

FREEDOM OF INFORMATION COVERSHEET

The following information is provided pursuant to section 28 of the *Freedom of Information Act 2016*.

FOI reference: 22-003

Information to be published	Status
1. Access application	Published
2. Decision notice and schedule	Published
3. Documents	Published
4. Additional information identified	n/a
5. Fees	waived
6. Processing time (in working days)	18 days
7. Decision made by Ombudsman	n/a
8. Additional information identified by Ombudsman	n/a
9. Decision made by ACAT	n/a
10. Additional information identified by ACAT	n/a

From: Yule, Kelly-Jane on behalf of CMTEDD FOI

To: <u>TCCS_FreedomOfInformation</u>

Subject: CMTEDDF0I2021-366 - FW: FOI for extension to document - Transfer request

Date: Tuesday, 4 January 2022 8:55:50 AM

Attachments: Doc1 -Authorisation of Temporary Traffic Managment (TTM) Plans Redacted.pdf

OFFICIAL

Hi Team

Will you accept a full transfer of the below access application? Perhaps it's something you can give to her administratively? Can you let me know and I will advise

Thanks

Kel

From:

Sent: Friday, 24 December 2021 8:09 AM **To:** CMTEDD FOI < CMTEDDFOI@act.gov.au> **Subject:** FOI for extension to document

CAUTION: This email originated from outside of the ACT Government. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi Kelly,

I hope you had a great holiday.

I need one more document via FOI please. Attached is an authorisation for TTMs. This authorisation has expired and I need the current one please.

Thanks for your help with this Kelly.

Cheers,









Freedom of Information Request: Reference 22-003

I refer to your application received by Transport Canberra City Services (TCCS) by way of transfer from the Chief Minister, Treasury and Economic Development Directorate on 5 January 2022. It is my understanding that you are seeking access to the following information under the *Freedom of Information Act 2016* (the FOI Act):

A current Authorisation of Temporary Traffic Management (TTM) Plans.

Authority

I am an Information Officer appointed by the Director-General under section 18 of the Act to deal with access applications made under Part 5 of the FOI Act.

Timeframes

A decision is due to you on 3 February 2022.

Decision on access

In accordance with the FOI Act, a search was conducted of records held by TCCS. This search identified seven records as relevant to your request.

In reviewing the information within these documents, I have found it contrary to the public interest to disclose some information. As such, I have decided to provide you with partial access to this government information. My reasons for this decision are detailed in the statement of reasons below.

I have included a schedule of the documents at <u>Attachment A</u>. The documents are enclosed at <u>Attachment B</u> with deletions applied to information which is contrary to the public interest to disclose.

Statement of Reasons

In making my decision on disclosing government information, I must identify all relevant factors in the Schedule of the FOI Act and determine, on balance, where the public interest lies. In reaching my access decision, I have taken the following into account:

Factors favouring disclosure in the public interest (Schedule 2, Section 2.1)

- Schedule 2.1 (a)(i) promote open discussion of public affairs and enhance the government's accountability;
- Schedule 2.1 (a)(viii) reveal the reason for a government decision and any background or contextual information that informed the decision.

Factors favouring non-disclosure (Schedule 2, Section 2.2)

• Schedule 2.2(a)(ii) - prejudice the protection of an individual's right to privacy or any other right under the *Human Rights Act 2016*.

I consider that it is in the public interest to release most of the information within the records identified as relevant to your application. However, I have found that the disclosure of some information to be contrary to the public interest.

Information relating to privacy

In reviewing the information in scope of your application, the personal information of third parties was identified. I have considered that the personal information is not readily available to the public and is likely to prejudice the protection of an individual's right to privacy under the *Human Rights Act* 2004

Factors in favour of release can still be met while protecting the personal information of these individuals. The protection of this information outweighs disclosure in this instance.

A copy of the information, with deletions applied to information, which is contrary to the public interest, is enclosed at <u>Attachment B</u>.

Online publishing - disclosure log

Under section 28 of the Act, TCCS maintains an online record of access applications called a disclosure log. Your original access application, my decision and documents will be published in the TCCS disclosure log between 3-10 business days from the date of this decision.

Your personal contact details will not be published. You may view the TCCS' disclosure log at https://www.cityservices.act.gov.au/about-us/freedom of information/disclosure-log.

Ombudsman review

My decision on your access request is a reviewable decision as identified in Schedule 3 of the Act. You have the right to seek an Ombudsman review of this outcome under section 73 of the Act within 20 working days from the day that my decision is published in TCCS' disclosure log or a longer period allowed by the Ombudsman.

If you wish to request a review of my decision, you may write to the Ombudsman at:

The ACT Ombudsman GPO Box 442 CANBERRA ACT 2601

Via email: actfoi@ombudsman.gov.au

TCCS.FOI@act.gov.au | phone: (02) 620 72987 | www.act.gov.au

ACT Civil and Administrative Tribunal (ACAT) review

Under section 84 of the Act, if a decision is made under section 82 on an Ombudsman review, you may apply to the ACAT for review of the Ombudsman decision.

Further information may be obtained from ACAT at:

ACT Civil and Administrative Tribunal Level 4, 1 Moore Street GPO Box 370 CANBERRA CITY ACT 2601

www.acat.act.gov.au

Telephone: (02) 6207 1740

If you have any queries concerning the directorate's processing of your request, or would like further information, please contact the TCCS FOI team on (02) 6207 2987 or email to tccs.foi@act.gov.au.

Yours sincerely

Meghan Oldfield Information Officer

February 2022

FREEDOM OF INFORMATION REQUEST SCHEDULE

Please be aware that under the Freedom of Information Act 2016, some of the information provided to you will be released to the public through the ACT Government's Open Access Scheme. The Open Access release status column of the table below indicates what documents are intended for release online through open access.

Personal information or business affairs information will not be made available under this policy. If you think the content of your request would contain such information, please inform the contact officer immediately.

