
Approach		56	0.0	0.044	6.2	LOS A	0.2	1.1	0.27	0.57	0.27	52.7
North: Prospect Road												
7	L2	15	0.0	0.098	5.5	LOS A	0.0	0.0	0.00	0.05	0.00	57.9
8	T1	173	2.4	0.098	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach		187	2.2	0.098	0.4	NA	0.0	0.0	0.00	0.05	0.00	59.4
All Vehicles		395	1.6	0.098	1.7	NA	0.2	1.8	0.10	0.16	0.10	57.6

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

MOVEMENT SUMMARY

Site: 1 [Prospect - Seaview West AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
1	L2	84	6.3	0.117	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	56.3
2	T1	131	7.3	0.117	0.0	LOS A	0.0	0.0	0.00	0.23	0.00	57.9
Approach		215	6.9	0.117	2.2	NA	0.0	0.0	0.00	0.23	0.00	57.3
North: Prospect Road												
8	T1	275	3.1	0.193	0.3	LOS A	0.5	3.8	0.17	0.12	0.17	58.3
9	R2	69	1.5	0.193	6.3	LOS A	0.5	3.8	0.17	0.12	0.17	56.1
Approach		344	2.8	0.193	1.5	NA	0.5	3.8	0.17	0.12	0.17	57.8
West: Seaview Street												
10	L2	61	0.0	0.155	6.0	LOS A	0.6	4.0	0.31	0.64	0.31	52.3
12	R2	85	3.7	0.155	8.2	LOS A	0.6	4.0	0.31	0.64	0.31	51.7
Approach		146	2.2	0.155	7.3	LOS A	0.6	4.0	0.31	0.64	0.31	52.0
All Vehicles		705	3.9	0.193	2.9	NA	0.6	4.0	0.14	0.26	0.14	56.3

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

MOVEMENT SUMMARY

Site: 1 [Scenario1: Prospect - Seaview West AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
1	L2	113	4.7	0.133	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	55.9
2	T1	131	7.3	0.133	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.5
Approach		243	6.1	0.133	2.6	NA	0.0	0.0	0.00	0.27	0.00	56.8
North: Prospect Road												
8	T1	275	3.1	0.209	0.4	LOS A	0.7	5.1	0.21	0.15	0.21	57.8
9	R2	91	1.2	0.209	6.5	LOS A	0.7	5.1	0.21	0.15	0.21	55.7
Approach		365	2.6	0.209	1.9	NA	0.7	5.1	0.21	0.15	0.21	57.3
West: Seaview Street												
10	L2	82	0.0	0.202	6.0	LOS A	0.8	5.4	0.31	0.65	0.31	52.2
12	R2	106	3.0	0.202	8.6	LOS A	0.8	5.4	0.31	0.65	0.31	51.6
Approach		188	1.7	0.202	7.4	LOS A	0.8	5.4	0.31	0.65	0.31	51.9
All Vehicles		797	3.4	0.209	3.4	NA	0.8	5.4	0.17	0.31	0.17	55.7

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

MOVEMENT SUMMARY

Site: 101 [Prospect - Seaview West PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
1	L2	62	10.2	0.081	5.7	LOS A	0.0	0.0	0.00	0.25	0.00	56.3
2	T1	86	2.4	0.081	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	57.9
Approach		148	5.7	0.081	2.4	NA	0.0	0.0	0.00	0.25	0.00	57.2
North: Prospect Road												
8	T1	134	3.1	0.109	0.2	LOS A	0.4	2.7	0.18	0.19	0.18	57.6
9	R2	61	0.0	0.109	5.9	LOS A	0.4	2.7	0.18	0.19	0.18	55.6
Approach		195	2.2	0.109	2.0	NA	0.4	2.7	0.18	0.19	0.18	57.0
West: Seaview Street												
10	L2	44	0.0	0.076	5.8	LOS A	0.3	2.0	0.20	0.58	0.20	53.0
12	R2	43	7.3	0.076	6.9	LOS A	0.3	2.0	0.20	0.58	0.20	52.4
Approach		87	3.6	0.076	6.3	LOS A	0.3	2.0	0.20	0.58	0.20	52.7
All Vehicles		431	3.7	0.109	3.0	NA	0.4	2.7	0.12	0.29	0.12	56.1

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

MOVEMENT SUMMARY

Site: 1 [Scenario1: Prospect - Seaview West PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prospect Road												
1	L2	83	7.6	0.092	5.6	LOS A	0.0	0.0	0.00	0.29	0.00	55.9
2	T1	86	2.4	0.092	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.5
Approach		169	5.0	0.092	2.8	NA	0.0	0.0	0.00	0.29	0.00	56.7
North: Prospect Road												
8	T1	134	3.1	0.124	0.3	LOS A	0.5	3.5	0.22	0.23	0.22	57.2
9	R2	82	0.0	0.124	6.0	LOS A	0.5	3.5	0.22	0.23	0.22	55.1
Approach		216	2.0	0.124	2.5	NA	0.5	3.5	0.22	0.23	0.22	56.4
West: Seaview Street												
10	L2	65	0.0	0.121	5.8	LOS A	0.4	3.2	0.21	0.59	0.21	52.9
12	R2	72	4.4	0.121	7.0	LOS A	0.4	3.2	0.21	0.59	0.21	52.3
Approach		137	2.3	0.121	6.5	LOS A	0.4	3.2	0.21	0.59	0.21	52.6
All Vehicles		522	3.0	0.124	3.6	NA	0.5	3.5	0.15	0.34	0.15	55.4

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

MOVEMENT SUMMARY

Site: 101 [Victoria - Seaview AM Peak]

2019 AM Peak
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	19	5.6	0.116	6.3	LOS A	0.3	2.3	0.18	0.16	0.18	56.1
2	T1	152	0.7	0.116	0.3	LOS A	0.3	2.3	0.18	0.16	0.18	57.9
3	R2	38	0.0	0.116	6.4	LOS A	0.3	2.3	0.18	0.16	0.18	55.8
Approach		208	1.0	0.116	1.9	NA	0.3	2.3	0.18	0.16	0.18	57.3
East: Seaview Street												
4	L2	64	3.3	0.155	9.2	LOS A	0.6	4.2	0.42	0.93	0.42	50.8
5	T1	37	0.0	0.155	10.7	LOS A	0.6	4.2	0.42	0.93	0.42	50.5
6	R2	22	9.5	0.155	12.9	LOS A	0.6	4.2	0.42	0.93	0.42	50.2
Approach		123	3.4	0.155	10.3	LOS A	0.6	4.2	0.42	0.93	0.42	50.6
North: Victoria Street												
7	L2	27	11.5	0.145	5.9	LOS A	0.1	0.8	0.04	0.08	0.04	57.3
8	T1	234	2.3	0.145	0.0	LOS A	0.1	0.8	0.04	0.08	0.04	59.2
9	R2	8	37.5	0.145	6.7	LOS A	0.1	0.8	0.04	0.08	0.04	56.0
Approach		269	4.3	0.145	0.8	NA	0.1	0.8	0.04	0.08	0.04	58.9
West: Seaview Street												
10	L2	24	4.3	0.204	8.9	LOS A	0.8	5.5	0.45	0.98	0.45	50.2
11	T1	78	1.4	0.204	11.0	LOS A	0.8	5.5	0.45	0.98	0.45	50.1
12	R2	39	0.0	0.204	12.1	LOS A	0.8	5.5	0.45	0.98	0.45	49.9
Approach		141	1.5	0.204	10.9	LOS A	0.8	5.5	0.45	0.98	0.45	50.1
All Vehicles		742	2.7	0.204	4.6	NA	0.8	5.5	0.22	0.41	0.22	55.1

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

MOVEMENT SUMMARY

Site: 3 [Scenario1: Victoria - Seaview AM Peak]

