



TransGrid

# Powering Sydney's Future

Potts Hill to Alexandria transmission cable project

Construction Traffic and Transport Management Plan

August 2020

# **TransGrid: State Significant Infrastructure - Powering Sydney's Future - Development and operation of a new 330 kV underground cable circuit**



## **CONSTRUCTION TRAFFIC & TRANSPORT MANAGEMENT PLAN (CTTMP)**

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**Document Control**


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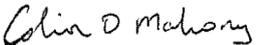
**Document Details:**

<b>Project No:</b>	1595
<b>Project Name:</b>	PSF - Supply and Installation of Integrated Cable Systems Rookwood to Beaconsfield
<b>Document Name:</b>	Construction Traffic & Transport Management Plan
<b>Document No:</b>	TEA-PSF-MP-004.100
<b>File Name:</b>	TEA-PSF-MP-004.100 PSF CTTMP_rev6 - FOR SUBMISSION

**Revision Status:**

Revision	Date	Description	Revised by
0	05/06/20	Draft for Consultation	Colin O'Mahony
2	06/07/20	For Submission	Colin O'Mahony
3	20/07/2020	For Submission. Minor edit to address DPIE comment.	Mark Favetta
4	07/08/2020	For Submission. Updated to include DPIE comments	Michael Palamara
5	13/08/2020	For Submission. Updated to include DPIE comments	Michael Palamara
6	18/08/2020	For Submission. Updated to include DPIE comments	Michael Palamara

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# 1 Introduction

## 1.1 Context

This Construction Traffic Management Plan (CTTMP) forms part of the Construction Environmental Management Plan (CEMP) for Powering Sydney’s Future – Potts Hill to Alexandria Transmission Cable Project

This CTTMP has been prepared to address the requirements of the Minister’s Conditions of Approval (CoA) and the environmental mitigation and management measures (EMMM) listed in the Amendment Report to the Environmental Impact Statement (EIS) and all applicable legislation.

## 1.2 Project Description

Key components of the project are listed below.

- Cable works connecting Rookwood Road substation with the Beaconsfield West substation comprising:
  - a 330 kV underground transmission cable circuit comprising three cables installed in three conduits;
  - another set of three conduits for a possible future 330 kV transmission cable circuit, if required (subject to future EIS approval);
  - four smaller conduits for carrying optical fibres;
  - around 24-32 joint bays, per circuit, where sections of cable will be joined together, located approximately every 600-800 metres along the transmission cable route;
  - link boxes and sensor boxes associated with each joint bay will be installed in a concrete pit with a removable lid to allow cable testing and maintenance; and
  - optical fibre cable pits for optical fibre cable maintenance.
- Special crossings of infrastructure, State and Regional Road crossings, watercourses, including two rail lines (at Chullora and St Peters), one freight rail line (Enfield Intermodal rail line at Belfield), one light rail line (at Dulwich Hill), the Cooks River and its associated cycleway (at Campsie/Croydon Park and Ashbury) and the southern wetland at Sydney Park (at Alexandria).
- Upgrade works at the Rookwood Road and Beaconsfield West substations to facilitate the new 330 kV transmission cable circuit.
- conversion works at the Beaconsfield West and Sydney South substations to transition the existing Cable 412 from a 330 kV connection to a 132 kV connection;
- a temporary construction laydown area at Camdenville Park.

The Site Plan below shows the proposal location within TransGrid’s network area.



Figure 1: Site Plan

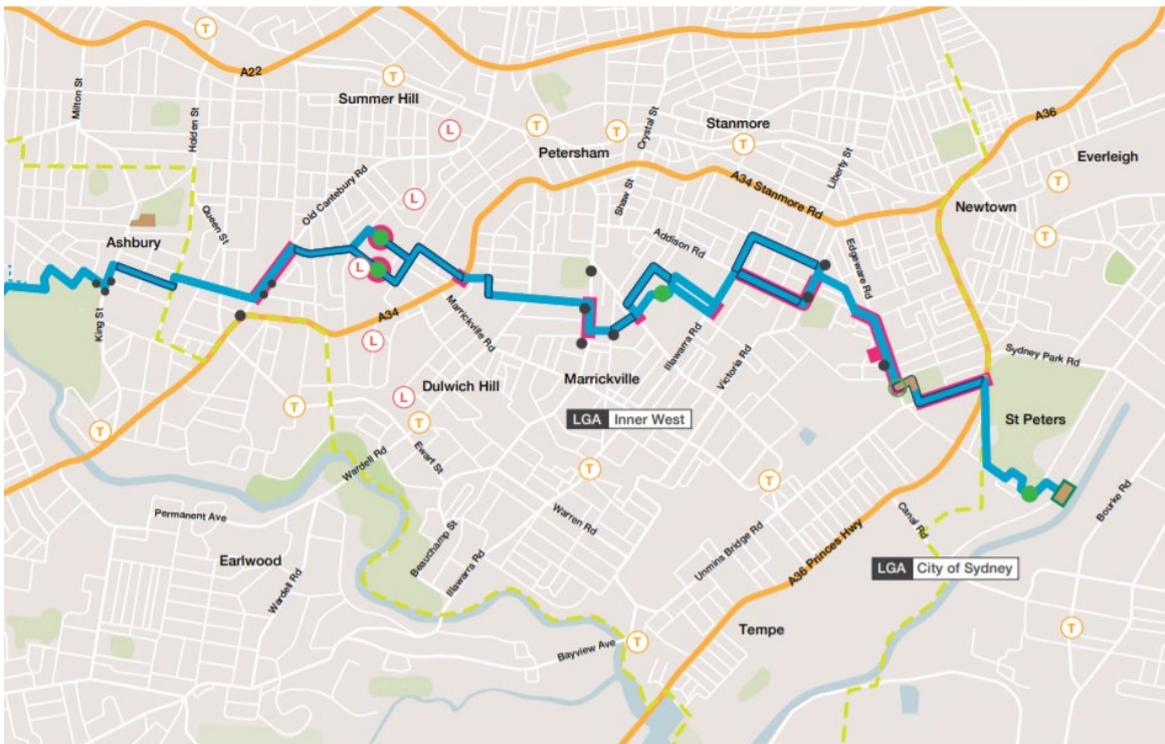


Figure 2: Site Plan continued

### 1.3 Scope and objectives

The purpose of this CTTMP is to outline the mitigation and management measures that TransGrid and its contractors will use to manage and control impacts associated with construction.

It includes the provision for the safe, efficient and effective movement of all vehicle, cyclist, pedestrian and disabled traffic to keep disruption on the road and transport networks to a minimum. It also provides for the protection of workers and site traffic.

To achieve these objectives, TransGrid and its contractors will:

- Ensure appropriate controls and procedures are implemented during construction activities to address potential traffic and access impacts along the route;
- Ensure measures are implemented to address the relevant CoA (Table 2.1) and EMMs (Table 2.2);
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2 of this Plan;
- Plan and stage all work activities to effectively minimise road occupancy and potential impacts on the road network;
- Develop site-specific TMPs for locations identified by RMS & TMC; and
- Develop site-specific Traffic Control Plans (TCPs) for all works that impact traffic, cyclist, and pedestrian networks.

### 1.4 Consultation for preparation of the CTTMP

This CTTMP was provided to the relevant councils and agencies for consultation. This included: Canterbury Bankstown Council, Inner West Council, City of Sydney, Australian Rail Track Corporation (ARTC), Sydney Metro, Sydney Transit Authority (STA), Sydney Trains and Traffic Management Centre (TMC). The outcomes of consultation were incorporated into this plan. Details of consultation is presented in Section 5. **Appendix A** presents a copy of consultation and includes a comments register of all comments received during the formal consultation period.

### 1.5 Baseline Data

Traffic data used is from RMS and TMC, who maintain baseline traffic data. . RMS data is freely available on <https://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=6>. TMC data is gathered through the Sydney Coordinated Adaptive Traffic System (SCATS). Where appropriate TMC may provide this data for the purposes of further analysis.

Public transport information has been sourced from the TfNSW website:  
<https://transportnsw.info/>

Cycle way information has been sourced from:  
[https://www.rms.nsw.gov.au/maps/cycleway\\_finder](https://www.rms.nsw.gov.au/maps/cycleway_finder)

Parking information is based on the EIS and ground truthed where required.

Sensitive receiver information is based on the EIS and was validated.

Business information has also been collected along the alignment.

## 2 Environmental Requirements

### 2.1 Legislation

#### 2.1.1 Legislation and regulatory requirements

Identified regulatory requirements include:

- An approved and valid Road Occupancy Licence (ROL)
- An approved relevant Speed Zone Authorisation (SZA)
- Australian Road Rules
- *Roads Act 1993 (NSW)*
- *Road Transport (Safety and Traffic Management) Regulation 2000*
- *Road Regulation 2008 (NSW)*
- *Road Transport Act 2013 (NSW)*
- *Work Health Safety Act 2011 (NSW)*
- *Work Health Safety Regulations 2017 (NSW)*.

Legislation relevant to traffic management also includes the EP&A Act, under which the project approval was granted.

#### 2.1.2 Guidelines and Standards

The key guidelines, specifications and policy documents relevant to traffic management include:

- Roads and Maritime Traffic Control at Worksites Manual v5 (27 July 2018)
- AUSTRROADS Guide to Traffic Management – Parts 1-13
- AUSTRROADS Guide to Road Design – Parts 1-7
- AUSTRROADS Guide to Road Safety – Parts 1-9, and Part 6A
- Australian Standard 1742 Parts 1 to 15, Manual of uniform traffic control devices (as required)
- Australian Standard 4282 Control of the Obtrusive Effects of Outdoor Lighting
- Australian / New Zealand Standard 3845 Road Safety Barrier System
- Australian / New Zealand Standard 1743-2001 Road Sign Specifications
- Australian / New Zealand Standard 2890 Parts 1 to 6. Parking Facilities
- RMS Delineation Manual
- RMS Australian Standard Supplements
- RMS Austroads Guides Supplements
- RMS Specification G10
- RMS Traffic Modelling Guidelines
- Cycling aspects of Austroads Guide
- STA Bus Design Guidelines
- Installation of Traffic Light Signals
- Guidelines for Location of VMS
- Technical Direction for use of VMS
- Road Occupancy Manual
- Catalogue No. 45094053 – Making roads more motorcycle friendly A guide for road design, construction and maintenance
- Roads and Maritime Services Austroads Guide Supplement Publication No: Pub.11.097

- Safety Barrier Products (Temporary) accepted for use on Classified Roads in NSW.
- Relevant RMS Technical Directions and Guide updates
- RMS Traffic Signal Design and Specification SI/TCS/8 Installation and reconstruction of traffic light signals
- Sydney's Cycling Future & Sydney's Walking Future (both released 2013)
- Disability Inclusion Action Plan 2018 - 2022 (released 2017)

## 2.2 Specific Definitions and Acronyms

TCP – Traffic Control Plan

The following acronyms may be used interchangeably and are referring to the same type of document that considers the impact of construction activities on the traffic and transport network.

CTTMP – Construction Traffic & Transport Management Plan

TMP –Traffic Management Plan

TTMP –Traffic & Transport Management Plan

## 2.3 Ministers Conditions of Approval

A State Significant Infrastructure (SSI) approval (SSI 8583) was granted on 14<sup>th</sup> May 2020. The Conditions of Approval (CoA) relevant to this Sub-plan are listed in Table 1 below. A cross reference is also included to indicate where the condition is addressed in this Sub-plan or other Project management documents.

Table 2: Conditions of Approval relevant to the CTTMP

ID	Condition Requirements	Document reference	How Addressed
C1	A Construction Environmental Management Plan (CEMP) must be prepared to detail how the performance outcomes, commitments and mitigation measures specified in the EIS will be implemented and achieved during construction.	CEMP All CEMP Sub-plans	The CEMP provides a central mechanism for all potential environmental impacts will be managed. It outlines the framework for the management of environment impacts. The CEMP has been prepared and will be implemented during construction. Each of the Sub-plans e.g. the CTTMP have a suite of environmental mitigation measures and environmental control measures, which were established to address the performance outcomes, commitments and mitigation measures identified in the EIS will be achieved during construction.
C2	The CEMP must be submitted to the Planning Secretary for approval no later than one (1) month before the	The CTTMP forms part of the CEMP	Condition noted. CEMP approval will be at least 1 month following the initial submission of the

ID	Condition Requirements	Document reference	How Addressed
	commencement of construction	submission.	CEMP.
C3	The following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan and be consistent with the CEMP referred to in Condition C1:	Section 5.3 Appendix A	This Traffic and Transport Sub-plan was provided to the relevant councils and agencies for consultation. The results of this consultation have been incorporated into the final plan and are summarised in Section 5.3
C3(a)	Traffic and Transport – TMC, Relevant Council(s)	Section 1.4 Section 5.3 Appendix A	During preparation of this plan, consultation was undertaken with Traffic Management Centre (TMC), City of Sydney (COS), Inner West Council (IWC), Canterbury/ Bankstown Council (CBC). The results of this consultation have been incorporated into the final plan and summarised in Section 5.3 & Appendix A. A full list of stakeholders is identified in Section 1.4.
C4	Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including all copies of correspondence from those agencies, must be provided with the relevant CEMP Sub-plan.	Section 5.3 Appendix A	This sub-plan was developed in consultation with the Traffic Management Centre (TMC), City of Sydney (COS), Inner West Council (IWC), Canterbury/ Bankstown Council (CBC). The results of this consultation have been incorporated into the final plan and are summarised in Section 5.3  Copies of correspondences from these agencies have been included in Appendix A of this plan.
C5	Any of the CEMP Sub-plans may be submitted along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.	No reference within this document. Refer to CEMP	This TTMP will be submitted to the DPIE for information no later than one month before construction.
C6	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary, must be implemented for the duration of construction. Where construction of the SSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage	No reference within this document. Refer to CEMP	This CTTMP will be submitted to the DPIE for approval no later than one month before construction.

ID	Condition Requirements	Document reference	How Addressed
	have been approved by the Planning Secretary.		
C7	The CEMP and CEMP Sub-plans required under this approval must be prepared by suitably qualified and experienced persons in accordance with relevant guidelines, and include where relevant:	CTTMP	Credentials are provided on the Document Control (QA page), including where relevant TfNSW accreditation.
C7 (a)	a summary of relevant background or baseline data;	Section 1.5 Section 3 Section 4	A review of available data sources has been conducted. An assessment of baseline data information has been completed.
C7 (b) i	details of: the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Refer to Section 4.1, 4.2 & 5.3	TMC – will be required to approve ROLs
C7 (b) ii	any relevant limits or performance measures and criteria; and	Refer to Section 4.2	TMC manages the performance of the state road network. They manage the performance of the network by restricting times certain types of temporary traffic arrangements can be implemented.
C7 (b) iii	the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the SSI or any management measures;	Refer to Section 4.2	The network performance will be managed through temporary traffic control at suitable times where impact to the traffic network is limited. This will be different
C7 (c)	any relevant commitments or recommendations identified in the EIS;	Section 2.4 Table 3	Section 2.4, Table 3 identifies how each of the commitments in the EIS are addressed
C7 (d)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Section 4.1 & 4.2 Section 5	In accordance with Condition E32(h) traffic control plans will document the measures to be implemented to comply with roads authority requirements. .
C7 (e)	a program to monitor and report on the:  (i) impacts and environmental performance of the SSI; and	Section 6.3 Section 6.5	Traffic controllers will continuously monitor traffic conditions to ensure delay and queuing remains acceptable and priority is to be given to peak direction.

ID	Condition Requirements	Document reference	How Addressed
C7 (e) ii	(ii) effectiveness of the management measures set out pursuant to paragraph (d);	Section 6.3 Section 6.5	Traffic controllers will continuously monitor the effectiveness of traffic conditions to ensure delay and queuing remains acceptable and priority is to be given to peak direction
C7 (f)	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 4.7 Section 4.8 Section 8.1 CEMP Section 7 CEMP Section 8.4	Incident response and the approach to managing unplanned lane closures is described in this CTTMP.  Continuous improvement will be implemented in accordance with Section 8.1 and CEMP Section 7.4
C7 (g)	a program to investigate and implement ways to improve the environmental performance of the SSI over time;	CEMP Section 8 CEMP Section 8.4	A number of events may trigger the update and revision of the CTTMP, these are detailed in section 8.
C7 (h)	a protocol for managing and reporting any:  (i) incident, non-compliance or exceedance of any impact assessment criterion and performance criterion;	CEMP Section 7 Section 4.7 Section 4.8	A protocol for CEMP incident and emergency response is included in the CEMP. Specifically with regard to the traffic and transport, this is detailed within sections 4.7 and 4.8
C7 (h) ii	(ii) complaint; or	Community Communication Strategy Section 6  Complaints management system	In accordance with the Conditions of Approval Part B, all complaints will be managed in accordance with the Community Communication Strategy (Refer section 6 for protocol) and via the complaints management system.
C7 (h) iii	(iii) failure to comply with other statutory requirements; and	CEMP Section 8.3 CEMP Section 8.4 Section 8.1 CEMP Section 7.3	TransGrid and its contractors are obliged to comply with all statutory requirements. In the event of failure to meet statutory requirements, these would be immediately recorded, reported to TransGrid consistent with CEMP Sections 8.3 and 8.4. and action would be taken. Investigations would be undertaken consistent with the triggers in Section 8.1 for continuous improvement, with immediate actions taken to address any incidents or emergencies consistent with the

ID	Condition Requirements	Document reference	How Addressed
C7 (i)	a description of the roles and environmental responsibilities for relevant employees, as well as training and awareness; and	Section 6.1	CEMP section 7.3 A description of roles and responsibilities has been included.
C7 (j)	a protocol for periodic review of the CEMP and associated subplans and programs.	Section 8.1	Refer Section 8.1 for information related to how continuous improvement
E27: Access	During construction, all reasonable and feasible measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, affected properties and businesses. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access arrangements must be developed in consultation with affected land users and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Section 4.6	Various environmental and traffic management measures will be applied to ensure resident access is maintained throughout the project including Home & Business Plans, as detailed in the project’s <i>Community Communication Strategy</i> , when access is blocked for an extended period of time. Any access physically affected by the Project will be reinstated at no cost to the property owner. The mitigation and management measures for property access are outlined in Section 4.6
E28: Pedestrian and Cyclist Access	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access are restricted or removed due to construction activities, an alternate route which complies with the relevant standards must be provided and signposted.	Section 4.4	Processes for managing disable, pedestrian and cyclist access during construction are outlined in Section 4.4  Existing pedestrian and cycling facilities will be maintained where feasible and any alternative routes will be established in compliance with RMS Traffic Control at worksites and AS1742.3.
E29 Classified Roads and Rail Corridors (a)	Unless otherwise agreed by the relevant roads authority or rail authority:  (a) road crossings on classified roads identified in Table 4 must be constructed via underboring methods;	-	Road crossings on classified roads identified in CoA Table 4 will be constructed via underboring methods. If alternative construction methods are more suitable, this would be agreed with TfNSW Asset Management.
E29 (b)	(b) rail crossings must be constructed via underboring methods, apart from the approved cable bridge across the rail corridor at Chullora and the Bedwin Road cycle bridge at St	Refer to Section 3.6.2.  Refer to design drawings	Table 7 identifies construction methodology for rail crossings.

ID	Condition Requirements	Document reference	How Addressed
	Peters;		
E29 (c)	(c) joint bays must not be constructed in classified roads or rail corridors.	No reference within this document. Refer to design drawings	Joint bays will not be located in rail corridors. Joint bays will not be located in classified roads unless otherwise agreed by the relevant roads authority.
E30 Traffic and Transport CEMP Sub-Plan (a)	(a) a description of the construction program, construction hours and access arrangements;	Refer to CEMP Section 2.6. Refer to Section 3.3 Refer to Section 4.6 for access arrangements	An construction program is included in the CEMP Section 2.6. Section 3.3 outlines construction hours . Access arrangements are detailed in Section 4.6.
E30 (b)	(b) a description of the proposed measures for managing traffic flow around the work sites;	Section 4.5	Various measures listed in Section 4.5 will be used to manage the flow of traffic around the work site.
E30 (c)	(c) provisions for additional traffic assessment and modelling where necessary to confirm the adequacy of the proposed traffic management measures, lane closures and diversions;	Section 4.2.1	Consultation with TMC has identified several locations where additional traffic assessment is necessary. These locations are identified in Section 4.2.1 Site-specific TMPs will be developed and approved by the relevant authorities prior to works commencing.
E30 (d)	(d) provisions for maintaining property access and on-street parking as far as reasonable and feasible, and for minimising and managing any disruptions to access and parking;	Section 4.6	Various environmental and traffic management measures will be applied to ensure resident access is maintained. The mitigation and management measures for property access are outlined in Section 4.6
E30 (e)	(e) provisions for maintaining emergency vehicle access at all times;	Section 4.6.3	Access for emergency vehicles will be maintained at all times. For example, no closures of main roads will occur. Emergency Services will be notified and consulted with the site-specific TMP, if there are any potential issues associated with impacting access. Site-specific TMPs will be approved by the relevant authorities prior to works commencing.

ID	Condition Requirements	Document reference	How Addressed
E30 (f)	(f) provisions for maintaining pedestrian, cycle and disabled access as far as reasonable and feasible;	Section 4.4	Pedestrian, cycling and disabled access will be maintained, as far as reasonable, during the works. Where access is restricted, alternative temporary facilities will be provided in compliance with relevant aspects of Austroads Guide to Road Design and Austroads Guide to Traffic Management.
E30 (g)	(g) provisions for minimising impacts on bus and light and heavy rail services,  and managing any required temporary bus stop relocations and diversions in consultation with applicable authorities and bus operators; and	Section 4.3	Works will be undertaken on light and heavy rail corridors through Out of Hours (OOH's) and/or during stakeholder nominated possessions.  Where possible, existing bus facilities will be maintained. However, where this cannot be achieved, equivalent temporary facilities will be provided.  All proposed changes to existing routes and bus stops facilities will be discussed with the bus operator and Council(s), prior to the commencement of works.
E30 (h)	(h) a protocol for the preparation of Traffic Control Plans prior to the commencement of all construction works with the potential to affect traffic, outlining the required traffic controls at the work sites.	Section 4.1	The protocol for TCPs includes: <ul style="list-style-type: none"> <li>• TCPs will be prepared by a suitably qualified technician in accordance with the Traffic control at work sites manual (Roads and Maritime, 2018) and will comply with the requirements of AS1743.3 Roads Signs - Specifications.</li> <li>• <b>Classified Roads:</b> TCPs will be submitted with ROL applications to TMC for approval via Oplinc.</li> <li>• <b>Local roads:</b> It is agreed by the relevant councils that TCPs which require diversions due to full road closures will be submitted to Council for information purposes only. All other TCPs are not required to be submitted.</li> </ul>

## 2.4 Environmental Mitigation and Management Measures

Relevant EMMMs are listed in Table 2 below. This includes reference to required outcomes (or “measure”, the timing of when the commitment applies, reference documents or sections of the Sub -plan where the measure is addressed.

Table 3: Environmental Mitigation and Management Measures relevant to this CTTMP

Impact	ID	Measure	Timing	Reference	How addressed
General traffic impacts	TT1	Alternative construction methodologies and traffic management approaches will be considered to identify additional measures that may reduce potential impacts.	Detailed design and construction	Design Drawings and throughout this document	During design development the alignment will be revised to reduce impact to classified roads
General traffic impacts	TT2	A CTMP will be produced for the project that will outline the proposed methodology for managing traffic flow around the work sites, traffic assessment, traffic counts, modelling and/or mid-block capacity assessments to confirm measures to be put in place to manage network performance from lane closures and proposed diversion routes. The CTMP will include effective traffic management measures for the proposed work sites to ensure the construction activities can be undertaken in a safe manner. The CTMP will also consider worker parking requirements and the temporary loss of on-road parking. The CTMP will be supported by TCPs.	Detailed design and construction	This document & Section 4.2.1 for site-specific TMPs	During consultation with TMC, SCO and Asset Management that site-specific TMPs (which consider traffic assessment, traffic counts, modelling and/or mid-block capacity assessments) are only required for the locations identified in Section 4.2.1
General traffic impacts	TT3	TCPs will be prepared for each work site. The TCP will graphically show the required traffic control at the work site, which will include, for example, lengths of merge/diverge tapers, location of traffic cones, traffic controllers, warning signage and speed limit sign locations, as required. Each TCP will be prepared by a suitably qualified technician in accordance with the Traffic control at work sites manual (Roads and Maritime, 2018) and will comply with the requirements of AS1743.3 Roads Signs - Specifications.	Detailed design and construction	Section 4.1	All TCPs will be prepared by a suitably qualified technician in accordance with the Traffic control at work sites manual (Roads and Maritime, 2018) and will comply with the requirements of AS1743.3 Roads Signs - Specifications. See also E30 (h)
Road closures	TT4	In the event of road closures, diversion routes will be provided along with an assessment of the likely network performance of the	Detailed design and construction	Section 4.1 & 4.2	Where road diversions are required on classified roads a

Impact	ID	Measure	Timing	Reference	How addressed
		proposed diversion. Where required, demand management measures will be considered in consultation with the relevant roads authorities to reduce traffic on key corridors affected by construction activities for the project by directing traffic to other appropriate roads. Diversion routes and demand management measures will be documented in the CTMP.			<p>site-specific TMP will be developed in consultation with TMC prior to works commencing on the impacted road.</p> <p>Road closures of local roads, will be undertaken in accordance with the pre-agreed approach to local road closures as documented in the Appendix A.</p>
Active travel impacts	TT5	Where feasible, reasonable and safe, impacts on active transport (walking and cycling) modes and routes will be minimised by maintaining access around work sites or providing diversion routes.	Construction	Section 4.4	Access will generally be maintained. In instances where access is impacted, suitable site-specific temporary measures will be implemented.
Vehicle access	TT6	Vehicle access to residential and business properties will be maintained at all times, where possible. Where restricting access to properties is required to enable construction works, vehicle access will be restored as soon as possible. Where access to a property cannot be maintained, affected owners/occupants will be informed and feasible and reasonable solutions for access to their specific location discussed.	Construction	Section 4.6.1	Access will be maintained where feasible. In instances where access is impacted, suitable site-specific temporary measures will be implemented in consultation with the impacted owners/occupants
Emergency access	TT7	Access for emergency services vehicles will be maintained at all times.	Construction	Section 4.6.3	<p>Access for emergency vehicles will be maintained at all times.</p> <p>Where road closures are implemented, emergency services will be notified. Additionally, detours will be in place for all vehicles to follow.</p>

Impact	ID	Measure	Timing	Reference	How addressed
Community and stakeholder consultation	TT8	<p>TransGrid will engage with relevant stakeholders including Roads and Maritime, Transport for NSW (TfNSW), Transport Management Centre (TMC), public transport service providers (e.g. Sydney Trains, Transdev, State Transit Authority), waste collection agencies, local councils and local residents and businesses regarding potential traffic and access impacts and management options, in accordance with the Community Consultation Framework (CCF).</p> <p>TransGrid will work with TfNSW and bus operators to ensure that sufficient lead time and comprehensive public notification is provided, regarding changes to bus stops and services and that alternative arrangements are in place to minimise disruption during road changes.</p> <p>Consultation regarding the potential overlap of construction works for the project and other adjacent projects will be undertaken during detailed design to ensure that the works are coordinated, where possible.</p>	Detailed design and construction	Section 5.3	<p>This CTTMP has been prepared in consultation with TfNSW, TMC, Transport authorities &amp; Councils. Refer to Appendix A</p> <p>Prior to works commencing notifications will be sent to homes and businesses minimum seven days prior to commencement of works in that area.</p>
Impacts to bus routes	TT9	All diversions of bus routes will be agreed with TfNSW and bus operators prior to the traffic management approach being finalised; and will consider acceptable routes based on the turning paths of these vehicles.	Detailed design and construction	Section 5.3 & Appendix A	Correspondence from Sydney Buses. Refer to Appendix A.
Construction laydown areas	TT10	The construction laydown areas will undergo a detailed design to ensure that access/egress is possible for the nominated construction design vehicle, and to ensure that impacts to the road network are mitigated and managed. This design will be presented within the CTMP for the project.	Detailed design and construction	Section 4	<p>During design development the number of laydown areas has been reduced to one, Camdenville Park.</p> <p>This laydown area is required to facilitate the new cable bridge construction at Bedwin Rd.</p> <p>A site-specific TMP will be developed for these works. The plan will address access/</p>

Impact	ID	Measure	Timing	Reference	How addressed
					egress. The site-specific TMP will be required to be approved by the relevant Road Authority.
Parking	TT11	Workers will be encouraged to travel to the work sites using public/active transport where possible. However, some on-road parking may be required at work sites. The CTMP will detail measures to minimise parking impacts to surrounding receivers as far as possible (e.g. not parking near schools/child care centres during drop off and pick up times or not parking close to sensitive land uses with high on-road parking demand, such as hospitals).	Construction	Section 4.5.1 Section 4.6.3	Staff will be encouraged to utilise public transport where possible and advised of CTTMP measures, in Tool box talks, relevant to surrounding receivers.

