



report;

Roseville College SWELL Centre - Preliminary CTMP

For Roseville College
25 October 2019

parking;
traffic;
civil design;
wayfinding;
ptc.

Document Control

Roseville College SWELL Centre - Preliminary CTMP, Report

Issue	Date	Issue Details	Author	Reviewed	For the attention of
1	25/09/2019	Draft	EL	FL	Jordan Graham
2	25/10/2019	Final	EL	AM	Jordan Graham
3					

Contact

Eric Lei

Graduate Traffic Engineer

+61 2 8920 0800

eric.lei@ptcconsultants.co

Andrew Morse

Partner/Senior Traffic Engineer

+61 2 8920 0800

andrew.morse@ptcconsultants.co

COMMERCIAL IN CONFIDENCE

The information contained in this document, including any intellectual property rights arising from designs developed and documents created, is confidential and proprietary to **ptc.**

This document may only be used by the person/organisation to whom it is addressed for the stated purpose for which it is provided and must not be imparted to or reproduced, in whole or in part, by any third person without the prior written approval of a **ptc.** authorised representative. **ptc.** reserves all legal rights and remedies in relation to any infringement of its rights in respect of its intellectual property and/or confidential information.

© 2019

ptc.

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

Contents

1. Introduction	1
1.1 Project Summary	1
1.2 Purpose of this Report	2
2. The Development	3
2.1 Site Content	3
2.2 Development Proposal	4
3. Existing Transport Facilities	8
3.1 Road Hierarchy	8
3.2 Surrounding Traffic Controls	9
3.3 College Traffic and Parking Arrangements	9
3.3.1 On-Street Parking Controls	9
3.3.2 On-Site Parking Supply	10
3.4 Public Transport	11
3.4.1 Rail	11
3.4.2 Bus	11
3.5 Active Travel	12
3.5.1 Walking	12
3.5.2 Cycling	12
4. Preliminary Construction Traffic Management Plan	13
4.1 Objective	13
4.2 General Requirements	13
4.3 Staging and Program	14
4.4 Hours of Work	14
4.5 Construction Vehicle Types	15
4.6 Construction Vehicle Routes	16
4.7 Construction Vehicle Site Access and Egress	22
4.8 Works Zone	23
4.9 Pedestrian Access	23
4.10 Special Deliveries	23
4.11 Staff Parking	23
4.12 Work Site Security	24
4.13 Staff Induction	24
4.14 Emergency Vehicle Access	24
4.15 Access to adjoining properties	24
4.16 Occupational Health and Safety	24
4.17 Method of Communicating Traffic Changes	24
4.18 Contact Details for On-Site Enquiries and Site Access	25
5. Summary	26
Attachment 1 Swept path	27
Figure 1.1 – Site Location	1
Figure 2.1 – Roseville College Context	3

Figure 2.2 – Court Level	5
Figure 2.3 – Ground Level	6
Figure 2.4 – Pool Concourse Floor	7
Figure 3.1 – Road Hierarchy	8
Figure 3.2 – Existing On-Street Parking Controls	10
Figure 3.3 – Surrounding Public Transport (Bus and Train Services)	11
Figure 3.4: Surrounding cycle paths (Source: Ku-ring-gai Cycleways Map)	12
Figure 4.1 – Construction Vehicle Routes – 19m Truck & Dog (Demolition, Shoring and Excavation Stages)	16
Figure 4.2 – Construction Vehicle Routes - 12.5m HRV (Construction Stage)	16
Figure 4.3 – Intersection Overview	17
Figure 4.4 – Swept Path Analysis – 19m Truck and Dog at intersection 1 (Boundary Street/Archbold Road)	18
Figure 4.5 – Swept Path Analysis – 19m Truck and Dog at intersection 2 (Archbold Road/Bancroft Avenue)	18
Figure 4.6 – Swept Path Analysis – 19m Truck and Dog at intersection 3 (Bancroft Avenue/Wandella Avenue)	19
Figure 4.7 – Swept Path Analysis – 19m Truck and Dog at intersection 4 (Wandella Avenue/Victoria Street)	19
Figure 4.8 – Swept Path Analysis – 19m Truck and Dog at intersection 5 (Victoria Street/Recreation Avenue)	20
Figure 4.9 – Swept Path Analysis – HRV at intersection 6 (Hill Street/Bancroft Avenue)	21
Figure 4.10 – Extent of the Works Zone	22
Table 3.1 – Rail Services	11
Table 4.1 – Staging and Program of the Overall Project	14
Table 4.2 – Construction Vehicles and Estimated Vehicle Trips	15

1. Introduction

1.1 Project Summary

ptc. has been engaged by EPM Project Pty Ltd to prepare a preliminary construction traffic management plan (CTMP) that is intended to accompany a State Significant Development Application by the Roseville College located at the address of 27 Bancroft Avenue, Roseville within the Ku-ring-gai Council Local Government Area (see Figure 1.1). This CTMP will need to be updated subject to the detailed activities during construction stage.

This preliminary CTMP is associated with the demolition, excavation and construction associated with the following proposal:

- Demolition of the existing sports courts and the property at 37 Bancroft Avenue,
- Construction of a new semi-recessed three / four storey building including a 25m swimming pool and associated facilities,
- Construction of a two-storey car park comprising a basement level and semi-basement level,
- Construction of rooftop sports courts above the new car park,
- Construction of a new access way to the new car park via Recreation Avenue.

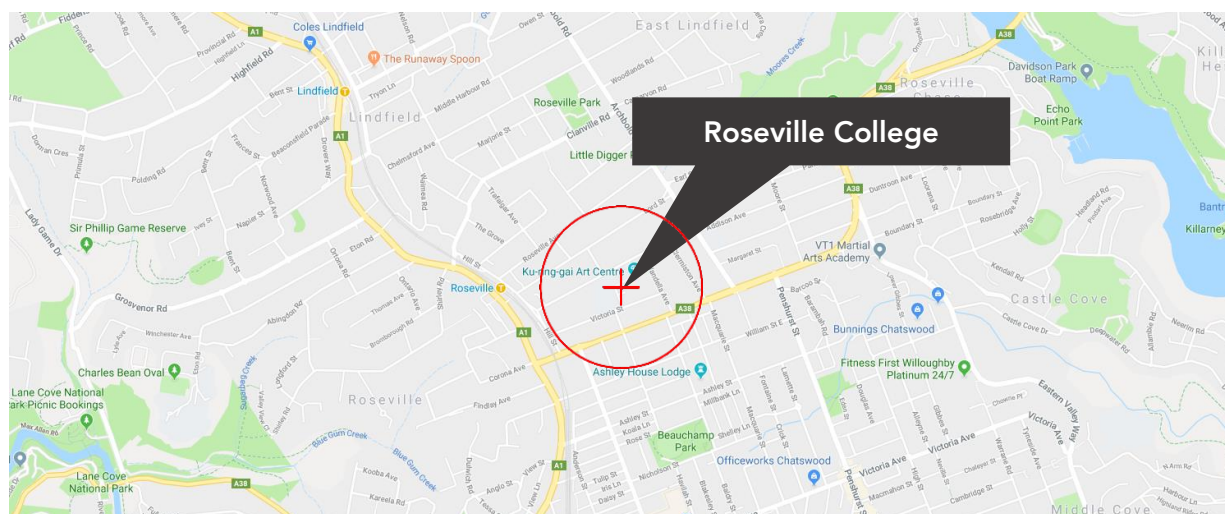


Figure 1.1 – Site Location

1.2 Purpose of this Report

This report presents the following considerations in relation to the construction traffic management of the Proposal:

Section 2	A description of the project;
Section 3	A description of the road network serving the development property;
Section 4	Preliminary construction traffic management plan; and
Section 5	Summary.

2. The Development

2.1 Site Content

Roseville College is located at 27-29 Bancroft Avenue in the suburb of Roseville, which is approximately 10 kilometres north of Sydney CBD. The College campus is located between Victoria Street to the south and Bancroft Avenue to the north. The property of No. 37 Bancroft Avenue was recently acquired by the College containing a single detached dwelling with a tennis court to the rear.

The College is located within a predominantly residential area to the east of the T1 railway line, comprising a mix of large established dwellings and the Roseville Lawn Tennis Club to the west and medium density residential flat building to the south.

The Pacific Highway and Roseville railway station are located approximately 400 metres to the west of the site.

The aerial photograph in Figure 2.1 provides an overview of the area and context in relation to the surrounding land uses.



Figure 2.1 – Roseville College Context

2.2 Development Proposal

The proposed Student Wellness (SWELL) Centre will be built on the site of the current sports courts and the site of No. 37 Bancroft Avenue.

The development will include two parts:

Part 1: Carpark (27-29 Bancroft Avenue)

- Demolition of existing sports courts;
- Construction of:
 - Two storey car park with a basement level and one semi-basement level (each level having separated access);
 - Storage areas; and
 - Amenities
- Partial demolition and modifications to existing staff carpark to the south of the new works for a new access way; and
- Landscaping.

Access to the basement level of the new carpark will be via the existing staff carpark off Recreation Avenue. A new ground-level vehicle access from Recreation Avenue will also be constructed to provide access to the new ground-level car park.

Part 2: Swimming Pool (37 Bancroft Avenue)

To adjoin the new carpark constructed in Part 1 and extending into 37 Bancroft Avenue, a new semi-recessed three / four storey building will be constructed, including:

- 25m swimming pool;
- An additional rooftop sports court;
- Gym (across two levels)
- Learning spaces;
- Amenities;
- Staff area;
- Lobby;
- Goods lift;
- Storage; and
- Landscaping

The current proposal incorporates the car parking facilities approved under DA0262/16, which will need to be amended to reflect the inclusion of the swimming pool, integrated circulation and other amendments such that it would not be “substantially the same development” that was approved by Council. In this regard, the proposed swimming pool and associated facilities at No. 37 Bancroft Avenue cannot be considered as separate projects and therefore the two projects are to be combined.