2019 AM Peak
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	29	3.6	0.200	6.9	LOS A	0.8	5.4	0.28	0.19	0.28	55.6
2	T1	234	0.5	0.200	0.6	LOS A	0.8	5.4	0.28	0.19	0.28	57.3
3	R2	79	0.0	0.200	7.0	LOS A	0.8	5.4	0.28	0.19	0.28	55.2
Approach		342	0.6	0.200	2.6	NA	0.8	5.4	0.28	0.19	0.28	56.6
East: Seaview Street												
4	L2	113	1.9	0.246	9.8	LOS A	1.0	6.8	0.52	0.94	0.52	50.1
5	T1	37	0.0	0.246	13.5	LOS A	1.0	6.8	0.52	0.94	0.52	49.8
6	R2	22	9.5	0.246	17.1	LOS B	1.0	6.8	0.52	0.94	0.52	49.5
Approach		172	2.5	0.246	11.5	LOS A	1.0	6.8	0.52	0.94	0.52	49.9
North: Victoria Street												
7	L2	27	11.5	0.196	6.1	LOS A	0.1	1.0	0.04	0.06	0.04	57.5
8	T1	332	1.6	0.196	0.1	LOS A	0.1	1.0	0.04	0.06	0.04	59.4
9	R2	8	37.5	0.196	7.4	LOS A	0.1	1.0	0.04	0.06	0.04	56.1
Approach		367	3.2	0.196	0.7	NA	0.1	1.0	0.04	0.06	0.04	59.2
West: Seaview Street												
10	L2	24	4.3	0.316	10.1	LOS A	1.3	9.4	0.61	1.03	0.73	47.9
11	T1	78	1.4	0.316	14.4	LOS A	1.3	9.4	0.61	1.03	0.73	47.8
12	R2	52	0.0	0.316	17.3	LOS B	1.3	9.4	0.61	1.03	0.73	47.7
Approach		154	1.4	0.316	14.7	LOS B	1.3	9.4	0.61	1.03	0.73	47.8
All Vehicles		1035	1.9	0.316	5.2	NA	1.3	9.4	0.28	0.39	0.30	54.7

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

MOVEMENT SUMMARY

Site: 101 [Victoria - Seaview PM Peak]

2019 PM Peak
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	12	0.0	0.090	6.1	LOS A	0.3	1.8	0.16	0.16	0.16	56.4
2	T1	117	0.9	0.090	0.2	LOS A	0.3	1.8	0.16	0.16	0.16	57.9
3	R2	33	3.2	0.090	6.2	LOS A	0.3	1.8	0.16	0.16	0.16	55.7
Approach		161	1.3	0.090	1.9	NA	0.3	1.8	0.16	0.16	0.16	57.3
East: Seaview Street												
4	L2	59	1.8	0.127	8.8	LOS A	0.5	3.6	0.35	0.92	0.35	51.2
5	T1	43	0.0	0.127	9.8	LOS A	0.5	3.6	0.35	0.92	0.35	50.9
6	R2	12	45.5	0.127	13.3	LOS A	0.5	3.6	0.35	0.92	0.35	50.4
Approach		114	5.6	0.127	9.6	LOS A	0.5	3.6	0.35	0.92	0.35	51.0
North: Victoria Street												
7	L2	27	7.7	0.116	5.8	LOS A	0.2	1.1	0.06	0.12	0.06	57.0
8	T1	171	3.1	0.116	0.1	LOS A	0.2	1.1	0.06	0.12	0.06	58.6
9	R2	18	0.0	0.116	5.9	LOS A	0.2	1.1	0.06	0.12	0.06	56.5
Approach		216	3.4	0.116	1.3	NA	0.2	1.1	0.06	0.12	0.06	58.2
West: Seaview Street												
10	L2	6	0.0	0.089	8.5	LOS A	0.3	2.2	0.40	0.95	0.40	50.9
11	T1	34	0.0	0.089	9.8	LOS A	0.3	2.2	0.40	0.95	0.40	50.6
12	R2	25	0.0	0.089	10.7	LOS A	0.3	2.2	0.40	0.95	0.40	50.4
Approach		65	0.0	0.089	10.0	LOS A	0.3	2.2	0.40	0.95	0.40	50.6
All Vehicles		556	2.8	0.127	4.2	NA	0.5	3.6	0.19	0.39	0.19	55.4

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

MOVEMENT SUMMARY

Site: 3 [Scenario1: Victoria - Seaview PM Peak]

2019 PM Peak
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	24	0.0	0.184	6.5	LOS A	0.7	4.9	0.25	0.19	0.25	55.8
2	T1	215	0.5	0.184	0.5	LOS A	0.7	4.9	0.25	0.19	0.25	57.3
3	R2	81	1.3	0.184	6.6	LOS A	0.7	4.9	0.25	0.19	0.25	55.2
Approach		320	0.7	0.184	2.5	NA	0.7	4.9	0.25	0.19	0.25	56.6
East: Seaview Street												
4	L2	100	1.1	0.199	9.2	LOS A	0.8	5.6	0.44	0.93	0.44	50.5
5	T1	43	0.0	0.199	12.2	LOS A	0.8	5.6	0.44	0.93	0.44	50.3
6	R2	12	45.5	0.199	18.3	LOS B	0.8	5.6	0.44	0.93	0.44	49.7
Approach		155	4.1	0.199	10.7	LOS A	0.8	5.6	0.44	0.93	0.44	50.4
North: Victoria Street												
7	L2	27	7.7	0.159	6.0	LOS A	0.2	1.3	0.07	0.09	0.07	57.3
8	T1	253	2.1	0.159	0.1	LOS A	0.2	1.3	0.07	0.09	0.07	58.9
9	R2	18	0.0	0.159	6.3	LOS A	0.2	1.3	0.07	0.09	0.07	56.7
Approach		298	2.5	0.159	1.0	NA	0.2	1.3	0.07	0.09	0.07	58.6
West: Seaview Street												
10	L2	6	0.0	0.148	8.9	LOS A	0.5	3.6	0.55	1.00	0.55	49.2
11	T1	34	0.0	0.148	11.9	LOS A	0.5	3.6	0.55	1.00	0.55	49.0
12	R2	36	0.0	0.148	14.2	LOS A	0.5	3.6	0.55	1.00	0.55	48.8
Approach		76	0.0	0.148	12.7	LOS A	0.5	3.6	0.55	1.00	0.55	48.9
All Vehicles		848	1.9	0.199	4.4	NA	0.8	5.6	0.25	0.36	0.25	55.3

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

MOVEMENT SUMMARY

Site: 101 [Victoria - Harland AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	19	0.0	0.034	5.5	LOS A	0.0	0.0	0.00	0.17	0.00	56.9
2	T1	46	2.3	0.034	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	58.4
Approach		65	1.6	0.034	1.6	NA	0.0	0.0	0.00	0.17	0.00	58.0
North: Victoria Street												
8	T1	51	2.1	0.171	0.2	LOS A	0.9	6.4	0.18	0.47	0.18	55.3
9	R2	240	3.1	0.171	5.7	LOS A	0.9	6.4	0.18	0.47	0.18	53.3
Approach		291	2.9	0.171	4.8	NA	0.9	6.4	0.18	0.47	0.18	53.7
West: Harland Street												
10	L2	206	0.0	0.149	5.7	LOS A	0.6	4.5	0.12	0.55	0.12	53.3
12	R2	17	0.0	0.149	7.1	LOS A	0.6	4.5	0.12	0.55	0.12	52.7
Approach		223	0.0	0.149	5.8	LOS A	0.6	4.5	0.12	0.55	0.12	53.2
All Vehicles		579	1.6	0.171	4.8	NA	0.9	6.4	0.14	0.47	0.14	53.9