Information about what is published on open access is available online at: https://www.cityservices.act.gov.au/about-us/freedom of information/disclosure-log

Factors favouring non-disclosure:

Schedule 2.2(a)(ii) - prejudice the protection of an individual's right to privacy or any other right under the Human Rights Act 2016.

Parameters of the Request	File No
AUTHORISATION OF TEMPORARY TRAFFIC MANAGEMENT (TTM) PLANS CAMPBELL	FOI 22-003

Reference number	Page number	Description	Date	Status	Reason for non-release or deferral	Open Access release status
1	1-5	Authorisation of Temporary Traffic Management (TTM) Plans	18/10/2021	Partial access	Schedule 2.2 (a)(ii)	Documents to be published
2	6	Traffic Guidance Scheme – General Construction Arrangement Sheet 1 of 2	undated	Partial access	Schedule 2.2 (a)(ii)	
3	7	Traffic Guidance Scheme General Construction Arrangement Sheet 2 of 2	undated	Partial access	Schedule 2.2 (a)(ii)	

4	8	Traffic Guidance Scheme Vehicle Movement Plan	undated	Partial access	Schedule 2.2 (a)(ii)
5	9	Traffic Guidance Scheme Vehicle Movement Plan	undated	Partial access	Schedule 2.2 (a)(ii)
6	10	Traffic Guidance Scheme Vehicle Movement Plan	undated	Partial access	Schedule 2.2 (a)(ii)
7	11-33	Vital Design Solutions Traffic Management Plan General Construction Arrangement	12 October 2021	Partial access	Schedule 2.2 (a)(ii)

Total number of documents: 7

TM/

9650



<u>Authorisation of Temporary Traffic Management (TTM) Plans</u>

Hindmarsh

is authorised pursuant to Part 5 of Road Transport (Safety and Traffic Management) Act 1999 to install or display (or to interfere with, change or remove) the prescribed traffic control devices shown on the authorised TTM plans for the period of authorisation and for the daily authorised times for each TTM plan and in accordance with the attached conditions of authorisation.

A copy of this authorisation together with the plans authorised, the conditions of authorisation and the risk assessment must be available at the work site during working hours.

Period of authorisation

	From			То			
Date:	19/10/2021	Time:	06:00 AM	Date:	30/06/2022	Time:	06:00 PM

Authorised prescribed traffic control devices and daily authorised times

Authorised Plan	Devices authorised	Day/s	Times authorised
VS20089_C.11[8]	All prescribed traffic	Mon, Tue,	06:00 AM - 06:00 PM
VS20089_C.11a [1]	control devices	Wed, Thu,	19/10/2021 - 30/06/2022
24 hours	excluding	Fri, Sat,	
	T2-25	Sun	
	T1-34		
	T1-18		
	Traffic Controllers		

Authorised Plan	Devices authorised	Day/s	Times authorised
VS20089_C.11[8]	T2-25	Mon, Tue,	06:00 AM - 06:00 PM
VS20089_C.11a [1]	T1-34	Wed, Thu,	19/10/2021 - 30/06/2022
Daily	T1-18	Fri, Sat,	
	Traffic Controllers	Sun	

Date and time of footpath closure/s

	From			То			
Date:	01/02/2021	Time:	06:00 AM	Date:	30/06/2022	Time:	06:00 PM

All footpaths approved for closure

Constitution Avenue (northern side): in front of Block 32, Section 19 Campbell (71 Constitution Avenue).

Additional details on proposed daily working hours

This TMP has been submitted before under reference number 6425. TMP resubmitted as per RoadsACT request. The TGS is a permanent installation for the duration of works. Operating hours are: Monday - Friday: 0600 - 1800 Saturday: 0600 - 1800 Sunday & Public Holidays: As required (0600 - 1800)

Conditions of Authorisation:

This application supersedes current TTM authorisation 7223.

The ACT Government reserves the right to revoke this TTM application should there be any incidence of non-compliance to the conditions of authorisation listed.

National Capital Authority Works Approval will be required for any works undertaken on National or Designated land.

A record of dates and times temporary speed limits are in operation shall be kept, including any changes made, the name of personnel installing, changing or removing signs (see Section 2.5.3 Austroads Guide to Temporary Traffic Management).

Any permanent speed signs that contradict the temporary speed limit in the required zone shall be covered or removed. The contractor shall ensure all permanent speed signs have been reinstated as per the authorised TCD drawing at the completion of these works.

The contractor shall submit specific traffic guidance schemes for each stage of works associated with this development including the installation of this traffic guidance scheme.

Signs and devices shall be installed by a competent person who has the necessary training, skills and experience as defined in Austroads Guide to Temporary Traffic Management Part 8.

Site inspections and record keeping shall be undertaken and documented in accordance with the requirements of the Austroads Guide to Temporary Traffic Management Planning.

TCCSD will require a dilapidation report to be undertaken on the condition of the assets located within the road / road related area under the area of works as shown on the authorised TTM drawing. Any damage to the assets located above or below the ground will be repaired at the contractor's expense in accordance with TCCSD Specifications.

A Use of Public Land Application for Construction Activities will be required from TCCSD, City Services, Licensing and Compliance unit prior to any works commencing.

This work approval is granted for the following work activities only:

 Installation, modification and removal of traffic control devices in accord with an authorised temporary traffic management plan. • Excavation and construction on public unleased land

Note: All other land use requirements, such as material storage, site compounds and parking bay use, that require the use of public unleased land are likely to attract additional land use permits and associated fees. For further information please contact the Public Land Use Unit on 6205 8794 for further information.

It is a mandatory requirement that any person who undertakes on-site traffic control tasks has successfully completed a State or Territory road transport authority accredited traffic controller course provided by an accredited training provider.

Traffic controllers shall always keep their traffic controller's ticket with them on their person indicating their accreditation details. Traffic controllers are not authorised to undertake any on-site traffic controlling tasks unless they hold a valid accreditation as a traffic controller at the time.