- DA0563/18 – *Change of use from residential to an educational establishment (Roseville College) including minor alterations and additions*. This DA has been withdrawn from Council and the development proposal will incorporate the student population increase and carpark development to form as part of the SSD.

The proposed development of the SSD is shown in Figure 2.2 to Figure 2.4.

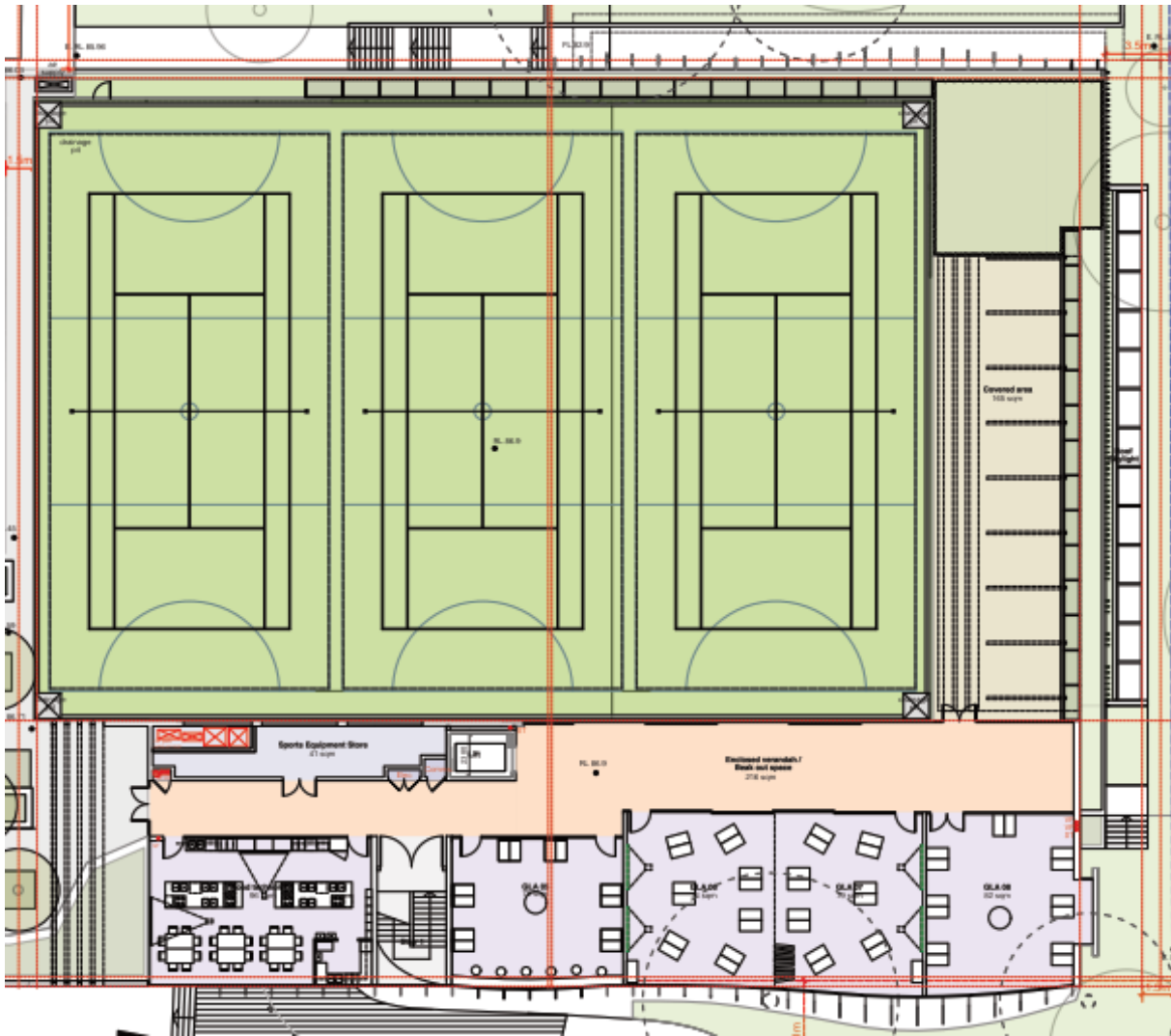


Figure 2.2 – Court Level

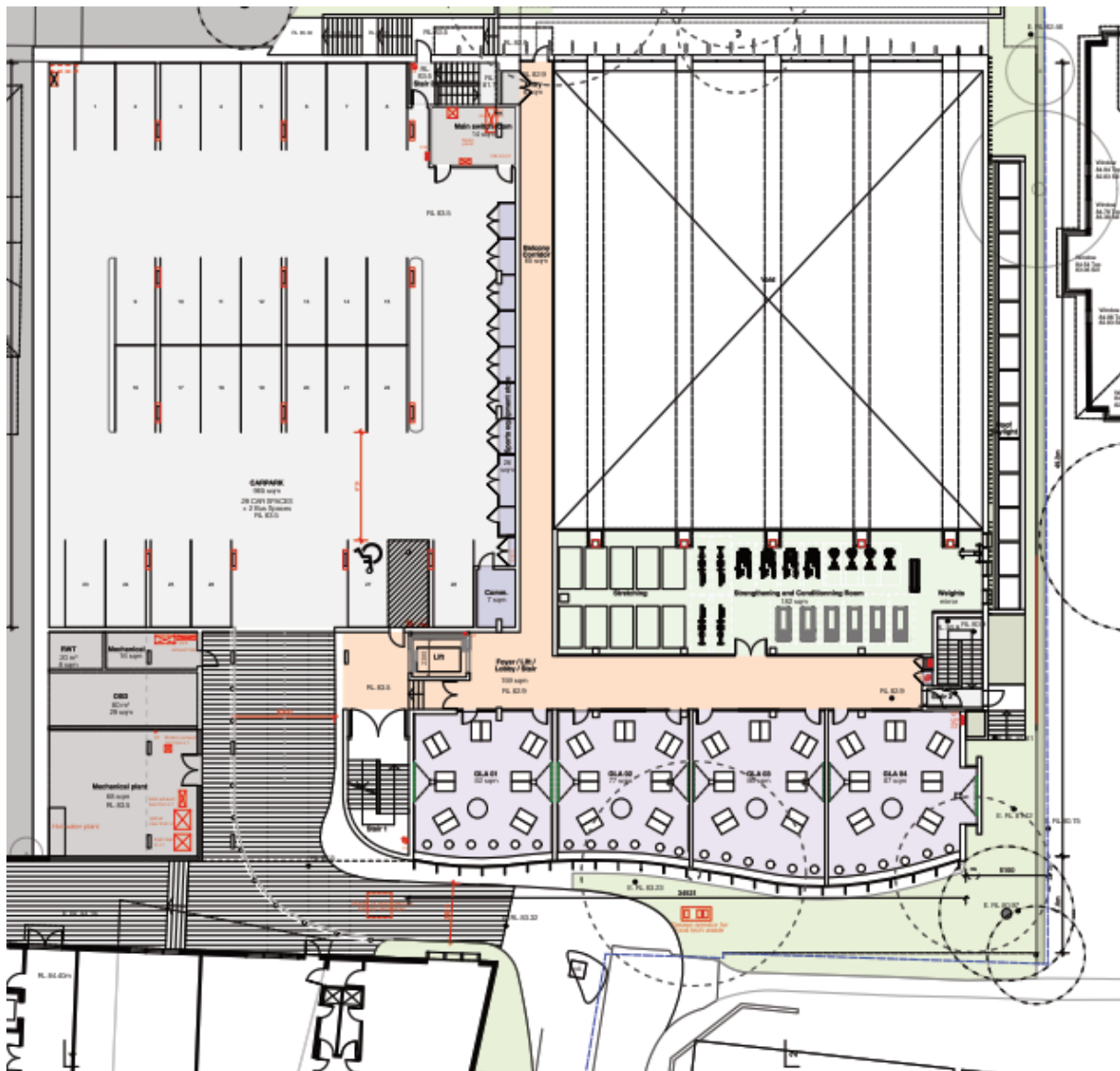


Figure 2.3 – Ground Level

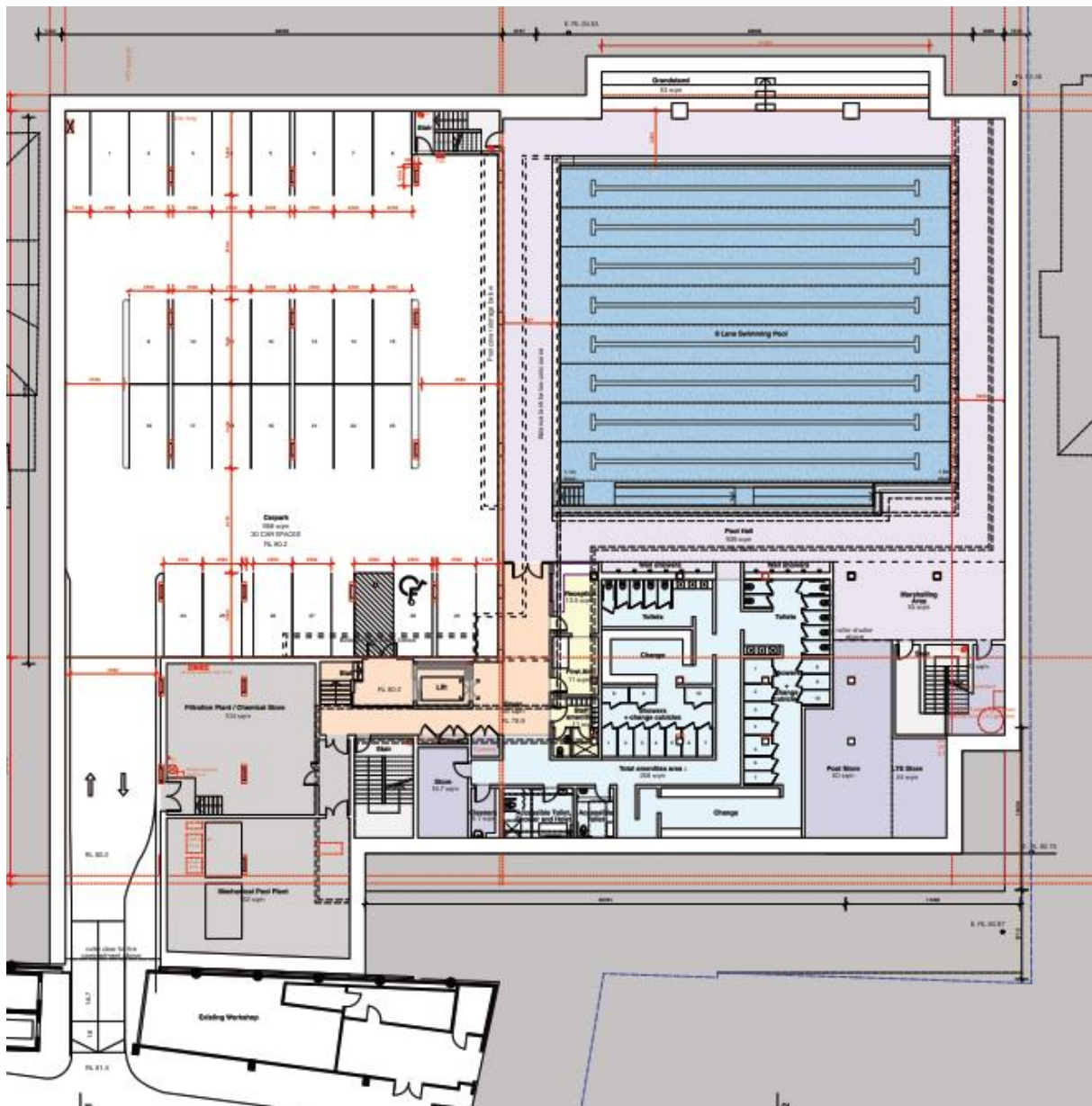


Figure 2.4 – Pool Concourse Floor

3. Existing Transport Facilities

3.1 Road Hierarchy

The College is located in Roseville to the east of the T1 railway and the Pacific Highway, and in this regard has reasonably good connections to the north shore arterial road network. However, connections to the west are somewhat limited by the North Shore Railway line, which acts as a barrier through the area.

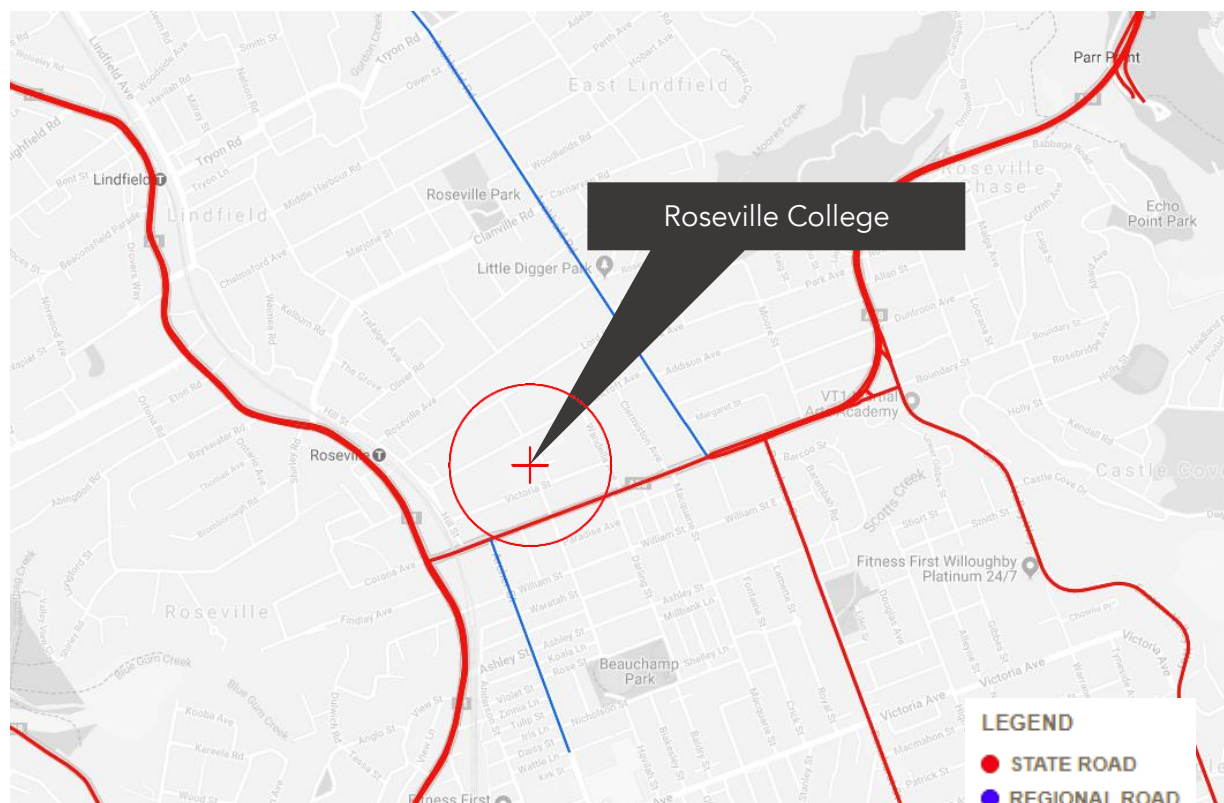


Figure 3.1 – Road Hierarchy

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

- | | |
|----------------|--|
| State Roads | - Freeways and Primary Arterials (RMS Managed) |
| Regional Roads | - Secondary or Sub Arterials (Council Managed, partly funded by the State) |
| Local Roads | - Collector and Local Access Roads (Council Managed) |

The road network servicing the College includes:

The Pacific Highway, which is classified as a State Road and follows a north–south alignment. Within the suburb of Roseville, the carriageway accommodates three (3) traffic lanes in each direction with auxiliary turning lanes at major intersections.

Boundary Road, which is classified as a State Road and provides a connection between Pacific Highway to the west and Warringah Road to the east.

Recreation Avenue, which is a Local Road providing vehicular access to the existing and future car park in the College and the car park of Roseville Tennis Club. Recreation Avenue is a cul-da-sac with narrow carriageway in the width of approximately 5.5m. Access to Recreation Avenue is only available via Victoria Street.

Victoria Street, which is a Local Road providing access to the local properties. Victoria Street provides strategic access to the College frontage. Dedicated pickup and drop-off areas are provided along the northern side of Victoria Street during the school time. Most of on-street parking spaces are unrestricted parking with the exception of 1/2P on the opposite side the College during school hours.