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

MOVEMENT SUMMARY

Site: 4 [Scenario1: Victoria - Harland AM Peak]

2019 AM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	19	0.0	0.034	5.5	LOS A	0.0	0.0	0.00	0.17	0.00	56.9
2	T1	46	2.3	0.034	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	58.4
Approach		65	1.6	0.034	1.6	NA	0.0	0.0	0.00	0.17	0.00	58.0
North: Victoria Street												
8	T1	51	2.1	0.213	0.2	LOS A	1.2	8.2	0.19	0.49	0.19	55.1
9	R2	313	2.4	0.213	5.7	LOS A	1.2	8.2	0.19	0.49	0.19	53.2
Approach		363	2.3	0.213	4.9	NA	1.2	8.2	0.19	0.49	0.19	53.4
West: Harland Street												
10	L2	292	0.0	0.205	5.7	LOS A	0.9	6.6	0.13	0.55	0.13	53.2
12	R2	17	0.0	0.205	7.7	LOS A	0.9	6.6	0.13	0.55	0.13	52.7
Approach		308	0.0	0.205	5.8	LOS A	0.9	6.6	0.13	0.55	0.13	53.2
All Vehicles		737	1.3	0.213	5.0	NA	1.2	8.2	0.14	0.49	0.14	53.7

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

MOVEMENT SUMMARY

Site: 101 [Victoria - Harland PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	29	0.0	0.036	5.5	LOS A	0.0	0.0	0.00	0.25	0.00	56.2
2	T1	40	0.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	57.8
Approach		69	0.0	0.036	2.4	NA	0.0	0.0	0.00	0.25	0.00	57.1
North: Victoria Street												
8	T1	39	0.0	0.159	0.2	LOS A	0.8	5.8	0.18	0.48	0.18	55.2
9	R2	231	2.3	0.159	5.7	LOS A	0.8	5.8	0.18	0.48	0.18	53.2
Approach		269	2.0	0.159	4.9	NA	0.8	5.8	0.18	0.48	0.18	53.5
West: Harland Street												
10	L2	85	0.0	0.070	5.7	LOS A	0.3	1.9	0.10	0.56	0.10	53.3
12	R2	16	0.0	0.070	6.8	LOS A	0.3	1.9	0.10	0.56	0.10	52.8
Approach		101	0.0	0.070	5.8	LOS A	0.3	1.9	0.10	0.56	0.10	53.3
All Vehicles		440	1.2	0.159	4.7	NA	0.8	5.8	0.13	0.46	0.13	54.0

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

MOVEMENT SUMMARY

Site: 4 [Scenario1: Victoria - Harland PM Peak]

2019 PM Peak
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Victoria Street												
1	L2	29	0.0	0.036	5.5	LOS A	0.0	0.0	0.00	0.25	0.00	56.2
2	T1	40	0.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	57.8
Approach		69	0.0	0.036	2.4	NA	0.0	0.0	0.00	0.25	0.00	57.1
North: Victoria Street												
8	T1	39	0.0	0.209	0.2	LOS A	1.1	8.0	0.19	0.50	0.19	55.0
9	R2	316	1.7	0.209	5.7	LOS A	1.1	8.0	0.19	0.50	0.19	53.1
Approach		355	1.5	0.209	5.1	NA	1.1	8.0	0.19	0.50	0.19	53.3
West: Harland Street												
10	L2	158	0.0	0.118	5.7	LOS A	0.5	3.4	0.10	0.56	0.10	53.3
12	R2	16	0.0	0.118	7.3	LOS A	0.5	3.4	0.10	0.56	0.10	52.8
Approach		174	0.0	0.118	5.8	LOS A	0.5	3.4	0.10	0.56	0.10	53.3
All Vehicles		598	0.9	0.209	5.0	NA	1.1	8.0	0.14	0.49	0.14	53.7

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

Appendix D Green Travel Plan

SSD 10371

Trinity Grammar School Summer Hill Campus - The Renewal Project

Green Travel Plan

Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	Justin Knight	Mel Fyfe	EIS	28/02/2020
2.				
3.				
4.				

Level 5, Suite 501, 174 Pacific Highway, Greenwich. PO Box 5238 Greenwich NSW 2065

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1 Introduction

The purpose of this Green Travel Plan (GTP) is to encourage travel behaviour change through raising awareness of other alternatives to using a private vehicle. It is intended that this document addresses the requirements of a Green Travel Plan and a Workplace Travel Plan.

The Green Travel Plan is a collection of initiatives and actions to encourage travel behaviour change. The plan will provide students, staff and parents with information on sustainable transport and encourages them to make alternative transport choices than the use of a private vehicle. The implementation of the Green Travel Plan intends to reduce traffic congestion and parking problems.

This plan has been prepared to support the State Significant Development (SSD) Application for the Trinity Grammar School (TGS) Renewal Project.

Successful development and implementation of this Green Travel Plan can have the following benefits:

- Reduced reliance on on-site parking;
- Reduced congestion on local road and parking networks;
- Improved health (physical and mental) for staff and students;
- Reduced greenhouse gas emissions;
- A more active workplace and school campus; and
- An improved community and corporate image.

1.1 Project Description

The proposed development is for new teaching and educational facilities, as detailed below:

- New five (5) storey building at the heart of the Campus to accommodate modern, flexible teaching and learning spaces;
- Improve movement and flow for students, with better east-west and north-south links across the school grounds and between levels, including more accessible connections between the Junior School, ovals and car park, and providing strong visual and physical connections;
- Renewal and Refurbishment of existing teaching and learning facilities;
- Reconfiguration and connection of underground car park improve traffic flow for the school drop-off and pick-up zone and improve the safety of boys and visitors who enter the school grounds as pedestrians from Victoria Street;
- New multipurpose pavilion between Ovals 1 and 3 containing a multipurpose space and basketball court;
- Demolition of school-owned residences at 46, 48, 50 and 52 Seaview Street, improving the existing service, maintenance and delivery facilities;
- Improvement and extension to Junior School outdoor teaching area and outdoor assembly area.

The location of the renewal project is within the existing grounds of the school's Summer Hill Campus on Victoria Street, Prospect Road and Seaview Street. The site is within the Inner West Council local government area. An aerial view of the site is shown in Figure 1-1.

Figure 1-1 Site Location Aerial View

1.2 Objectives

The main objective of this Green Travel Plan is to reduce the reliance on private vehicle usage and promote of sustainable and active modes of transport by:

- Increasing mode share for public transport, cycling and walking to school journeys;
- Ensuring adequate facilities are provided at the site to enable staff, visitors and students to commute by sustainable and active transport modes;
- Reduce the number of car journeys to and from the school;
- Raising awareness of the benefits of using sustainable and active transport.

1.3 Existing Mode Share

A Travel Mode Survey was conducted in February 2020. The results are presented in the figures and tables below. The mode share for students is shown in Figure 1-2 and Table 1-1.