Construction vehicles shall only enter and exit this site in a forward direction.

Construction vehicles shall not be permitted to enter and exit in a reverse direction under any circumstances without appropriate and authorised control measures being in place.

The contractor shall notify ACT Parking Operations parking.operations@act.gov.au
to advise of the location, dates and times when closures of regulatory parking control areas have been installed / removed. All temporary parking control signs shall be removed at the end of this project and regulatory parking control signage reinstated in accordance with the authorised TCD drawing.

The contractor shall only install or display (or to interfere with, change or remove) a prescribed traffic control device during the authorised working times. Prescribed traffic control devices shall be fully covered or removed at all other times.

The contractor shall ensure that all temporary signs and devices are removed at the completion of these works.

Where pedestrians including people with disabilities or visual impairment have to move through, past or around a work site or to cross the road within a work site they shall be provided with and directed to suitably constructed and protected temporary footpaths and crossing points or formal pedestrian crossings or refuges if warranted. **Temporary kerb ramps and footpath connections shall be constructed in accordance with TCCS Municipal Infrastructure Technical Specifications (MITS).**

Temporary signs authorised under this TTM application shall be installed on posts and be placed a minimum of 600 mm clear distance behind the kerb or footpath and erected a minimum of 2.2 m above the level of the kerb or footpath to the underside of the sign.

All redundant line marking shall be eradicated, and temporary line marking installed in accordance with TCCS Municipal Infrastructure Technical Specifications (MITS). At the completion of this project all temporary line marking shall be eradicated and

new line marking reinstated in accordance with the authorised TCD drawing and TCCS Municipal Infrastructure Technical Specifications (MTIS).

The principal contractor shall ensure that all directly affected businesses / residents and Government Agencies have been advised in writing prior to these works commencing This letter shall include the following information.

- Project details.
- Proposed commencement / completion dates
- Proposed site hours of operation.
- Principal contractors' details including contact numbers to answer any enquiries in relation to these works.

Access to commercial and residential properties including any driveways shall be maintained at all times unless agreed to otherwise with the property owners prior to works commencing.

All road safety barrier products used under this TTM application shall have a current acceptance status by Transport NSW, Roads and Maritime Services for use on classified roads.

Road safety barrier system shall be installed in accordance with the manufacturer's specifications.

Road safety barrier system shall have appropriate end terminal treatments installed as per the manufacturer's specifications.

The principal contractor shall identify areas where construction workers associated with this site can park legally in accordance with the Australian Road rules and this advice shall be communicated to all staff during induction / toolbox meetings during the course of the construction period. **Construction parking is not permitted on any of the following areas.**

- Footpaths
- Verges / Nature Strips
- Driveways
- Public Open Spaces

The contractor shall provide advice to Pedal Power ACT regarding changes to the Constitution Avenue on road cycle facility which will be place for the duration of the construction period for the information and awareness of their members.

Temporary speed cushions shall comply with the relevant Australian Standard and be installed in accordance with the manufacturer's specifications.

Delegate: Colin Evans Pos. No. 23592

Signature:

Date:

18/10/2021

(Delegate of the road transport authority)

THE AUTHORISATIONS

TTM plan authorisation	Authorised
Public unleased land Act work approved	Approved
Approval to use a road closure and Temporary public road closure	Yes