Bancroft Avenue, which is a Local Road parallel to Victoria Street to the north of the College. Currently the College's driveway along Bancroft Avenue only provide garbage truck access for waste collection. In the vicinity of the College the carriageway accommodates single marked traffic lanes in each direction, with parking along both sides.

3.2 Surrounding Traffic Controls

The traffic controls in the vicinity of the College comprise a general 50kph speed limit with a 40kph school zone applicable to Victoria Street and Bancroft Avenue.

Local Area Traffic Management treatments are installed on both Victoria Street and Bancroft Avenue at Hill Street, which intersect with Boundary Road on the south end. Wombat pedestrian crossings are provided in front of the College's main accesses at both Victoria Street and Bancroft Avenue.

3.3 College Traffic and Parking Arrangements

The College benefits from two road frontages comprising Victoria Street and Bancroft Avenue. Vehicular access to the basement car park is currently only available via two driveways off Recreation Avenue. There is another driveway off Bancroft Avenue, which is only used by emergency vehicles and garbage trucks for waste collection. Both of these roads are classified as "local roads" according to the RMS Road Classification map and are residential in character (refer to Section 3.1 for further details).

The primary on-street drop-off and pick-up area is provided along Victoria Street.

3.3.1 On-Street Parking Controls

The College has two road frontages; Victoria Street and Bancroft Avenue with on-street parking. The on-street parking restrictions vary subject to different time of day. The various parking controls are presented in Figure 3.2 which comprise either unrestricted parking, 'No Parking', or 'No Parking during student drop-off and pick-up periods' ('No Parking' permits a driver to stop for up to two minutes, however, they must remain within three metres of the vehicle) and 1/2P during school pickup and drop-off periods.



Figure 3.2 – Existing On-Street Parking Controls

3.3.2 On-Site Parking Supply

The current parking provision within the College comprises 127 car parking spaces (including six disabled parking spaces, two parking spaces for College's minibuses and one loading bay). The parking spaces are provided for staff, visitors and/or Year-12 students. The onsite parking spaces are located across multiple basement car parks and at-grade car parks with accesses via Bancroft Avenue, Recreation Street and Victoria Street. There are currently no dedicated onsite parking spaces for pick-up/drop-off within the College.

3.4 Public Transport

The College is well serviced by both train and bus services operating on the T1 Railway Line and a number of buses operating along Boundary Road and Pacific Highway and Hills Street.