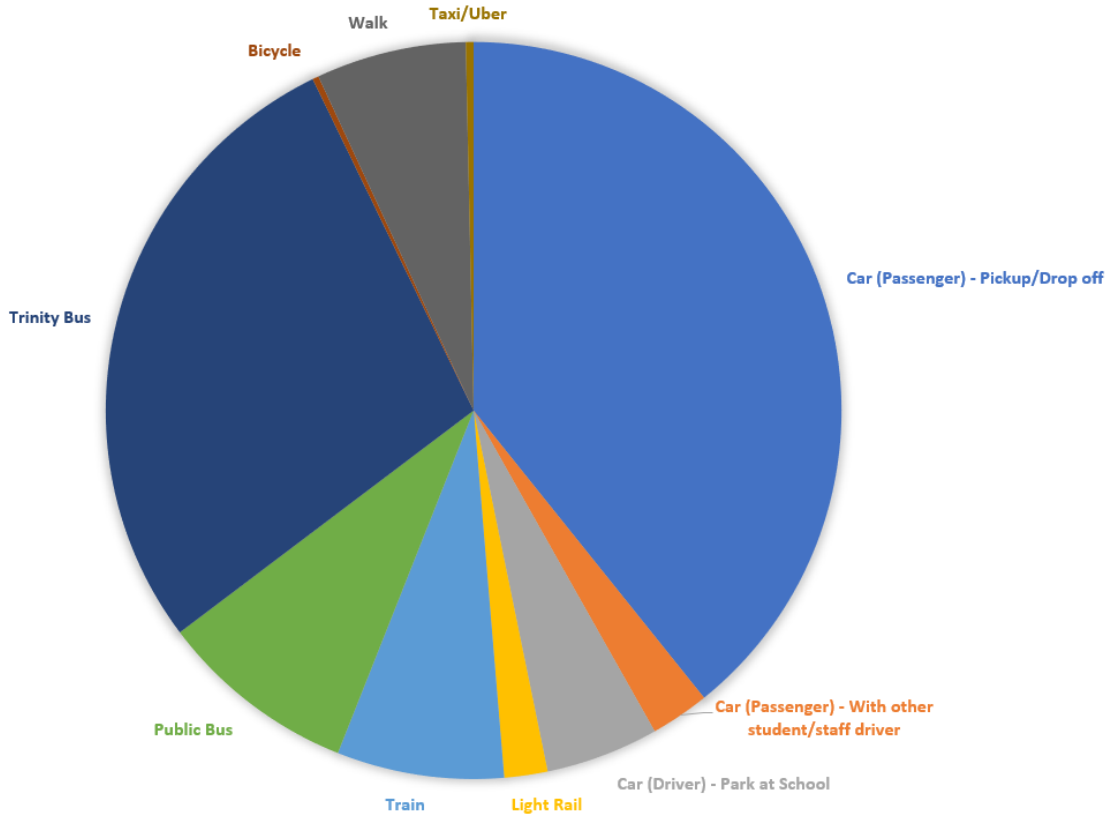


Figure 1-2 Student Mode Share

Table 1-1 Student Mode Share

Transport Mode		%	
Non-Sustainable and Active	Car (Passenger) - Pickup/Drop off	39%	47%
	Car (Passenger) - With other student/staff driver	3%	
	Car (Driver) - Park at School	5%	
	Taxis/Uber	0%	
Sustainable and Active	Light Rail	2%	53%
	Train	7%	
	Public Bus	9%	
	Trinity Bus	28%	
	Bicycle	0%	
	Walk	7%	
	Total	**100%**	

The mode share for staff in shown in Figure 1-3 and Table 1-2.

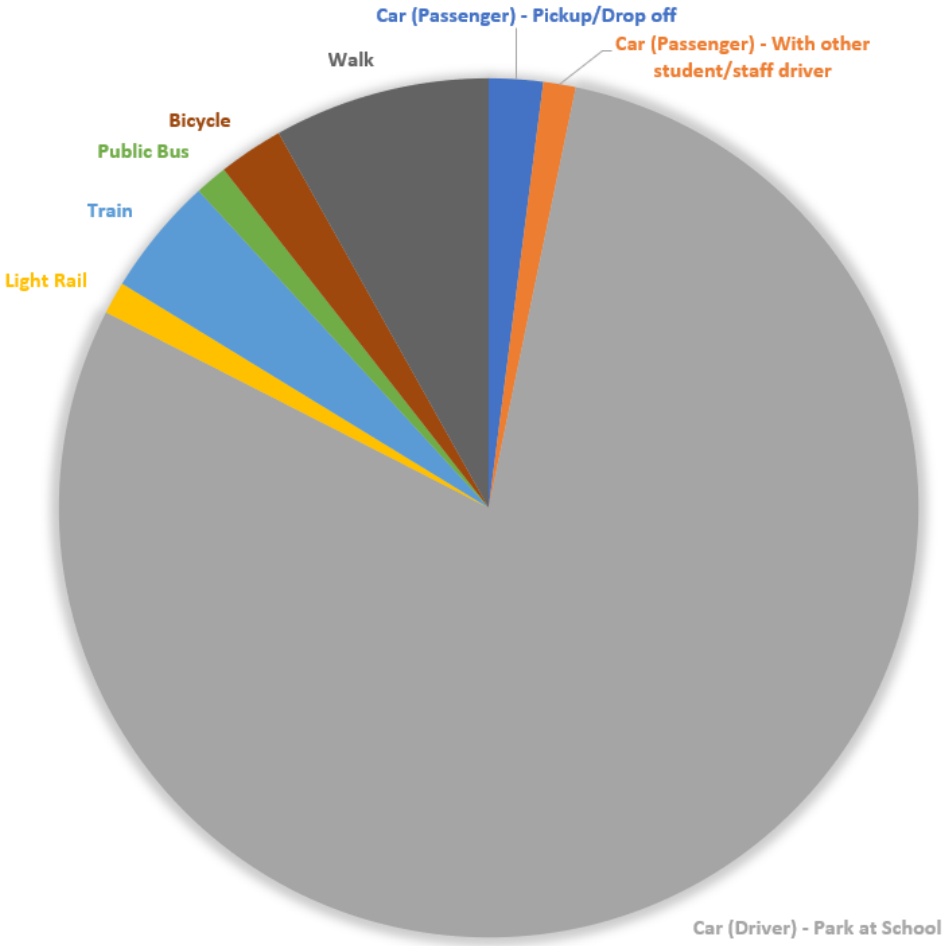


Figure 1-3 Staff Mode Share

Table 1-2 Staff Mode Share

Transport Mode		%	
Non-Sustainable and Active	Car (Passenger) - Pickup/Drop off	2%	83%
	Car (Passenger) - With other student/staff driver	1%	
	Car (Driver) - Park at School	79%	
Sustainable and Active	Light Rail	1%	17%
	Train	4%	
	Public Bus	1%	
	Bicycle	2%	
	Walk	8%	
	Total	**100%**	

The above figures demonstrate that whilst there are already some very good practices in place to achieve the objectives for a Green Travel Plan, there are opportunities for improvement.

The school bus service is a preferred mode of transport for students. The success of this service should be built upon when considering initiatives to increase usage of active and sustainable transport.

The best opportunities to improve usage of active and sustainable exist in the following areas:

- Reduce the amount of staff using private vehicles, 83% of staff drive to work, this number is very high;
- Increase the amount of staff using public transport to travel to work. There is a low percentage of staff using public transport;
- Increase the number of students and staff riding to school. Currently less than 1% of students ride to school and a low percentage of staff; and
- Increase the number of students walking to school. There is a low percentage of students walking to school.

1.4 Current Trends

Table 1-3 compares the results from the recent travel mode survey to previous surveys undertaken for the school. The data shows a trend towards sustainable and active modes of transport.

Table 1-3 Past and Present Travel Mode Splits

Travel Mode		2013		2016		2018		2019		2020	
Non-Sustainable and Active	Drop off/Pick up	49%	55%	47%	53%	48%	54%	42%	46%	39%	47%
	Car Diver	4%		4%		5%		4%		5%	
	Car with Student Driver	3%		2%		1%		0%		3%	
	Taxi/Uber	0%		0%		0%		0%		0%	
Sustainable and Active	Trinity Bus	24%	45%	23%	47%	27%	46%	37%	54%	28%	53%
	Public Bus	8%		10%		10%		10%		9%	
	Train	6%		8%		2%				7%	
	Walk	4%		4%		6%		7%		7%	
	Boarders	2%		2%		1%		1%		0%	
	Cycle	0%		1%		0%		0%		0%	
	Light Rail									2%	

1.5 Students

Students that attend the school come from all over the Sydney metropolitan area.