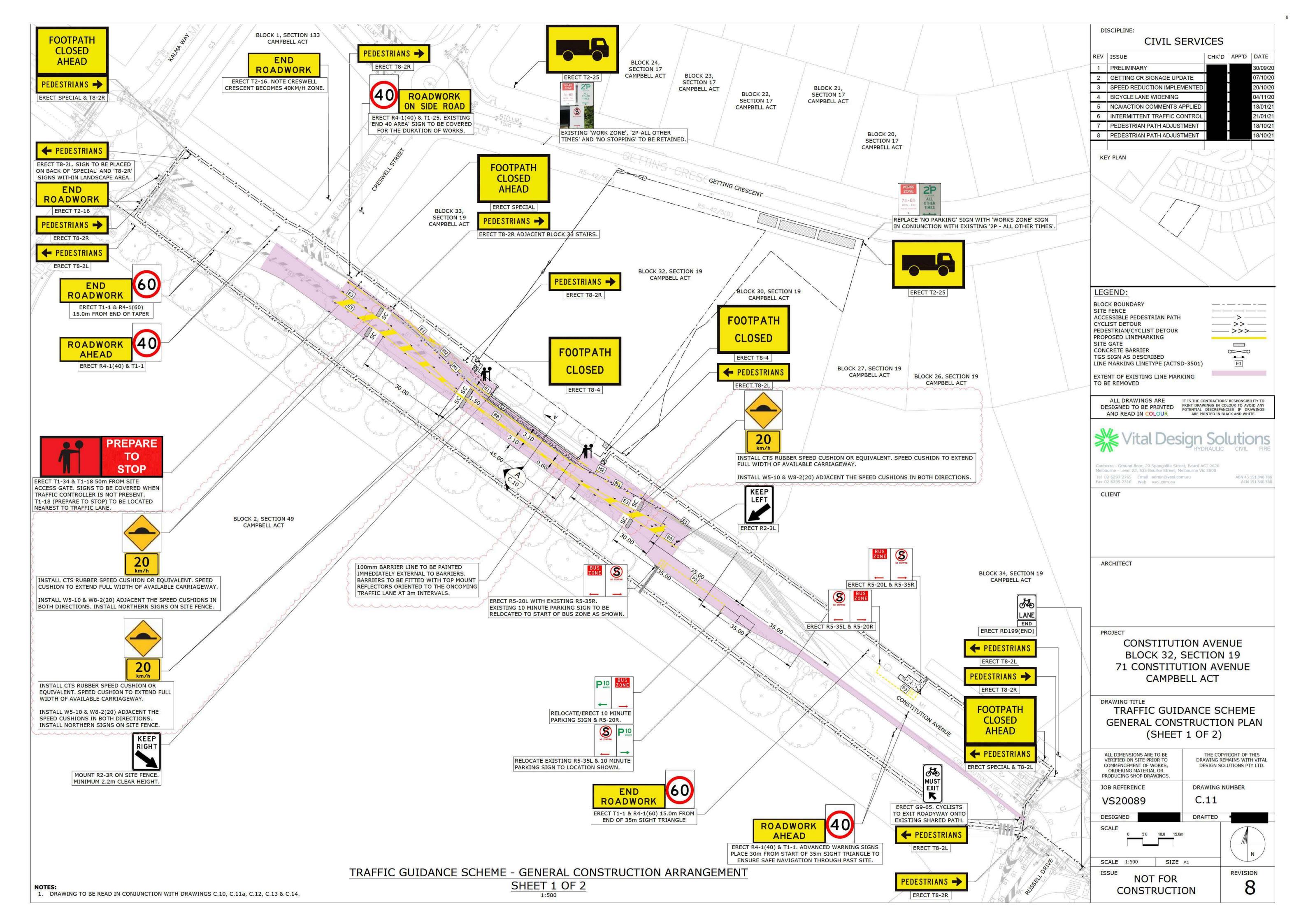
Area of Works

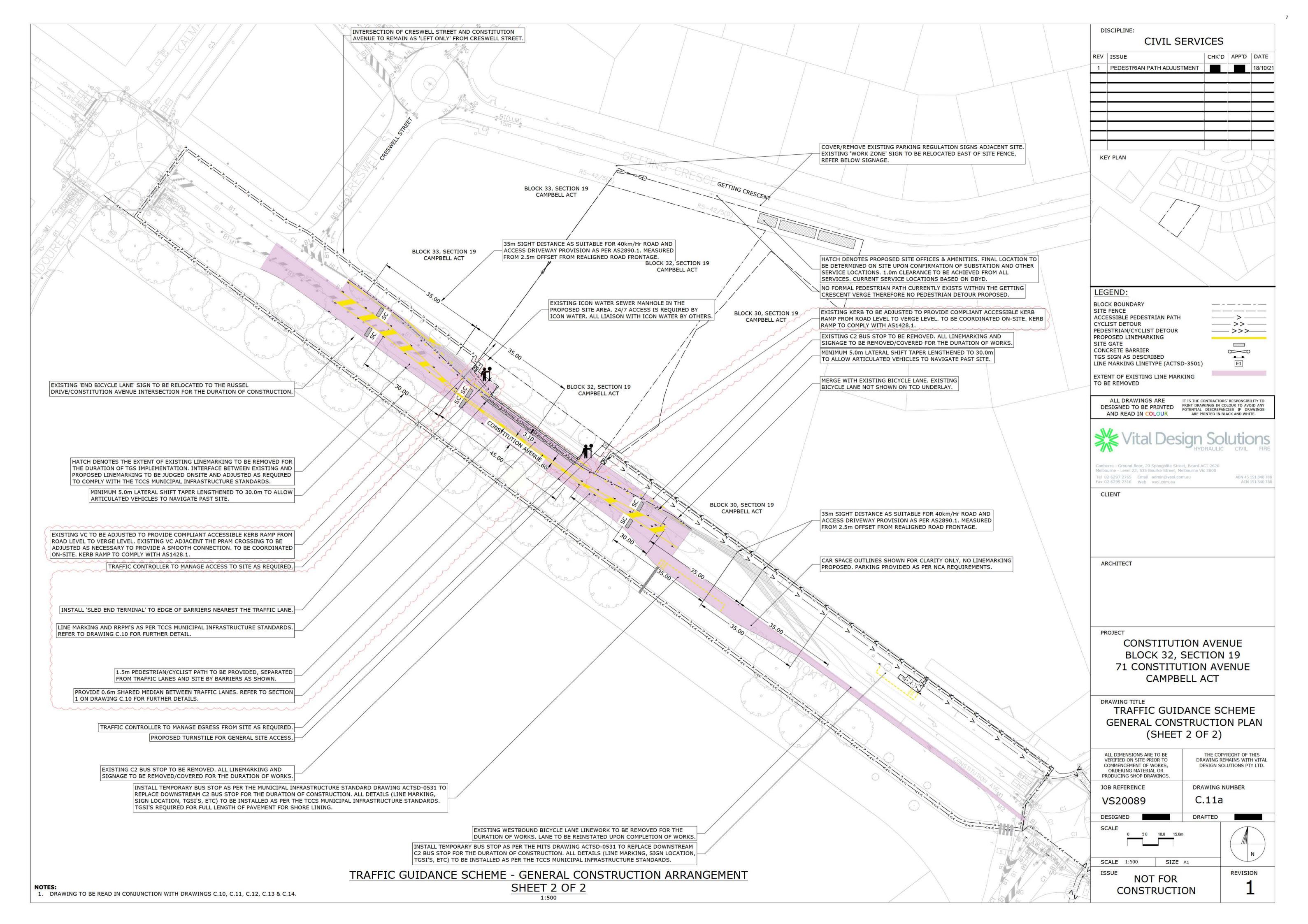
Suburb: CAMPBELL, Section number: 32, Block number: 19