### 3 Construction Traffic Impacts

#### 3.1 Predicted Vehicle Movements

Heavy vehicle movements associated with construction works on the project are anticipated to have minimal impact on the road network.

The construction works will have a maximum of seven sites active at one time. Each site will have a maximum six heavy vehicle movements/day to remove spoil and delivery materials.

The largest typical heavy vehicle will be a 12.5m rigid vehicle. In areas with improved access, the largest vehicle will be a 19m truck and trailer. In areas with limited access, smaller vehicles will be used, as required.

In instances where larger or special vehicles are required (i.e. Bedwin Road bridge works), an individual assessment will be completed to ensure the vehicle can access the site. Where required these assessments will be included in ROL or TMP applications.

#### 3.2 Summary of Cumulative Impacts

The cumulative impacts have been mitigated through the development of this CTTMP and future site-specific TMPs.

Further consideration of cumulative impacts is also addressed in the ‘Public Infrastructure CEMP Sub Plan’, as required by CoA’s C3(g) and E31.

Table 4: Summary of Cumulative Impacts

Other activities with cumulative impacts	Contribution to overall impact
<ul style="list-style-type: none"> <li>• Other vehicle, cyclists, pedestrian and disabled traffic</li> <li>• Vehicles and machinery associated with other works</li> <li>• Installation of utilities;</li> <li>• Vehicles and machinery associated with other TransGrid construction works</li> </ul>	<p>Impacts to vehicle and pedestrian traffic during the works.</p> <p>Council was consulted in relation to other development in the area. Council submissions have been given due consideration.</p> <p>The TMP and /or TCP would consider the cumulative impact of traffic movements.</p> <p>Other works on TransGrid’s network would be staged and coordinated as necessary to minimise potential cumulative traffic impacts on vehicle/pedestrian movements during the works.</p>

#### 3.3 Construction Hours

Construction hours will vary depending on the location of works and approval of relevant road & rail authorities.

For further information on construction hours refer to Section 6 of the Construction Noise & Vibration Management Plan for an outline of construction hours, variation to work hours, highly noise intensive works and Out of Hours Work Protocol.

### 3.4 Existing Road Network

The proposed alignment is generally within existing roads and accessed accordingly. There are several NSW Roads and Maritime Service (RMS) Classified roads located throughout the proposed route. RMS have been consulted and site-specific TMPs have been identified for certain locations.

The main features of the transport network in the area of the proposal include roadways and train line. Transport in the region is heavily reliant on the road network for private vehicle usage and public transport in the form of buses, trains and commercial vehicles.

There are nine NSW Roads and Maritime Service Classified roads located along the route which includes, Rookwood Road, Hume Highway, Juno Parade, Roberts Road, Punchbowl Road, Old Canterbury Road, New Canterbury Road, Sydenham Road and Princes Highway.

There are twelve roads that are regionally classified on the cable route which include Waterloo Road, Burwood Road, Fifth Avenue, Brighton Avenue, King Street, Wardell Road, Addison Road, Enmore Road, Llewellyn Street, Edgeware Road, Bedwin Road and May Street. Traffic on these roads is heavy during peak times and remains busy at off peak periods due to the presence of both commercial and residential properties and the use of the area as a transport hub.

A small number of the streets along the route accommodate bus stops including Sydney Buses operated bus routes. Predominately, the majority works only cross bus routes and as such, impacts are expected to remain low.

Throughout the feeder route, both sides of the road are utilised for car parking during business hours and out of hours due to residential properties. Paved footpaths are located throughout the route.

During the construction works, the potential restrictions on existing public roads will include:

- Reduced roadwork speed limits
- One lane alternate (stop/slow) operations
- Lane closures/ reduction in traffic capacity
- Turning prohibitions
- Detours
- Full closure of roads during bridge construction, trenching and cable hauling
- Changes to private property or business access
- Removal of some on street parking

While the proposed changes will impact the traffic and transport network, measures outlined in this CTTMP will be implemented to mitigate against any significant impacts.

### 3.5 Surrounding Road Network

Below is a list of all roads impacted by the alignment. Effort will be made to reduce the impact of the traffic management approach prior to the commencement of works.

Note: All road restoration will be completed in agreement the with relevant road authorities' requirements.

Table 5: Surrounding Road Network and Traffic Management Approach

Road name	Classification	Minimum road width (m)	Bus Route	Traffic management approach for trenching and excavation
William Holmes Street	Local Road	9	No	Diversions required
Rookwood Road	State Road 190	23	Yes	Traffic flow maintained
Muir Road	Local Road	20	Yes	Traffic flow maintained
Hume Highway*	State Road 2	23	Yes	Traffic flow maintained
Hillcrest Avenue	Local Road	11	Yes	Diversions required
Rawson Road (between Hillcrest Avenue and Waterloo Road)	Local Road	10.5	No	Diversions required
Waterloo Road*	Regional Road 7118	12	Yes	Traffic flow maintained
Rawson Road (between Waterloo Road and Maiden Street)	Local Road	10	Yes	Diversions required
Maiden Street	Local Road	9	No	Diversions required
Juno Parade (between Maiden Street and Acacia Avenue)	State Road 636	12.5	Yes	Traffic flow maintained
Acacia Avenue	Local Road	10.5	No	Diversions required
Wangee Road (between Acacia Avenue and Roberts Road)	Local Road	9.5	Yes	Diversions required
Roberts Road*	State Road 200	24	No	Traffic flow maintained
Wangee Road (between Roberts Road and Skyline Street)	Local Road	10.5	No	Diversions required
Wangee Road (between Skyline Street and Punchbowl Road)	Local Road	10.5	No	Diversions required
Punchbowl Road*	State Road 549	19.5	Yes	Traffic flow maintained

Road name	Classification	Minimum road width (m)	Bus Route	Traffic management approach for trenching and excavation
Wangee Road (between Punchbowl Road and Yangoora Road)	Local Road	12	No	Traffic flow maintained
Yangoora Road (between Wangee Road and Neale Street)	Local Road	9.5	No	Diversions required
Neale Street	Local Road	10.5	No	Diversions required
Lucerne Street (between Neale Street and Knox Street)	Local Road	11.5	No	Traffic flow maintained
Knox Street	Local Road	12	No	Traffic flow maintained
Walker Street (east of Knox Street)	Local Road	9	No	Diversions required
Carter Street (west of Burwood Road)	Local Road	11	No	Traffic flow maintained
Burwood Road (between Carter Street and Bruce Avenue)	Regional Road 7047	11	Yes	Diversions required
Bruce Avenue*	Local Road	12.5	No	Traffic flow maintained
Omaha Street (between Bruce Avenue and First Avenue)	Local Road	12	No	Traffic flow maintained
Seventh Avenue (between First Avenue and Fifth Avenue)	Local Road	10.5	Yes	Diversions required
Fifth Avenue*	Regional Road 7067	12	No	Traffic flow maintained
Seventh Avenue (between Fifth Avenue and Beamish Street)	Local Road	10.5	Yes	Diversions required
Beamish Street	Local Road	10.5	No	Diversions required
Byron Street (between Beamish Street and Brighton Avenue)	Local Road	10.5	No	Diversions required
Option 1: Cowper Street (between Brighton Avenue and Lindsay Street)	Local Road	12	No	Traffic flow maintained
Option 1: Lindsay Street	Local Road	12	No	Traffic flow maintained
Harmony Street (between Hay Street and Malleny Street)	Local Road	12.5	No	Traffic flow maintained
Malleny Street	Local Road	12.5	No	Traffic flow maintained

Road name	Classification	Minimum road width (m)	Bus Route	Traffic management approach for trenching and excavation
Cheviot Street (between Malleny Street and Roslyn Street)	Local Road	12.5	No	Traffic flow maintained
Roslyn Street (between Cheviot Street and King Street)	Local Road	12	Yes	Traffic flow maintained
King Street	Regional Road 2040	12	Yes	Traffic flow maintained
Second Street (between King Street and Holden Street)	Local Road	10	No	Diversions required
Holden Street	Local Road	12	No	Traffic flow maintained
Hanks Street (between Holden Street and Old Canterbury Road)	Local Road	12	No	Traffic flow maintained
Old Canterbury Road	State Road 652	12.5	Yes	Traffic flow maintained
Arlington Street (between Old Canterbury Road and Constitution Road)	Local Road	10	No	Diversions required
Option 4b: Constitution Road (between Windsor Road and west of the rail corridor)	Local Road	9	No	Diversions required
Option 4b: Constitution Road (East of the rail corridor and west of Grove Street)	Local Road	10	No	Diversions required
Option 4b: Constitution Road (between Grove Street and Denison Road)	Local Road	10	No	Diversions required
Option 4b: Denison Road (between Constitution Road and Hill Street)	Local Road	10	No	Diversions required
Denison Road	Local Road	10	No	Diversions required
Pigott Street (between Denison Road and New Canterbury Road)	Local Road	9.5	No	Diversions required
New Canterbury Road*	State Road 167	12.5	No	Traffic flow maintained
Herbert Street (between New Canterbury Road and Fairfowl Street)	Local Road	12	No	Traffic flow maintained
Fairfowl Street	Local Road	5.5	No	Diversions required
Pile Street (between Fairfowl Street and Livingstone	Local Road	12	No	Traffic flow maintained

Road name	Classification	Minimum road width (m)	Bus Route	Traffic management approach for trenching and excavation
Road)				
Livingstone Road	Local Road	12.5	Yes	Traffic flow maintained
Hawkhurst Street	Local Road	12.5	No	Traffic flow maintained
Centennial Street	Local Road	8	Yes	Diversions required
Sydenham Road	State Road 664	12.5	No	Traffic flow maintained
Option 5b: Neville Street (between Sydenham Road and Surrey Street)	Local Road	7	No	Diversions required
Option 5b: Surrey Street	Local Road	7	No	Diversions required
Option 5b: Charles Street	Local Road	12.5	No	Traffic flow maintained
Option 5a: Centennial Street (east of Sydenham Road)	Local Road	12.5	No	Traffic flow maintained
Option 5a: Amy Street (south of Horton Street)	Local Road	12.5	No	Traffic flow maintained
Option 5a: Horton Street	Local Road	12.5	No	Traffic flow maintained
Option 5a: Illawarra Road (between Horton Street and Charles Street)	Local Road	9	No	Diversions required
Illawarra Road (north of Charles Street)	Local Road	9	No	Diversions required
Option 6b: Addison Road	Regional Road 7018	10.5	Yes	Diversions required
Option 6a: Agar Street	Local Road	9	No	Diversions required
Option 6a: Newington Road (between Agar Street and Enmore Road)	Local Road	6.5	No	Diversions required
Option 6b: Enmore Road (between Newington Road and Scouller Street)	Regional Road 2021	13	Yes	Traffic flow maintained
Option 6b: Addison Road	Regional Road 7018	10.5	Yes	Diversions required
Option 6b: Enmore Road (between Addison Road and Scouller Street)	Regional Road 2021	13	Yes	Traffic flow maintained
Scouller Street	Local Road	12.5	No	Traffic flow maintained
Juliett Street	Local Road	12	No	Traffic flow maintained
Llewellyn Street	Regional Road 7018	12	No	Traffic flow maintained

Road name	Classification	Minimum road width (m)	Bus Route	Traffic management approach for trenching and excavation
Edgware Road (between Llewellyn Street and south of Darley Street)	Regional Road 7017	12	Yes	Traffic flow maintained
May Street (west of Campbell Street to Princes Highway)	Regional Road 2099	7	No	Diversions required
Princes Highway*	State Road	21	Yes	Traffic flow maintained
Barwon Park Road	Local Road	12.5	No	Traffic flow maintained
Euston Road*	Local Road	12	No	Traffic flow maintained
Burrows Road	Local Road	12	No	Traffic flow maintained

### 3.6 Public Transport

#### 3.6.1 Bus Services

The project would involve work being undertaken along a number of public transport corridors, specifically along bus routes and in the vicinity of rail and light rail infrastructure.

Table 5 lists bus routes that utilise streets potentially impacted by the transmission cable route. As per the EIS, section 7.2.2.1, the bus routes are:

Table 6 Bus Routes

Bus routes		
• L23	• 410	• 450
• M30	• 412	• 491
• M92	• 413	• 913
• N40	• 415	• 914
• 308	• 422	• 925
• 352	• 423	• 939
• 355	• 426	• 941
• 408	• 428	• 942

These bus routes provide local and regional connectivity across Sydney, which include key commuter routes, accessibility to services and local amenity.

Prior to any works occurring that will impact a bus routes, appropriate alternative arrangement will be implemented. Alternative arrangements will be developed in consultation with the impacted service operator and government organisations. Where appropriate, the following mitigation measures may be adopted:

- Works will be completed outside of scheduled bus routes service times;
- Temporary bus stops will be provided during works; and
- Detour routes and notifications will be developed with the relevant agencies and operators and temporary bus stops will be implemented.

#### 3.6.2 Heavy and light rail services

Rail services will not be impacted by underground trenching works for the transmission cable circuit. However, there are occasions where the transmission cable circuit would cross rail or light rail lines in the form of above ground cable bridges or underbores.

Table 7 Rail Crossings

Rail Crossings	Construction methodology
Bedwin Road – rail lines	Cable bridge
Muir Road - Chullora rail line	Cable bridge
ARTC Carter Street and Walker Street	Underbore
Sydney Light Rail Constitution Road – L1 passenger line	Underbore

Rail service providers will be consulted to ensure that works occur outside of planned services. The proposed works at the above locations are scheduled during rail shutdown periods as required. Bedwin Road & Muir Road cable bridges will be considered during the development of site-specific TMPs.

### 3.7 Disabled, pedestrian and cyclists

The transmission cable route crosses along some sections of the road network identified by Roads and Maritime as cycle routes. The cycle network is generally managed by local authorities. Roads and Maritime classifies cycleways into bicycle friendly roads (ranging between low, moderate and high difficulty roads), on-road cycle lanes and off-road shared paths as defined on the Roads and Maritime cycleway finder<sup>3</sup>.

As per the EIS, section 7.2.3, the pathways affected are:

Table 7 Cycle paths affected

Cycleway type	Roads forming part of the Local Authority Cycleways Network
Bicycle friendly roads	<ul style="list-style-type: none"> <li>• Punchbowl Road near Wangee Road (high difficulty)</li> <li>• Wangee Road between Punchbowl Road and Yangooro Road (moderate difficulty)</li> <li>• Yangooro Road between Wangee Road and Neale Street (low, moderate and high difficulty)</li> <li>• Omaha Street between Bruce Avenue and First Avenue (moderate difficulty)</li> <li>• Fifth Avenue north of Seventh Avenue (moderate difficulty)</li> <li>• Byron Street west of Brighton Avenue (low difficulty)</li> <li>• Hanks Street between Holden Street and Old Canterbury Road (low and moderate difficulty)</li> <li>• Pigott Street between Denison Road and New Canterbury Road (moderate difficulty)</li> <li>• Herbert Street between Seaview Street and Fairfowl Street (moderate difficulty)</li> <li>• Wardell Road near Pile Street (moderate difficulty)</li> <li>• Centennial Street between Petersham Road and Sydenham Road (moderate difficulty)</li> <li>• Newington Road between Agar Street and Enmore Road (low difficulty)</li> <li>• Enmore Road between Newington Road and Scouller Street (moderate difficulty)</li> <li>• Addison Road between Agar Street and Enmore Road (moderate difficulty)</li> <li>• Enmore Road between Llewellyn Street and Scouller Street (moderate difficulty)</li> <li>• Juliatt Street between Scouller Street and Llewellyn Street (moderate difficulty)</li> <li>• Llewellyn Street between Juliatt Street and Edgeware Road (moderate difficulty)</li> <li>• May Street from east of Bedwin Road to Applebee Street (low difficulty)</li> </ul>

Cycleway type	Roads forming part of the Local Authority Cycleways Network
On-road cycle lanes	<ul style="list-style-type: none"> <li>• None</li> </ul>
Off-road shared paths	<ul style="list-style-type: none"> <li>• Cooks River Cycleway. The Cooks River cycleway is a 30-kilometre-long shared use path for cyclists and pedestrians that is generally aligned with the Cooks River. The western terminus of the cycleway is in Settlers’ Park, Ryde, while the south-eastern terminus is in Botany Bay at Kyeemagh:               <ul style="list-style-type: none"> <li>– a shared path linking Lindsay Street to Harmony Street across the Cooks River through Lees Park; and</li> <li>– a shared path from Croydon Avenue near Croydon Park, which runs along the northern side of the Cooks River and links to Lees Park.</li> </ul> </li> <li>• Arlington Light Rail Station (The Greenway)</li> <li>• May Street between Campbell Street and Applebee Street</li> <li>• multiple paths through Sydney Park</li> </ul>

Suitable treatments will be developed and implemented as part of the site-specific TCPs.

### 3.8 Parking

Throughout the feeder route, both sides of the road are moderately utilised for car parking during business hours and out of hours due to residential properties. Paved footpaths are located throughout the route.

As part of preparation for each stage notifications will be made prior to impacting on street parking. Notifications will be provided minimum seven days prior to commencing works. Subsequently, traffic controllers will manage parking, where necessary, using traffic cones and signage.

Works will be staged to minimise disruption to all stakeholders. As indicated, all stakeholders will be consulted prior to works as in accordance with the Community Stakeholder Engagement Plan (CSEP) and this Sub plan.

### 3.9 Schools & Sensitive Receivers

It is our intention to carry out works near schools during holiday periods to minimise to minimise disruption, inconvenience and noise. Schools along the route include:

- Camdenville Public School,
- Christian Brothers High School,
- Croydon Park Public School,
- Greenacre Public School,
- Lewisham Public School,
- Newington College,
- Petersham Primary School,
- St John Vianney Catholic Primary School,
- St Michael’s Catholic Primary School,
- St Patrick’s Catholic Primary School,
- St Pius Catholic Primary School,
- Summer Hill Public School

The construction risk assessment will identify the hazards associated with these works and implement measures to ensure the safety of everyone. The CRA will be completed prior to commencing works.

### 3.10 Businesses

There are a number of businesses requiring driveway access along the route. Any disruptions will be managed by consulting with the business directly prior to commencing works.

## 4 Construction Traffic Management

This CTTMP together with associated site-specific TMPs and site-specific TCP will address the requirements of individual sections of the project. The site-specific TMPs and TCPs will be prepared in a staged manner prior to commencing within the relevant work or project section. Site-specific TMPs will be approved by the relevant authority.

This CTTMP has been prepared to meet all RMS guidelines and Australian Standard 1742.3 – 2009 and developed with the following objectives:

- Detail existing traffic conditions;
- Identify the works and traffic generation, and the consequent impacts it may have on the surrounding traffic operations;
- Detail any traffic mitigation and control measures required to respond to potential impacts from staff and heavy vehicle movements;
- Identify required approvals, licenses or permits; and
- Detail measures to accommodate and manage the movement of oversized vehicles.

### 4.1 Traffic Control Plan protocol

During construction planning, work areas will be identified based on the alignment. Traffic Control Plans (TCPs) will be developed of all sites to safely accommodate the work areas.

TCPs will be prepared by a suitably qualified technician in accordance with the Traffic control at work sites manual (Roads and Maritime, 2018) and will comply with the requirements of AS1743.3 Roads Signs - Specifications.

Works requiring lane occupancy on State and Regional Roads or impacting traffic within 100m of State and Regional Roads will require submission to TMC for approval via the Oplinc system 10 days prior to commencement of works on the applicable road.

TCPs will be submitted to the relevant council for notification purposes 2 weeks prior to the commencement of works for full road closures and 1 week prior to commencement of works for works where traffic flow is maintained.

As required, the TCP will graphically show the required traffic control at the work site, which will include, for example, lengths of merge/diverge tapers, location of traffic cones, traffic controllers, warning signage and speed limit sign locations.

An example of a TCP is included for reference in Appendix B.

### 4.2 Road Occupancy

During majority of the works up to six vehicles would be required at any one location on the route at any one time. Vehicles associated with the proposal would mainly include light vehicles and two to three heavier vehicles such as trucks, excavators and cable drums. Heavy vehicles along the route are expected to cause some minor disruption to local roads.

The works would also result in temporary changes to traffic arrangements in local roads. Portions of some roads will need to be blocked, changing access to some buildings over short periods of time.

Extended impacts on roadways would occur at joint bays and around bridges works. It’s anticipated that a single bi-directional passing lane will be available adjacent to the joint bay locations during construction of the bay, however some joint bay locations may require road closures for cabling hauling.

Road Occupancy Licences (ROLs), issued by TMC mitigate against the impact of works on the performance of the traffic network. The TMC issues ROL’s based on the anticipated impact of the works to the road network. Further information on ROL related procedures is detailed below.

#### 4.2.1 Classified RMS roads

The works involve:

- Trenching through several State and arterial roads. Underbores will be used to cross under Hume Highway, Roberts Road and New Canterbury Road.
- There are twelve roads that are regionally classified on the cable route which include Waterloo Road, Burwood Road, Fifth Avenue, Brighton Avenue, King Street, Wardell Road, Addison Road, Enmore Road, Llewellyn Street, Edgeware Road, Bedwin Road and May Street.

#### Lane closure & road occupancy submission procedure

Any ROL application that will require the occupation of the roadway will be sent to TMC using the OPLINC (Online Planned Incident) System.

The TMC is responsible for processing and approving ROLs. TransGrid and its contractors will submit all ROL applications through OPLINC at least 10 days prior to the relevant road occupancy.

It should be noted that road occupancy requests must comply with the various road safety and traffic management principles outlined in this Sub-Plan. In the event that the ROL is rejected for occupancy during standard hours, approval to conduct works outside standard hours will be sought in accordance with the Out of Hours Protocol (refer to the Noise and Vibration Management Sub-plan).

#### Traffic Modelling

During the development of this CTTMP and consultation with stakeholders, there has been no identified need for Traffic Modelling.

Consultation with SCO, RMS & TMC has identified the following locations which require site-specific TMPs to be approved prior to construction on that road.;

- Rookwood Road
- Hume Highway
- Juno Parade
- Roberts Road
- Punchbowl Road
- Old Canterbury Road
- New Canterbury Road
- Sydenham Road

- Llewellyn Street
- Edgeware Road
- Bedwin Road
- Princes Highway

TMC require 20 business days to review all TMPs.

The site-specific TMPs will determine appropriate mitigation measures.

If required, the traffic modelling and analysis will be carried out in accordance with and the requirements of RMS Traffic Modelling Guidelines February 2013. The modelling and analysis will enable the critical assessment of traffic impacts on the road networks and traffic systems from the proposed works for long term changes.

Where required, the TMP will include traffic counts, modelling and/or mid-block capacity assessments.

Copies of the site-specific TMC approved TMPs will be provided to DPIE for information.

**Camdenville Park Laydown Area**

Access to Camdenville Park is left in/left out vehicle operation only. Access to the laydown area will be via May Street.

The laydown area is required for the Bedwin Road Bridge works. The site specific TMP will cover access to Camdenville Park.

**Signalled intersections**

All the signalised intersections along the transmission cable route are managed by Roads and Maritime and the TMC. A list of signalised intersections along the transmission cable route is presented in the table below.

*Table 8: Project Alignment - Signalised Intersections*

Signalised intersections
William Holmes Drive/Rookwood Road
Rookwood Road/Muir Road
Muir Road/Worth Street
Muir Road/Hume Highway
Rawson Road/Waterloo Road
Wangee Road/Punchbowl Road
Seventh Avenue/Fifth Avenue
Centennial Street/Sydenham Road

**Signalised intersections**

Illawarra Road/Addison Road/Agar Street
Addison Road/Enmore Road
Enmore Road/Llewellyn Street
Llewellyn Street/Edgeware Road/Alice Street
Edgeware Road midblock crossing
May Street/Princes Highway

Where works impact traffic loops, restoration of loops will be agreed with TMC/ RMS prior to commencing works at the location.

**4.2.2 Local Council Roads**

Works on local roads will be undertaken in accordance with the relevant council road opening permit or otherwise agreed.

Restoration of road openings will be completed in line with the relevant road authorities’ specifications.

Councils will be notified of upcoming works minimum of 2 weeks prior to works commencing.

**Road Opening Permit**

Each council’s road opening permits specifies that before commencing and during works, barricades and warning signs are to be used for traffic and pedestrian safety in accordance with Australian Standards 1742.3

To comply with this requirement a TCP which shows the traffic control arrangements for the proposed site would be prepared in accordance with Australian Standard 1742.3. The TCP will graphically show the required traffic control at the work site, which will include, for example, lengths of merge/diverge tapers, location of traffic cones, traffic controllers, warning signage and speed limit sign locations, as required.

TCPs will be submitted to the relevant Council for notification purposes 2 weeks prior to the commencement of works for full road closures and 1 week prior to commencement of works for works where traffic flow is maintained. TCPs will be developed as per section 4.2 above.

**4.3 Public transport****4.3.1 Bus Services**

Generally, there is expected to be a minimal impact on bus services along the route as measures outlined within this document will be implemented to mitigate against construction traffic impacts.

The management of access for public transport users and operators during the construction period will occur in consultation with the relevant public transport providers and other transport stakeholder.

TransGrid and its contractors will maintain the existing public transport facilities wherever possible, however where this cannot be achieved, equivalent temporary facilities will be provided or agreed diversion route will be developed.

Any temporary diversion of bus route and/or alteration of bus stops that may be required to facilitate works and will be managed in consultation with the bus service providers. Bus providers require six weeks’ notice to divert bus routes.

Continuous consultation with bus service providers will also be undertaken throughout the project.

#### **4.3.2 Light & Heavy Rail services**

Works within rail corridors will be undertaken during out of hours or during planned rail shutdowns to minimise impact to services.

Rail shutdowns are managed by the relevant rail authority (i.e. Sydney Trains or Transdev) and the project has been notified of scheduled shutdowns.

The project has aligned the project schedule so as not to impact to normal Light Rail and Heavy Rail operations by completing works either OOH’s or during planned rail shutdowns.

#### **4.4 Disabled, Pedestrian and Cyclist Facilities**

It is not anticipated that works will significantly affect disabled, pedestrians and cyclists. Disabled, pedestrian and cyclist access requirements and impacts as a result of construction will be assessed and considered during the development of site-specific TMPs and TCPs. Where provided infrastructure has been impacted by works, temporary measures will be implemented to ensure that road users can continue with their day to day activities with minimal interference. This will be considered separately for each work area.

Where detours are required for users, these detours will be shown on TCPs.

Cyclists would follow the same diversion routes as vehicles (if required). As such, consideration will be given during the diversion route selection process to include bicycle-friendly roads in order to ensure cycling connectivity and safety is maintained. Provided the affected roads remain open for traffic, cyclists would still be able to use these routes, subject to traffic control. Diversion routes will be signposted in accordance with RMS Traffic Control at Worksites and AS1742.3.

#### **4.5 Traffic movements**

Measures will be employed to minimise traffic disruption. The works would be undertaken by those experienced in implementing such activities along traffic routes. Any disruption, however, cannot be fully avoided, but can be minimised through timing the work to avoid peak traffic flows. Any road closure to restrict through traffic (non-residential) or local diversions will be communicated in advance to local residence and relevant Council via notifications and Traffic Control Plans.

There would be some localised disruption to the community around the immediate work site in terms of a reduction in pedestrian access and disruption to vehicular traffic and parking during works. Any inconvenience to pedestrians during works would be minimised by ensuring that there is an alternative route. Additionally, residents, public authorities and commercial organisations would be notified via a letterbox drop of upcoming works.

All general vehicle movements that come into contact with works will be managed under a site-specific TCP. TCPs will be developed and will be designed for site-specific situations and will meet Australian Standard 1742.3, Manual of uniform traffic control devices Part 3 Traffic control devices for works on roads and the Roads and Traffic Authority’s Traffic

control at worksites manual Version 5. It is proposed that “Stop/Slow” traffic access is maintained around the works at all times. Lane widths are to be reduced but maintained at a minimum of 3.0 metres of ‘clear’ corridor considering the types of vehicles using the roadway, consideration should be given to any obstructions such as overhanging trees etc. With the close proximity of works to the travel path of vehicles, and the entry and egress of plant and vehicles from worksites the speed will be restricted to 40km/h through the work zones. The feeder route works are proposed to be completed in 30-40m sections per day to minimise the impacts.

The following general safety measures may include the following procedures:

- Visual warning barriers around immediate works area, plant and workers;
- Advance warning signs prior to and for the duration of the works;
- Construction Risk Assessment;
- Site-specific Traffic Control Plan for each section of works;
- Hazards identification and use of Safe Work Method Statements (SWMS) at the start of each shift;
- Additional safety measures may need to be put in place to ensure traffic speed is reduced; and
- Use of ‘Speed indicator Signs’

#### 4.5.1 Staff Vehicle Movements

Staff on the project work-sites would comprise project management, various trades, and general staff.