Table 1-4 presents a summary of the distance from school that students reside. Figure 1-4 presents a heat map of the locations that students reside.

Table 1-4 Distance students reside from School

	Distance (km)			
	0 – 2	2 – 10	10 - 20	>20
Junior	18%	67%	15%	0%
Middle	13%	66%	20%	1%
Senior	12%	61%	24%	2%
Total	**14%**	**64%**	**20%**	**1%**

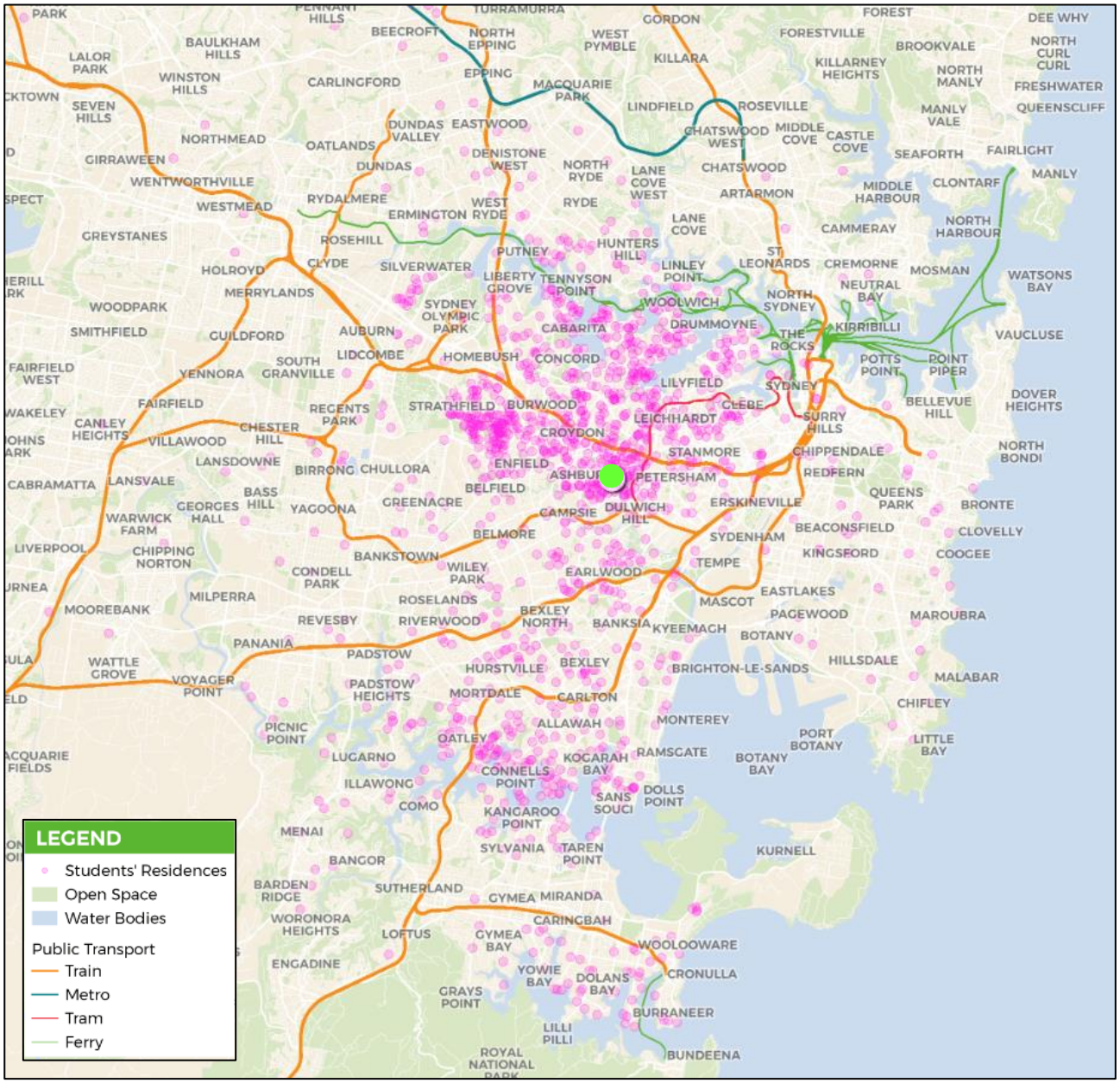


Figure 1-4 Heat Map - Location that students reside

2 Green Travel Plan Initiatives

2.1 Bicycle

The local road network provides good cycling connections in all directions. Staff and high school students should be encouraged to cycle to school.

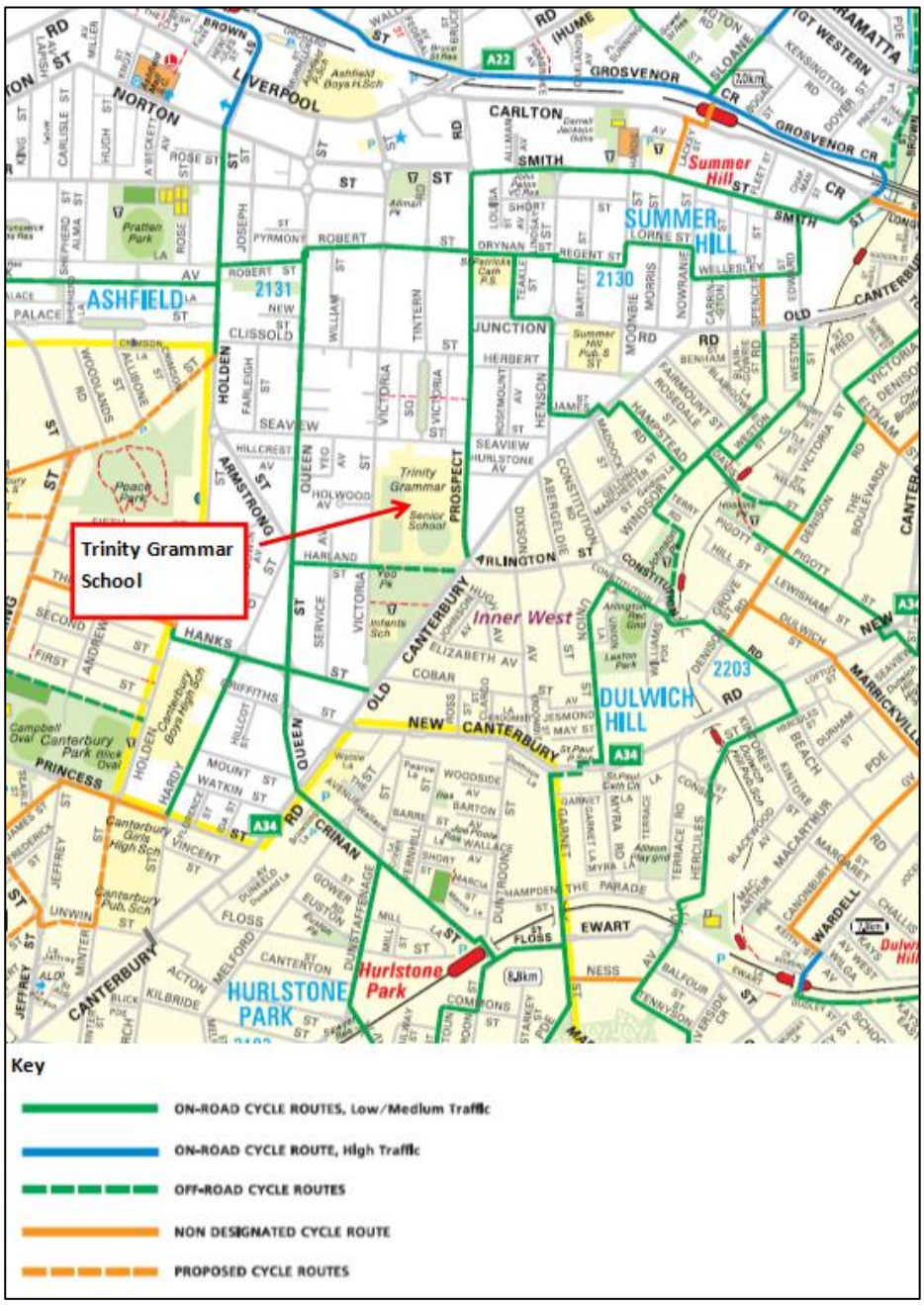


Figure 2-1 Extract from Ashfield Cycle Map

Currently, less than 1% of staff and students ride to school. A very low amount of bike parking is provided. Six bicycle parks are provided for students and five are provided for staff. This limits the amount of staff and students that can safely store their bicycle. This is significantly less than recommended by Austroads Guidelines and the Ashfield Development Control Plan (DCP).