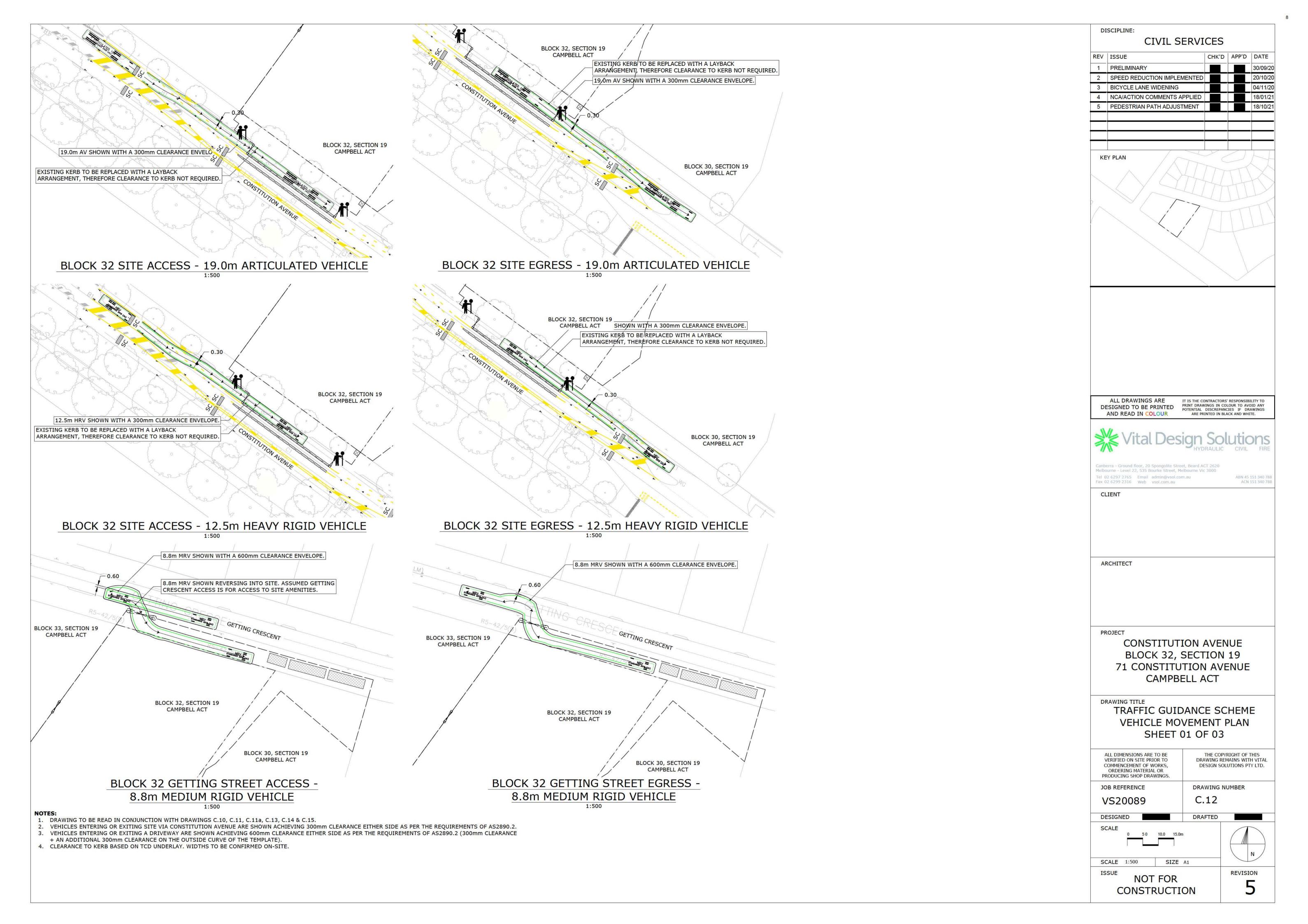
Additional streets and suburbs or blocks and sections where works are approved