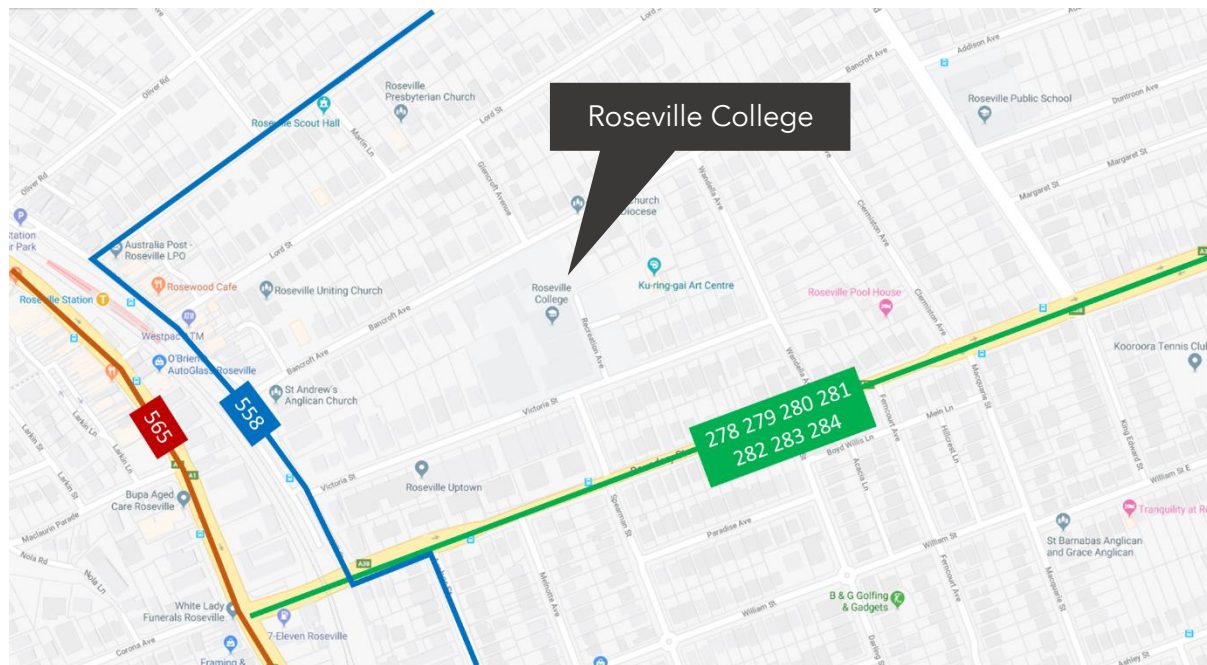


Figure 3.3 – Surrounding Public Transport (Bus and Train Services)

3.4.1 Rail

Roseville Station is located approximately 300m walking distance from the Bancroft Avenue entrance and is situated on the T1 North Shore Line, providing access to the College from Northern, Southern and Western suburbs (via interchange at Sydney CBD stations).

Table 3.1 – Rail Services

Rail Route	From	To	Frequency on Weekdays (approx.)
Northern Line (Southbound)	Berowra/Hornsby	Parramatta (via Central)	Arrive every 15 minutes (morning peak and afternoon school peak)
Northern Line (Northbound)	Parramatta (via Central)	Hornsby/Berowra	Arrive every 6-9 minutes (morning peak) Depart Every 6-9 minutes (afternoon school peak)

Services via the North Shore/Northern Line are frequent and provide excellent availability throughout the day, especially during peak hours.

3.4.2 Bus

A bus stop is located approximately a 2 min walk (120m) from the College at the corner of Boundary Road and Spearman Street. The buses on the opposite direction can be accessed via the signalised crossing at the intersection of Boundary Road and Archer Street.

3.5 Active Travel

In addition to public transport, the locality has been assessed for its active transport potential.

3.5.1 Walking

In terms of public infrastructure, the local road network offers a high level of amenity and safety for pedestrians, providing footpaths on either side of most roadways, wombat crossings, supporting signage and appropriate lighting throughout the locality.

3.5.2 Cycling

The subject site is located within a well-connected bicycle network. Figure 3.4 presents a screenshot of the cycle map published by Council. This will encourage and promote cycling as an alternative mode of transport for its occupants which is a healthy, low cost and environmentally-friendly method of travel.



Figure 3.4: Surrounding cycle paths (Source: Ku-ring-gai Cycleways Map)

4. Preliminary Construction Traffic Management Plan

4.1 Objective

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

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

4.2 General Requirements

In accordance with Road and Maritime Services (RMS) requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.

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

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

4.3 Staging and Program

The proposed overall development of the site will involve demolition, shoring, earthworks / excavation and construction, to which this CTMP relates.

The estimated staging, description and programming of the works is summarised in Table 4.1.

Table 4.1 – Staging and Program of the Overall Project

Phase	Duration	Estimated Commencement
Enabling Works	1 week	Subject to DA approval
Demolition Works	3 weeks	
Shoring Systems	4 weeks	
Bulk Excavation	7 weeks	
Structure	33 weeks	
Roadworks to Recreation Avenue	4 weeks	
Fit-off and Facades	22 weeks	

The enabling works involve road works to Recreation Avenue.

Major concrete pours and crane/plant erection and dismantle will only take place during school holiday periods. Fixed cranes, excavation plants as well as piling plants will enter the site after hours via Bancroft Avenue with appropriate traffic control.

4.4 Hours of Work

All works, associated with the project will be restricted to the time periods by the Conditions of Consent. As the conditions of consent have not yet been issued, the development is proposing the following working hours to be associated with the construction activity;

- Monday to Friday 6:30am to 5:30pm;
- Saturdays 8:30am to 1:30pm;
- Sunday or public holidays No works to be undertaken without prior approval

4.5 Construction Vehicle Types

As discussed in Section 4.3, the construction will be undertaken in six stages and each stage will require ingress and egress for various vehicles dependent on the stage of construction.

Table 4.2 – Construction Vehicles and Estimated Vehicle Trips

Phase	Maximum Size of Vehicle	Estimated Max Daily Trips
Enabling Works	HRV	4
Demolition Works	19m Truck and dog	8
Shoring Systems	HRV	10
Bulk Excavation	19m Truck and dog	16
Structure	HRV	Generally 4 trips; 100 trips on days of concrete pours
Roadworks to Recreation Avenue	HRV	4
Fit-off and Facades	HRV	4

**These are the estimated maximum trips during each stage and the intensity will vary dependent on the construction activity being undertaken, i.e. – concrete pours, material deliveries, etc.*

Any oversized vehicle that is required to travel to the project will be dealt with separately, with the submission of required permits to and subsequent approval by Ku-ring-gai Council prior to any delivery.

4.6 Construction Vehicle Routes

The site is located in Roseville and the proposed construction vehicle routes have regard for the surrounding traffic arrangements within the vicinity of the site, as shown in Figure 4.1 and Figure 4.2.

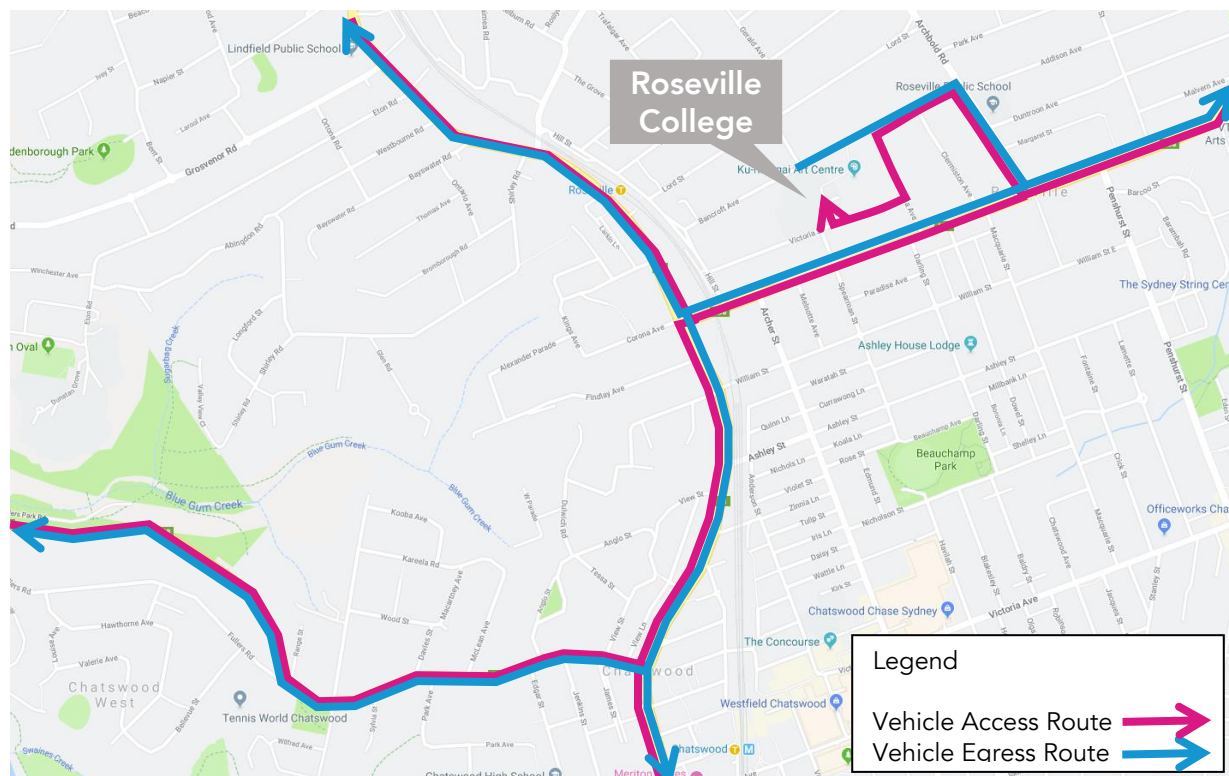


Figure 4.1 – Construction Vehicle Routes – 19m Truck & Dog (Demolition, Shoring and Excavation Stages)