Table 1-4 shows that 78% of students live within 10 kms of the school. It is considered that cycling is a viable option for these students. There is significant opportunity for the number of students using this mode to increase.

A total of 37 bike parking spaces are proposed as detailed in Table 2-1. This amount of spaces is still significantly less than recommended by the above guidelines and DCP, however due to the very low demand at present, it is considered appropriate for the initial development. The school should aim to increase the number of racks and encourage cycling as a mode of transport.

Table 2-1 Proposed bike parking provision

	Number	Rate	Bike Parks
Junior School	310	1 per 100 students	3
Senior School	1750	1 per 100 students	18
Staff	321	1 per 20 staff	16
Total			**37**

An area within the revised car park has been identified as an indicative location for bicycle storage. The yellow highlighted area of the Figure 2-2 shows the indicative location of the proposed bicycle storage facility.

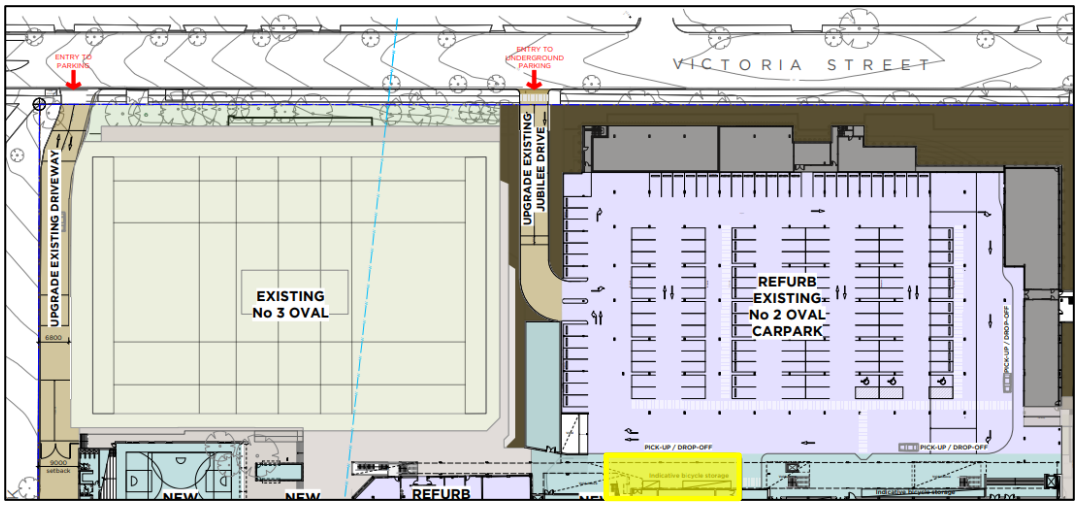


Figure 2-2 Indicative Location of Bicycle Storage Facility

Bike parking facilities should be designed in accordance to Standards Australia AS2890.3 (Bicycle Parking Facilities) and should be provided in a well-lit, sheltered and secure location. The school should ensure that the shower facilities in the gym and aquatic centre are available for those that require use of an end of trip facility.

It is noted that cycling guidelines generally do not contain requirements to provide bicycle parking for students up to Year 4. Where appropriate, students should be encouraged to cycle to school from a young age. This will also assist in embedding in students the benefits of active living. For these students, adult supervision is required. Initiatives such as parent-run 'bike buses', where parents and younger students ride in a convoy together are an effective way of promoting cycling.

The school is less than 1 km from the Green Way. The Green Way is a 5.8km environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove. The Green Way mostly follows the route of the Inner West Light Rail and Hawthorne Canal and features bike paths and foreshore walks, cultural and historical sites, cafes, bush care sites and a range of parks, playgrounds and sporting facilities. Cyclists could use the Green Way as part of their ride to or from school or could detour via this path to extend the length of their ride and the duration of exercise. Using the heat map in Figure 1-4, a good proportion of students would have access to the GreenWay. A map of the Green Way is attached in Appendix A.

The following measures should also be considered to promote cycling to school:

- Supply a Green toolkit to cyclists - this can consist of puncture repair equipment, a bike pump, a spare lock and lights;
- Approach local cycle retailers to provide bulk servicing of student and staff bikes at a discounted price;
- Provide cycle maps to staff and students;
- Make staff and students aware of the nearby Greenway;
- Participate in annual events such as 'Ride to Work Day' and 'Ride to School Day';
- Promote cycling to school during significant events such as the Tour de France;
- Notice boards should have news of events / generic posters promoting cycling;
- The schools should have a 'Cycling to school' webpage specific for their school containing details of storage areas, shower facilities and links on the intranet containing useful links to journey planning websites in Sydney;
- Implement a parent run 'bike bus' program for younger students;
- Make staff and students aware of public transport cycling carriage policies and cycle storage facilities at rail stations;
- Staff and students who cycle should be encouraged to form a Bicycle User Group in order to provide a body of regular cyclists who can discuss on issues relating to the provision of on-site cycling facilities and the maintenance of off-site cycle routes; and
- Set up 'Bike Buddies' scheme for less confident people interested in cycling and potentially offer rider training through an accredited training provider.

2.2 Walking

All roads adjacent to the school have concrete footpaths on both sides of an adequate size for the student volumes.

There is a pedestrian (zebra) crossing on Prospect Road near the entrance to the school.

There is a signalised pedestrian crossing on Old Canterbury Road that provides a safe point for students to cross.

A pedestrian refuge island has recently been installed on Victoria Street at the southern end of the school (near Yeo Park). This island will need to be removed to accommodate the new maintenance and delivery area. It is recommended that a painted island is installed to replace this facility.

A pedestrian refuge island has been provided on Queen Street near Seaview Street.

A pedestrian refuge island has been provided on Old Canterbury Road near Constitution Road. Students that use light rail may use this facility.

Figure 2-3 shows the pedestrian infrastructure in the vicinity of the school.

Figure 2-3 Pedestrian facilities near school

The nearby Green Way (refer Appendix A of this report) could be included as part of staff or students walk to or from school.

Table 1-4 shows that 14% of students live with 2km of the school. Walking to school is considered a viable option for these students. *Sydney's Walking Future* is a strategy that recognises walking's place as an active, sustainable and enjoyable transport mode, and encourages people to walk for transport, especially for trips under two kilometres. The strategy aims to increase walking trips to school to reduce pressure on the road network. Currently only 7% of students walk to school. There is opportunity for the number of students using this mode to increase.

Initiatives that could be implemented to encourage staff or students to walk to or from school include:

- Produce a map showing the most direct route connecting the transport interchange and schools, along with the estimated walking time;
- Create and maintain an intranet 'useful walking routes' containing useful routes to key areas;
- Encourage use fitness phone applications to monitor and track the amount individuals walk each day;
- Make pedometers available to staff and students expressing an interest in walking to school; and
- Participate in National Walk Safely to School Day and host a healthy breakfast for participants.