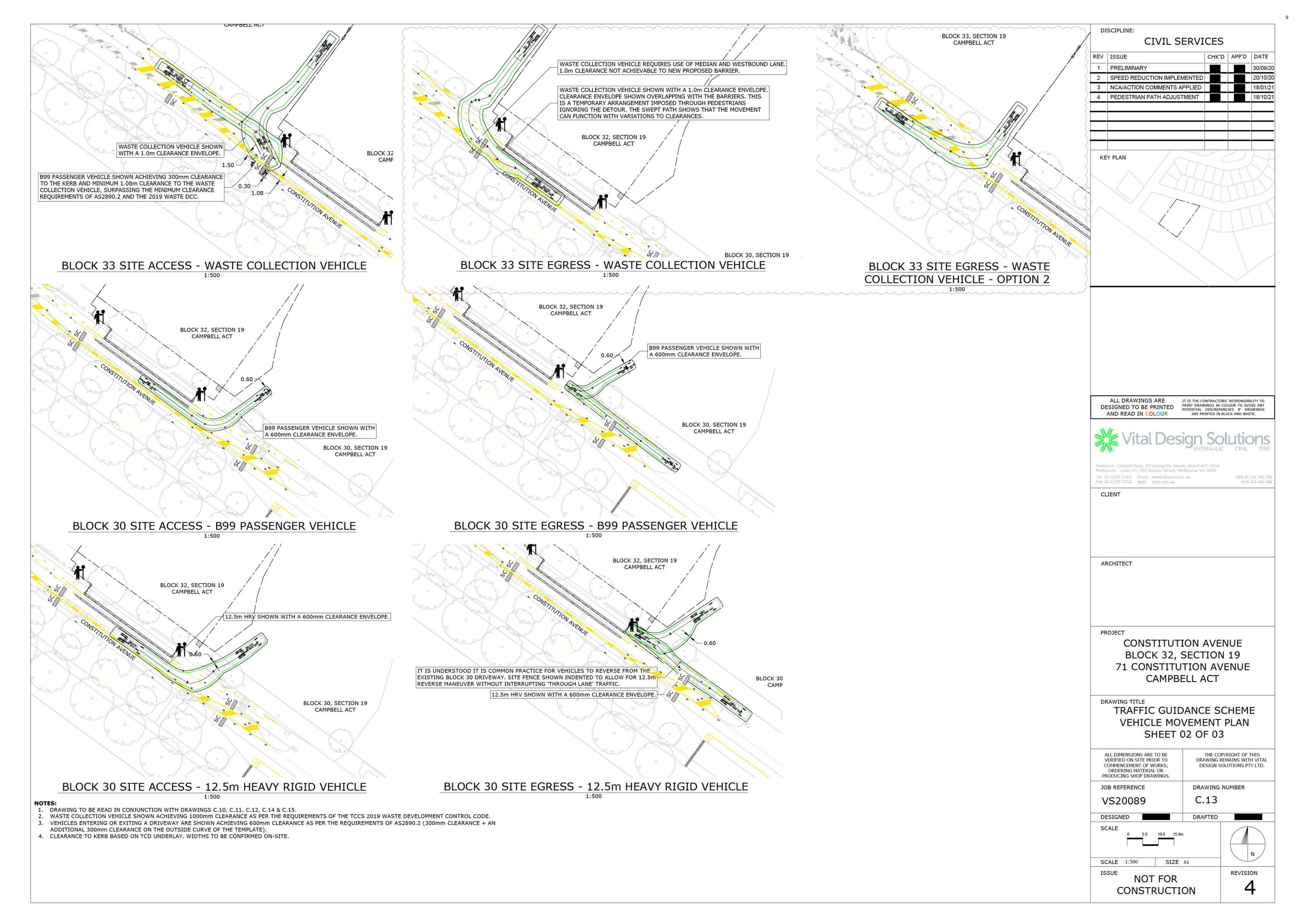
As per preivous submission

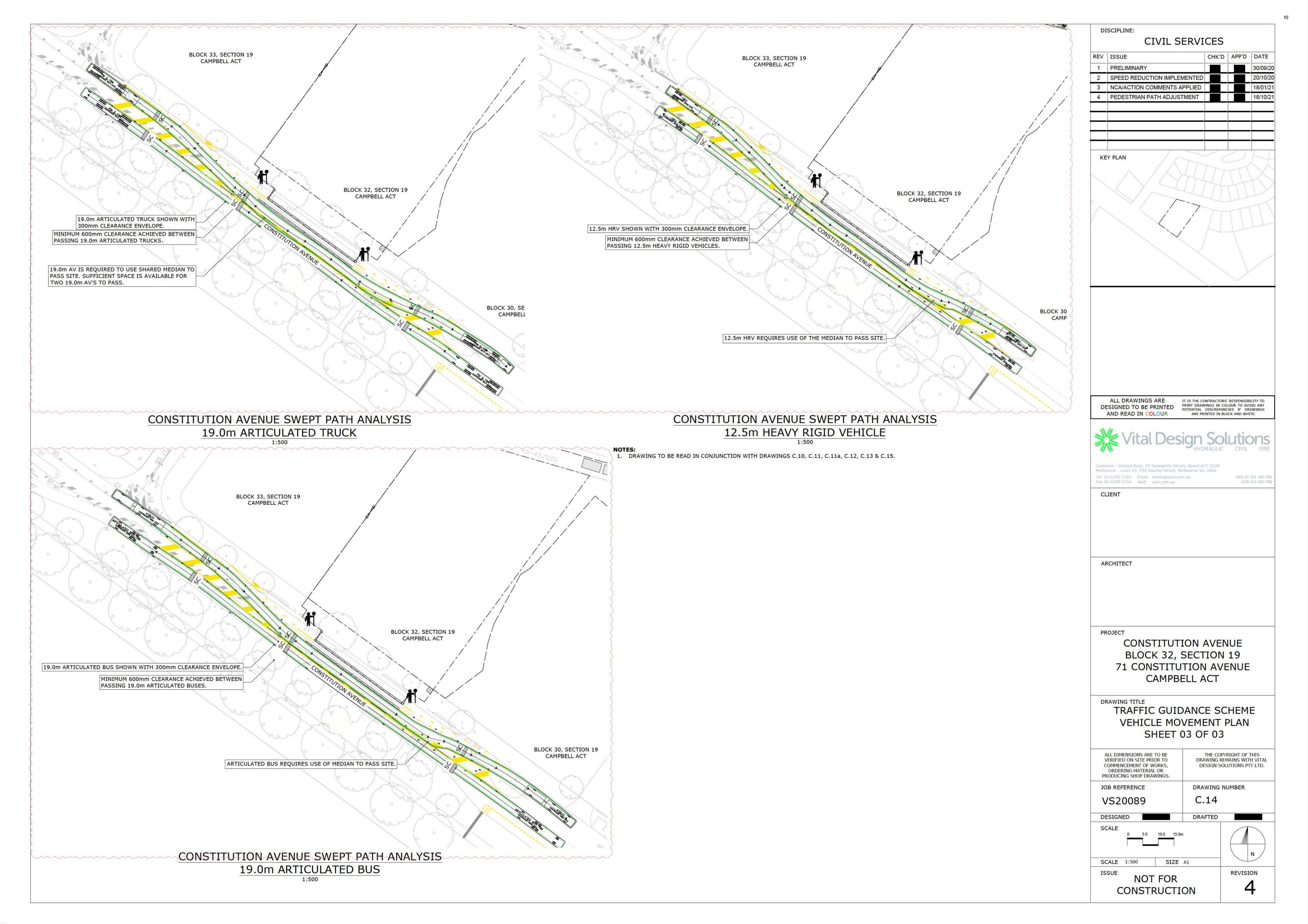
Contractor details
Organisation: Hindmarsh
Contact:
email:
Contact number:













Traffic Management Plan General Construction Arrangement

71C Block 32, Section 19 Campbell



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1.0 Scope of Traffic Management Plan

The following Traffic Management Plan relates specifically to the general construction works associated with the development of Block 32, Section 19 Campbell. The traffic guidance scheme (TGS) associated with this report is to be installed for the duration of construction as described in section 1.2 of this report.

1.1 Site Location and Description

The extent of works/site associated with the Traffic Management Plan is described on the Traffic Guidance Scheme associated with this Traffic Management Plan. The site is highlighted below in *Figure 1*.