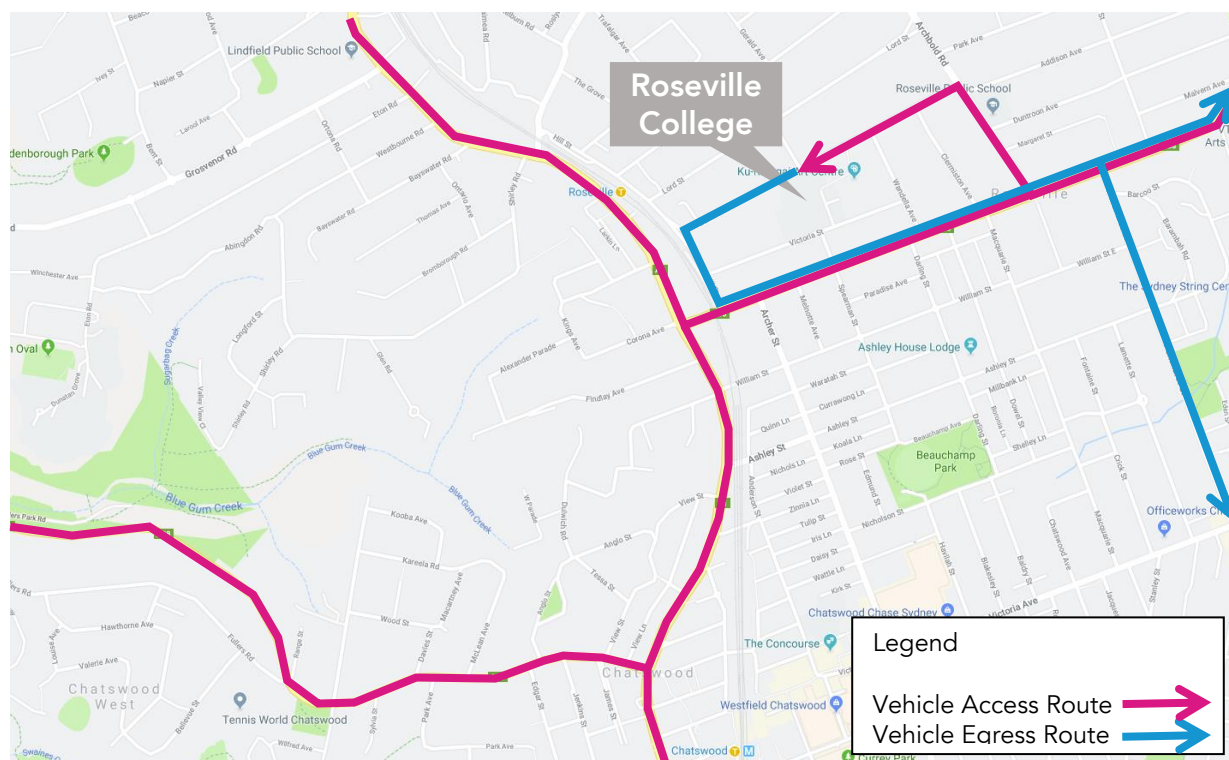


Figure 4.2 – Construction Vehicle Routes - 12.5m HRV (Construction Stage)

No queuing or marshalling of trucks is permitted on any public road.

All vehicle routes are constrained to existing public roads that have the physical geometry to accommodate the turning movements.

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

Swept path analysis has been undertaken utilising the largest expected vehicle type on the key intersections to confirm that the exiting intersections can accommodate these vehicles.

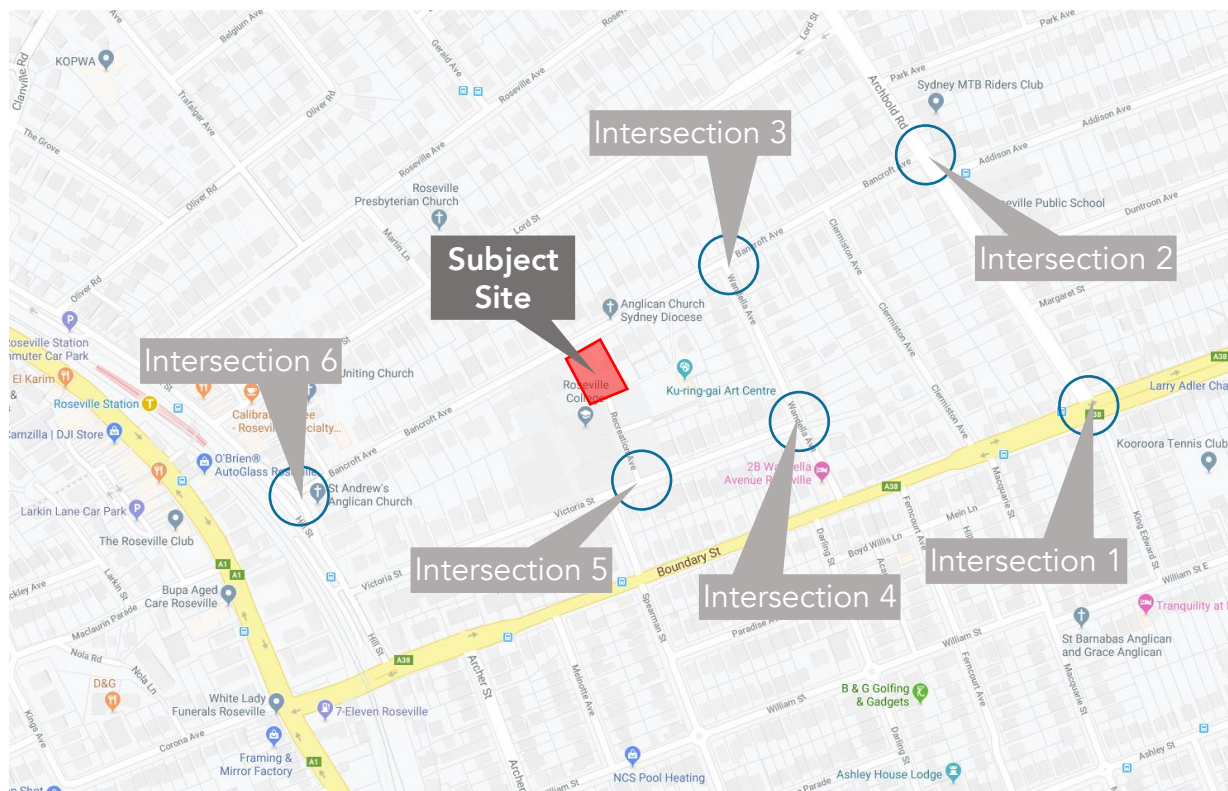


Figure 4.3 – Intersection Overview

The swept path analysis for each intersection can be found in Figure 4.8 through Figure 4.9.

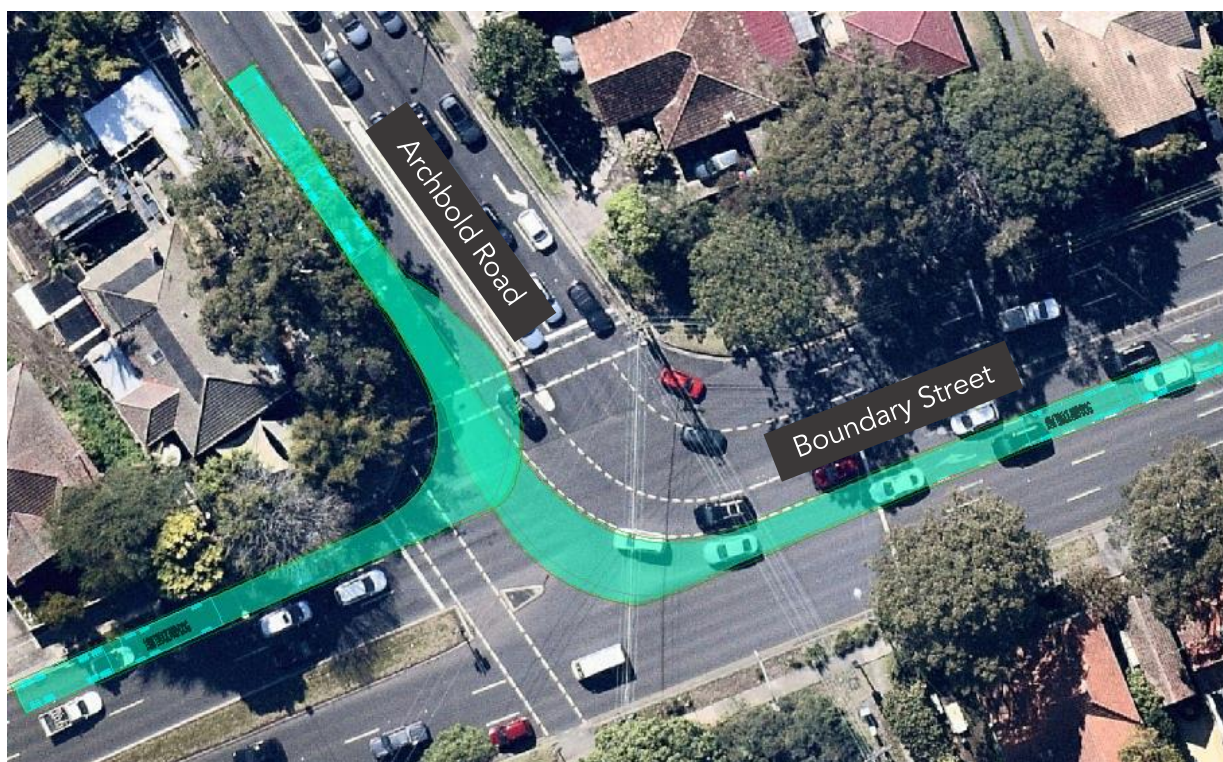


Figure 4.4 – Swept Path Analysis – 19m Truck and Dog at intersection 1 (Boundary Street/Archbold Road)