It is assumed that the majority of staff will travel together in plant required to carry out the works, and this would ensure that the traffic volume generated by staff would be kept to a minimum.

To minimise the impact of staff vehicles along the alignment. Staff will be reminded at induction and pre-start meetings the importance of utilising public transport or travelling together where possible.

All vehicles will exit work-sites in a forward direction and wheels will be free of soil to prevent soil being dispersed on the adjacent road. Work vehicles entering public roadways from the site compounds will, at all times, observe the road rules so as not to place road users in danger.

## 4.6 Maintaining Access

### 4.6.1 Property Access

TransGrid and its contractors does not expect any long term property access impact for these works. Traffic controls & safe pedestrian pathways will be implemented and maintained as required. During works, access to some individual properties may be disrupted for short periods and alternative access provided. Residents will also be notified and access arrangements negotiated with the property/business owner. Residents will receive community notifications no earlier than 14 calendar days and no later than 7 calendar days prior to commencement of works. This will be in accordance with the projects *Community Communication Strategy*. TransGrid and its contractors will maintain and manage residential driveway access as required. Traffic controllers shall continuously monitor traffic conditions to ensure delay and queuing remains acceptable and priority is to be given to peak direction.

All general vehicle movements that come into contact with works will be managed via this plan.

It is not anticipated that the trenching works will significantly affect property access. Positioning of the plant and trucks within the work area will be such that property access is maintained at all times.

The works which may impact property access are associated with joint bays and underboring works. Where access is modified signage will be installed to direct people to businesses and properties. Signage will be used to direct pedestrians, cyclists and vehicles as appropriate.

### **Joint Bays**

Joint bays located in local roads have been identified as a critical construction activity for resident consultation. The impact of constructing the joint bays while it will not remove pedestrian access, may impact on vehicle access. To minimise access impact, TransGrid and its contractors will:

- Liaise directly with impacted residents to determine extent of impact;
- Develop a suitable strategy for temporary resident parking (if required); and
- Ensure pedestrian and wheelchair access is maintained.

### **Underboring**

Due the complex nature of underboring works, large compounds located in local roads have been identified as a critical for construction activity and require resident consultation. The location of these compounds may impact on vehicle access To minimise access impact, TransGrid and its contractors will:

- Liaise directly with impacted residents to determine extent of impact;
- Develop TCPs to assist in maintaining access via an alternative route;
- Develop a suitable strategy for temporary resident parking (if required); and
- Ensure pedestrian and wheelchair access is maintained.

#### **4.6.2 Heavy vehicle access and safety**

Access and safety during heavy vehicle movements including spoil transportation, will be maintained at all times. Vehicles transporting spoil would be scheduled to be distributed evenly throughout the working hours to minimise impacts on access to surrounding properties and to reduce the incidence of queuing on the public road network.

Vehicle movements outside of the work site will be via defined access-ways to the adjacent major road network. As such, it is unlikely that there would be disruption caused to surrounding areas adjacent to the construction site as work vehicles will be confined to defined access-ways.

In addition, safety measures will be in place within the work-sites so that vehicle movements are conducted in a safe manner in and in accordance with Taihan’s driver code of conduct, see Appendix C.

#### **4.6.3 On Street Parking Mitigation Measures**

Impact to on street parking will be minimised by:

- Location of the alignment will be centred within the road. This will reduce the need to remove parking during construction.

- Implementation of stop/slow TCPs will assist in minimising the impact on street parking by mitigates the need to remove on street parking
- Local road closures and maintaining access for residents, deliveries, visitors, waste collection etc will allow work compounds to be set up without the need to maintain through traffic and unobstructed lane closures. By not having to maintain through traffic lanes this mitigates the need to remove parking.
- Where possible due to COVID, workers have been encouraged to car pool. This will:
  - Minimise the number of worker vehicle movements
  - Minimise the number of on street parking spaces used by workers
  - Minimise the size of work compounds and provide additional space for machinery (increasing construction efficiency)
- Reduce the size of work compounds by:
  - Only occupying space for trenching that can be completed within the shift
  - Using smaller machinery to reduce the widths and length of the compounds while not compromising excavation efficiency.
- Workers will not park near schools during drop off and pick times
- Workers will not park near significant traffic generating developments (i.e. places of worship, sporting grounds, hospitals) during peak period use.

#### 4.6.4 Emergency Vehicles

Access for emergency vehicles will be unaffected as there are no plans to close any main roads.

As required, emergency Services will be notified and consulted with on a site-specific TMP basis.

Liaison with emergency services will be undertaken to ensure that emergency response plans are not compromised.

#### 4.7 Incident Response

Where an incident occurs that may impacts temporary works associated with the project, a work crew will be made available to respond to the area and rectify the work site as required. This could include:

- Isolating the impacted area (i.e. pedestrian or traffic diversions); and
- Rectify work site (i.e. secure loose road plate or worksite items).

Incidents can be reported in accordance with the Incident Notification and reporting requirements set out in the CEMP.

Where site-specific TMPs are developed, a specific incident response plan will be developed appropriate to the works being completed. The incident response plan will be included in the site-specific TMP.

#### 4.8 Unplanned lane closure

In the event that an unplanned lane closure is required as a result of emergency construction works, Taihan will follow emergency works procedures (Refer CEMP Section 7), including all relevant notifications.

TransGrid and its contractors will supply and install regulatory traffic control devices and remove them when the devices are no longer required.

TransGrid and its contractors will immediately advise the TMC or other applicable roads authority representative (e.g. local councils for local roads) of the nature of the closure or restriction and of the schedule for reopening the lanes as quickly as possible.

## 5 Consultation

### 5.1 Consultation for preparation of the EIS

TransGrid undertook a range of activities to ensure all stakeholders were aware of the proposed activities and gave them an opportunity to provide feedback on the project.

Stakeholder engagement activities undertaken for this proposal include:

- Engaging with key stakeholders in the areas where the new cables could be laid;
- 40,950 project update newsletters were distributed;
- 669 properties were door knocked by the project team, and
- 73 community members attended the information sessions

These sessions provided an opportunity for community members to learn more about the proposal and provide feedback to TransGrid.

The major questions raised during the sessions related to route options and construction works impacts.

TransGrid considered these questions and addressed them where possible to minimise the impact on the local area.

TransGrid offered to visit community members who were unable to attend the sessions, or people who required more information following the sessions.

A toll free 1800 information line (1800955558) has been established and an email address ([psf@transgrid.com.au](mailto:psf@transgrid.com.au)) has been made available for people wanting more information on the proposal, to ask questions or to raise issues during works.

TransGrid has a dedicated project information page on its website.

### 5.2 CTTMP Consultation Strategy

The overarching CTTMP applies to all areas of the project alignment, with further controls being implemented for the work areas identified in Section 4.2.1. Site-specific TMPs will be developed during the project with input from the relevant organisations. The site-specific TMPs will be developed in consultation with relevant organisations and be approved by the relevant road authority.

The development of the overarching CTTMP has been developed with consultation of the following key organisations.

Table 9: Key Agencies Consulted

Organisation	Notification Timeframe
Transport Management Centre	10 business days
Transport for New South Wales	n/a
Sydney Coordination Office	n/a
Sydney Buses (State Transit Authority)	6 weeks for diversions only
Transit Systems	28 days for route changes
Punchbowl Buses	6 weeks for diversions only
Transdev	6 weeks for permitted diversions. No diversions permitted along Rookwood Road
City of Sydney Council	2 weeks
Inner West Council	2 weeks
Canterbury/Bankstown Council	2 weeks

Details of the consultation are set out below and in Appendix 2.

### 5.3 Summary of Consultation

Meeting minutes and emails can be found in Appendix A.

Table 10: Consultation summary

Date	Organisation	Consultation method	Summary
22/05/20	Transport Management Centre	Meeting	Agreed approach for CTTMP development & identified locations which require site specific TMPs
22/05/20	TfNSW Asset Management	Email	Agreed approach for CTTMP development & justification for trenching through State Roads to be provided for approval
18/05/20	Sydney Transit Authority	Email	Agreed requirements for diversion of buses
18/05/20	Transit Systems	Email	Agreed requirements for diversion of buses
05/6/20	Transdev NSW	Email	Agreed requirements for buses
11/06/20	Punchbowl Bus Company	Email	Agreed requirements for buses
01/06/20	Inner West Council	Meeting	Agreed requirements for TCPs
04/06/20	Canterbury Bankstown	Meeting	Agreed requirements for TCPs

	Council		
05/06/20	City of Sydney	Email	Agreed requirements for TCPs

## 6 Compliance management

### 6.1 Roles and responsibility

The project team organisational structure and overall roles and responsibilities are outlined in the CEMP Section 3.1. Specific responsibilities for the implementation of construction traffic management are detailed below

#### 6.1.1 Traffic Manager

The roles and responsibilities of the Traffic Manager include:

- Manage and implement the Construction, Traffic & Transport Management Plan (CTTMP)
- Develop and implement site-specific Traffic Management Plans, (TMPs), Traffic Control Plans (TCPs), where required
- Identify, assess, apply for Road Occupancy Licenses (ROLs), road opening permits and notifications under applicable legislation, where required
- Manage and coordinate personnel, vehicles, plant, equipment, temporary road user relocations and traffic management measures to minimise construction traffic impacts on the local and regional road network, public transport, disabled, pedestrian and cyclists, parking, schools, businesses and other sensitive receivers
- Ensure strict compliance with safety and incident response requirements

#### 6.1.2 Traffic Control Supervisors

The roles and responsibilities of the Traffic Control Supervisors include:

- Manage the day to day operations and work load of the traffic control teams
- Manage the implementation of traffic control layouts ensuring adequate number of staff and equipment on-site
- Assist and participate in pre-start meetings and toolbox talks
- Provide relevant copies of TCPs and ROLs to traffic control teams
- Undertake daily inspections of short-term traffic control, maintain records and provide copies to the Traffic Manager weekly
- Install and maintain long-term traffic control layouts
- Manage all site specific TMPs including for construction deliveries, haul movements, site accesses and crane works on-site
- In conjunction with the Traffic Manager, investigate traffic related incidents/ hazards, identify preventative measures and manage the implementation of actions to mitigate future occurrences
- Ensure the OH&S needs of all staff, especially traffic control team members, are met
- Assist with the development of TCPs
- Any other duties as directed by the Traffic Control Team.

## 6.2 Communication

Taihan will consult and communicate with the local community, businesses, agencies and relevant stakeholders that will be affected during the project. Traffic and transport communications will be captured via home and business plans, which are detailed in Community Communication Strategy. Communication will be ongoing with all stakeholders as relevant to mitigate impacts to the community. Residents will also receive community notifications, inline with the Community Communication Strategy notification timeframes. The project website will provide all relevant information related to upcoming works.

## 6.3 Inspections

Relevant worksite and traffic control measures will be implemented and inspected by a suitably qualified person under the RMS Prepare a Workzone Traffic Management Plan and Implement Traffic Control Plans courses. The purpose of the inspections is to confirm signs and traffic control devices are visible and effective under site conditions and expected traffic speeds.

Daily inspections will be carried out at the start and end of each day’s work. The inspections will check that all traffic control measures and signs are in place as per the relevant TCP. The inspection details will be recorded and provided to the Traffic Manager weekly.

## 6.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of traffic management measures, compliance with this CTTMP (Sub-plan), CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in the CEMP Section 8.1.3.

## 6.5 Reporting

TransGrid and its contractors will report to applicable agencies and stakeholders (on all traffic and transport management matters during the delivery of the project.

Applicable agencies and stakeholders may include Canterbury Bankstown Council, Inner West Council, City of Sydney, Australian Rail Track Corporation (ARTC), Sydney Metro, Sydney Transit Authority (STA), Sydney Trains and Traffic Management Centre (TMC), depending on the location, timing and applicable approval being worked under.

The frequency of reports provided by TransGrid and its contractors to applicable authorities will include:

- Immediate – notification of major vehicle accidents (with a report within two days), breaches of any ROL conditions
- Weekly reports – upcoming construction activities, planned lane closures/road occupancies and any incidents and follow-up actions undertaken.

## 7 Conclusion

Extensive efforts have been made to minimise the impact of construction activities on the traffic and transport networks associated with this project. Through careful planning, impacts on residents, business and the wider community can be mitigated and thus ensuring:

- The works period is localised and short term for trenching works;
- All works affecting the local area would be undertaken in accordance with a CTTMP and a site-specific TMPs and/or TCPs;
- The number of construction vehicles are minimised throughout the project;
- Control measures outlined in this document would readily manage potential impact,;
- No other significant access corridors are restricted;
- Affected residences and businesses would be consulted about the schedule of work;
- Works on a classified road would comply with the relevant TfNSW approval and road occupancy licence (ROL) requirements; and
- The works would not prevent access or mobility for people with disabilities.

## 8 Review and improvement

### 8.1 Continuous improvement

Refer CEMP Section 8.4.

Continuous improvement of this Sub-plan will be achieved by the ongoing evaluation of environmental management performance against the objectives.

Continuous improvement will focus on:

- Identifying areas of opportunity for improvement of traffic management;
- Determining the cause or causes of non-conformances and deficiencies;
- Developing and implementing any required plans of corrective and preventative action to address any nonconformances and deficiencies
- Verifying the effectiveness of the corrective and preventative actions
- Documenting any changes in procedures resulting from process improvement;
- Make comparisons with objectives and targets, where applicable.

### 8.2 CTTMP update and amendment

Refer CEMP Section 8.4.

The processes described in the CEMP Section 8 may result in the need to update or revise this Sub-plan (CTTMP). This will occur as needed.

Only the Construction Traffic Manager (in consultation with the Environment and Sustainability Manager) can amend this CTTMP.

This Sub-plan will be reviewed quarterly.

A copy of any updated CTTMP and its changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure in the CEMP Section 8.

## Appendix A – Stakeholder consultation:

### Transport Cluster

#### TfNSW Asset Management, Traffic Management Centre & Sydney Coordination Office

##### PSF - TfNSW/TMC/SCO consultation

**Meeting Date:** 22/5/20

**Location:** Webex online meeting

**Participants :**

Taihan/ Garde: Colin O'Mahony (CO'M), John Klaser (JK), Michael Palamara (MP); Saidhbin Langan (SL)

Transgrid: Colin Mayer (CM), Pdraig Clifford (PC)

Traffic Management Centre (TMC) : Prabaka Siva (PS), Salona Allimia (SA)

TfNSW Asset Management: Suppiah Thillaindesan (ST)

Sydney Coordination Office (SCO): Alexander Coates (AC)

**Participants :** Peter Keyes, Joe Morabito, Francois La Rue, JC Mayer, Thank Ha, Doug Tran

**Proposed Agenda:**

- Project update
- Introduction to team
- Impact to State & Regional Roads

**Discussed:**

- Transgrid revised route to avoid placing joint bays in State Roads.
- EIS approved by NSW DPIE on 14/5/20
- TransGrid has engaged Taihan/Garde to design and construct the 20km 330kV cable between Potts Hill and Alexandria. Under this contract Taihan is accountable for obtaining all necessary third party approvals.
- CO'M Taihan Interface Manger & MP Taihan Traffic Manger went through the alignment and identified all State & Regional Roads which are impacted by the works.
- TMC identified several locations which require site specific TMP's to be developed prior to commencing works at that location.
  - Rookwood Road
  - Hume Highway
  - Juno Parade
  - Roberts Road
  - Punchbowl Road
  - Old Canterbury Road
  - New Canterbury Road
  - Sydenham Road
  - Llewellyn Street
  - Edgeware Road
  - Bedwin Road
  - Princes Highway

- As part of the DPIE approval, Taihan will develop a Construction Traffic & Transport Management Plan (CTTMP).
  - It was agreed that the site specific TMP's do not require approval prior to DPIE approval of the CTTMP.
- SA is TMC point of contact for this project.
  - SA will review and coordinate approval TMP's.
  - SA will review TCP's and ROL requests prior to submission via OPLINC.
- ST requested documentation to support open trenching on State Roads instead of underboring.
- ST advised a settlement analysis would need to be provided with underbore designs.
- AC advised that Westconnex opening could impact issuing of ROL's for a month or more. Taihan advised this can be accommodated in the program.
- CO'M advised that Bedwin Cable Bridge girder erection must be completed during a rail possession. Sydney Trains Rail possession currently planned for July 2021.
- AC advised that TMP for Bedwin Cable Bridge works should consider rail replacement buses.  
**POST MEETING CLARIFICATION:** SA advised that Rail replacement buses are not planned to use Bedwin Rd Bridge.

**Actions:**

- Taihan to provide documentation to support open trenching on State Roads instead of underboring.
- Taihan to develop site specific TMP's for TMC approval.
- AC to provide Bus replacement routes or provide contact to identify all impacts of Bedwin Bridge closure on bus diversion routes.

## Sydney Buses

### Sydney Transit Authority

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**From:** Bushara Gidies [REDACTED]  
**Sent:** Monday, May 18, 2020 11:13 AM  
**To:** 'Padraig Clifford' [REDACTED]; Egwin Herbert [REDACTED]  
**Cc:** Adrian Prichard [REDACTED]  
**Subject:** RE: TransGrid | Powering Sydney’s Future – planning approval received

Hi Padraig,

Hope you're well,

I commented on this project before as per attached email.

According to the below affected services, State Transit 352 & 355 services will be impacted by this project. .

Our requirements remain consistent as before:

- Minimum lane width for passing buses 3.25m (3.5m preferred)
- Any bus stops temporarily relocated done so with the assistance of traffic controllers to assist our customers. The same kerbside meterage at existing Bus Zone/associated No Stopping draw-in or out needs to be provided at the temporary location (removal of parking and kept clear).
- Bus movements prioritised.

Should a diversion around a roadway be required due to the above conditions being unable to be met, we would require 6 weeks notice in order to alter our scheduling and passenger information data.

Also, I included Adrian from Transit Systems for comment as the majority of works will be carried out within his region.

Hope this helps.

**Regards**

**Bushara Gidiess**

Traffic & Services Manager

Eastern Region | State Transit

MOB : [REDACTED]

Port Botany Depot

[REDACTED]  
[www.transport.nsw.gov.au/state-transit](http://www.transport.nsw.gov.au/state-transit)



## Transit Systems

**From:** Adrian Prichard [REDACTED]  
**Sent:** Monday, 18 May 2020 2:42 PM  
**To:** Bushara Gidies [REDACTED] Padraig Clifford [REDACTED] Egwin Herbert [REDACTED]  
**Subject:** Re: TransGrid | Powering Sydney’s Future – planning approval received

Good Afternoon Padraig

These works effect the below Transit Systems services

L23, 308, 406, 410, 412, 413, 415, 422, 423, 426, 428 & (M30 now re-branded 430).

As Bushara from State Transit has already advised we would require

Minimum 3.3 - 3.5 meter lane width maintained.

All stops that are required to be temporarily moved must have the same curb side meterage this includes no stopping/parking areas before and after to allow for safe draw in and out of curb.

If stop is required to be temporarily moved for extended period of 3 days and up. 28 days notice must be given to allow for Data & Scheduling update.

If closure of road and diversion required a minimum 6 weeks notice is required for Data & Scheduling update.

Buses movement to be prioritized at all works sites.

I look forward to discussing all impacts regarding these works at a later date.

I have forwarded your email to Steve Babbage from Transdev and Hamish Fraser from Punchbowl buses as your works will effect their services as well.

Regards

**Adrian Prichard**

Network Planner

T: [REDACTED]

E: [REDACTED]

A: Lot 2 Airfield Drive, LEN WATERS ESTATE NSW 2171



[www.transitsystems.com.au](http://www.transitsystems.com.au) 

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## Transdev NSW

**Colin O'Mahony**

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**From:** Colin O'Mahony  
**Sent:** Friday, 5 June 2020 2:13 PM  
**To:** Steve Babbage  
**Cc:** Sanjana Dev; Janet Hoppo  
**Subject:** RE: Powering Sydneys Future

Hi Steve,

Thanks for your response.

Works on Rookwood Rd will be undertaken at night and one trafficable lane will be maintained.

Do you have any other concerns or requirements we need to be aware of?

Regards,

**Colin O'Mahony**  
Interface Manager

**Taihan Electric Australia Pty Ltd**



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**From:** Steve Babbage [Redacted]  
**Sent:** Friday, 5 June 2020 2:09 PM  
**To:** Colin O'Mahony  
**Cc:** Sanjana Dev; Janet Hoppo  
**Subject:** RE: Powering Sydneys Future

Good afternoon Colin,

Thank you for your email.

Transdev operates the follow services that could be affected.

913, 914, 925, M90, M92, N30 & N40

The main concern is at Potts Hill where double decker buses are used on the M92 services along Rookwood Rd.

These services can't be diverted.

Kind regards,

**Steve BABBAGE**  
Network Support Officer



Transdev NSW  
PO Box 209, Georges Hall, NSW 2198  
[Redacted] [www.transdevnsw.com.au](http://www.transdevnsw.com.au)

Do you really need a hard copy? Please consider the environment before you print.

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## Punchbowl Bus Company

**From:** Hamish Fraser [REDACTED]  
**Sent:** Thursday, 11 June 2020 1:41 PM  
**To:** Colin O’Mahony  
**Subject:** RE: Powering Sydneys Future

Hi Colin

I have no issue with this approach.

Regards

Hamish Fraser  
Planner & Scheduler  
Punchbowl Bus Company

T 02 8522 5000 | M [REDACTED]  
56 Hannans Rd, Riverwood NSW 2210

Email: [REDACTED]



[@PunchbowlBusCo](https://twitter.com/PunchbowlBusCo) [www.facebook.com/PunchbowlBus](https://www.facebook.com/PunchbowlBus)

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**From:** Colin O’Mahony [REDACTED]  
**Sent:** Wednesday, 10 June 2020 10:36 AM  
**To:** Hamish Fraser [REDACTED]  
**Subject:** RE: Powering Sydneys Future

Hi Hamish,

Yes 450, 939, 941, 942 are the routes we impact.

During route determination, bus routes were avoided where possible but unfortunately we can’t avoid bus routes entirely.

Given the narrow streets which our works will be carried out on, we will require minor diversions, i.e. block at a time.

As agreed with the other bus authorities we will provide 6 weeks’ notice where we require minor diversions.

Regards,

**Colin O’Mahony**  
Interface Manager

## Local Government Authorities

### Inner West Council

#### PSF - Inner West Council - Traffic Consultation

**Meeting Date:** 1/6/2020 - 1:30 PM

**Location:** Online - Webex

**Participants :**

Taihan & subcontractors: Colin O' Mahony, John Klaser, Mick Conlon, Michael Palamara, Amanda Muir, Faria Hossain

Transgrid: Pdraig Clifford, Monica Struzman, Klia Stratigos

Inner West Council: Manoj Isac, Manod Wickramasinghe, George Tsaprounis

**Agenda:**

- Traffic requirements for PSF project
- Major works requiring extended or complex traffic setups

**Discussed:**

- Overarching CTMP will be submitted to DPIE to cover the majority of the road network.
- Where traffic flow is maintained IWC don't require TCP submission for approval.
- Where traffic flow is not maintained IWC require two weeks to review TCP's.
- TMC/ TfNSW have identified several locations where site specific TMP's are required.
- Provided high level traffic requirements for underbores. For these works Home & Business Plans will be developed to ensure all effected residents are consulted with.
- IWC agreed that non enforceable signage could be used to temporarily remove parking on street to minimise the need for full road closures. **Post meeting note:** IWC sent sample coreflute sign as a template.
- IWC will receive an invitation to attend a workshop to discuss CEMP & subplans shortly.

## Canterbury Bankstown Council

### PSF - Canterbury/ Bankstown Council - Traffic Consultation

**Meeting Date:** 4/6/2020 - 3:30 PM

**Location:** Online - Webex

**Participants :**

Taihan & subcontractors: Colin O' Mahony, John Klaser, Mick Conlon, Michael Palamara, Amanda Muir, Faria Hossain, Isaac Condran

Transgrid: Colin Mayer, Pdraig Clifford, Monica Struzman

Canterbury Bankstown Council: Jeff Senior, Nadim El Masri, Rohit Autar

**Agenda:**

- Traffic requirements for PSF project
- Major works requiring extended or complex traffic setups

**Discussed:**

- Overarching CTTMP will be submitted to DPIE to cover the majority of the road network.
- Majority of works will be undertaken during normal working hours. Night works will be dictated by the road authority.
- Taihan will provide 6 week look ahead program.
- Residents will be notified 7 days in advance for works on local roads. Council have asked to be notified at least 14 days in advance for these works.
- Council to be notified 14 days in advance for any out of the ordinary traffic impacts such as work at intersections. Council need to be notified as per accepted timelines on any Road Closures or major Traffic Diversions.
- Council will confirm if “non-enforceable signage” could be used to temporarily remove parking on street.
- Where traffic flow is not maintained further discussion is required. For these locations, documentation will be provided to CBC in there accepted timeframes.
  - Examples include Special crossings, which were discussed in more detail.
  - TMC/ TfNSW have identified several locations where site specific TMP's are required.
- Provided high level traffic requirements for Muir Rd Cable bridge. Further development of TCP & turning paths required.
- Provided high level traffic requirements for seven underbores. For these works Home & Business Plans will be developed to ensure all effected residents are consulted with.
- There are some locations that have obstructions in the parking lanes. This infrastructure must be considered as it may limit the type of traffic control and diversions that can be implemented.
- CBC will receive an invitation to attend a workshop to discuss CEMP & subplans shortly.
- Transgrid will be sending CBCC detailed information on the entire length of the works from which Council will decide which ones need to go to the LTC and which ones can be completed under the Electricity Act (Clause 45) using notification only. Council will consider only requiring 7-days notice where traffic flow is maintained. More feedback from Council following submission of CTMP.
- Transgrid have been informed of the LTC meeting dates and cut-off dates for documents to be submitted.

**Actions:**

- Taihan to provide traffic requirements for all streets in CBC LGA and program of works.

## City of Sydney

**Colin O`Mahony**

---

**From:** Joshua Faul [REDACTED]  
**Sent:** Friday, 5 June 2020 10:06 AM  
**To:** Colin O`Mahony  
**Cc:** Harry Muker; Joseph Gomes; Chris Collins  
**Subject:** Re: PSF - City Of Sydney - CTTMP consultation evidence

Hi Colin,

The below is correct and agreed.

Regards,

**Joshua Faul**

Construction Liaison Coordinator  
City of Sydney

P [REDACTED]  
F [REDACTED]  
M [REDACTED]  
[REDACTED]

On 5 Jun 2020, at 9:59 am, Colin O`Mahony [REDACTED] wrote:

Hi Josh,

**NOTE:** This email will be used as evidence of consultation in our Construction Traffic & Transport Management Plan (CTTMP)

To summarise what has been discussed;

- Taihan do not require a Road Opening Permit as permanent restoration will be agreed between Transgrid & City of Sydney following completion of works in accordance with Electricity Supply Act.
- Traffic Control Plans
  - Traffic Flow Maintained: TCP's do not require approval from COS prior to commencement. COS reserve the right to request TCP's.
  - Road Closure: TCP's must be submitted to COS minimum two weeks prior to commencement of road closure.