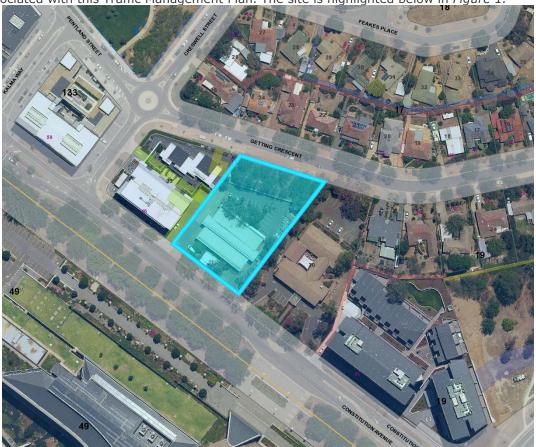


Figure 1: Site Location

1.2 Works Timing, Duration and Staging

The attached TGS and its associated elements are to be installed permanently for the duration of construction. Implementation of the TGS as follows:

- The developer has advised that construction is to begin ASAP.
- The developer has advised a tentative completion date of June 31st, 2021.

1.3 Statement of duty of care

VDS has designed the Traffic Management Plan and associated Traffic Guidance system in accordance with the Austroads Guide to Temporary Traffic Management and the associated duty of care to all road users and workers impacted by the proposed works

1.4 Site Induction and Training Plan

The principal contractor is responsible for inducting and training all relevant workers to the operation of the Temporary Traffic Management Plan, Traffic Guidance Systems, Vehicle Movement Plans and Construction Parking Plans. This is to be managed under the Principal Contractors induction and site management scheme.



1.5 Prestart Meeting

A prestart meeting is to be undertaken by the principal contractor and attended by all on-site traffic management personnel before commencing traffic management duties to ensure that activities, roles and responsibilities are clearly understood prior to work commencing:

- Direct briefing of traffic controller's role
- Details of Traffic Guidance Systems
- Contact Numbers and details of relevant people
- Breaks
- Traffic Monitoring instructions
- Incident Management procedures

Note, all of the above are to be provided/facilitate by the Principal Contractor.

1.6 Key Personnel

Key Personnel involved in the TMP include:

Contractor: Hindmarsh

TMP Designer Vital Design Solutions

- TMP Authoriser RoadsACT

Colin Evans (02 6207 6821)

1.7 Registers required on-site

The following registers are to be maintained on-site; this is to be facilitated by the principal contractor:

Table 1: Registers to be retained on-site

Key Personnel Register	Identify all key personnel and provide contact details for the relevant road infrastructure manager, the affected local government, the client, the main contractor, the project manager, the site supervisor, and any key subcontractors.
Incident Register	Record all incidents that occur on site, including date and time of the incident, date- stamped photographs of signs and devices in the vicinity of the incident.
Variations Register	Record any modifications to approved traffic management treatments, including reason for the modification and departure from the Austroads Guide, date, time, modification made and residual risk
Daily Inspection Register	Record the time and date at which traffic controls were erected at the start of the day, when changes to controls occurred and why the changes were made, and any observations associated with traffic controls and their impacts on road users or adjacent properties.
Complaints Register	Records any complaints received including party making the complaint, contact details, nature of the complaint, and any follow up actions that have been identified and subsequently taken.
Consultation Register	Identify and provide contact details for the stakeholders who have been consulted during the preparation of the TMP. Also provide an overview of the main issues raised during consultation.



1.8 Roles and Responsibilities

See below general roles and responsibilities associated with the project as per the Austroads Guide for Temporary Traffic Management.

Table 2: Roles and Responsibilities

	and Responsibilities
Role	Responsibilities
Description	
Project Manager	 Ensure all traffic control measures of the TMP are placed and maintained in accordance with the TMP and the relevant Acts, Codes, Standards and Guidelines Ensure suitable communication and consultation with the affected stakeholders is maintained at all times Ensure inspections of the traffic controls are undertaken in accordance with the TMP and results recorded. Detail any variations and reasons for variations. Review feedback from field inspections, worksite personnel and members of the public. Take action to amend the traffic control measures as appropriate following approval from the road infrastructure manager. Arrange and/or undertake any necessary audits and incident investigations.
Site supervisor	Responsible for overseeing the day to day activities and has responsibility for practical application of the TMP. The Site Supervisors responsibilities include: - Instruct workers on the relevant safety standards, including the correct wearing of high visibility safety vests - Ensure Traffic Control Measures are implemented and maintained in accordance with the TMP - Undertake and submit the required inspection and evaluation reports to management - Render assistance to road users and stakeholders when incidences arising out of the works affect the network performance or the safety of road users and workers - Take appropriate action to correct unsafe conditions, including any necessary modifications to the TMP.
Traffic Management Personnel	 Have available at least one person on site who is qualified to implement the TMP to ensure the traffic management devices are set out in accordance with the TMP. Have at least one person who is qualified to amend the TMP available to attend the site at short notice at all times to manage variations, contingencies, and emergencies, and to take overall responsibility for the traffic management.
Traffic	Traffic Controllers control road users to avoid conflict with plant, workers, traffic, and
Controllers	vulnerable road users, and stop and direct traffic in emergency situations. Traffic controller responsibilities include: - Operate in accordance with Part 7 of the Austroads Guide to Temporary Traffic Management and any jurisdiction-specific legislation and regulation, including regarding operation and accreditation.
Workers and Subcontractors	 Correctly wear high visibility vests, in addition to other protective equipment required (e.g. footwear, eye protection, helmet, sun protection) at all times whilst on the worksite Comply with the requirements of the TMP and ensure no activity is undertaken that will endanger the safety of other workers or the general public Enter and leave the site by approved routes and in accordance with safe work practices

All workers are to operate in accordance with the Principal Contractors Work Health and Safety Management Plan for the project.

1.9 Incident Procedures

All workers are to follow the Principal Contractors procedures in the event of an incident occurring including:

- First Aid Response
- Emergency Services Contact
- Clearing the site

All incidents are to be reported as per the Principal Contractors procedures including date, time, and time stamped photos of signs near the incident.