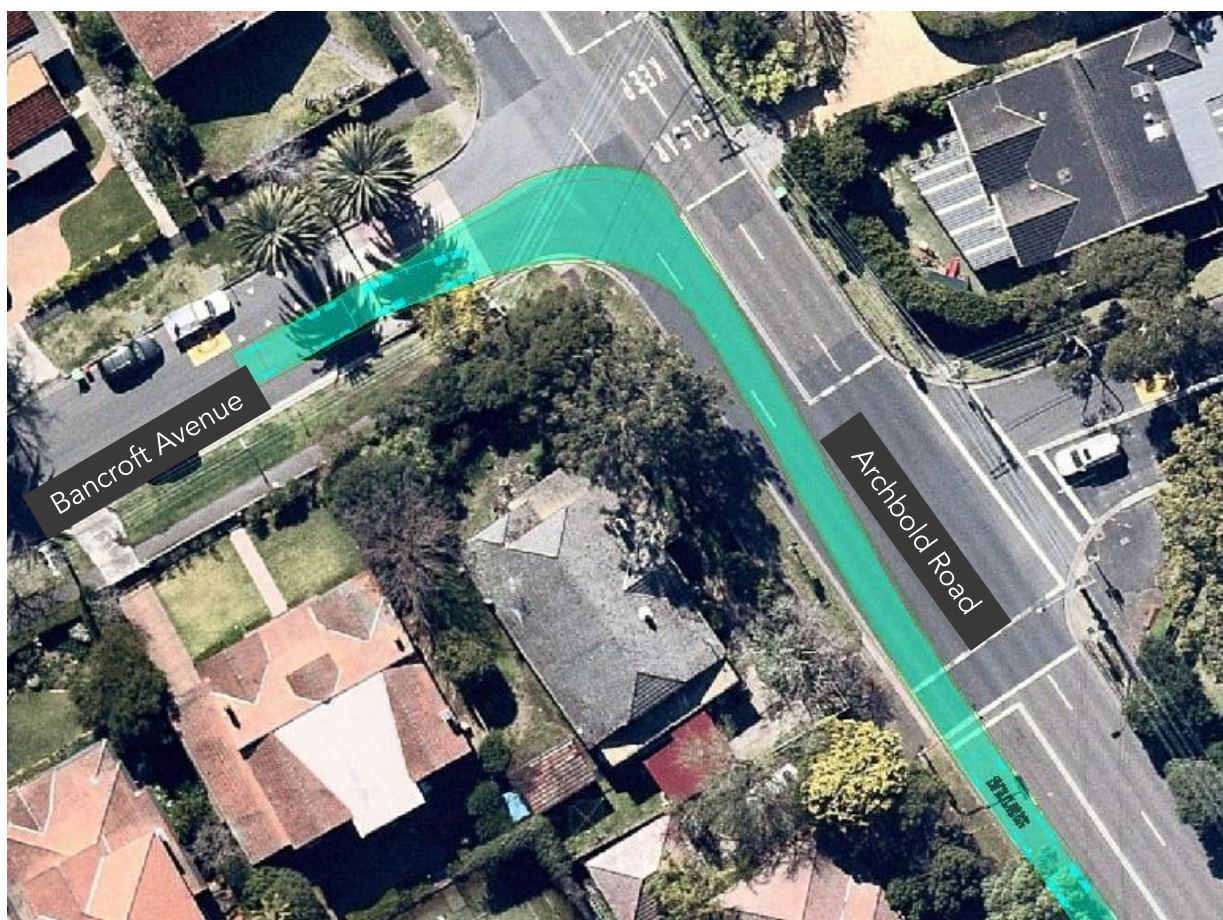


Figure 4.5 – Swept Path Analysis – 19m Truck and Dog at intersection 2 (Archbold Road/Bancroft Avenue)



Figure 4.6 – Swept Path Analysis – 19m Truck and Dog at intersection 3 (Bancroft Avenue/Wandella Avenue)



Figure 4.7 – Swept Path Analysis – 19m Truck and Dog at intersection 4 (Wandella Avenue/Victoria Street)



Figure 4.8 – Swept Path Analysis – 19m Truck and Dog at intersection 5 (Victoria Street/Recreation Avenue)



Figure 4.9 – Swept Path Analysis – HRV at intersection 6 (Hill Street/Bancroft Avenue)

4.7 Construction Vehicle Site Access and Egress

During the demolition, shoring and excavation phases, the construction vehicles will access the site via Recreation Avenue and exit onto Bancroft Avenue in a one-way arrangement. As loading and unloading will occur within the site at these stages, a Works Zone is not required.

During the construction stage, a Works Zone is required on Bancroft Avenue for delivery trucks and concrete trucks. Unloading of materials and excavation plants will occur within the Works Zone. Construction vehicles will not access the site via Recreation Avenue at this stage.

Gate controllers will be utilised to safely manage access and egress from the site at all times.

The extent of the Works Zone is shown in Figure 4.10.



Figure 4.10 – Extent of the Works Zone

Traffic Controllers will be utilised to safely manage access and egress from the Works Zone at all times.

Details of the Works Zones will be finalised in the Detail Construction Traffic Management Plan.

4.8 Works Zone

As outlined in Section 0, a Works Zone is proposed on Bancroft Avenue. Exact details will be determined in the detailed Construction Traffic Management Plan.

The Works Zone operational hours are expected to align with the hours of work:

- Monday to Friday 6:30am to 5:30pm;
- Saturdays 8:30am to 1:30pm.

Work Zone applications will be submitted as part of the Detail Construction Traffic Management Plan.

4.9 Pedestrian Access

Pedestrian access to and around the site is to be maintained at all times. To provide segregation and protection for pedestrians, it is proposed a 2.4m high Class A hoarding is to be erected along the site boundary. This fencing will define the extent of the works site.

Pedestrian access to the site will be via two designated pedestrian gates and the exact location of these gates will be determined during the CC process.

All access points are to be securely locked when construction activities are not in progress.

The exact location of this fence is to be agreed on site, prior to commencement of the works.

Sections of the footway along the development frontages may be required for short term closure during the construction process. The extent and timings will be determined during the CC process and traffic control, in accordance with the RMS Traffic Control at Works Sites, will be provided accordingly.

4.10 Special Deliveries

Whilst not anticipated, any oversized vehicle that is required to travel to the site will be dealt with separately, with the submission of required permits to and subsequent approval by Council prior to any delivery. Requests shall be submitted 28 days prior to the scheduled date of use of an oversized vehicle.

4.11 Staff Parking

It is expected that there will be on average 35 workers on site with a peak of 85 workers on site at any given time. There will be no parking available to site personnel on site in the initial stages. All site personnel are to be advised that they are not to park in the on-street parking in the vicinity of the development site. To minimise the required parking, the contractor will be encouraged to assist in the transportation of workers to the site. Also, site personnel will be advised to car pool (where ever practicable) and site personnel will be informed of the public transport options available in the vicinity of the site (refer to Section 3.4) and advised to utilise these facilities (wherever practicable).

A public transport pack information is to be provided to all staff and contractors, advising them of the public transport options available.

4.12 Work Site Security

As discussed in Section 4.9, to provide security to the works site and protection to the general public, it is proposed that a 2.4m high, Class A hoarding is to be erected along the development site boundary. This fencing will define the extent of the works site. All access points are to be securely locked when construction activities are not in progress. The exact locations of the access points are to be agreed on site, prior to commencement of the works.

4.13 Staff Induction

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

4.14 Emergency Vehicle Access

The proposed traffic control arrangements propose partial closure of Recreation Avenue and full closure of the end of Recreation Avenue temporarily during the erection and dismantling of the crane/hoist.

Any emergency vehicles requiring access to the project site will do so via the site access on Bancroft Avenue or Recreation Avenue.

4.15 Access to adjoining properties

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

4.16 Occupational Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold RMS accreditation in accordance with Section 8 of Traffic Control at Worksites.

4.17 Method of Communicating Traffic Changes

Traffic control plans in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and RMS Traffic Control at Worksites manual will advise motorists of upcoming changes in the road network.

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

No deviation from the approved TCP shall be permitted, unless otherwise approved by Council and certified by an RMS accredited personnel.

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

The TCP's will be formalised in the Detail Construction Traffic Management Plan.

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

4.18 Contact Details for On-Site Enquiries and Site Access

For information regarding on-site enquiries and site access, Paul Christopher, Managing Director Construction of Prime Constructions Pty Ltd (the Principal Contractor) can be contacted via phone on 02 9418 7707 or email on pchristopher@primeconstruct.com.au.