Regards,

**Colin O`Mahony**  
Interface Manager

**Taihan Electric Australia Pty Ltd**  
[REDACTED]

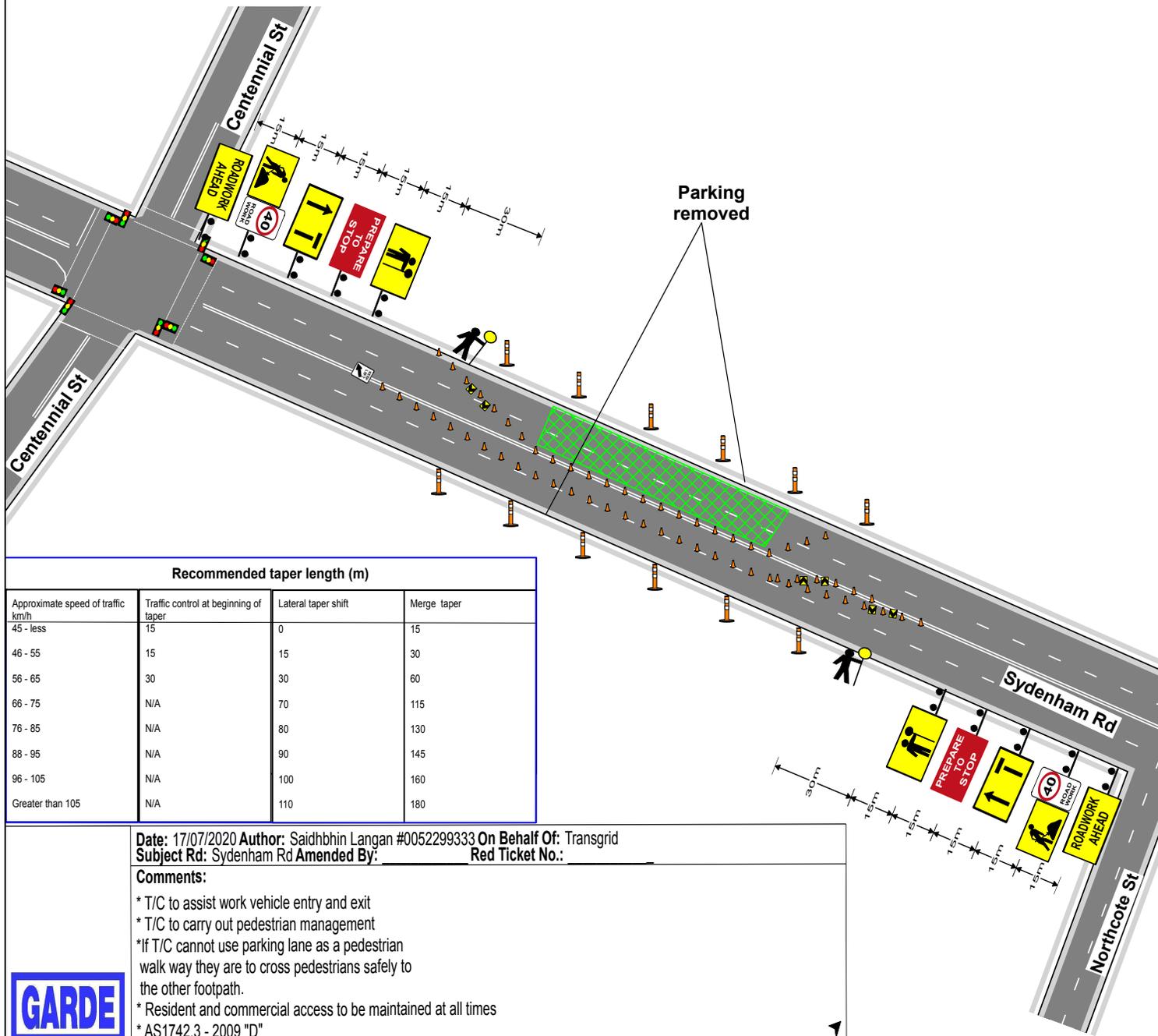
#	DocumentNo	Plan Title	Date	Organisation	Name	Document name Page / section / reference	Revision	Comment	TransGrid/Taihan How addressed	Status
1	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	Inner West Council	Kendall Banfield	General	0	This is a clear and comprehensive plan overall that appears to have covered all key issues. Inner West Council has endured significant construction issues from WestConnex but appreciates this project would have a lower impact over a much shorter period in any given area. Council appreciates the need for the project and that impacts are inevitable. Notwithstanding, a commitment is sought for all contractors to work co-operatively with councils and their communities to minimise impacts - beyond minimum compliance with conditions of approval and construction plans. A similar general comment can be applied to other construction management plans, particularly plans for noise and air emissions. Note that residents and businesses in the St Peters area will have endured cumulative construction impacts from multiple infrastructure prior to this project, e.g. WestConnex M8 and Metro South West.	As per the TransGrid Community and Stakeholder Plan, the project has set itself the objectives across all phases of the project to:  1. Engage early with stakeholders and the community to inform them about the project and seek their input to identify issues  2. Develop and maintain working relationships with stakeholders.  PSF is closely liaising with Sydney Metro, Sydney Trains and Westconnex to minimise the impact of cumulative works on the community.  PSF's CEMP and all sub-plans embrace, and will endeavour to fulfill, this objective.	Closed
2	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	Inner West Council	Kendall Banfield	p.8 2.1.2 Guidelines & standards	0	Include in list NSW Government guidelines: Sydney's Cycling Future & Sydney's Walking Future (both released 2013) and Disability Inclusion Action Plan 2018 - 2022 (released 2017)	Yes, will include	Closed
3	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	Inner West Council	Kendall Banfield	p.16 ID TT11 Parking	0	Provision is satisfactory, but Council would like to see a commitment to this action to avoid parking complaints, particularly in areas where parking is in short supply	PSF has established and is committed to the implementation of its Environmental Management Mitigation Measures (EMMM's) as set.	Closed
4	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	City of Canterbury Bankstown	Jeff Senior		0	Table 2 E30 (h), How addressed is not correct for CBC Table 3 Under General Traffic Impacts ID TT2, it is understood that this section is targeted at Classified roads, but it does not make that differentiation. The measure is concerning "lane closures and diversion routes", it is suggested to include local Council in the consultation as this will cater for the smaller diversions on local roads and also the situation where the diversion from the classified road is through roads under Council control. Under section Road Closures TT4 It states that the road closures shall be undertaken in accordance with the requirements documented in appendix A. There is no mention of the process for Road Closures. suggest Council supply the process for inclusion in the documentation	Each council has different requirements so we don't want to make specific reference. TransGrid and it's subcontractor Taihan discussed CBC traffic requirements and process for road closures in meeting held 4/6/20. Rohit provided revised meeting minutes following the meeting. These meeting minutes will be included in Appendix A.	Closed

#	DocumentNo	Plan Title	Date	Organisation	Name	Document name Page / section / reference	Revision	Comment	TransGrid/Taihan How addressed	Status
5	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	ARTC	Stuart Lee		0	ARTC's comments are subject to the forthcoming Works Deed but in the interim please note: The proposed design and construction needs to be in accordance with all relevant Australian and ARTC requirements including but not limited to ARTC Network Rules and Procedures	Noted	Closed
6	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	STA	Bushara Gidies		0	I can confirm that STA has no further comment other than the one provided previously to Construction Traffic & Transport Management Plan.		Closed
7	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	17-Jun-20	Transport Management Centre	Salona Allimia		0	Please note, in principle, no objections from TMC, subject to more information being submitted on the site specific TMPs for the key intersection sites, as noted in the overarching CTTMP. Please also note, a 20 business day review period is required for reviewing TMPs.	Noted	Closed
8	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	19-Jun-20	Sydney Metro	Denise Thornton		0	No comments from Sydney Metro in regards to corridor protection and transport planning on the CEMP and sub-plans. Can you please keep us in the loop with the latest programming information as it becomes available so that we can understand when the works will occur		Closed
9	TEA-PSF-MP-004.100	Construction Traffic and Transport Management Plan	29-Jun-20	Sydney Trains	Bruce Leishman		0	I was unable to open the drop box you provided. However provided there is no encroachment to RailCorp/Sydney Trains property with proposed construction traffic and that you are also engaging with Sydney Metro on the same, Sydney Trains have no requirements.	Noted	Closed

---

## Appendix B – Traffic Control Plan

Typical layout shown for reference. All sites will have site-specific TCPs developed for implementation prior to commencement of construction activities within each area.



Recommended taper length (m)

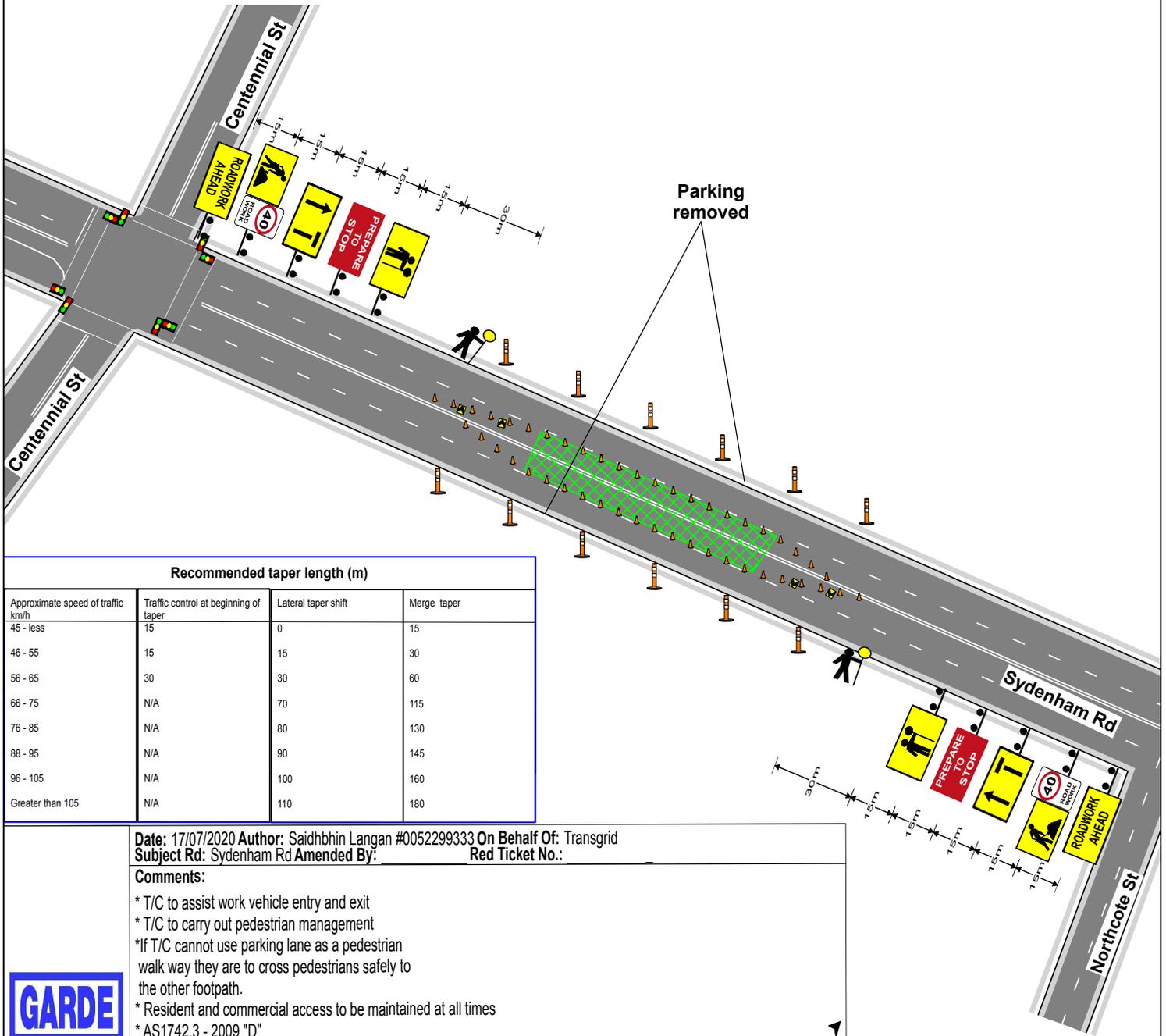
Approximate speed of traffic km/h	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
88 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180

Date: 17/07/2020 Author: Saidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Sydenham Rd Amended By: Red Ticket No.:

**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, red barricades, Bollards & tape.
- \* Diagram not drawn to scale

**GARDE**



Recommended taper length (m)

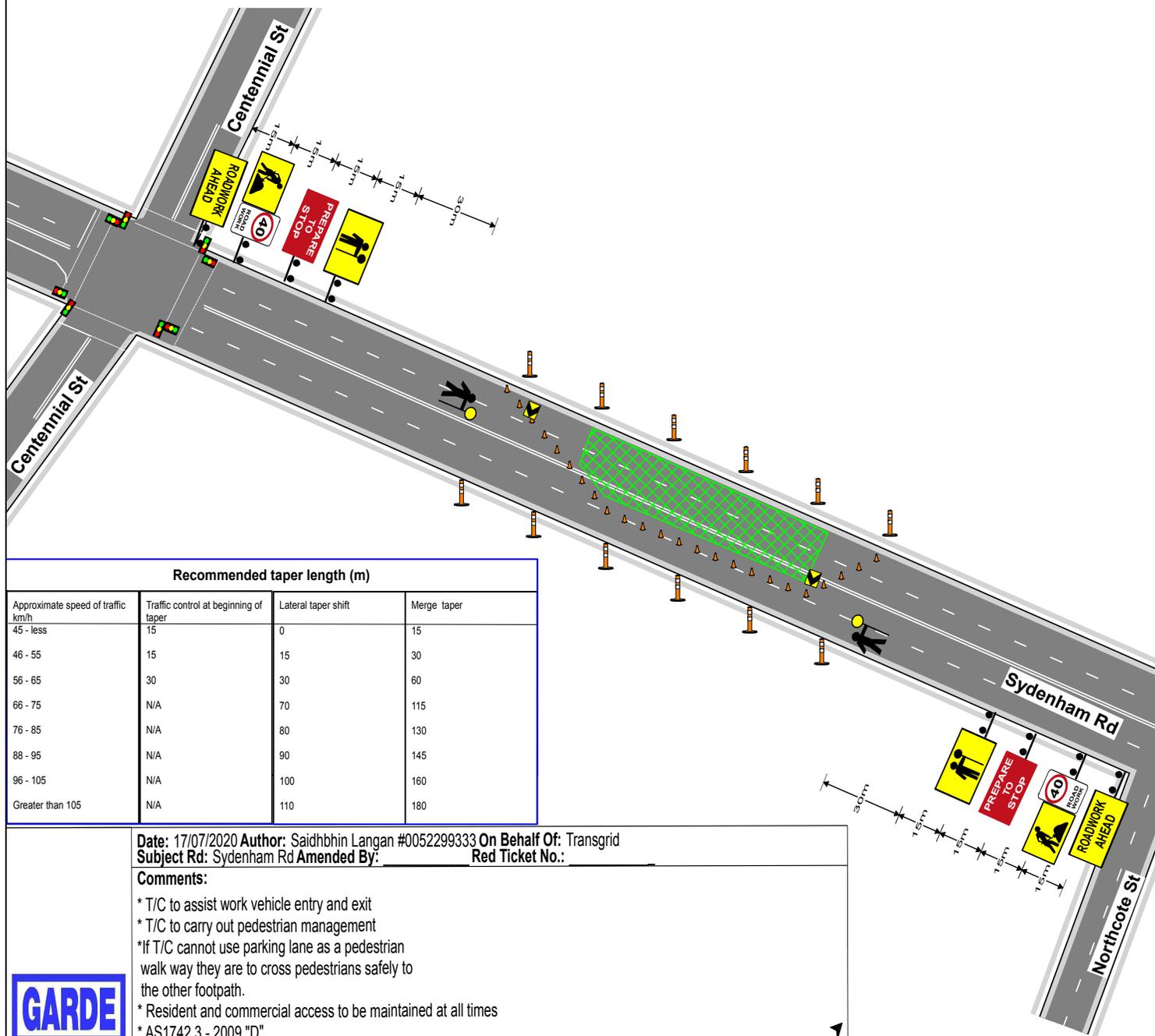
Approximate speed of traffic km/h	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
88 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180

Date: 17/07/2020 Author: Saidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Sydenham Rd Amended By: Red Ticket No.:

**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, red barricades, Bollards & tape.
- \* Diagram not drawn to scale

**GARDE**



Recommended taper length (m)

Approximate speed of traffic km/h	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
88 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180

Date: 17/07/2020 Author: Saidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Sydenham Rd Amended By: Red Ticket No.:

**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, red barricades, Bollards & tape.
- \* Diagram not drawn to scale

**GARDE**

## Appendix C – Heavy Vehicle Driver Code of Conduct



### HEAVY VEHICLE DRIVER CODE OF CONDUCT

#### Purpose and Objectives

The purpose of the Heavy Vehicle Driver Code of Conduct is to ensure that the impacts of construction traffic on transport networks and adjoining properties is minimised. This Code clearly defines and details acceptable behaviour for all heavy vehicle drivers operating in connection with the Works including suppliers and subcontractors.

#### Responsibilities of Drivers

- Drivers must follow ALL road rules and regulations required by law. Drivers must:
  - Hold a current and appropriate licence for the class of vehicle they are operating
  - Comply with speed limits on all roads
  - Comply with all road works speed limits
  - Obey construction traffic signs and devices
  - Obey sign posted (road) load limits
  - Ensure the vehicle does not exceed mass or dimension limits
  - Ensure loads are distributed to remain within the capacity of the vehicle and axles
  - Restrain loads appropriately in accordance with the NTC Load Restraint Guide.
  - Make sure that your vehicle is roadworthy and well maintained
- Drivers must drive safely which includes, but is not limited to:
  - Making sure you are medically fit to drive, have no alcohol in your system and you are not under the influence of drugs
  - Driving in a calm, courteous manner that is appropriate with existing road, traffic and weather conditions
  - Not operating any vehicles or machinery while suffering from fatigue
  - Implementing fatigue management and rest laws and procedures
  - Responding to changes in circumstances (such as delays), reporting these to your base (if possible) to implement short-term fatigue management measures
- Making sure that your rest breaks are taken at the prescribed intervals and are effective
- If you are concerned about the placement of a load or mass of loaded materials raise the issue with the Supervisor and do not leave site.
- Drivers must behave in a professional manner at all times.
- Drivers must adhere to routes nominated by Taihan for each specific worksite and they must not use any roads if their weight is over the posted load limit.
- Routes passing schools and childcare centres are subject to school zone. During the hours of 08:00-09:30 and 14:30 – 16:00 the speed limit is 40KMH. These locations and times will be



identified and confirmed by Taihan during planning of the work and communicated to all drivers.

- Drivers should only park or wait in approved areas as directed by Taihan.
- Drivers are to arrive and depart from worksites as required by Taihan. Drivers will be turned away if they arrive outside of the Taihan approved hours and the truck operating company will be notified.
- Turn vehicles off when not in use or required to idle for long periods of time.
- Drivers must not leave their vehicle unless it is correctly parked, has been turned off, hand brake applied, and the keys removed.
- Drivers leaving their vehicle must wear appropriate PPE (safety boots, long pants, Hi-Vis long sleeve shirt, hard hat and safety glasses).
- Vehicles must not transfer dirt or debris onto public roads. You must use rumble grids/ wheel wash units where they are installed. If any materials are deposited on public roads you must immediately contact your Supervisor and the Taihan Supervisor to arrange for the road to be cleaned.
- Before leaving any site it is mandatory to cover truck loads and tailgates and draw bars must be free of loose material.
- If approached by people with enquiries about the Works, drivers should remain polite and provide them with the community information line number (1800 955 588). Do not provide any other information about the project.
- Drivers must comply with the Taihan’s ‘Non - negotiables’, which have been communicated via Inductions.
- As a courtesy to people who may be impacted by driver behaviour, drivers will:
  - Use horns only in an emergency or for safety reasons
  - Not tailgate (drive too close to other vehicles)
  - Not use compression braking if possible where noise is likely to adversely impact on residents
  - Ensure that there is no littering
  - Not block residential driveways or any other access points.

**Declaration**

I have read and understand the above conditions and will ensure that I abide by this Code of Conduct.

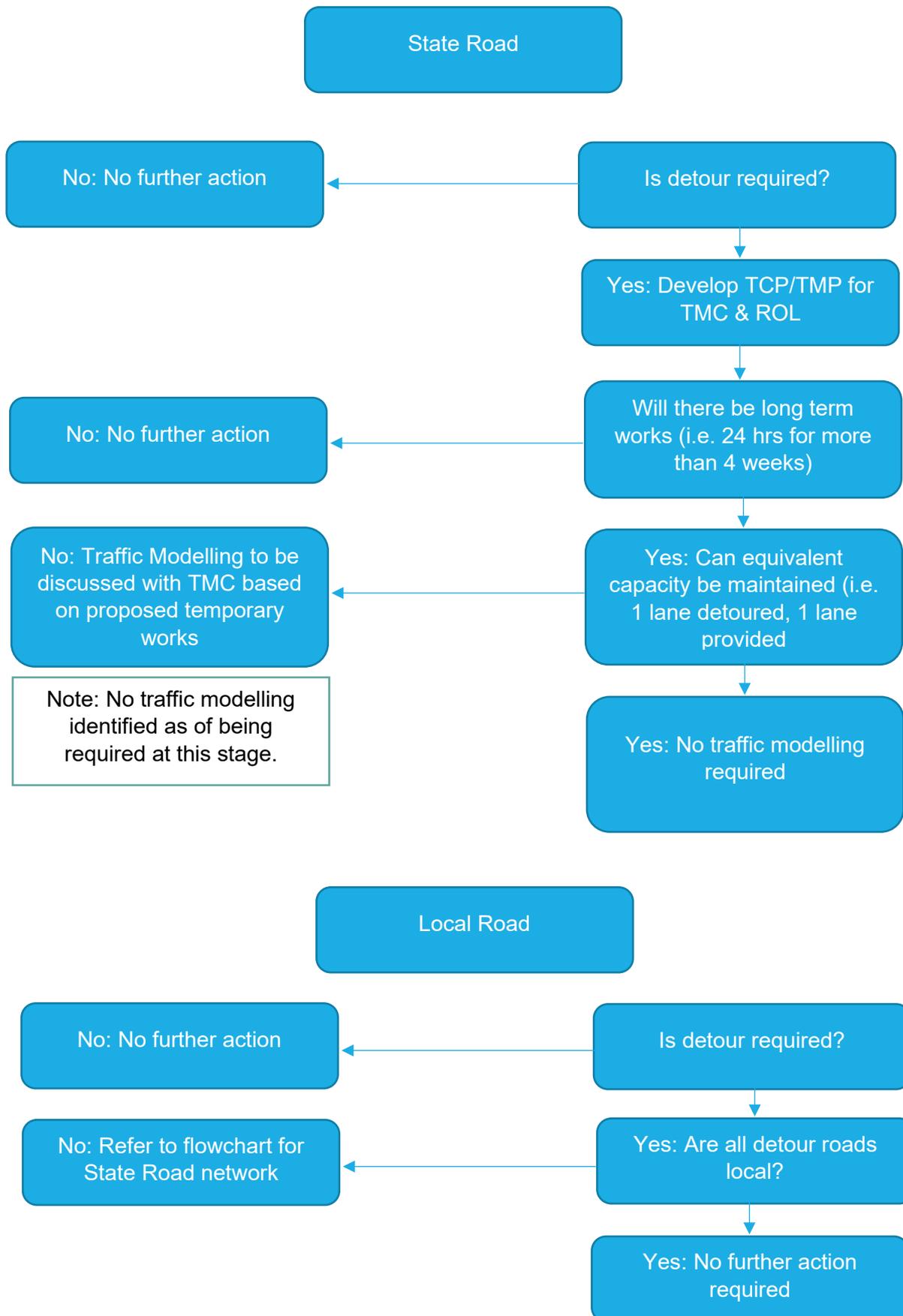
Company:

Date:

Print Name:

Signed:

## Appendix D – Traffic Modelling Flowchart



## **Appendix E – Example Site Specific Traffic Management Plan**



# Transport Management Plan

Powering Sydney Future

Rookwood Road



**taihan**



Traffic Engineering

Transport Planning

Data Analysis

Consulting Services



Headway Traffic and Transport Pty Ltd

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## Revision History

Issue	Date	Comments	
Draft	22/06/2020	Issued as Draft for internal comment	
V1	03/07/2020	Submission to the Transport Management Centre	
V2	06/08/2020	Updated with response to TMC comments	
Prepared by:		Daniel Ngo	
Approved by:		Michael Palamara PWZTMP: 00516779687	

Table 1: Revision History

This document is not to be changed by anyone other than a representative of Headway Traffic and Transport Pty Ltd. Headway Traffic and Transport Pty Ltd does not accept any liability where this document is used outside of its intended purpose or where changes have been made without the consent of Headway Traffic and Transport Pty Ltd.

Headway Traffic and Transport Pty Ltd does not accept any liability where assumptions have been made within this document. Assumptions will be clearly identified.

Headway Traffic and Transport excludes implied warranties and conditions, to the extent legally permissible.

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## References

AS1742.3:2019 – Traffic Control for Works on Roads

AustRoads – Guide to Traffic Management Set

AustRoads – Guide to Temporary Traffic Management 2019

RMS – Traffic Control at Work Sites Manual

RMS – Supplement to Australian Standard 1742: Manual of Uniform Traffic Control Devices  
Part 1-15

RMS – Temporary Road Safety Barrier Systems

RMS – Traffic Volume Viewer

RMS – QA specification: M209 Road Openings and Restorations

# 1 Introduction

## 1.1 Context

This Site-Specific Traffic Management Plan (TMP) for Rookwood Road forms part of the Overarching Construction Traffic and Transport Management Plan (CTTMP) for Powering Sydney's Future – Potts Hill to Alexandria Transmission Cable Project

This TMP has been prepared to address the requirements of the Overarching CTTMP, the Transport Management Centre (TMC) and Transport for New South Wales (TfNSW).

Information excluded from this TMP can be found within the overarching CTTMP. The site specific TMP is to provide a detailed review of the current site traffic and transport conditions and determine the expected impact to the traffic and transport network based on the proposed works.

## 1.2 Project Overview

### 1.2.1 General Project Overview

The project involves the construction of 330kV underground cables between TransGrid's Rookwood Road substation at Potts Hill and the Beaconsfield West substation at Alexandria.

The future circuit route is located within the Local Government Areas of Canterbury-Bankstown Council (CBC), Inner West Council (IWC) and City Of Sydney (CoS).

In summary, the key features of the project include:

- A 330 kV underground transmission cable circuit comprising three cables installed in three conduits and smaller conduits for carrying optical fibres,
- Another ductbank for a possible future 330 kV transmission cable circuit if it is required,
- 23 joint bays, link and sensor boxes per circuit, where sections of cable would be joined together,
- 14 underbore crossings,
- Bridge structures at Muir Rd & Bedwin Rd.

The project also includes conversion works at Sydney South substation to transition the existing Cable 412 from a 330 kV connection to a 132 kV connection. Works at this substation are not expected to impact traffic in the surrounding area.

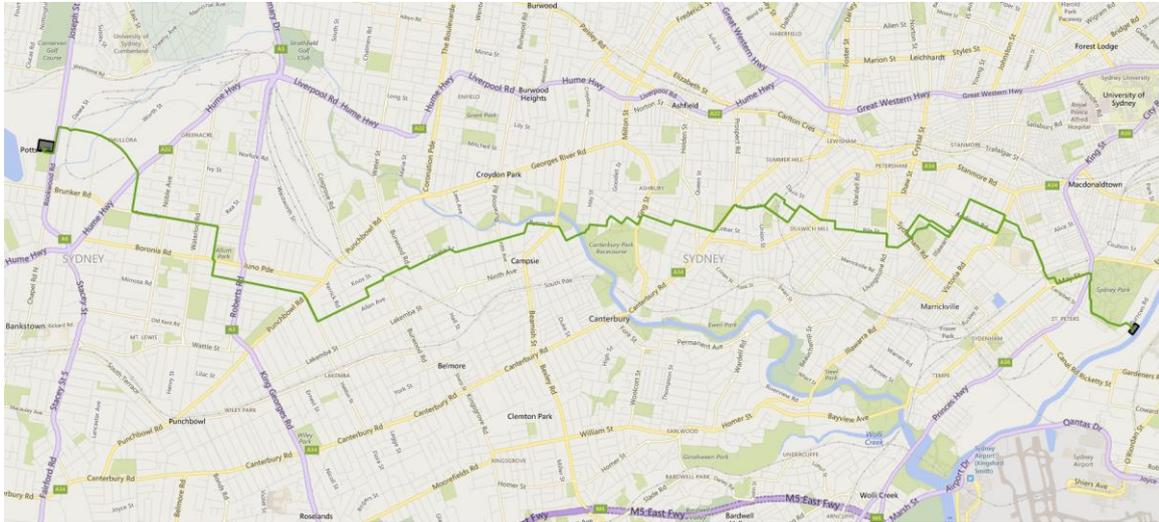


Figure 1: Project Overview Map – Source: [www.transgridmaps.com.au](http://www.transgridmaps.com.au)

## 1.2.2 Rookwood Road Works Overview

The works involve the open trenching of Rookwood Road between William Holmes Street and Muir Road. Trenching works are planned to commence from William Holmes Street and Muir Road simultaneously to minimise extended road works on Rookwood Road.

The location of the trench will generally be within the centre median island on Rookwood Road with perpendicular crossings at Muir Road and William Holmes Street.

Excavation, conduit installation, TSB concrete backfill, and temporary restoration works will be completed at the end of shift.

Depending on the composition of the approved TSB concrete backfill, curing may be required. If curing is required, road plates will be required to be installed. This will require a speed reduction to 60km/h for the duration of the works. Investigation into a TSB concrete backfill that will not require curing is being conducted, however, at the time of preparing the TMP is yet to be confirmed.

With proximity to a significant industrial estate an assessment has been undertaken for heavy vehicles. Higher Mass Limit (HML) vehicles will be unaffected by works. Detours will be in place for General Mass Limit (GML) and Concessional Mass Limit (CML) vehicles on Muir Road

approaching Rookwood Road to travel southbound on Rookwood Road. VMS boards will be implemented prior to detours being required for notification purposes to advise of detour route and then during works to support other traffic control devices.

### **1.3 Authorisation**

This TMP is to be authorised by the TMC with a copy to remain onsite at all times.

All project personnel are to ensure that their work activities covered by this document and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this TMP.

It is the responsibility of the Project Manager to obtain appropriate approvals required for the implementation of this TMP.