2.3 Public Transport

The school is serviced by the public bus network, heavy rail and light rail. Currently, 9% of students and 5% of staff use public transport to travel to school.

The locations of the train stations and bus routes are shown in Figure 2-4.

Figure 2-4 Public Transport near School

Figure 1-4 shows that the greatest potential to increase the numbers of students taking using public is on:

- the light rail line, particularly living in Leichhardt, Lilyfield and Glebe;
- students near Rhodes, Concord West, North Strathfield on the T9 Northern Line to travel to Ashfield station (a 14 – 19-minute journey); and
- students that live near Homebush, Strathfield, Burwood and Croydon on the T2 Inner West Line to travel to Ashfield station (a 16-minute journey).

The following initiatives should be considered to encourage the use of public transport for travel to and from school:

- Provide links from the school's transport page to relevant public transport journey planning websites;
- Provide information on preferred walking routes to public transport infrastructure near the school; and
- Provide public transport maps and promotional items to staff in the induction packs for new employees.

2.4 School Bus

The school operates a substantial bus network to meet the needs of its students, 28% of students use this service to travel to school. This service has a charge per trip. The network for this service is shown in Figure 2-5

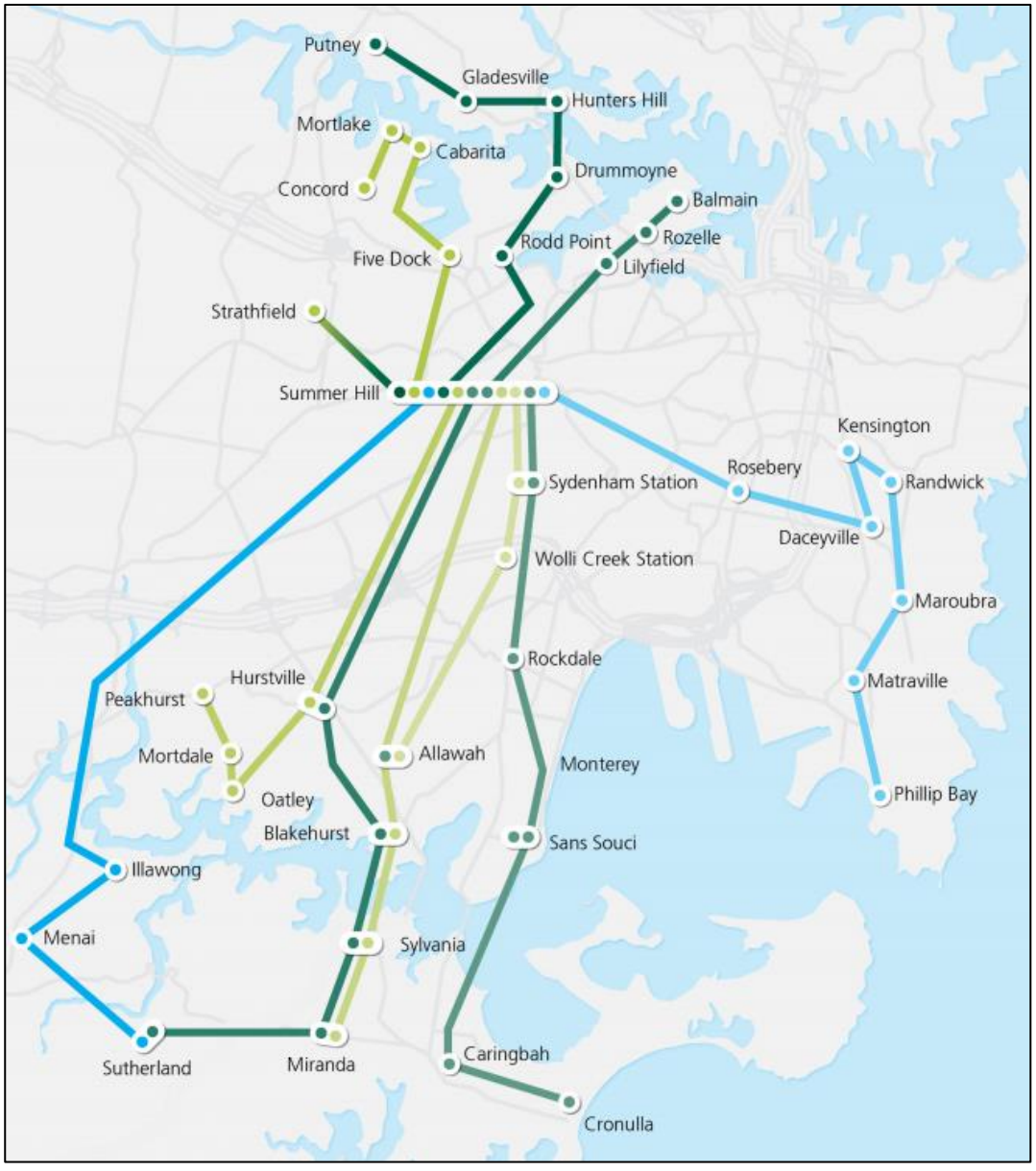


Figure 2-5 School operated bus network

This mode of travel to and from school is well used by students. The school provides excellent information on its website on the operation of this service. Figure 1-4 confirms that this network has been well designed and serves a significant proportion of the student population.

The school bus service is the most heavily favoured sustainable transport mode. Reliability, safety, efficiency and convenience are likely to be the key contributing factors for students and parents selecting this mode. The network obviously also services a significant proportion of the student population. The popularity of the service should be taken into account when considering the best way to increase the percentage of students using sustainable and active modes.

The school should continue to review the operation of this service to ensure that it continues to meet the needs of the student population. Based on Figure 1-4, consideration could be given to extending the service to areas such as Silverwater, Abbotsford, Strathfield South and Enfield.

2.5 Car Pooling

The current level of carpooling that occurs in travel to and from school is unknown. However, carpooling is considered as an opportunity to significantly reduce cars on the road network. The school could set up a system to manage and display the real-time carpool information from participants. This system can be via the cloud, google maps or various smartphone applications.

Carpooling should be a long-term initiative which requires consistent promotion. The initiative could be operated through parents on a carpooling forum. The school will manage and encourage parents to be proactive in offering carpooling services. The benefits of carpooling can be promoted in parent teacher meetings, school newsletters and by educating students.

A range of free apps are currently available online to assist with the implementation of carpooling. The School would need to consider the Child Protection Policies before promoting the initiative.

2.6 Car Parking

The Jubilee and staff carparks have a combined total of 312 parking spaces. Under the proposed arrangement, 324 car spaces are provided. This is substantial and adequate to service the school's existing and proposed demand.

3 Green Travel Plan Framework

3.1 Management and implementation

The success of a Green Travel Plan relies partly on the actions and initiatives identified, but also with the willingness and capacity to implement them. The other key elements in the development and implementation of a successful GTP include:

- Communications – Good communications are an essential part of the GTP. It will be necessary to explain the reason for adopting the plan, promote the benefits available and provide information about the alternatives to reliance on private car travel;
- Commitment – GTPs involve changing established habits and providing the impetus for occupants in new developments to choose a travel mode other than private car use. To achieve co–operation, it is essential to promote positively the wider objectives and benefits of the Plan. This commitment includes the provision of the necessary resources to implement the Plan, beginning with the introduction of encouragement for changing travel modes upon occupation; and
- Consensus – It will be necessary to obtain broad support for the introduction of the Plan.

Once the Plan has been adopted it will be essential to maintain interest in the scheme and any new initiative in the Plan will need to be promoted and marketed. At all stages, staff and students should be consulted on any new initiatives to ensure that they are tailored to their needs, if they are in keeping with the Green Travel Plan Framework and the objectives of this plan.