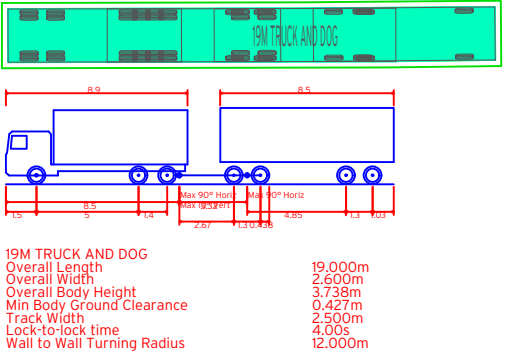
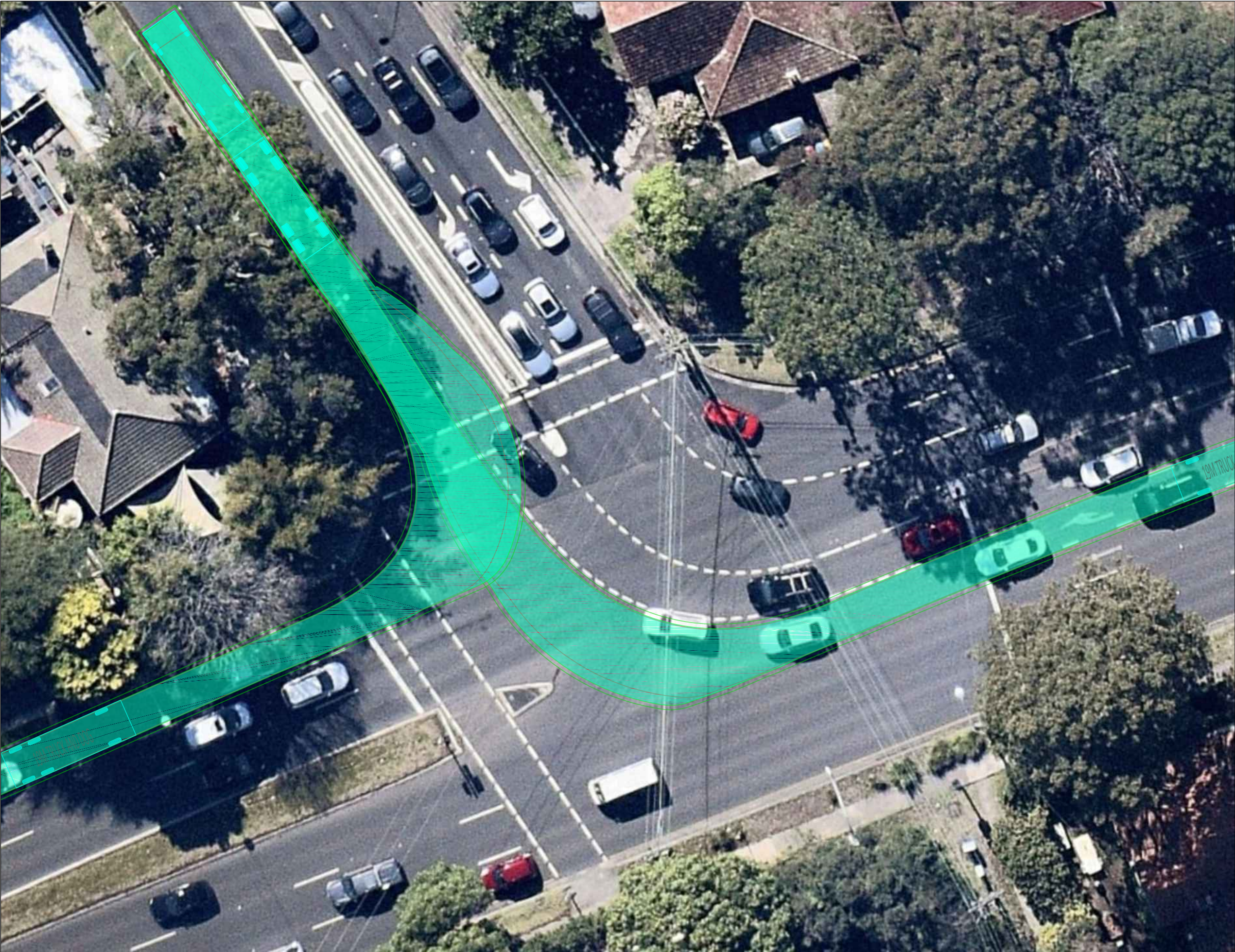
5. Summary

This CTMP has been prepared to outline the construction traffic measures to improve site safety to the public and workers and the construction process.

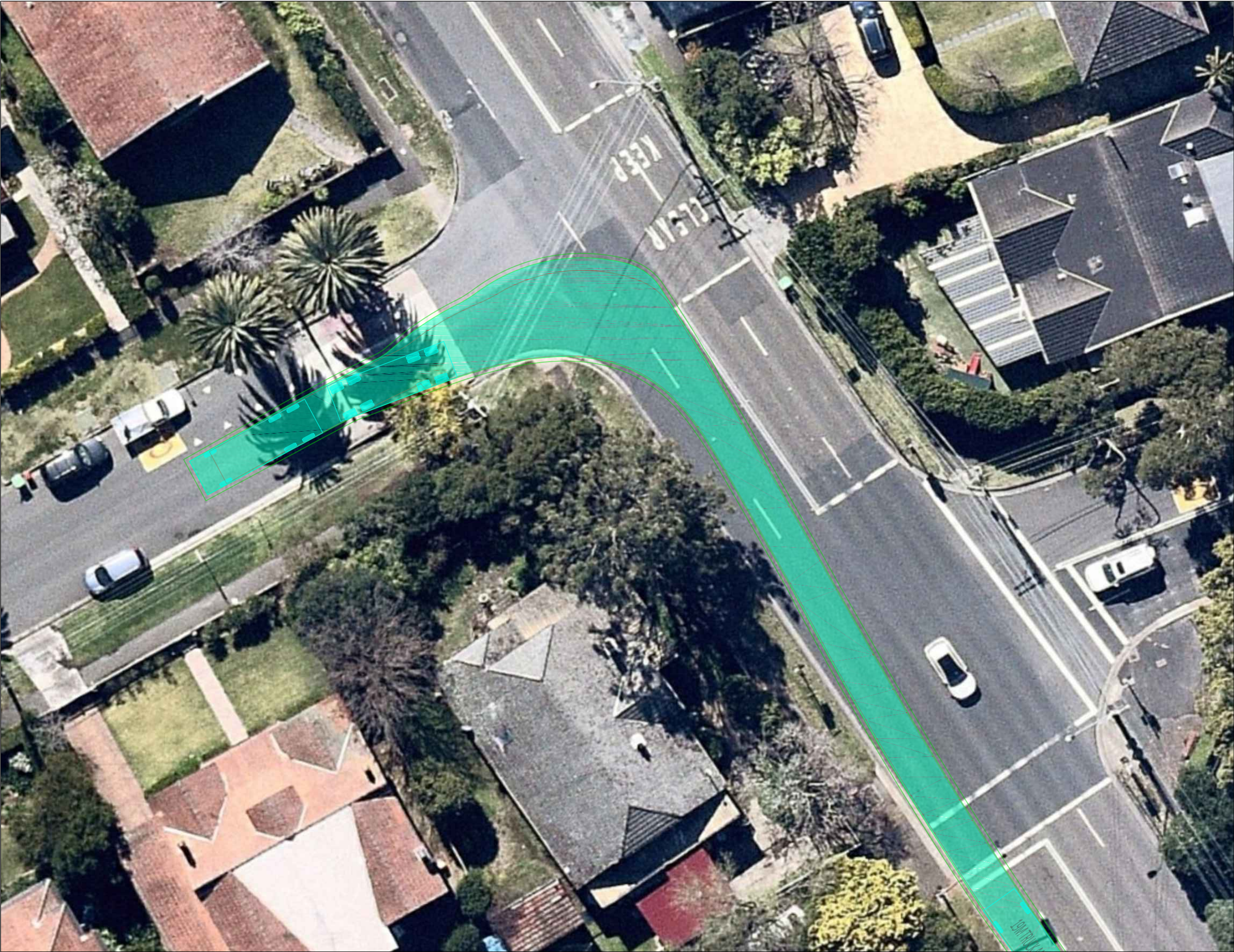
The construction activity is anticipated to have minimal disruption to the daily activities within the vicinity of the site.

It is envisaged that this document will be continually reviewed and amended if required, due to changes in design, RMS, Councils or any other authority requirements.

Attachment 1 Swept path



<div>ptc.</div> <div>Suite 502, 1 James Place North Sydney NSW 2060</div> <div>t +61 2 8920 0800</div> <div>ptcconsultants.co</div>	rev	date	comment / description	drawn	reviewed		project Roseville SWELL	drawing title 19m Truck and Dog Swept Path - Intersection 1 (Boundary Street/Archbold Road)	client	EPM Projects	
									drawing #	TP-001	rev 1
									project #	2583B	
									scale	1 : 250	
	1	26/09/19	FOR INFORMATION	EL	FL						