### **1.4 Development**

This document has been developed by Headway Traffic and Transport on behalf of TransGrid and Taihan to satisfy the requirements of the project approval by Department of Planning and Environment (DPIE) for the Powering Sydney Future project.

### **1.5 Scope of TMP**

This document identifies the current road conditions and impacts of the associated works. It has been developed to assess the impact of the proposed works and provide suitable mitigation measures. This document;

- does not detail the implementation, monitoring, auditing, or removal of the traffic control devices, and
- does not substitute the requirement of government or third-party approvals.

Other documents relating specifically to the works may be referenced within this TMP. Taihan's Project Manager is responsible for maintaining, updating, and issuing any revisions of these documents as required.

### 1.5.1 Feedback Received

Response to TMC comments received on 15 July 2020 below. For detailed TMC comments, please refer to **Appendix E: TMC Comments**.

Item No.	TMP Section Reference	Response
1	2.3	TMC Project Contacts updated.
2	3.2.1	Impact to pedestrian network updated in <b>Section 4.1.1</b> .
3	4.2.2	Any work interfering with traffic signals will require Network Operations approval. Updated in <b>Section 4.2.2</b> (TMC to provide suitable contact/s for project alignment).
4	4.4.1	Noted.
5	6	Added Transport Operations Room to flowchart in <b>Section 6</b> .
6	4.1.1	Updated <b>Section 4.1.14.4.1</b> to include construction vehicles.
7	Appendix A:	Updated <b>Section 4.2.3</b> to address kerb island removal and temporary reinstatement at end of each shift.
8	Appendix C:	VMS Strategy updated as per TMC comments.
9	-	Noted. TMC request for CCTV Cameras located at intersections to be maintained at all times
10	-	Noted. Refer to Overarching CTTMP <b>Section 5</b> and <b>Appendix A</b> for Bus Operator requirements.
11	4.1.5	Noted. Resident access addressed in <b>Section 4.1.5</b> . Resident Access will not be affected by works.
12	5.2	TMC will be registered on the stakeholder email list. Updated <b>Section 5.2</b>
13	-	Noted. Project Manager to obtain written approval from Sydney Road Assets for alignment. Letter to be provided separately to TMC.
14	-	Noted. Refer to Overarching CTTMP <b>Section 5</b> and <b>Appendix A</b> .

## 2 Project Details

### 2.1 Background

The works will occur involve the excavation, placement, installation of underground transmission cables and subsequent restoration works. It is expected that the works will progress at a rate of 12m metres per night.

The project has allowed a project duration of 11 weeks with a commencement date of the 31 August 2020. All works are scheduled to be conducted at night.

#### 2.1.1 Location

The works associated with this TMP are limited to Rookwood Road between William Holmes Street and Muir Road. The works associated with this TMP extend fifty (50) metres into William Holmes Street and Muir Road.

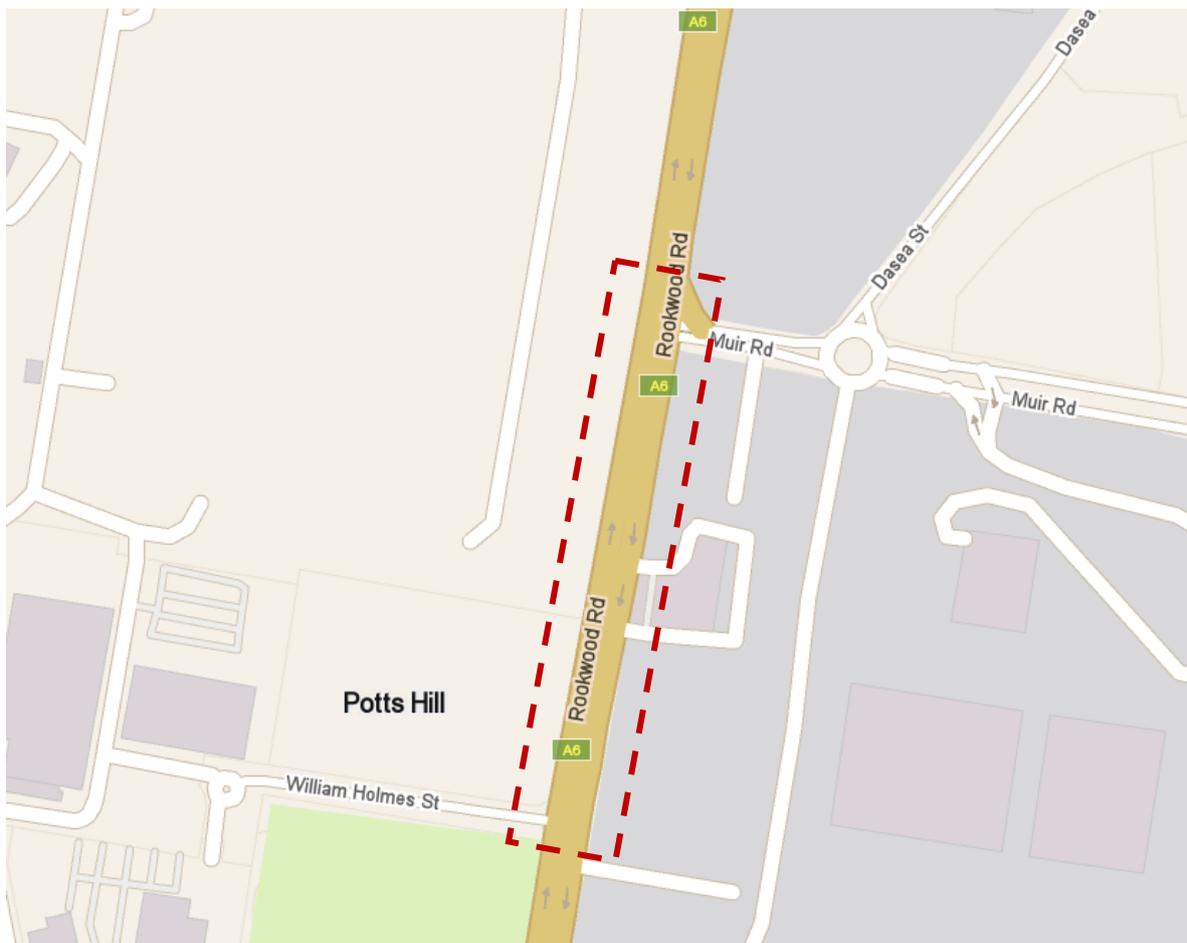


Figure 2: Site Location - Source: [www.whereis.com](http://www.whereis.com)

## 2.2 Project Timeframe

### 2.2.1 Proposed Schedule

The project is expected to commence from the 31<sup>st</sup> of August 2020. Works will be completed in two (2) consecutive nights with one (1) night respite. The works are scheduled to be completed within eleven (11) weeks from commencement.

### 2.2.2 Proposed ROL Hours

Work will only occur as per the approved Road Occupancy License, however, proposed ROL times are provided below based on the traffic volume assessment completed in **Section 3.4 Traffic Volumes and Traffic Analysis**.

Days of the Week	Proposed Working Hours	Shifts
Monday - Thursday	8pm – 5am	Work will be conducted over two (2) shifts with one (1) night respite.
Friday – Saturday	8pm – 7am	
Sunday	8pm – 5am	
Saturday – Monday	8pm – 5am	Restoration works on Muir Road, will require a continuous shift from Saturday night to Monday morning. Date to be confirmed and subject to ROL application.

Table 2: Proposed ROL hours

## 2.3 Project Contacts

Name	Organisation	Position	Office No.	Mobile No.
Salona Allimia	TMC	A/Rail Interface Officer		0437 985 398
Prabaka Siva	TMC	Manager Reliability & Congestion Planning		0477 301 499
Colin O’Mahony	Taihan	Interface Manager		0479 120 698

Table 3: Project Contacts

## **3 Existing Traffic Network**

### **3.1 Road Profiles**

#### **3.1.1 Rookwood Road**

Rookwood Road is a six (6) lane divided state road with a sign posted speed limit of 80km/h. No parking is permitted with a clearway in operation during morning and afternoon peaks.

Rookwood Road forms part of the General Mass Limit (**GML**), Concessional Mass Limit (**CML**) and Higher Mass Limit (**HML**) heavy vehicle routes. It is approved for vehicles up to 25/26m B-Doubles.

#### **3.1.2 William Holmes Street**

William Holmes Street is a two (2) lane divided local road with a sign posted speed limit of 20 km/h. There is no parking permitted, reinforced with “No Stopping” signs posted.

#### **3.1.3 Muir Road**

Muir Road is a five (5) lane divided local road with a sign posted speed limit of 60 km/h. There is no parking permitted, reinforced with “No Stopping” signs posted.

Muir Road forms part of the General Mass Limit (**GML**) and Concessional Mass Limit (**CML**) heavy vehicle routes. It is approved for vehicles up to 25/26m B-Doubles.

## **3.2 Active Transport**

### **3.2.1 Pedestrian Network**

Rookwood Road between William Holmes Road and Muir Road has a limited pedestrian network that provides access to the surrounding commercial, industrial and parkland areas.

For the Rookwood Road and William Holmes Street intersection, there are northern and western pedestrian crossings.

For the Rookwood Road and Muir Road intersection, there are southern and eastern pedestrian crossings.

### **3.2.2 Bicycle Network**

There are no bicycle paths within the vicinity of the works associated with this TMP.

### 3.3 Public Transport

The following routes service Rookwood Road;

- M92 – Sutherland to Parramatta
  - Northbound – Bus Stop ID: 214313 First Service 6:14am, Last Service 9:01pm
  - Southbound – Bus Stop ID: 219072 First Service 5:57am, Last Service 9:10pm
- 925 – East Hills to Lidcombe via Bankstown
  - Southbound – Bus Stop ID: 219072, will not be affected by works.

Both M92 and 925 services are operated by Transdev. For up to date timetables refer to TfNSW online, <https://transportnsw.info/> (Date accessed: 18/06/2020).

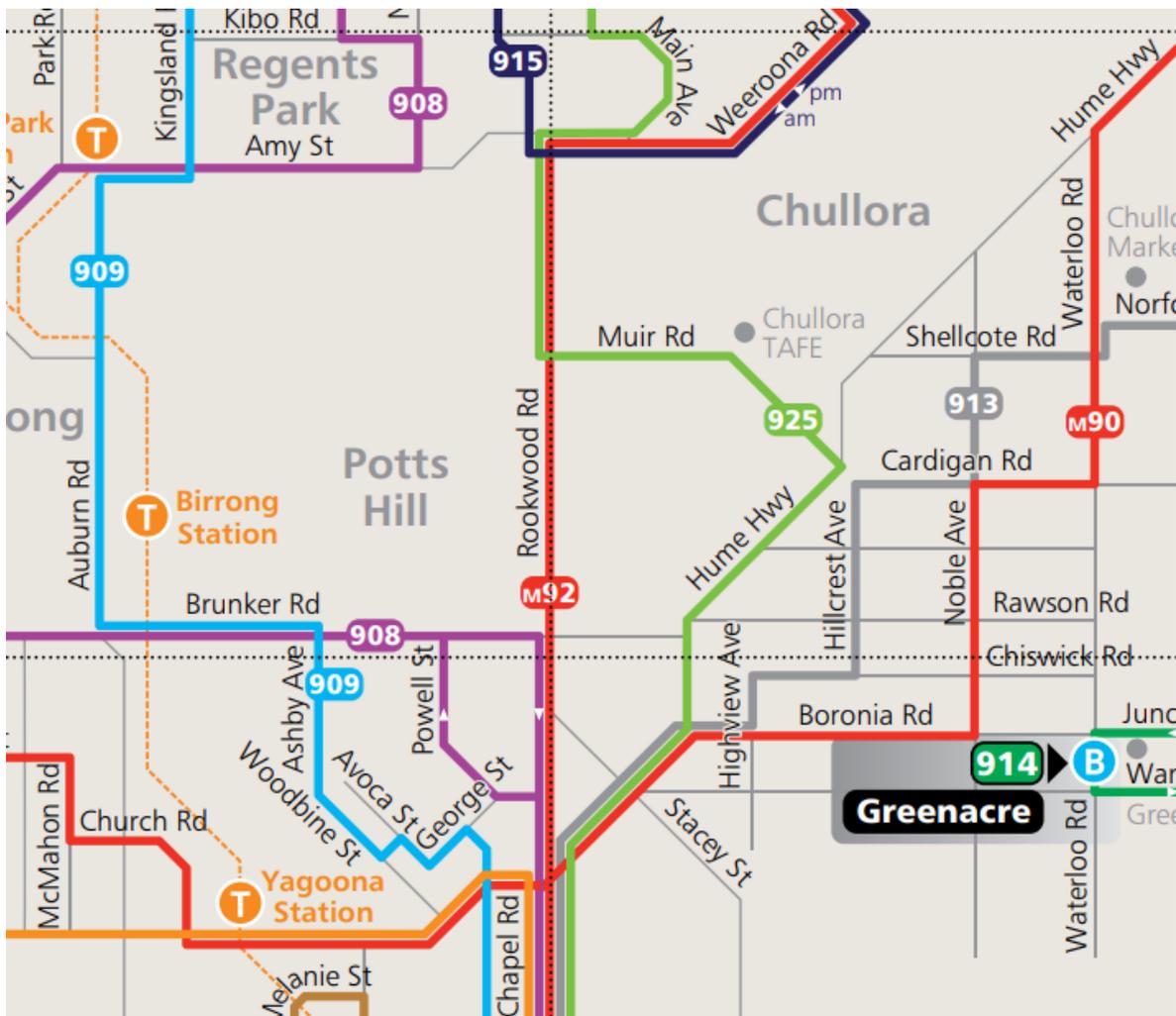


Figure 3: Transdev Bus Network - Source: <https://www.transdevnsw.com.au>

### 3.4 Traffic Volumes and Traffic Analysis

Data from the RMS Traffic Volume Viewer was extracted and analysed below. The nearest traffic counter for Rookwood Road is located 10m south of Lewis St, Regents Park 2143.

RMS Traffic Volume data are from August 2013, 2015 and 2017. August volume figures have been selected and averaged over hour time periods for weekday and weekends.

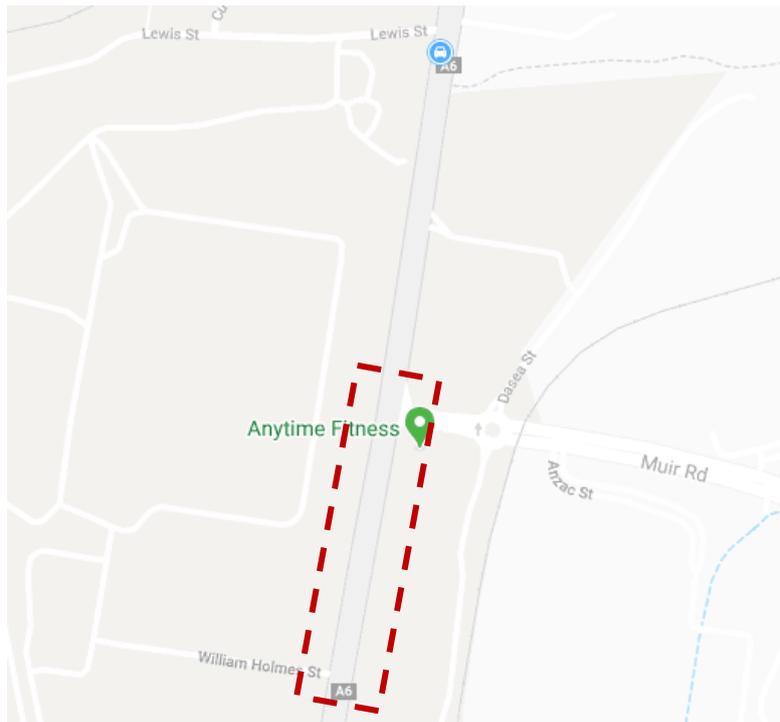


Figure 4: Traffic Counter to Worksite – Source: [RMS Traffic Volume Viewer](#)

The data presents a very consistent image in all three years analysed.

- Morning peak hours
  - Weekday (Monday – Friday) – High traffic volume (> 1100 vehicles/hour) were recorded from 6am.
  - Weekend (Saturday – Sunday) – High traffic volume will be outside of ROL times.
- Afternoon peak hours
  - Weekday and Weekend – High traffic volume decreased after 7pm. With vehicles/hour reducing to below 1000 by 8pm.

The data is presented in **Figure 5** and **Figure 6** for northbound traffic and **Figure 7** and **Figure 8** for southbound traffic. Highlighted green area is the proposed ROL times. Additional analysed data is attached in **Appendix D: Traffic Volumes and Analysis**.

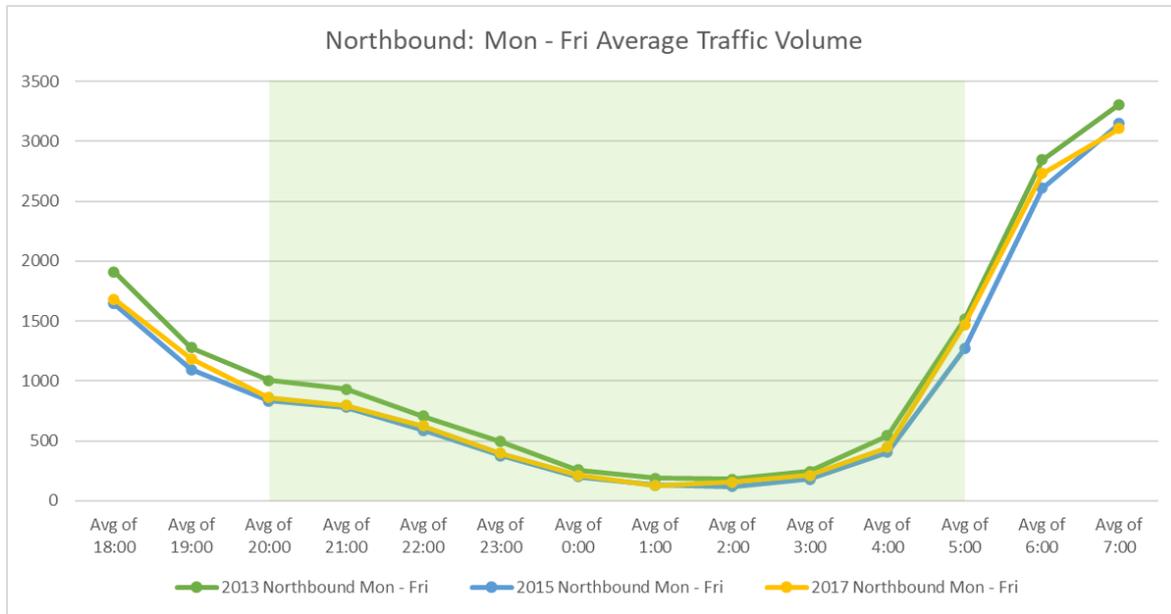


Figure 5: Northbound Average Traffic Volume for August (Monday - Friday)

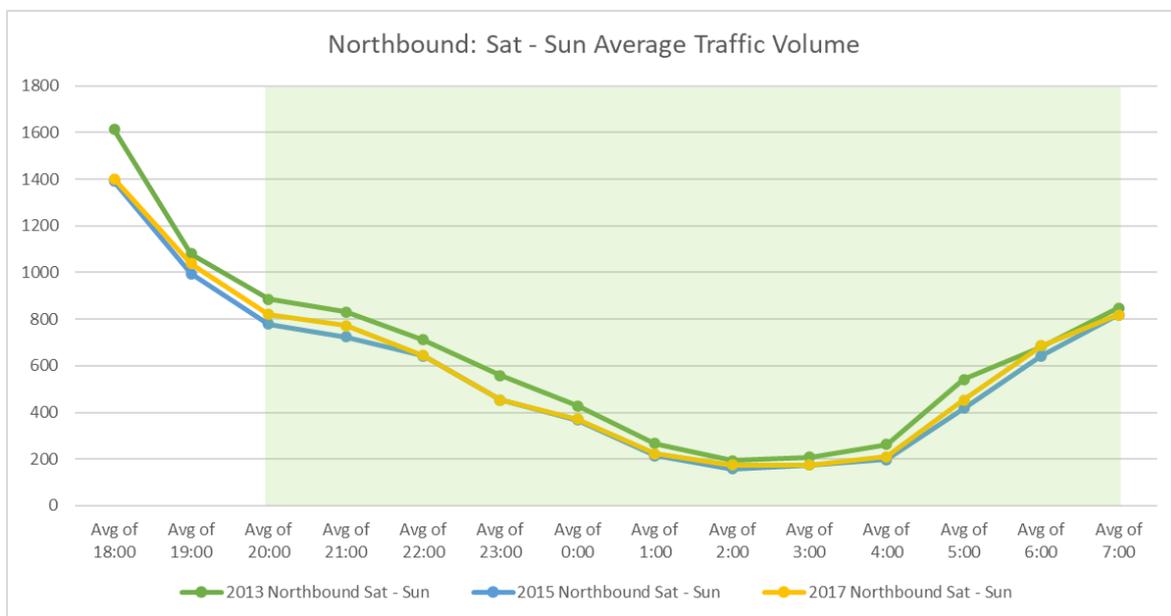


Figure 6: Northbound Average Traffic Volume for August (Saturday - Sunday)

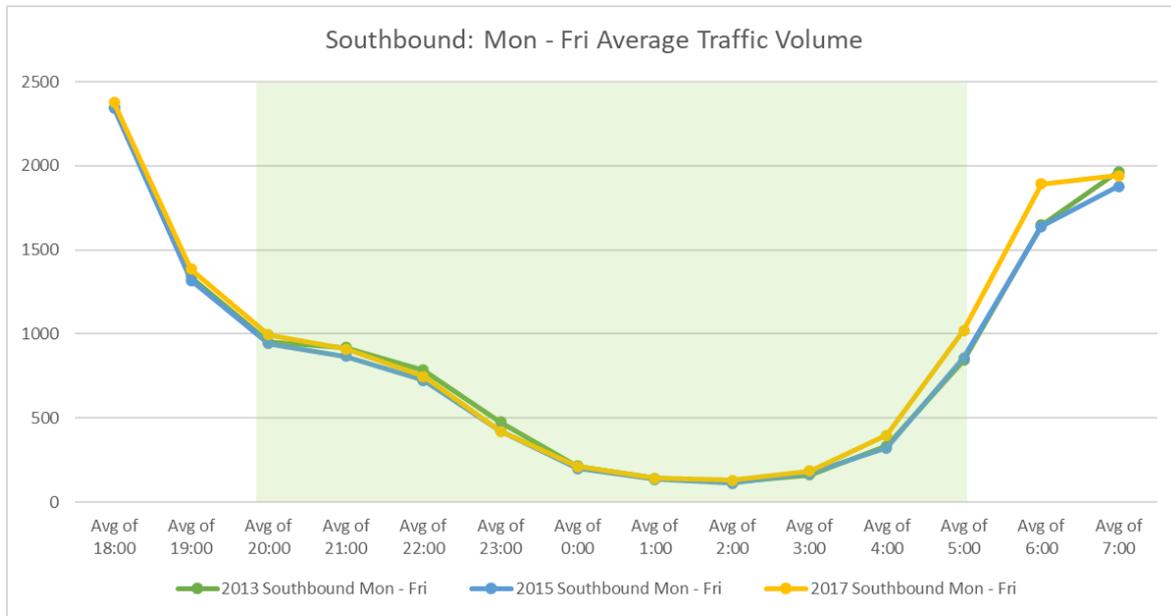


Figure 7: Southbound Average Traffic Volume for August (Monday - Friday)

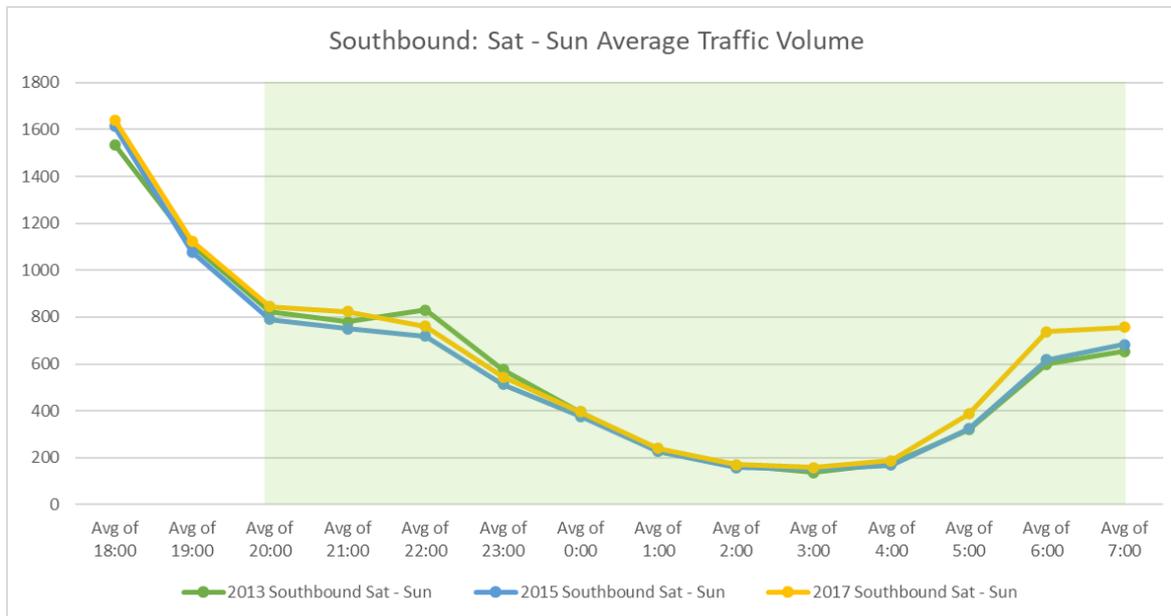


Figure 8: Southbound Average Traffic Volume for August (Saturday - Sunday)

## **4 Construction Traffic Management**

All efforts have been made in the project schedule to reduce the impact of the construction on the existing road network. In particular, with the intention to remove the impact to the public transport and heavy vehicle networks.

### **4.1 Impact to Existing Network**

#### **4.1.1 Pedestrian Network**

There will be no impact to the pedestrian network. During the cross over works from Rookwood Road into Muir Road, pedestrians will be managed onsite as per the TCP found in **Appendix A: Traffic Control Plans**.

If pedestrians are to be detoured, alternative pedestrian/cyclist paths and crossings will be required to have:

- Sufficient lighting
- Paths widths and pram ramps are wheelchair compliant and all push buttons are accessible
- Sufficient sightlines for pedestrians and drivers
- Usability of all paths should be maintained
- No construction vehicles to obstruct crossings or footpaths

#### **4.1.2 Bicycle Network**

There will be no impact to the bicycle network.

#### **4.1.3 Public Transport**

There will be minimal impact to the M92 or 925 bus services associated with the lane closures. No routes will be obstructed or require to be detoured.

Typically, there will be no services running for either the M92 or 925 for the majority of the active Road Occupancy License (**ROL**) times.

For restoration works on Muir Road that results in the westbound closure, 925 bus services will always remain unaffected. Buses will be permitted through the closure as per relevant TCP. Refer to **Appendix A: Traffic Control Plans**.

#### **4.1.4 Emergency Vehicles**

Any impact to emergency services will be minimal and associated with lane closures. No routes will be obstructed or require to be detoured. Emergency services will always be given priority.

#### **4.1.5 Other Access**

Access to private property will not be impacted.

GML vehicles from Muir Road to Rookwood Road will be diverted via Bruncker Road. Refer to **Section 5.1.1 General Mass Vehicles (GML), Appendix B: Detour Maps and Appendix C: VMS Strategy.**

### **4.2 TfNSW Infrastructure & Assets**

#### **4.2.1 Safety Barrier System**

The alignment will not impact the safety barrier system within the centre median on Rookwood Road.

#### **4.2.2 Traffic Signals**

Traffic signals loops at Muir Road, William Holmes Street and Rookwood Road will be required to be reinstated once the works are completed. The following locations have been identified. TMC/TfNSW will need to provide details of the detector identification numbers.

- Muir Road at Rookwood Road – Westbound approach to Rookwood Road
- Rookwood Road at Muir Road – Northbound right turn into Muir Road
- Rookwood Road at William Homes Street – Southbound right turn into William Holmes Street
- William Homes Street at Rookwood Road – Eastbound approach to Rookwood Road

Network Operations approval will be required for any works affecting traffic signal loops.

#### **4.2.3 Road Pavement, Kerbs and Median Islands**

Road pavements, kerbs and median islands will be impacted where the alignment passes through these.

Where kerb islands are removed, they will be reinstated with temporary asphalt at the completion of each shift until permanent restoration is completed.

## **4.3 Vehicle Movements**

### **4.3.1 Oversized or Special Loads**

There has been no identified need for the movement of oversized or special loads. If required these movements will be appropriately managed with approval from the necessary authorities.