3.2 Leadership

An essential part of an effective Green Travel Plan is to nominate a Travel Plan Co-ordinator. The role of the Co-ordinator is to champion the benefits of active and sustainable travel and influence staff and students to adopt these modes. The role should be undertaken by an enthusiastic and skilled communicator in order to encourage people to consider travel other than private vehicles.

Senior management support of the Co-ordinator is critical to ensuring the success of any travel plan. The support should be demonstrated by:

- Leading by example;
- Providing budget and resources for the implementation; and
- Supporting changes or development of policy documentation.

The Co-ordinator will be responsible for the development, consultation, promotion, implementation, review and enhancement of the plan.

3.3 Promotion

All students and staff will be issued with a copy of the Green Travel Plan and a copy should be made available on the School's website.

Other promotional material will take a variety of forms and should be issued either to individual staff members and students, displayed in a prominent location in the school or provided in the form of 'one off' marketing initiatives. This would include outlining the benefits for the school in participating in government travel surveys to both improve public transport services and promote the use of public transport.

The promotional material will advise employees wishing to raise specific transport-related matters to discuss them with the appropriate nominated Travel Plan co-ordinator who in turn would liaise with the Green Travel Plan management team, transport operators and the local authority as required.

3.4 Targets

The GTP must contain targets for the various modes of sustainable and active transport. Targets must be specific, reasonable and achievable, and should be associated with a 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.

It is recommended that the school looks to adopt targets consistent with Table 3-1. The targets in the table are based on no net increase of the number of staff and students using private vehicles. Given the time required to influence behavioural change the school should aim to achieve these targets over a ten-year period.

Table 3-1 Recommended Targets

	Transport Mode	Current		Target (2030)	
		No.	%	No.	%
Students	Private Vehicle	778	47%	778	37%
	Sustainable & Active	877	53%	1,322	63%
	Total (Students)	**1,655**	**100%**	**2,100**	**100%**
Staff	Private Vehicle	230	83%	230	72%
	Sustainable & Active	47	17%	91	28%
	Total (Staff)	**277**	**100%**	**321**	**100%**

Targets should also consider any overarching State Government or Council policies or plans. For example, if a planning document identifies a mode share target for the area this should be addressed within the travel plan.

3.5 Continual improvement

The Green Travel Plan is a strategy that will evolve over time. Although the objectives of the Plan to 'educate' students and staff, and to facilitate travel by sustainable modes will not change, it may be possible over time to re-define specific targets. Target setting should reflect an ambition for continued improvement and there should be a mechanism to review targets against reality.

It is recommended that this review is undertaken annually, targets are revised, and the plan is amended and redistributed.

4 Conclusion

A Green Travel Plan is a useful tool to manage the culminative impacts of the development by enabling staff and students of the school to reduce reliance on private car travel and increase public and active transport use.

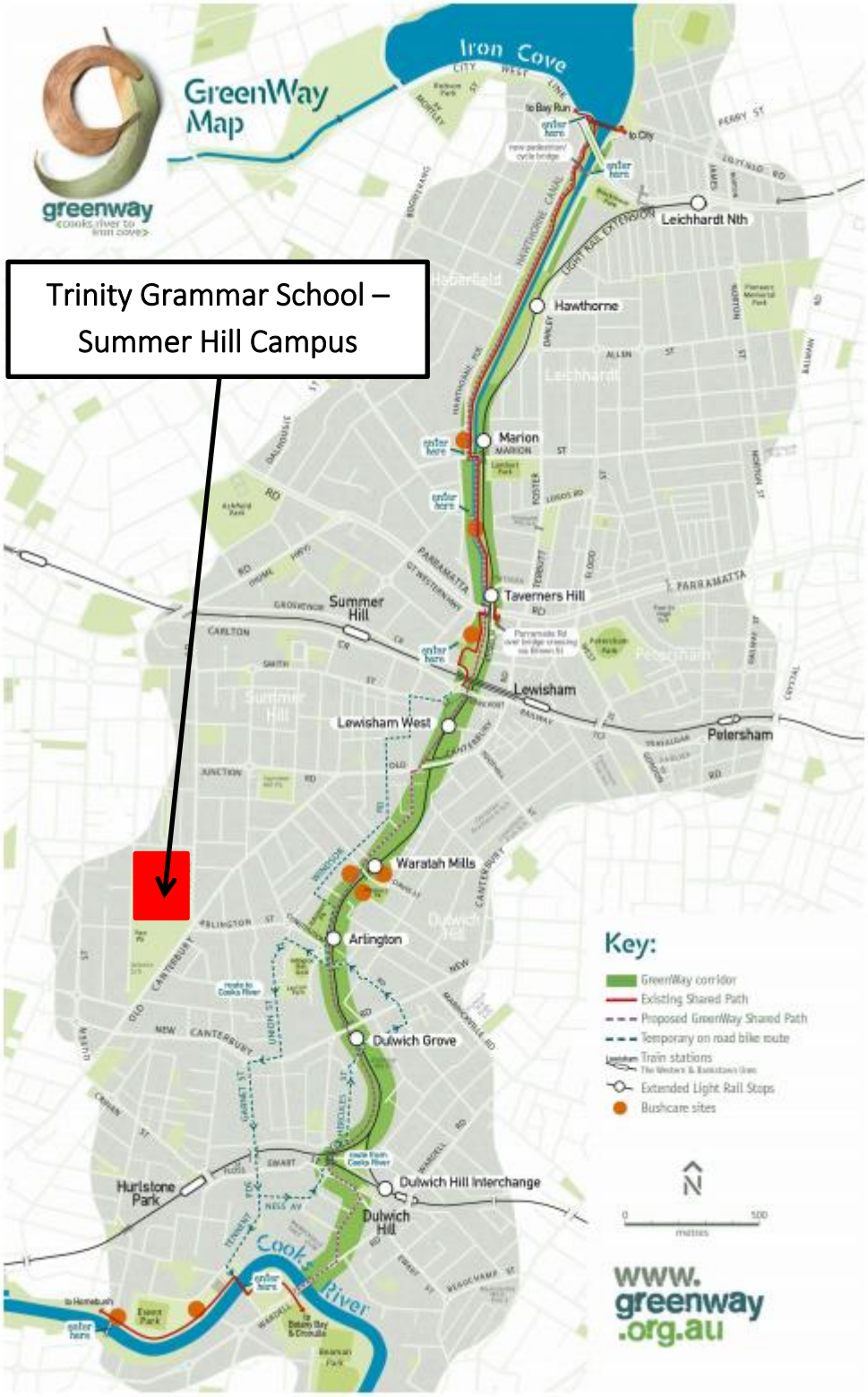
The Green Travel Plan will contribute to a healthier and better quality of life for students and staff, and a reduction in air and noise pollution. The schools will benefit from more productive staff and students, cost savings and reduced demand for car parking.

The school already has some excellent initiatives in place such as the school bus. The popularity of this services demonstrates that it significantly addresses the travel needs of the student population. The school should seek to further build on the success of this service as demand increases.

There are significant opportunities for improvement, in particular reducing the amount of staff using private vehicles and promoting walking and cycling within reasonable walking and cycling catchments.

Successful implementation of the Green Travel Plan will require commitment, communication and consensus to achieve the desired outcomes.

Appendix A – Green Way Map


GreenWay Map
greenway
Trinity Grammar School – Summer Hill Campus
Iron Cove
Leichhardt Nth
Hawthorne
Marion
Taverners Hill
Summer Hill
Lewisham
Lewisham West
Petersham
Waratah Mills
Arlington
Dulwich Grove
Dulwich Hill Interchange
Dulwich Hill
Hurlstone Park
Cooks River
Key:
GreenWay corridor
Existing Shared Path
Proposed GreenWay Shared Path
Temporary on road bike route
Train stations
Extended Light Rail Stops
Bushcare sites
www.greenway.org.au