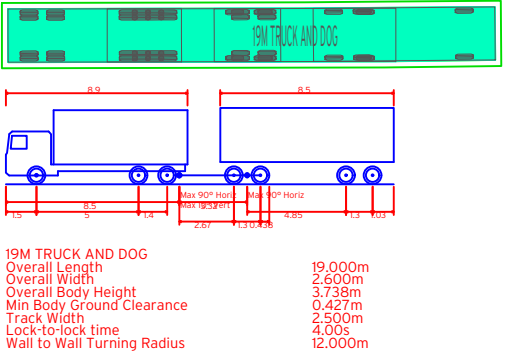
commentsA3

19M TRUCK AND DOG

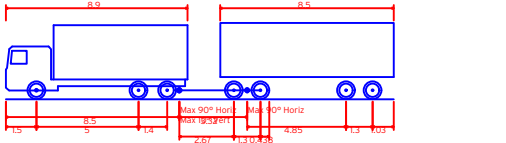
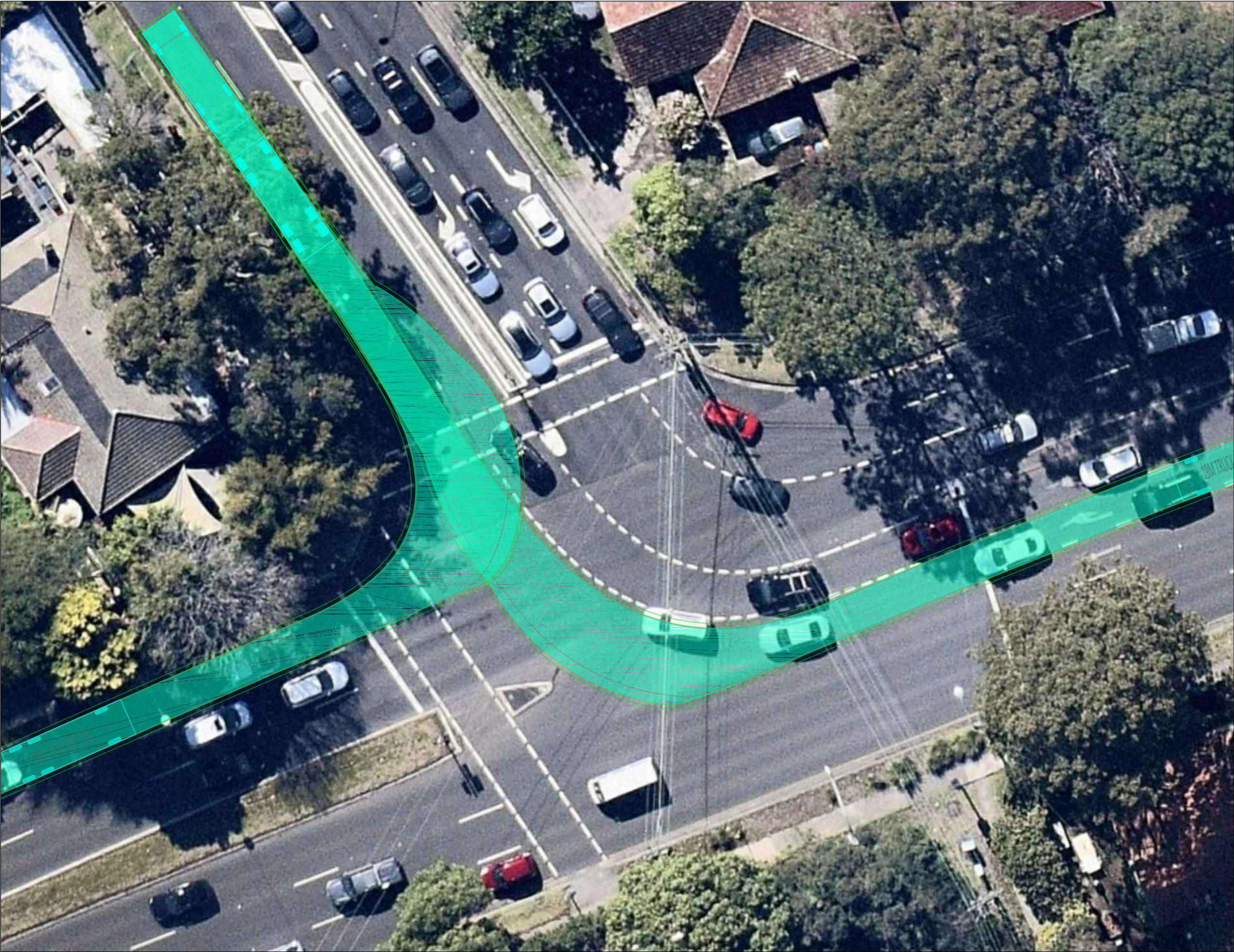
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Wall-to-Wall Turning Radius

19.000m
2.600m
3.738m
0.427m
2.500m
4.00s
12.000m

<div><div>ptc.</div><div>Suite 502, 1 James Place North Sydney NSW 2060 t +61 2 8920 0800 ptcconsultants.co</div></div>	rev	date	comment / description	drawn	reviewed		project Roseville SWELL	drawing title 19m Truck and Dog Swept Path - Intersection 2 (Archbold Road/Bancroft Avenue)	client	EPM Projects		
									drawing #	TP-002	rev 1	
									project #	2583B		
									scale	1 : 250		
	1	26/09/19	FOR INFORMATION		EL				FL			

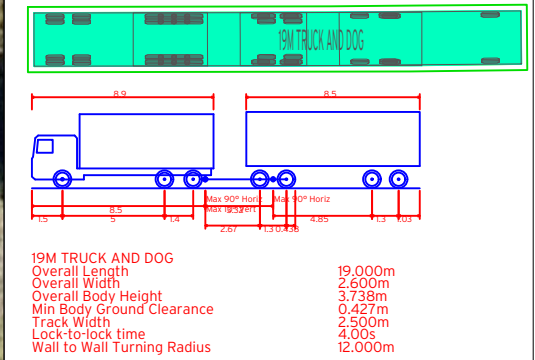


<div><div>ptc.</div><div>Suite 502, 1 James Place North Sydney NSW 2060</div><div>t +61 2 8920 0800</div><div>ptcconsultants.co</div></div>	rev	date	comment / description	drawn	reviewed		project Roseville SWELL	drawing title 19m Truck and Dog Swept Path - Intersection 3 (Bancroft Avenue/Wandella Avenue)	client	EPM Projects		
									drawing #	TP-003	rev 1	
									project #	2583B		
									scale	1 : 250		
	1	26/09/19	FOR INFORMATION		EL				FL			



19M TRUCK AND DOG	
Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall-to-Wall Turning Radius	12.000m

<div>ptc.</div> <div>Suite 502, 1 James Place North Sydney NSW 2060</div> <div>t +61 2 8920 0800</div> <div>ptcconsultants.co</div>	rev	date	comment / description	drawn	reviewed		project Roseville SWELL	drawing title 19m Truck and Dog Swept Path - Intersection 4 (Wandella Avenue/Victoria Street)	client	EPM Projects	
									drawing #	TP-004	rev 1
									project #	2583B	
									scale	1 : 250	
	1	26/09/19	FOR INFORMATION	EL	FL						




ptc.

Suite 502, 1 James Place
North Sydney NSW 2060

t +61 2 8920 0800

ptcconsultants.co

rev	date	comment / description	drawn	reviewed
1	26/09/19	FOR INFORMATION	EL	FL



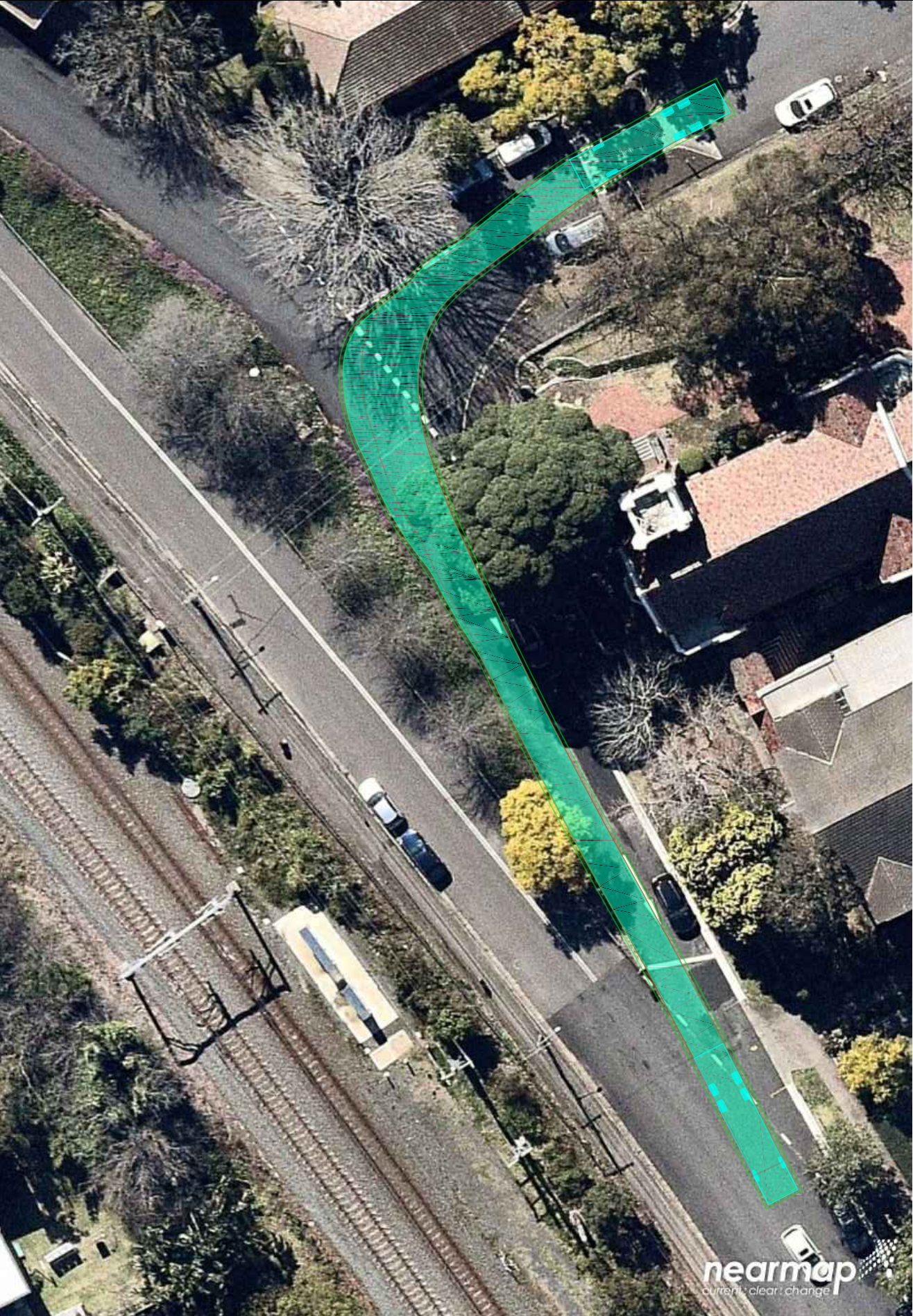
project

Roseville SWELL

drawing title

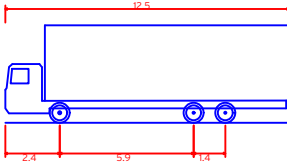
19m Truck and Dog Swept Path - Intersection 5
(Victoria Street/Recreation Avenue)

client	EPM Projects	
drawing #	TP-005	rev 1
project #	2583B	
scale	1 : 250	



comments

A3



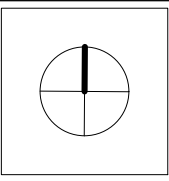
HRV - Heavy Rigid Vehicle
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Curb to Curb Turning Radius

12.500m
2.500m
4.300m
0.417m
2.500m
6.00s
12.500m

ptc.

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

rev	date	comment / description	drawn	reviewed
1	26/09/19	FOR INFORMATION	EL	FL



project
Roseville SWELL

drawing title
HRV Swept Path - Intersection 6 (Bancroft
Avenue/Hill Street)

client	EPM Projects
drawing #	TP-006
project #	2583B
scale	1 : 400

rev 1