## **4.4 Permits and Road Management Authority**

ROL's and Speed Zone Authorisations (SZA's) will be required to be obtained from the TMC to access the state road network and local road network within 100 metres of the intersection to traffic signals.

### **4.4.1 Road Occupancy License**

An assessment of ROL times has been conducted in **Section 3.4 Traffic Volumes and Traffic Analysis** that shows proposed ROL times of:

- Nightly ROL's: Sunday to Thursday 8:00pm to 5:00am
- Nightly ROL's: Friday to Sunday 8:00pm to 7:00am
- Saturday night to Monday morning ROL: Saturday 8pm – Monday 5am.

### **4.4.2 Speed Zone Authorisation**

SZA's will be required to ensure that a safe speed limit is temporarily introduced while workers, plant and machinery are on the roadway. The SZA will form part of the ROL submission.

Subject to the TSB concrete backfill composition, a temporary long term speed reduction on Rookwood Road from 80km/h to 60km/h may need to be implemented. For the purposes of this TMP, the following options need to be considered:

- Option 1: Rookwood Road – Temporary speed limit 40km/h only during construction activities
- Option 2: Rookwood Road – Long term temporary Road Work speed limit 60km/h and temporary speed limit 40km/h only during construction activities.

If Option 2 will be pursued, a site specific long term TCP will be developed.

## 4.5 Workers of Foot

Worker movements will be confined within the compound or traffic control area. If workers are to leave these areas, they are to do so by vehicles or existing footpath and pedestrian crossings.

## 4.6 Typical Traffic Control Plans

Traffic control plans (refer to **Appendix A: Traffic Control Plans**) will be implemented to isolate the work area and provide an safe area for workers. The following are the proposed typical TCP configurations:

- Rookwood Road southbound: Works have been staged to occupy slow, middle and fast lanes to allow the crossover from Muir Road into the centre median of Rookwood Road.
  - 1 lane of 3 lanes
  - 2 lanes of 3 lanes
- Rookwood Road northbound: Works have been staged to occupy slow, middle and fast lanes to allow the crossover from William Holmes Street into the centre median of Rookwood Road.
  - 1 lane of 3 lanes
  - 2 lanes of 3 lanes

Works contained on Rookwood Road will use a combination of the above depending on the alignment and space required.

Restoration works on Muir Road will require an additional ROL for restoration works. It will require the:

- Occupation of westbound lanes on Muir Road, approaching Rookwood Road, during day shift. Rookwood Road will have two lanes available in both northbound and southbound directions.
- Occupation of westbound lanes on Muir Road, approaching Rookwood Road, during night shift. Rookwood Road lanes will be reduced to one lane in both northbound and southbound directions.

Due to the closure of westbound traffic lanes, approaching Rookwood Road, a detour will be set in place as shown in **Appendix A: Traffic Control Plans**. Bus service 925, will be unaffected by works and access will remain unchanged.

This is required due to the concrete pour and the additional time needed for the concrete road pavement to cure. Council will approve the dates of when works will take place.

## 5 Communications

### 5.1 Portable VMS Strategy

The portable VMS strategy has been developed and attached in **Appendix C: VMS Strategy**.

Project contact number will be confirmed prior to implementation.

The VMS strategy will be implemented:

- Two weeks prior, 24 hours/day, with a notification message for upcoming works
- Pre-event message to be implemented for the duration of the works.
- Event message to be implemented for the duration of the works.

There will be 5 VMS boards implemented:

- Muir Road, approaching Rookwood Road, on the dividing island. Facing westbound traffic.
- Hume Highway, approaching Muir Road, on the dividing island. Facing southbound traffic.
- Rookwood Road, approaching Muir Road, on western footpath. Facing southbound traffic.
- William Holmes Street, approaching Rookwood Road, on northern footpath. Facing eastbound traffic.
- Rookwood Road, approaching William Holmes Street, on eastern footpath. Facing northbound traffic.

#### 5.1.1 General Mass Vehicles (GML)

The left turn from Muir Road to Rookwood Road will be restricted for GML vehicles. VMS will advise of detour for GML vehicles a week prior and for the duration of works. The proposed alternative for GML vehicles will be to use Bruncker Road. Refer to **Appendix B: Detour Maps**.

The following properties will be notified prior to works commencing of changed access:

- BP Truckstop
- Galserv Galvanising Services Sydney

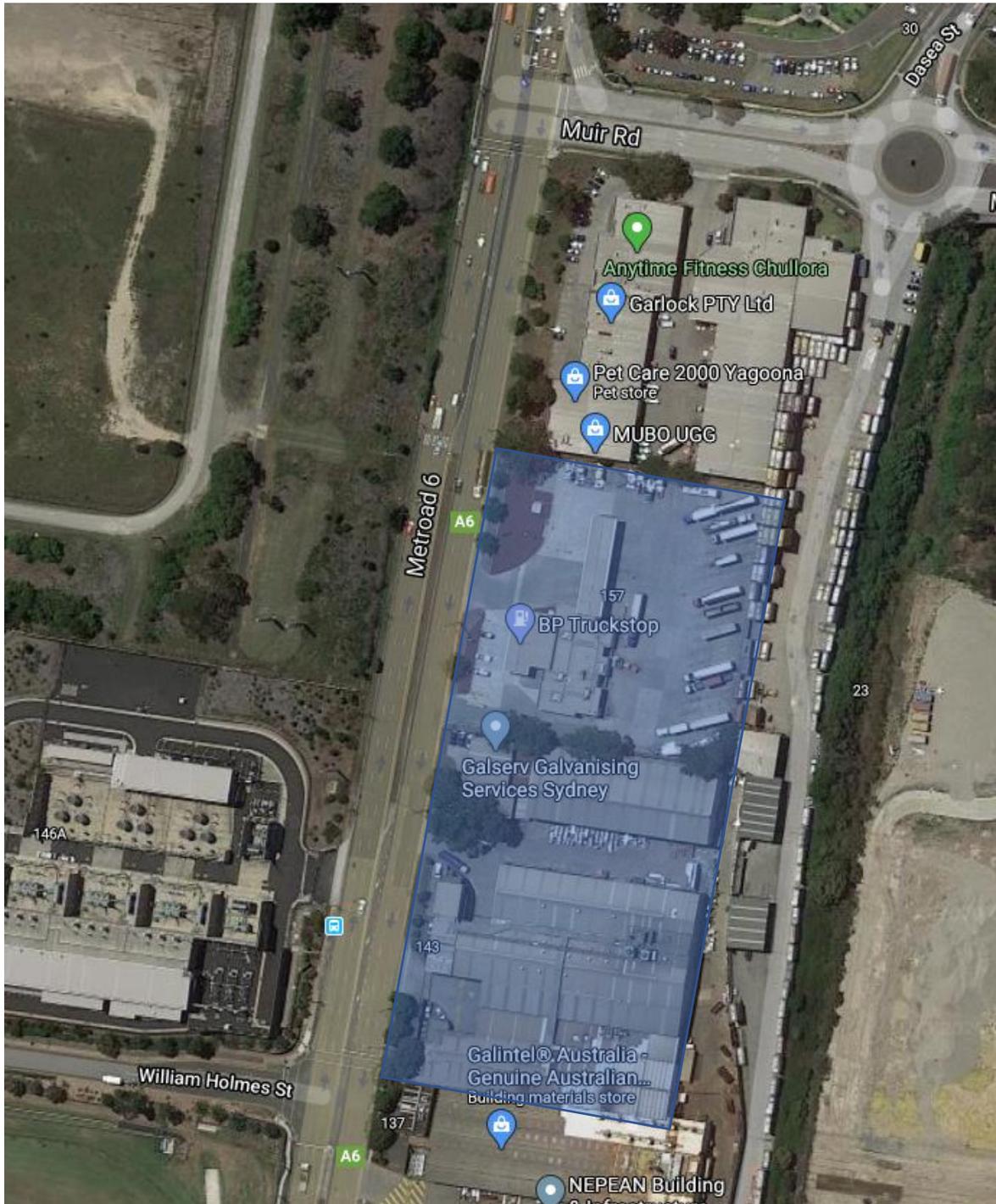


Figure 9: Map of properties to be notified – Source: [Google Maps](#)

## **5.2 Communications Strategy**

DPIE approval requires a robust communication strategy as part of the project. The communication strategy can be found within the Construction Environment Management Plan (CEMP). Details of how this impacts the TMP can be viewed in the Overarching CTTMP.

All works associated with Rookwood Road site specific TMP must comply with the requirements of the CEMP.

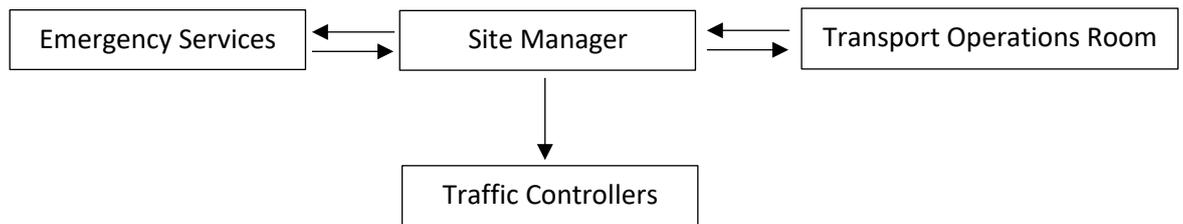
TMC will be registered to the projects resident notification mail out list. This will provide TMC with up to date information on the project.

## 6 Incident Management Plan

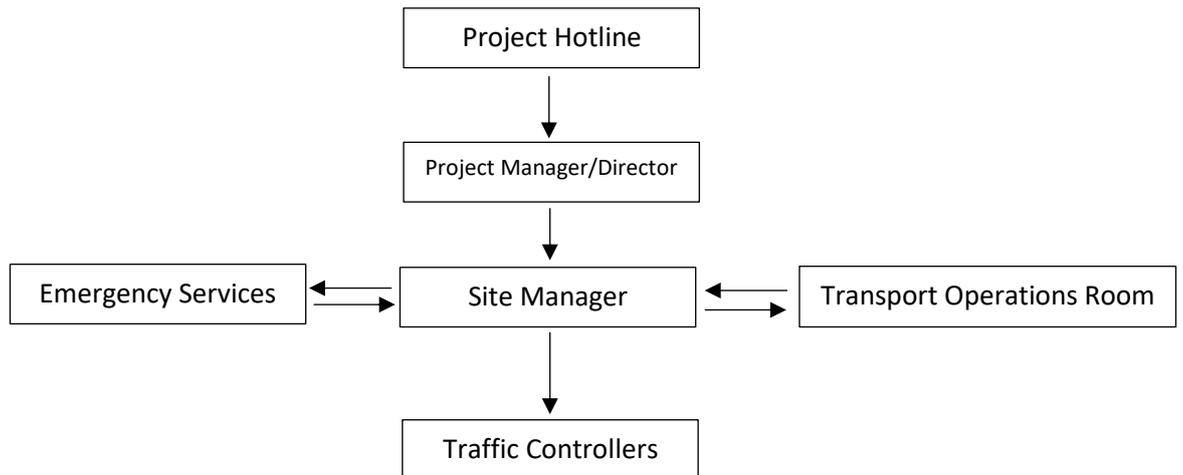
At the end of every ROL shift, all works will either be completed or restored to a temporary safe state.

For incidents occurring within site the following incident response plan is to be followed:

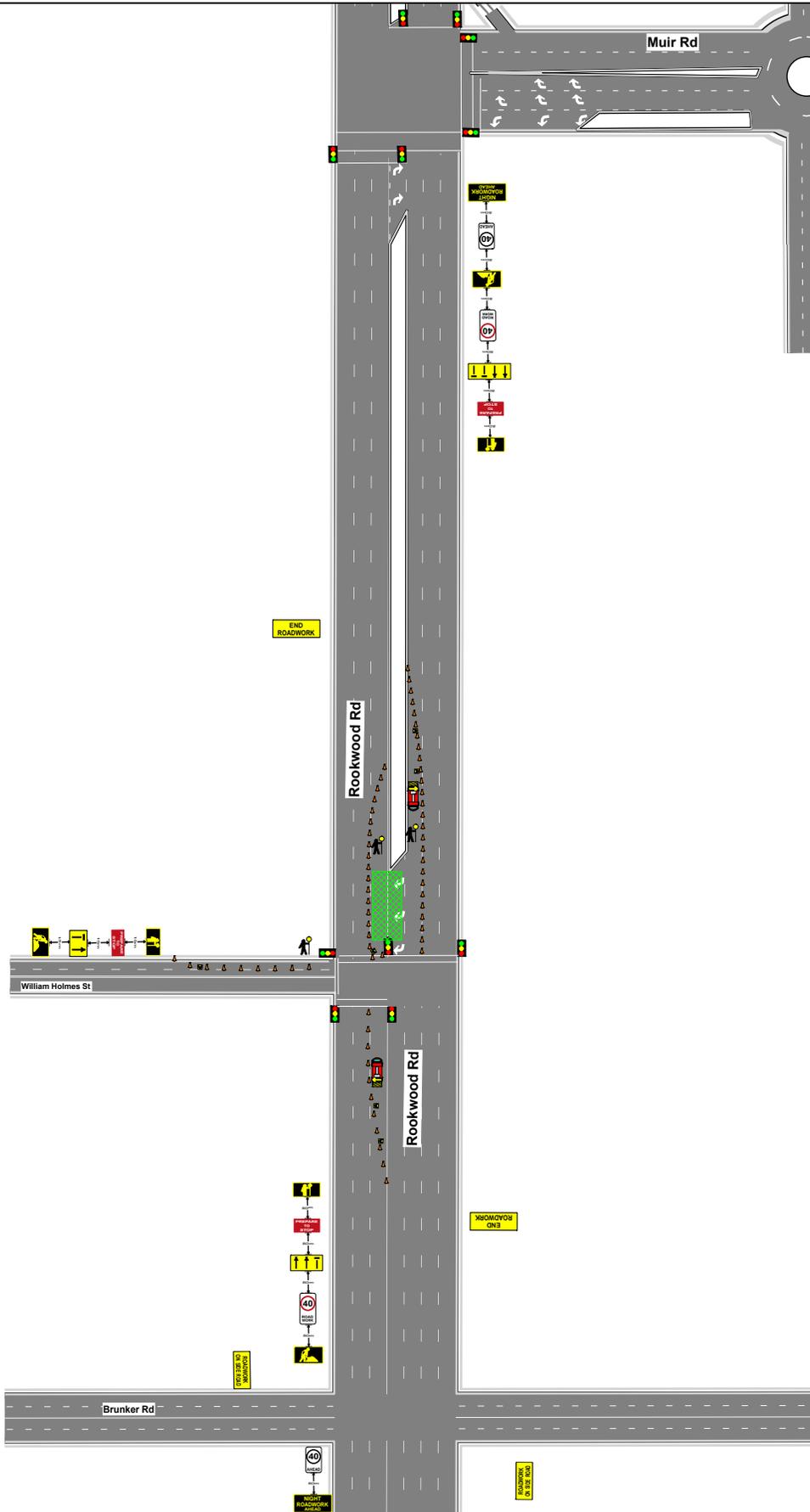
- During ROL shift hours – Site Manager to contact relevant authorities and traffic controllers to assist as required.



- Outside of ROL shift hours – Project Hotline to be contacted as per below.



## **Appendix A: Traffic Control Plans**



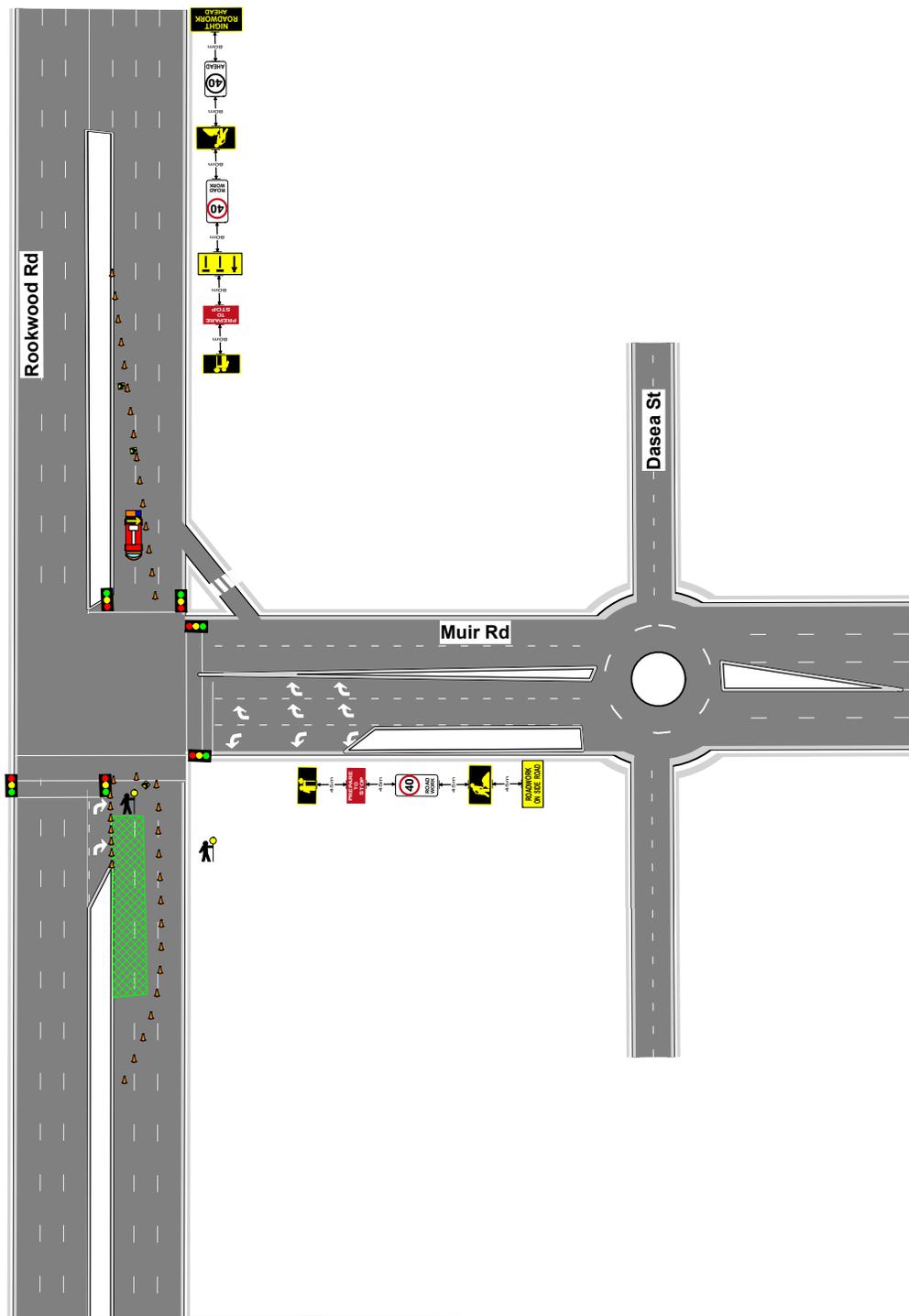
**Garde**

Date: 28/04/2020 Author: Seabhain Langan #0052299331 On Behalf Of: Transgrid  
 Subject: Rookwood Rd Amended By: [Redacted] Red Ticket No.: [Redacted]

Comments:

- \* TIC to assist work vehicle entry and exit
- \* TIC to carry out pedestrian management
- \* If TIC cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Mirror Image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* TIC and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 TIC is required where ADT < 1,500 vehicles and work area is less than 250m
- \* TIC to ensure there is an adequate escape route
- \* Two way traffic to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, bollards & tape, but & white barriers.
- \* Diagram not drawn to scale

Recommended speed of traffic (km/h)	Recommended taper length (m)	
	Traffic control at beginning of taper	Lateral taper still
10	15	30
40-50	15	30
50-60	20	60
60-70	N/A	70
70-80	N/A	100
80-90	N/A	140
90-100	N/A	180
Over 100	N/A	180



Date: 28/04/2020 Author: Saidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd Amended By: Red Ticket No.:

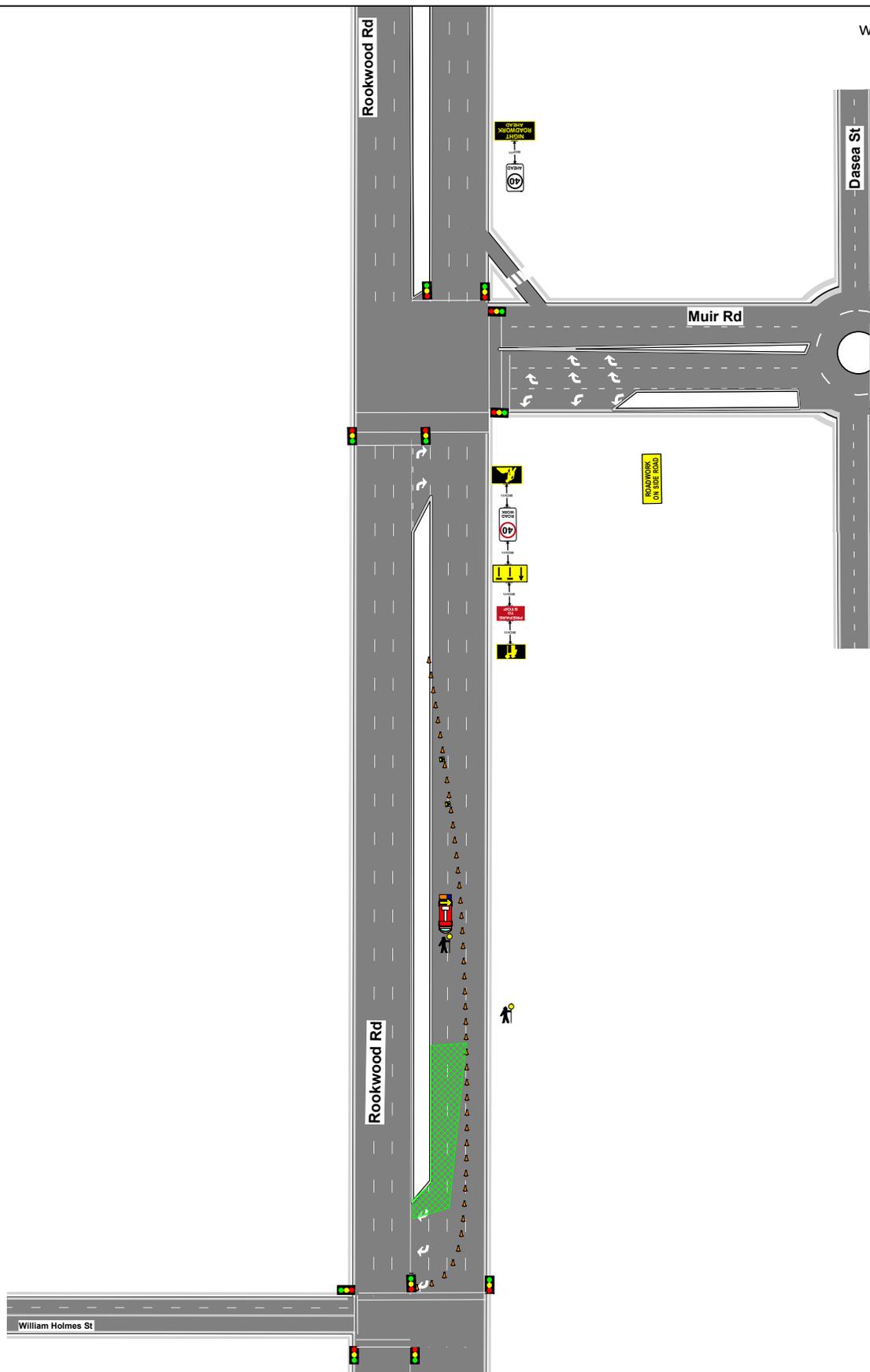
**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Minor image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
- \* Diagram not drawn to scale

**GARDE**

**Recommended taper length (m)**

Approximate speed of traffic (km/h)	Traffic control at beginning of taper	Lateral taper shift	Merge taper
40 - less	15	0	15
40 - 55	15	15	30
55 - 65	30	30	60
65 - 75	N/A	70	115
75 - 85	N/A	80	130
85 - 95	N/A	90	145
95 - 105	N/A	100	160
Greater than 105	N/A	110	180



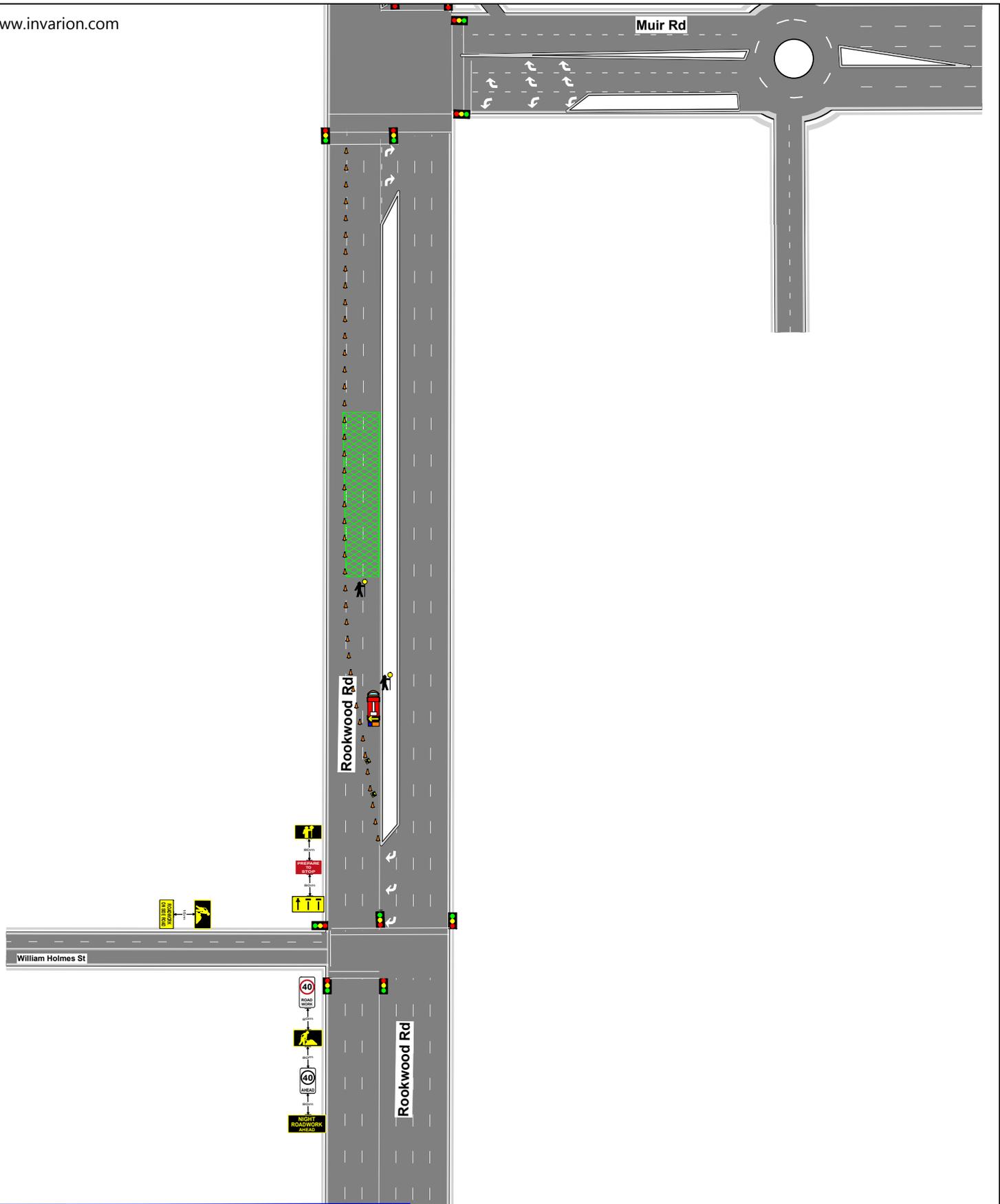
**DATE:** 28/04/2020 **AUTHOR:** Sathish Langan #00529933 **ON BEHALF OF:** Transgrid  
**SUBJECT RD:** Rookwood Rd **AMENDED BY:** Red Ticket No.:

**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Mirror image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
- \* Diagram not drawn to scale

**GARDE**

Approximate speed of traffic (km/h)	Recommended taper length (m)		
	Traffic control at beginning of taper	Lateral taper start	Merge taper
0-10	0	0	0
10-15	15	15	30
15-20	30	30	60
20-25	45	45	90
25-30	60	60	120
30-35	75	75	150
35-40	90	90	180
40-45	105	105	210
45-50	120	120	240
Greater than 105	N/A	110	180



Date: 28/04/2020 Author: Saidhbhjn Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd Amended By: Red Ticket No.:

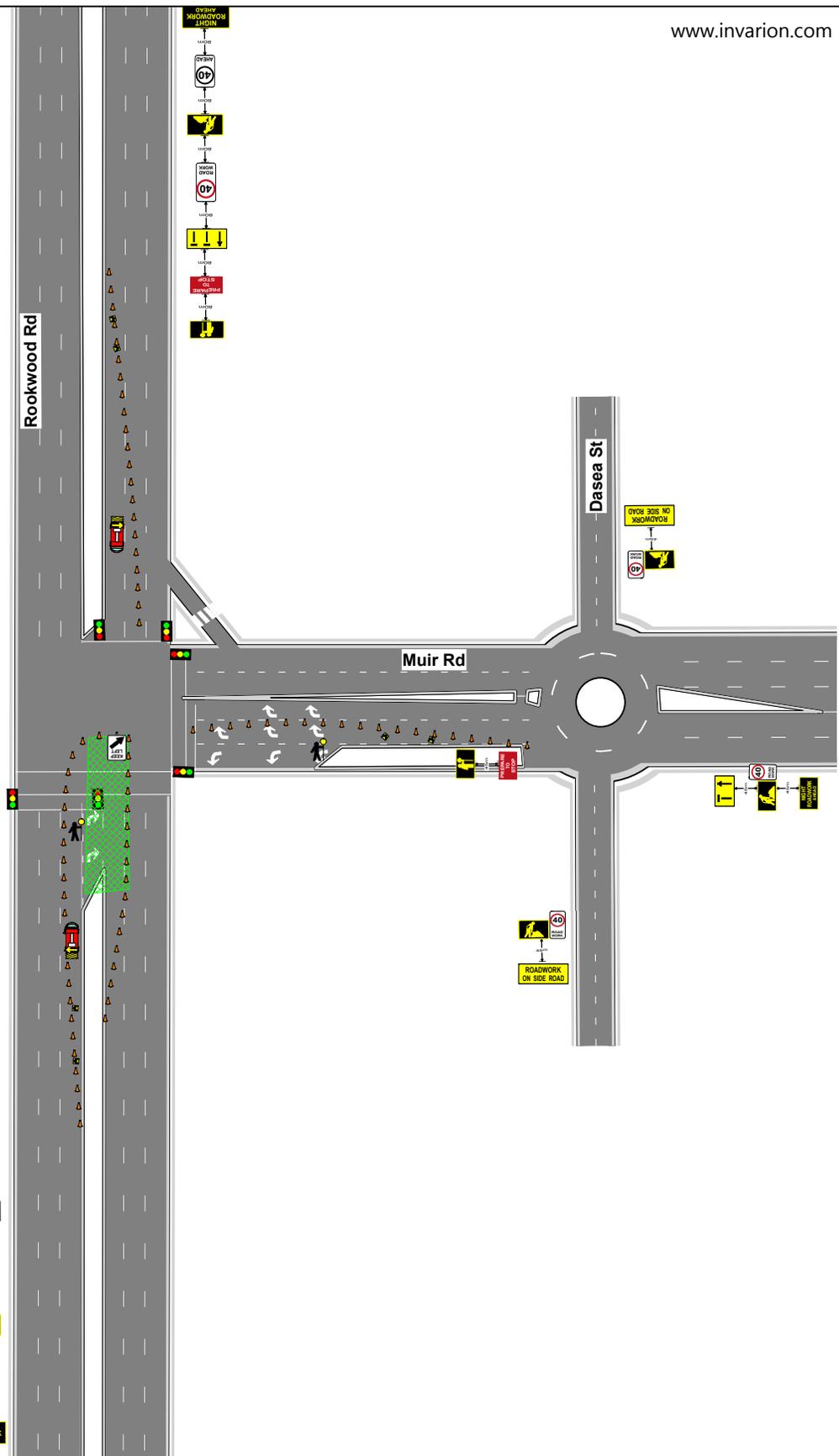
**Comments:**

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Mirror image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
- \* Diagram not drawn to scale

**GARDE**

**Recommended taper length (m)**

Approximate speed of traffic (km/h)	Traffic control at beginning of taper	Lateral taper shift	Merge taper
43 - 45	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180



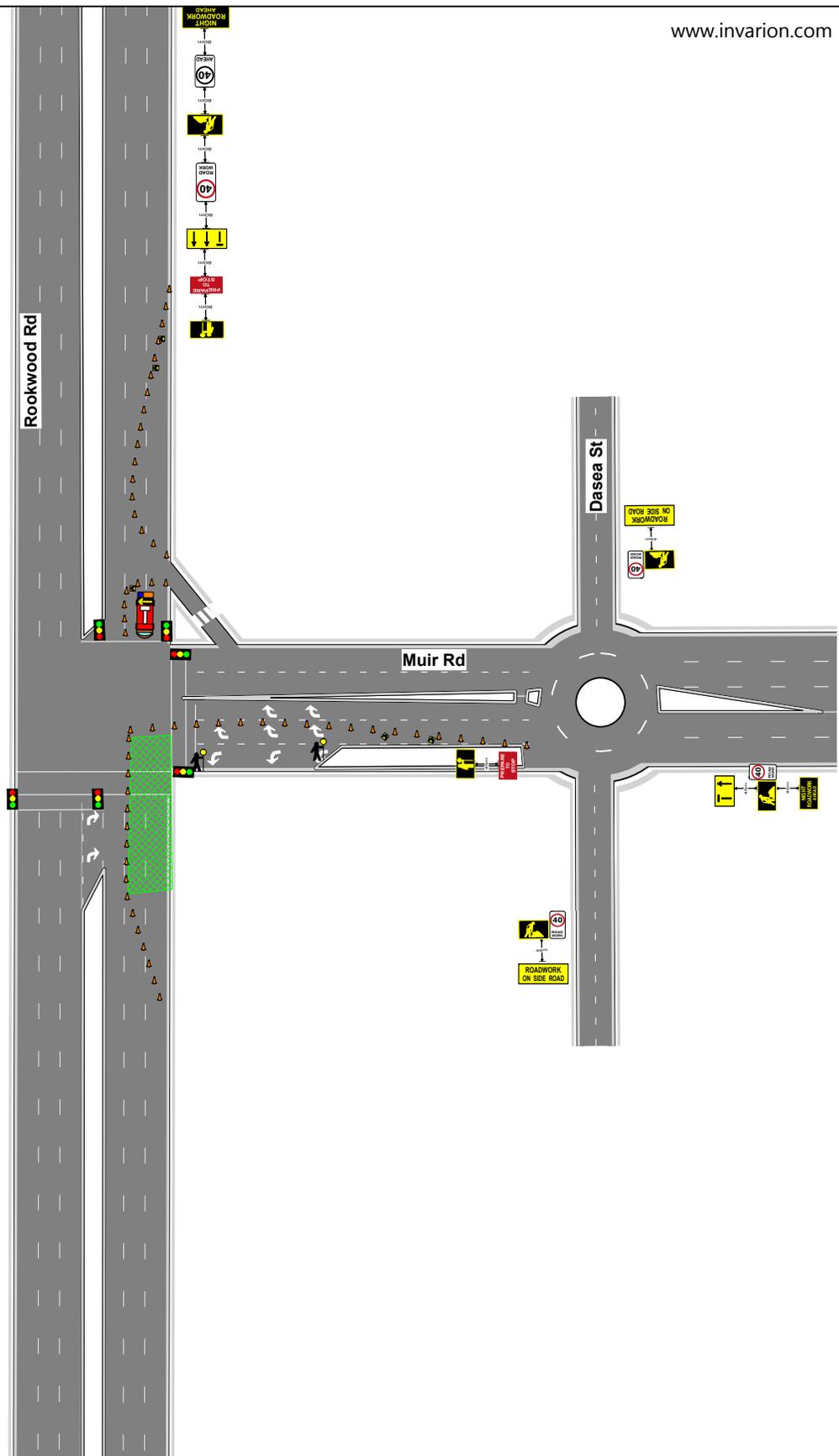
**GARDE**

Date: 05/06/2020 Author: Saïdhbhín Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd & Muir Rd Amended By: Red Ticket No.:

Comments:

- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Mirror image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
- \* Pedestrian path outlined in blue
- \* Diagram not drawn to scale

Recommended taper length (m)			
Approximate speed of traffic (km/h)	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - 55	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180



**Garde**

Date: 05/06/2020 Author: Saidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd & Muir Rd Amended By: Red Ticket No.:  
 Comments:

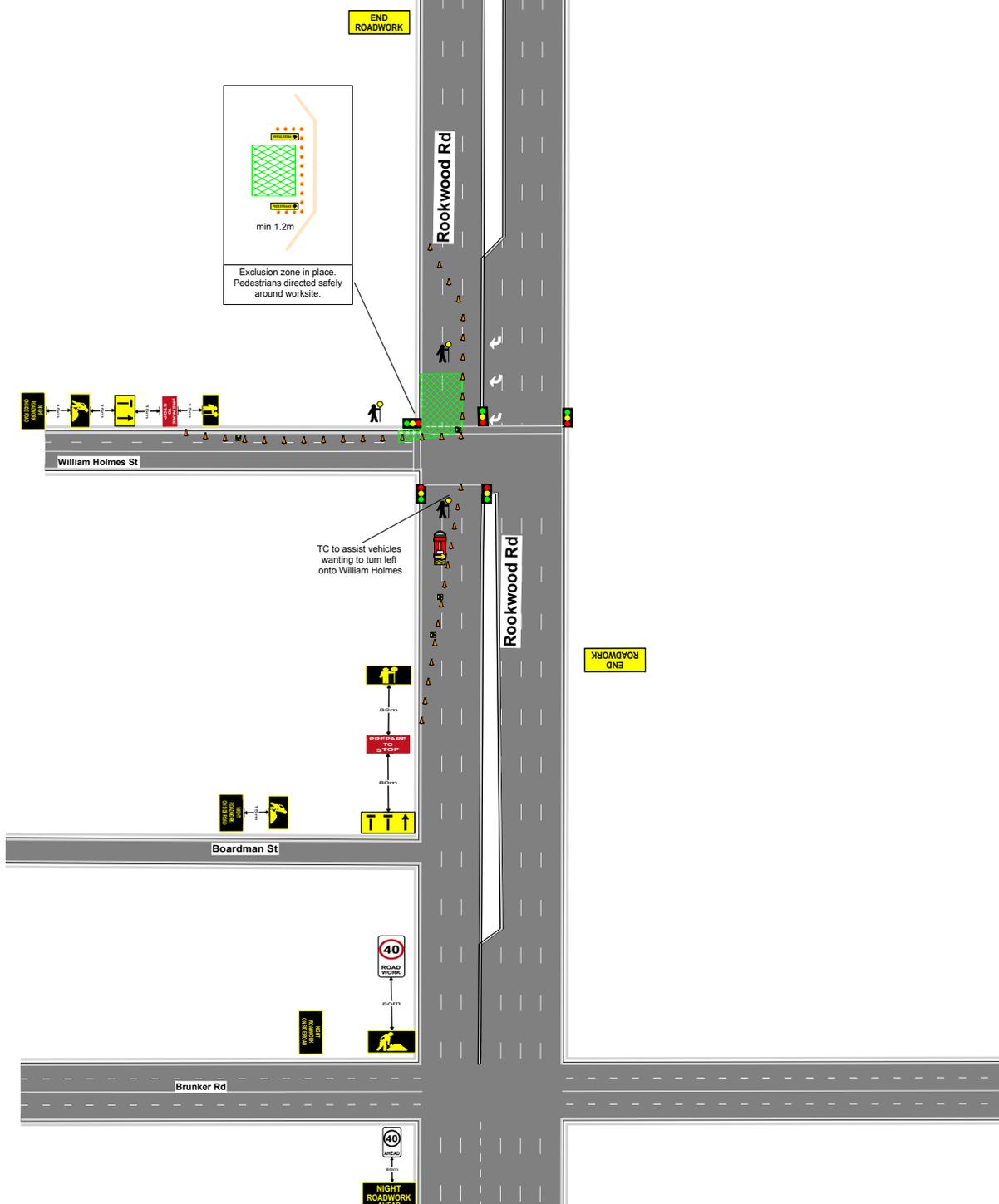
- \* T/C to assist work vehicle entry and exit
- \* T/C to carry out pedestrian management
- \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
- \* Mirror image for opposite side of road
- \* Resident and commercial access to be maintained at all times
- \* AS1742.3 - 2009 "D"
- \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
- \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
- \* T/C to ensure there is an adequate escape route
- \* Two way radios to be used if required
- \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
- \* Pedestrian path outlined in blue
- \* Diagram not drawn to scale

Recommended taper length (m)			
Approximate speed of traffic (km/h)	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - 55	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180







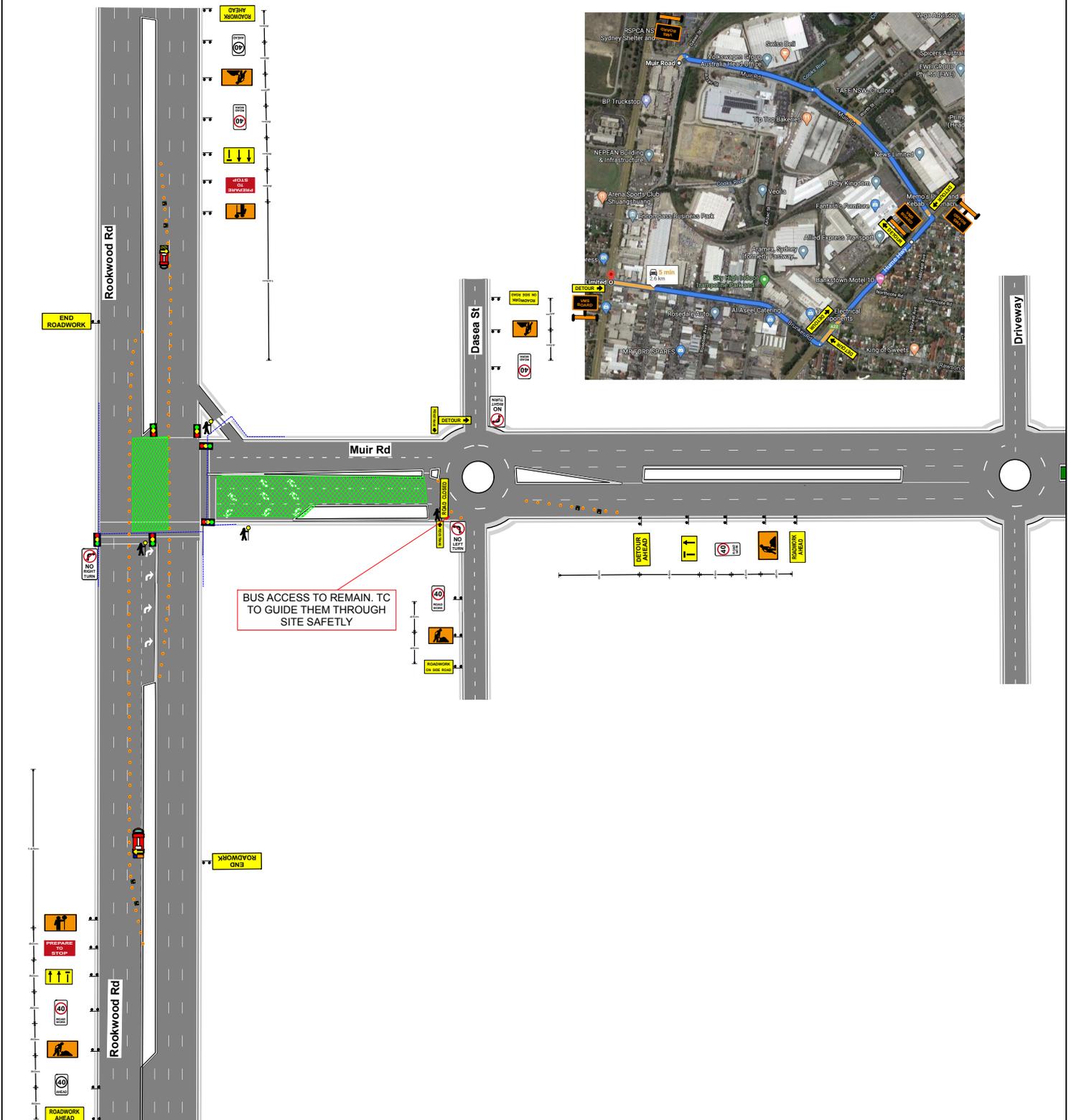


Date: 19/06/2020 Author: Saidhbin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd Amended By: Red Ticket No.:

- Comments:**
- \* T/C to assist work vehicle entry and exit
  - \* T/C to carry out pedestrian management
  - \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
  - \* Mirror image for opposite side of road
  - \* Resident and commercial access to be maintained at all times
  - \* AS1742.3 - 2009 "D"
  - \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
  - \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
  - \* T/C to ensure there is an adequate escape route
  - \* Two way radios to be used if required
  - \* Ensure exclusion zone is formed on footpaths along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
  - \* Diagram not drawn to scale



Approximate speed of traffic (km/h)	Recommended taper length (m)		
	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45-55	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
Greater than 105	N/A	110	180

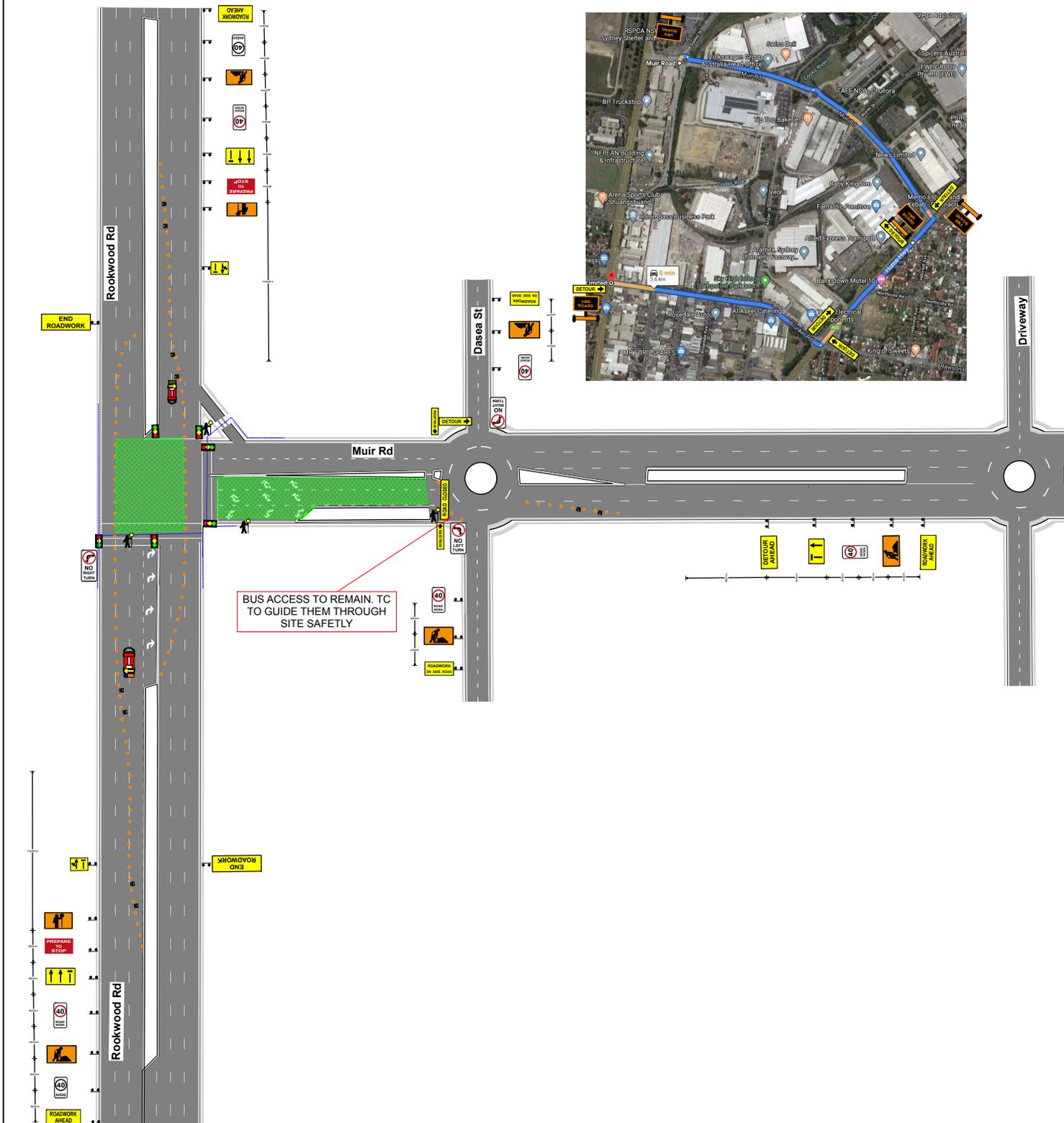


Date: 29/07/2020 Author: Saidhbin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd & Muir Rd Amended By: Red Ticket No.:

- Comments:**
- \* T/C to assist work vehicle entry and exit
  - \* T/C to carry out pedestrian management
  - \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
  - \* Mirror Image for opposite side of road
  - \* Resident and commercial access to be maintained at all times
  - \* AS1742.3 - 2009 "D"
  - \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
  - \* T/C is required where ADT < 1,500 vehicles and work area is less than 250m
  - \* T/C to ensure there is an adequate escape route
  - \* Two way radios to be used if required
  - \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
  - \* Diagram not drawn to scale

**GARDE**

Approximate speed of traffic (km/h)	Recommended taper length (m)		
	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180



Date: 29/07/2020 Author: Seidhbhin Langan #0052299333 On Behalf Of: Transgrid  
 Subject Rd: Rookwood Rd & Muir Rd Amended By: Red Ticket No.:

- Comments:**
- \* T/C to assist work vehicle entry and exit
  - \* T/C to carry out pedestrian management
  - \* If T/C cannot use parking lane as a pedestrian walk way they are to cross pedestrians safely to the other footpath.
  - \* Mirror Image for opposite side of road
  - \* Resident and commercial access to be maintained at all times
  - \* AS1742.3 - 2009 "D"
  - \* T/C and Sign location on plan is for illustration purposes only and will change accordingly
  - \* 1 T/C is required where ADT < 1,500 vehicles and work area is less than 250m
  - \* T/C to ensure there is an adequate escape route
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  - \* Ensure exclusion zone is formed on footways along work zones e.g. cones & tiger bars, Bollards & tape, blue & white barriers.
  - \* Diagram not drawn to scale

**GARDE**

Recommended taper length (m)			
Approximate speed of traffic (km/h)	Traffic control at beginning of taper	Lateral taper shift	Merge taper
45 - less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180

## **Appendix B: Detour Maps**

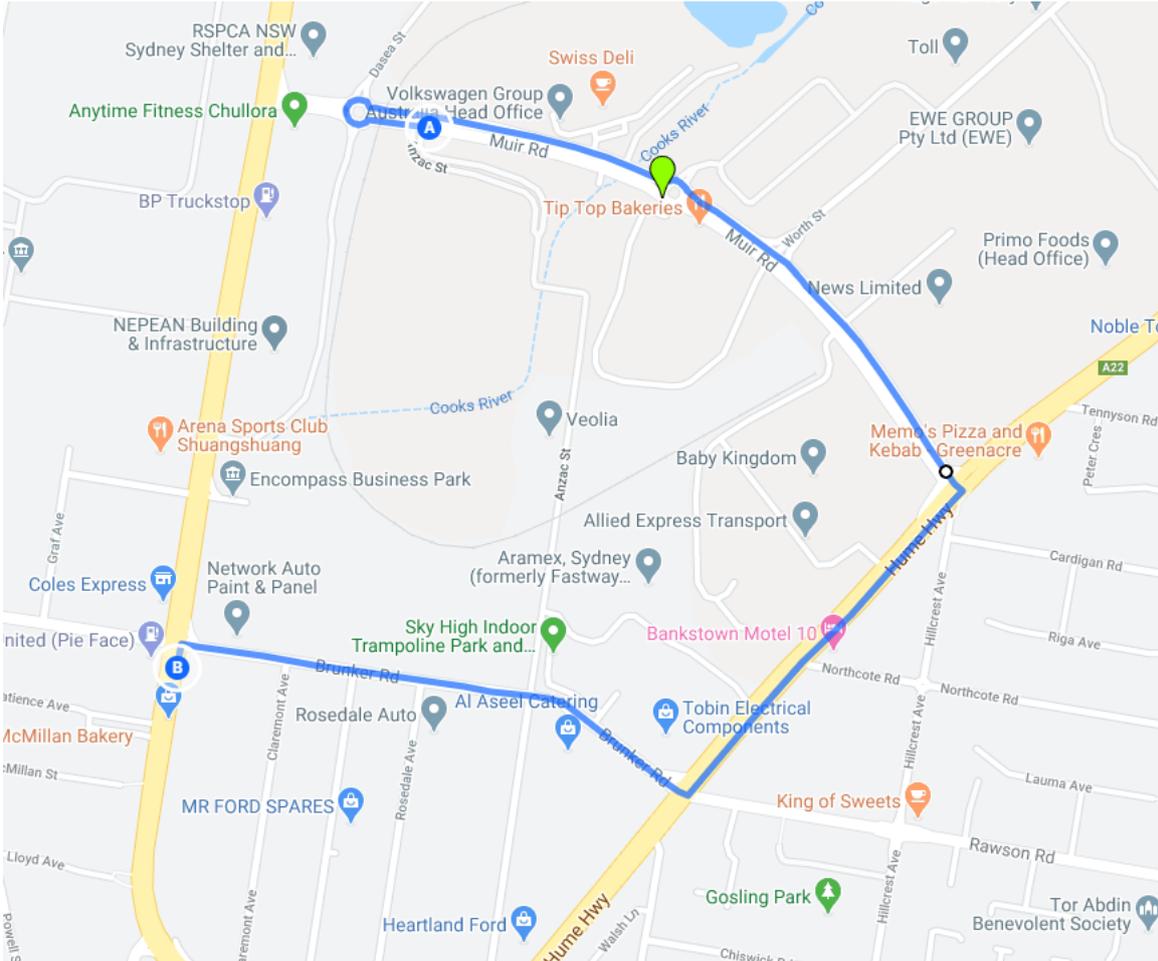


Figure 10: Detour Map - Source: [Google Maps](#)

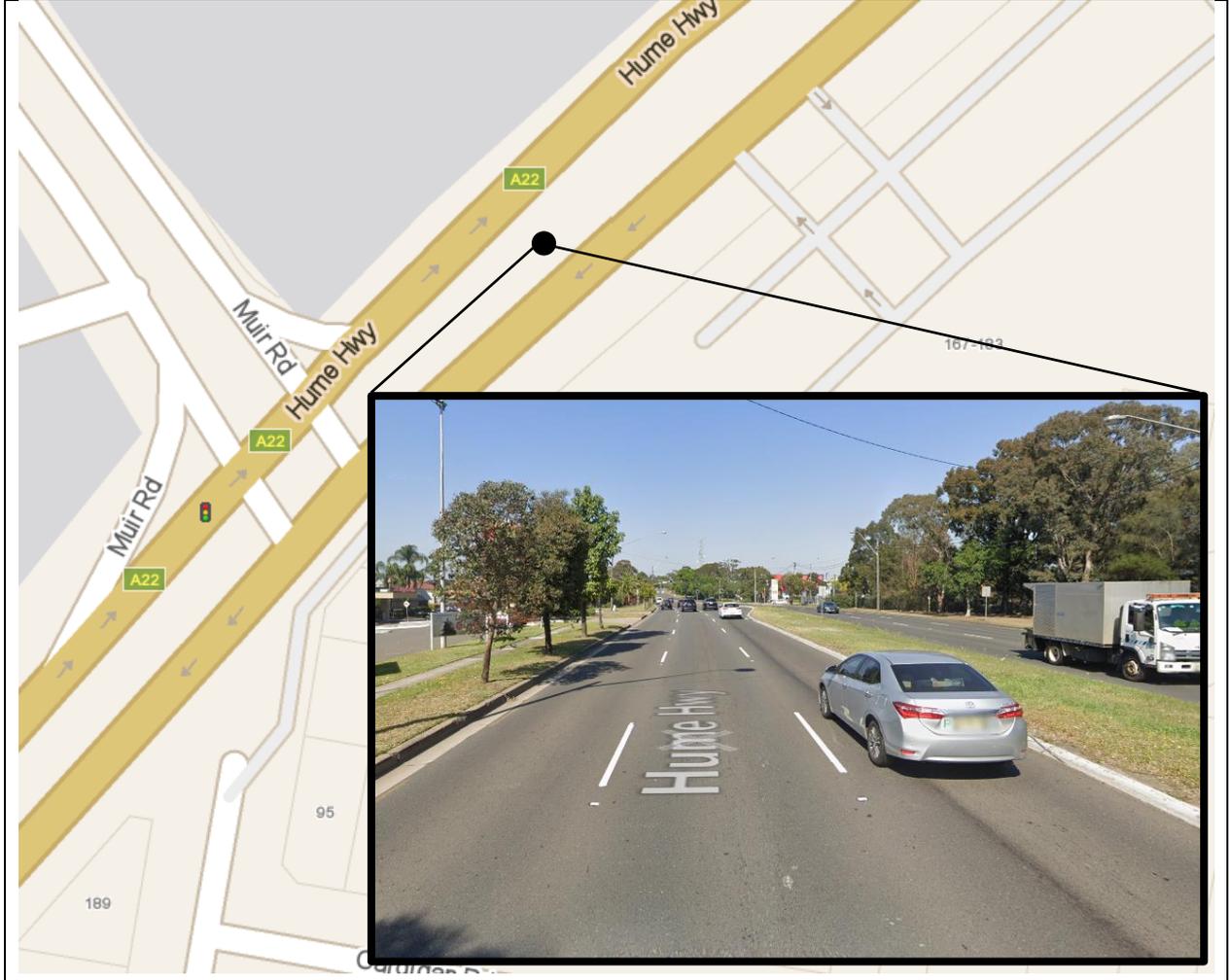
## Appendix C: VMS Strategy

VMS Board ID: RWK-001	Date: 18 Aug 2020
Location: Muir Road & Dasea Street intersection on eastern island.	Direction: Facing westbound traffic



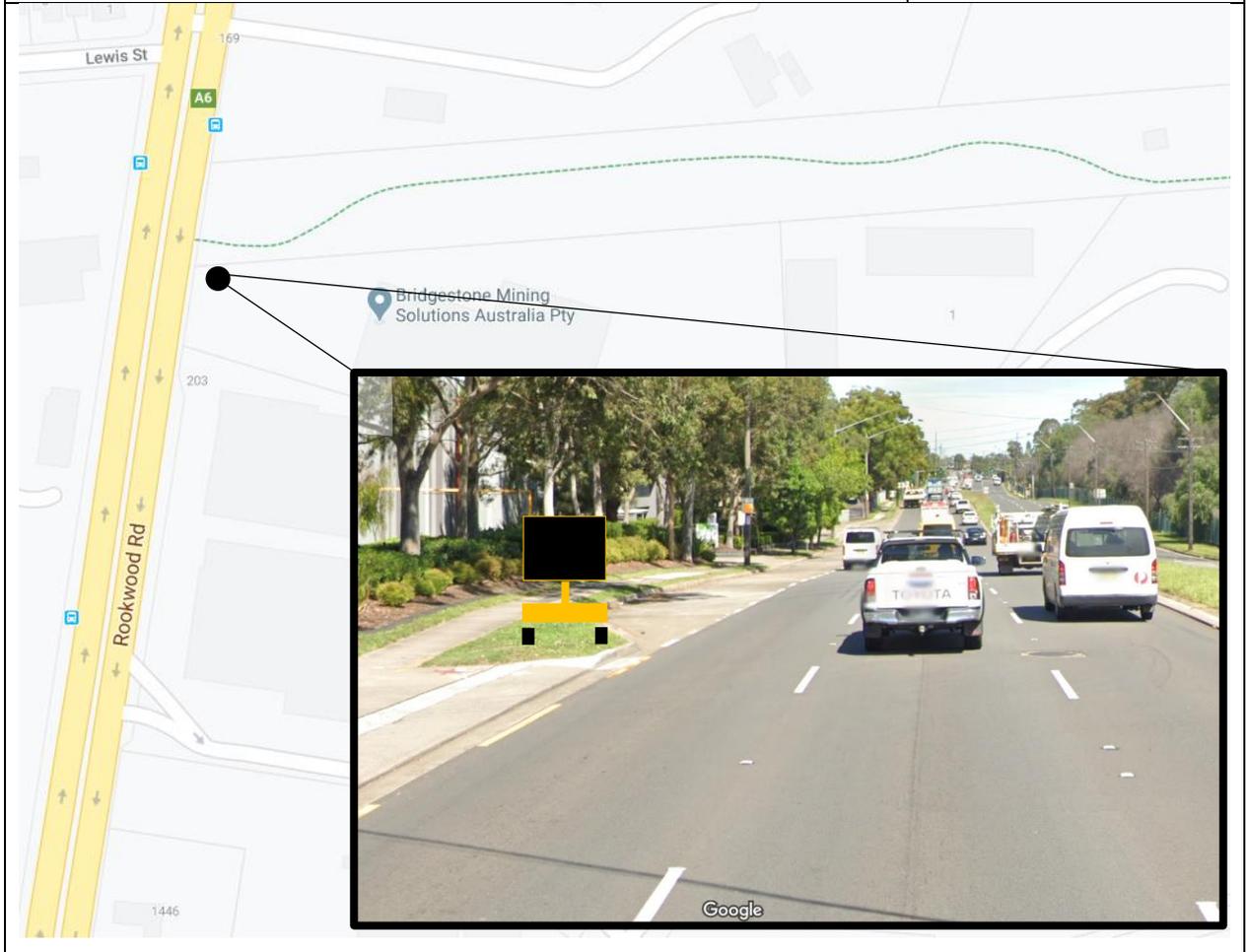
Notification	Pre – Event	Event			
24 hours, 2 weeks prior to work starting	Mon – Fri: 5am – 8pm Sat – Sun: 7am – 8pm	Sun – Thu: 8pm – 5am		Fri – Sat: 8pm - 7am	
		<b>No Detour</b>	<b>Detour</b>	<b>No Detour</b>	<b>Detour</b>
<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS FROM 1 SEP	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS 8PM TONIGHT	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM
<i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 2:</i> PROCEED WITH CAUTION	<i>Frame 2:</i> NO LEFT TURN	<i>Frame 2:</i> PROCEED WITH CAUTION	<i>Frame 2:</i> NO LEFT TURN

<b>VMS Board ID:</b> RWK-002	<b>Date:</b> 18 Aug 2020
<b>Location:</b> Hume Highway approaching Muir Road on dividing island.	<b>Direction:</b> Facing southbound traffic



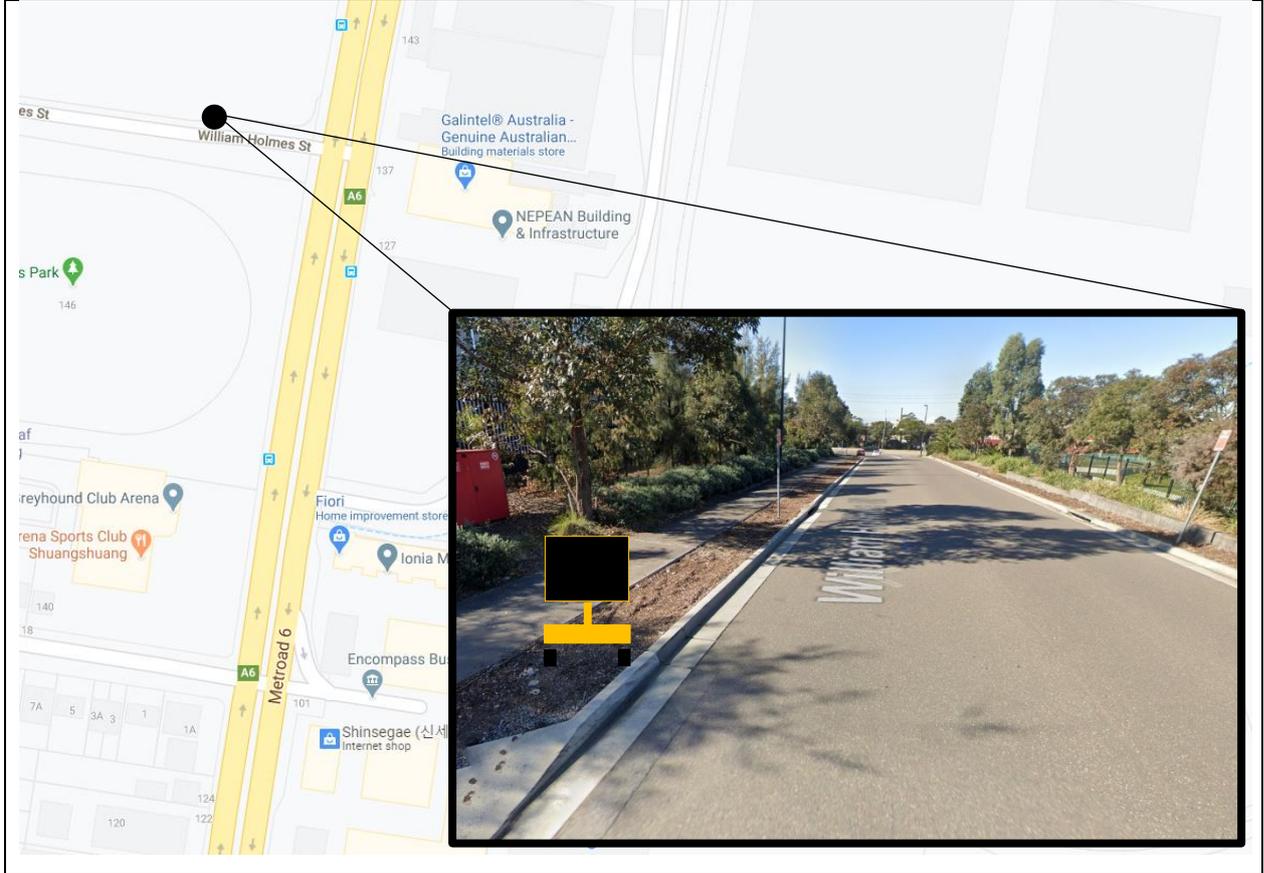
Notification	Pre – Event	Event	
24 hours, 2 weeks prior to work starting	Mon – Fri: 5am – 8pm	Sun – Thu: 8pm – 5am	Fri – Sat: 8pm - 7am
	Sat – Sun: 7am – 8pm	Detour	Detour
<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS FROM 1 SEP  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS 8PM TONIGHT  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM  <i>Frame 2:</i> HEAVY VEH USE BRUNKER RD	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM  <i>Frame 2:</i> HEAVY VEH USE BRUNKER RD

<b>VMS Board ID:</b> RWK-003	<b>Date:</b> 18 Aug 2020
<b>Location:</b> Rookwood road approaching Muir Road on eastern footpath.	<b>Direction:</b> Facing southbound traffic



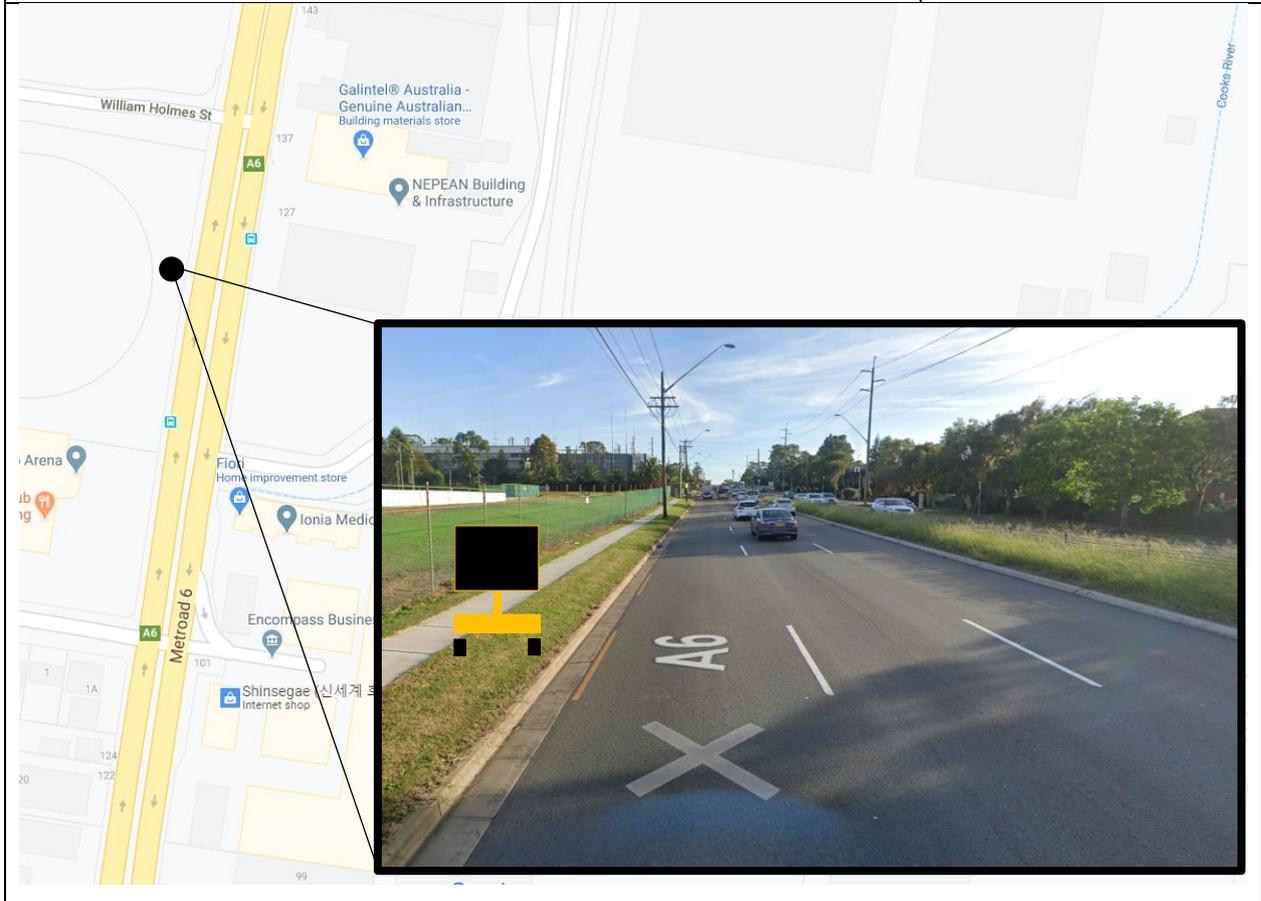
Notification	Pre – Event	Event	
24 hours, 2 weeks prior to work starting	Mon – Fri: 5am – 8pm Sat – Sun: 7am – 8pm	Sun – Thu: 8pm – 5am	Fri – Sat: 8pm - 7am
<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS FROM 1 SEP	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS 8PM TONIGHT	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM
<i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 2:</i> PROCEED WITH CAUTION	<i>Frame 2:</i> PROCEED WITH CAUTION

<b>VMS Board ID:</b> RWK-004	<b>Date:</b> 18 Aug 2020
<b>Location:</b> William Holmes Street approaching Rookwood Road on northern footpath.	<b>Direction:</b> Facing eastbound traffic



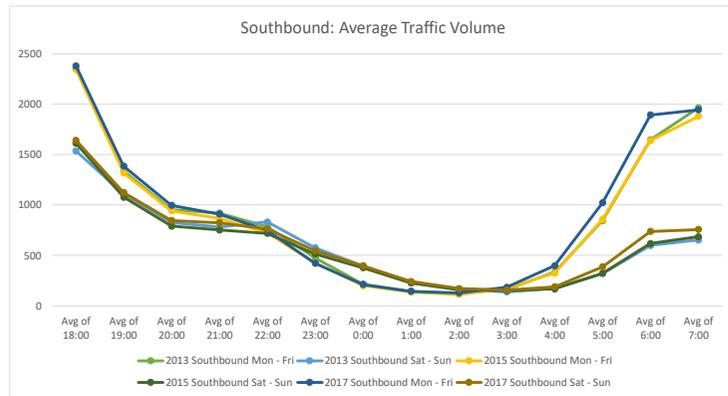
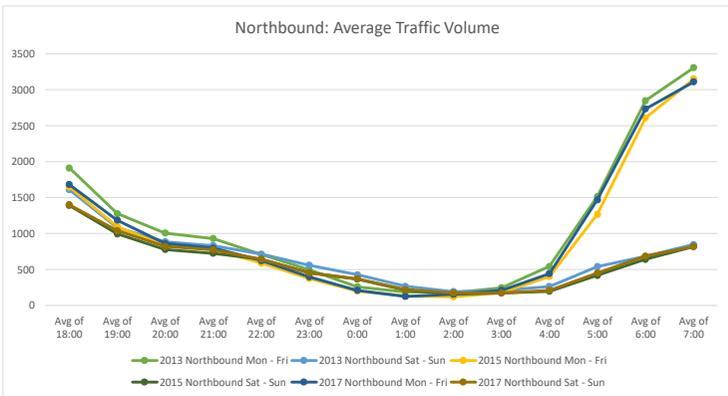
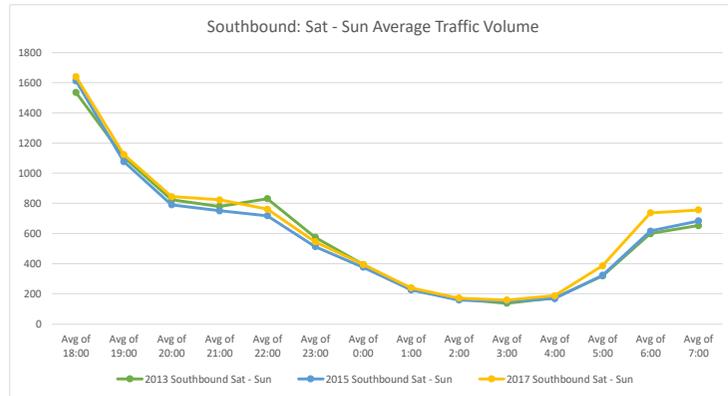
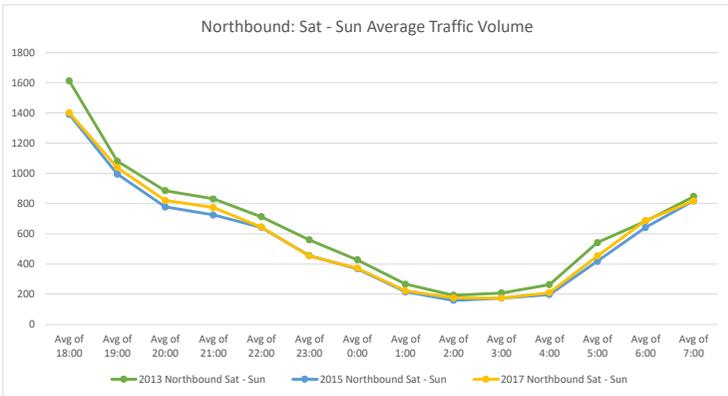
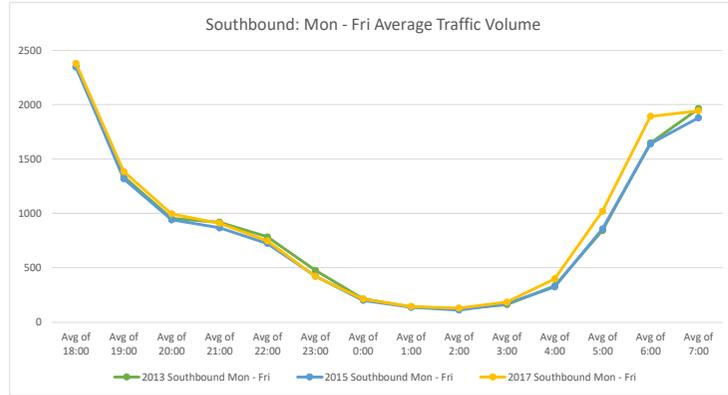
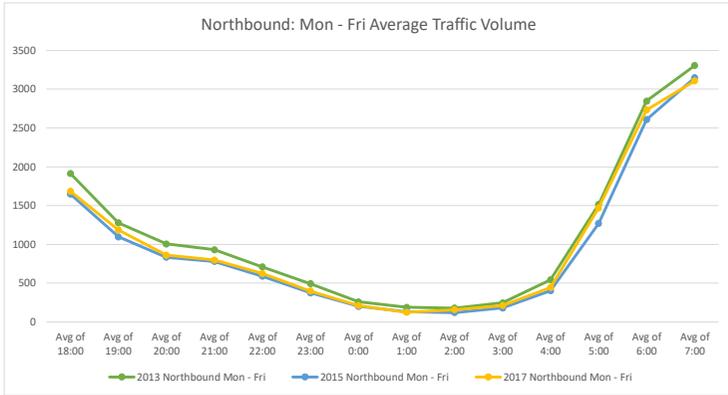
Notification	Pre – Event	Event	
24 hours, 2 weeks prior to work starting	Mon – Fri: 5am – 8pm Sat – Sun: 7am – 8pm	Sun – Thu: 8pm – 5am	Fri – Sat: 8pm - 7am
<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS FROM 1 SEP  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS 8PM TONIGHT  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM  <i>Frame 2:</i> PROCEED WITH CAUTION	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM  <i>Frame 2:</i> PROCEED WITH CAUTION

<b>VMS Board ID:</b> RWK-005	<b>Date:</b> 18 Aug 2020
<b>Location:</b> Rookwood Road approaching William Holmes Street on eastern footpath.	<b>Direction:</b> Facing northbound traffic



Notification	Pre – Event	Event	
24 hours, 2 weeks prior to work starting	Mon – Fri: 5am – 8pm Sat – Sun: 7am – 8pm	Sun – Thu: 8pm – 5am	Fri – Sat: 8pm - 7am
<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS FROM 1 SEP  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS 8PM TONIGHT  <i>Frame 2:</i> ENQUIRES CONTACT *PROJ CONTACT NUMBER*	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 5AM  <i>Frame 2:</i> PROCEED WITH CAUTION	<i>Frame 1:</i> ROOKWOOD RD ROAD WORKS UNTIL 7AM  <i>Frame 2:</i> PROCEED WITH CAUTION

## **Appendix D: Traffic Volumes and Analysis**



Average Traffic Volume for August (2013, 2015, 2017)																
Year	Direction	Day	Avg of 18:00	Avg of 19:00	Avg of 20:00	Avg of 21:00	Avg of 22:00	Avg of 23:00	Avg of 0:00	Avg of 1:00	Avg of 2:00	Avg of 3:00	Avg of 4:00	Avg of 5:00	Avg of 6:00	Avg of 7:00
2013	NB	Mon - Fri	1911	1277	1006	931	708	494	260	189	179	247	543	1515	2848	3306
2013	NB	Sat - Sun	1613	1081	885	831	713	559	428	266	194	208	263	541	682	847
2013	SB	Mon - Fri	2347	1338	953	919	784	476	213	141	121	161	333	844	1647	1964
2013	SB	Sat - Sun	1535	1108	825	780	831	575	395	228	165	137	174	319	599	653
<b>2013 Total</b>			<b>1974</b>	<b>1248</b>	<b>944</b>	<b>891</b>	<b>753</b>	<b>508</b>	<b>285</b>	<b>188</b>	<b>158</b>	<b>195</b>	<b>377</b>	<b>970</b>	<b>1798</b>	<b>2107</b>
2015	NB	Mon - Fri	1647	1097	833	780	589	375	202	132	121	180	403	1269	2608	3149
2015	NB	Sat - Sun	1391	995	778	724	642	454	367	215	158	174	197	417	642	818
2015	SB	Mon - Fri	2345	1319	942	867	723	423	200	136	112	170	324	858	1639	1879
2015	SB	Sat - Sun	1613	1077	790	751	718	513	376	227	159	151	168	323	617	684
<b>2015 Total</b>			<b>1844</b>	<b>1155</b>	<b>855</b>	<b>797</b>	<b>664</b>	<b>426</b>	<b>254</b>	<b>162</b>	<b>129</b>	<b>171</b>	<b>307</b>	<b>846</b>	<b>1658</b>	<b>1964</b>
2017	NB	Mon - Fri	1683	1186	861	798	624	398	211	125	157	211	444	1470	2734	3108
2017	NB	Sat - Sun	1401	1039	820	773	645	453	372	222	176	175	210	453	687	818
2017	SB	Mon - Fri	2377	1385	996	910	747	421	211	143	129	184	398	1021	1892	1943
2017	SB	Sat - Sun	1640	1124	845	823	761	545	395	240	171	159	188	386	737	757
<b>2017 Total</b>			<b>1899</b>	<b>1233</b>	<b>904</b>	<b>840</b>	<b>690</b>	<b>432</b>	<b>256</b>	<b>159</b>	<b>151</b>	<b>190</b>	<b>363</b>	<b>1032</b>	<b>1900</b>	<b>2077</b>

Legend (Vehicles/Hr)	
>1100	
Between 1100 & 950	
<950	

## Appendix E: TMC Comments

## Traffic Adjustment :

TMP		-	Rookwood Rd & Juno Pde	-	Revision v1
Traffic Plan	Precinct		Plan No.	Revision	
IRP = Incident Response Plan TMP = Traffic Management Plan TCP = Traffic Control Plan	E = Enabling Works				

Item No.	Reference:	TMC Comments	Date: 15/07/2020	Response	Date:
1	<b>Section 2.3</b> Project Contacts	TMC Project Contacts will be as below: Salona Allimia – A/Rail Interface Officer – 0437 985 398 Prabaka Siva – Manager Reliability & Congestion Planning – 0477 301 499		TMC Project Contacts updated.	
2	<b>Section 3.2.1</b> Pedestrian Network	Pedestrian/cyclist detour paths please ensure the following: <ul style="list-style-type: none"> <li>- Sufficient lighting</li> <li>- Ensure all pedestrian/cycle paths widths are and pram ramps are wheelchair compliant, and that all pedestrian push buttons are accessible</li> <li>- Ensure sufficient sight lines are maintained for pedestrians and drivers</li> <li>- Usability of all pedestrian/cycle paths should be maintained</li> </ul> <p>All pedestrian crossings to be maintained at all times (Pram ramp grades, path widths, etc to be maintained and accessible for all users)</p>		Impact to pedestrian network updated in Section 4.1.1.	
3	<b>Rookwood Rd</b> 4.2.2 Traffic Signals	Network Operations approval will be required for any works affecting traffic signal loops		Any work interfering with traffic signals will require Network Operations approval. Updated in Section 4.2.2 (TMC to provide suitable contact/s for project alignment).	
4	<b>Section 4.4.1</b> Road Occupancy Licenses	<ul style="list-style-type: none"> <li>- All ROLAs to be submitted 10 business days in advance</li> <li>- All ROLAs must include the project name (Transgrid PSF) prior to submission.</li> <li>- Any ROL's that have been applied for or licenced without the Major Project Name should be re-applied for using the Major Project Name.</li> <li>- All activation and deactivation of ROLs for work shifts must use the web application system and not call the TMC.</li> </ul>		Noted	
5	<b>Section 6</b> Incident Management Plan	Please include: Transport Operations Room to be notified of any incidents		Added Transport Operations Room to flowchart in Section 6.	
6	Construction Vehicles	No Construction vehicles should obstruct any pedestrian crossings or footpaths. No traffic controllers should stop general traffic to allow construction vehicles to enter or exit, without any approved ROL's		Updated Section <b>Error! Reference source not found.</b> to include construction vehicles.	
7	<b>Rookwood Rd</b> Appendix A Traffic Control Plans	Will any proposed works require removal of the existing median on Rookwood Rd? If so, what protection will be provided at the end of each shift?		Updated Section 4.2.3 to address kerb island removal and temporary reinstatement at end of each shift.	

# Transgrid – Powering Sydney’s Future

## Traffic Adjustment :

Item No.	Reference:	TMC Comments Date: 15/07/2020	Response Date:
8	<b>Appendix C</b> VMS Strategy	<p>Please submit a VMS plan, including location of VMS units and messages to be displayed prior to works and during construction works for works at Juno Pde.</p> <p>Please find attached update VMS Strategy for Rookwood Rd.</p> <p>Please note only 2 screens with 3 lines can be displayed at a time.</p> <p>Please provide a communication contact number which, must be displayed on the portable VMS units, to direct potential complaints/enquiries to the contractor or Transgrid.</p> <p>Placement of VMS units must:</p> <ul style="list-style-type: none"> <li>- Not impact pedestrian safety and space</li> <li>- Not impact TCS lanterns, visibility of existing TCS.</li> </ul>	VMS Strategy updated as per TMC comments.
9	<b>CCTV cameras</b>	CCTV Cameras located at the intersections must be maintained at all times	Noted. TMC request for CCTV Cameras located at intersections to be maintained at all times
10	<b>Public Transport</b>	Please submit Bus Operator acknowledgement of the works	Noted. Refer to Overarching CTTMP Section 5 and Appendix A for Bus Operator requirements.
11	<b>Access</b>	Resident access should be maintained at all times	Noted. Resident access addressed in Section 4.1.5. Resident Access will not be affected by works.
12	<b>Communications Strategy</b>	Please submit a copy of Resident/Local Business notification of these works	TMC will be registered on the stakeholder email list. Updated Section 5.2
13	<b>Trenching works</b>	Please submit written approval from Sydney Roads Assets – Thillai Suppiah for any trenching works required on State Roads	Noted. Project Manager to obtain written approval from Sydney Road Assets for alignment. Letter to be provided separately to TMC.
14	<b>Council Approval</b>	Please submit Local Council approval for any works affecting Local Roads and resident access	Noted. Refer to Overarching CTTMP Section 5 and Appendix A.