2.0 Documentation included - Schedule

Documentation included in this submission includes:

- Traffic Management Plan (This document)
- Traffic Guidance System
 - VS20089_C.10 Traffic Guidance Scheme Notes and Details
 - VS20089_C.11 Traffic Guidance Scheme General Construction Plan
- Vehicle Movement Plan
 - o VS20089_C.12 Vehicle Movement Plan Sheet 01 of 03
 - o VS20089_C.13 Vehicle Movement Plan Sheet 02 of 03
 - o VS20089_C.14 Vehicle Movement Plan Sheet 03 of 03
- Construction Parking Plan
 - o VS20089_C.15 Construction Vehicle Parking Plan



2.0 Introductory Activities

The following section describes the introductory activities undertaken during development of this Traffic Management Plan as per the requirements of Section 3.2.1 of Austroads Guide to Temporary Traffic Management Part 2: Traffic Management Planning.

A site inspection was undertaken by Vital Design Solutions on 07/10/2020 to ensure that the Traffic Management Plan proposed is developed for site specific conditions.

2.1 Pavement Condition

The pavement to be used will remain unchanged in regard to public road use. The general condition of the pavements is described below:

- Constitution Avenue:
 - o Is a well trafficked, asphalt paved road in a good state of repair.
 - o No immediate risks are presented by the condition of Constitution Avenue.
- Getting Crescent:
 - o Is a well trafficked, asphalt paved road in a good state of repair.
 - $\circ\quad$ No immediate risks are presented by the condition of Getting Crescent.

2.2 Road Layout & Geometry

The road layout is as described on the ACT Traffic Control Device Database. The roads applicable to this Traffic Management Plan include:

- Constitution Avenue
 - o A two lane, two-way roadway with a median turning lane adjacent site.
 - o Constitution Avenue is accessed via a signalised intersection from Wendouree Drive and Kalma Way to the Northwest, a T intersection at Creswell Crescent (restricted egress) to the Northwest and a signalised intersection from Russel Drive and Blamey Crescent to the Southeast.
- Getting Crescent
 - o A two lane, two-way roadway.
 - Getting Crescent is accessed via a roundabout from Creswell Street to the West, Creswell Street
 T-intersection to the North and Jacka Crescent to the East.

We understand that Constitution Avenue is designed for the use of large buses associated with ACTION Bus routes.

The general road layout is described on the underlays of the Traffic Guidance System Plans associated with this submission.

2.3 Sight Distance

The sight distance along Constitution Avenue and Getting Crescent approaching the proposed site access and Traffic Control Works is generally in good repair. It is noted that there are large trees on the southern verge and medium trees on the northern verge of Constitution Avenue and medium trees on both sides of Getting Crescent.

Generally speaking, all Traffic Management Signs will need to be located on the carriageway side of the trees to ensure visibility of any Traffic Control Devices.

2.4 Vulnerable Road User facilities

The attached TGS demonstrates the changes made to vulnerable road user facilities, listed below:

- Existing Westbound Bicycle lane on Constitution Avenue to be closed for the duration of construction. Cyclists are directed to use the existing shared path on the southern verge.
- Existing Eastbound Bicycle lane layout on Constitution Avenue has been altered to suit the proposed arrangement.
- Getting Crescent bicycles share the carriageway with general traffic (no separate cycle lane).
- Pedestrians are provided with footpaths in the verge.

2.5 Existing Signs

Our site inspection suggests that the existing on-site Traffic Control Signs are generally in accordance with the ACT Traffic Control Device Database.

Vital Design Solutions is not engaged to undertake a full audit of the ACT Database against the existing signs installed on-site and therefore our general commentary is sufficient.



The attached TGS demonstrates a minor amendment to the existing signage on Getting Crescent involving:

- Relocation of existing 'Work Zone' sign further East (extending work zone space);
- Temporary removal/covering of existing regulatory parking signs.

2.6 Lighting

There are existing Streetlighting facilities on Constitution Avenue and Getting Crescent.

2.6 Abutting Accesses

Block 33, Section 19, West of Site, currently shares a vehicular crossing with the existing development on block 32, Section 19. The driveway becomes separated at the boundary by a small retaining wall.

2.7 Adjoining Road Networks

Constitution Avenue and Getting Crescent are connected via Creswell Street. The Creswell Street egress to Constitution Avenue is a 'left only' intersection.

2.8 Traffic Assessment

VDS have received traffic data from the ACT Government for the two major intersections on Constitution Avenue, East and West of site.

The counts were undertaken from Monday 14th September to Friday 20th September; one working week. The data has been analysed to determine the approximate number of vehicles traversing Constitution avenue per hour.

Constitution Avenue/Blamey Crescent/Russel Drive Intersection - Traffic Count

TCS 161

RUSSEL Q16
CIT SS=47

8 PHASES

A E

C F1

D F2

The data for sensor pads 3 and 4 above suggest the maximum Eastbound vehicular traffic on Constitution Avenue does not currently exceed 500 vehicles per hour. Noting that the two Eastbound lanes on Constitution Avenue diverge from a single lane further west, the desirable number of open lanes is to be 1. This aligns with the existing arrangement.





The data for sensor pads 1 and 3 above suggest the maximum Westbound vehicular traffic on Constitution Avenue does not currently exceed 500 vehicles per hour. Noting that the two Westbound lanes on Constitution Avenue diverge from a single lane further west, the desirable number of open lanes is to be 1. This aligns with the existing arrangement.

2.9 Existing Speed Zone

The roads adjacent the proposed works operate under the below speed conditions:

- Constitution Avenue 60km/hr (Signposted)
- Getting Crescent 50km/hr (Residential Street)



3.0 Risk Assessment

The site and works specific Risk Assessment for the Traffic Management Plan associated with the elevated scaffold installation is attached as *Appendix A*, this includes identification of risks and management considerations used in development of the Traffic Guidance Schemes, Vehicle Movement Plans and Construction Parking Plan.

Within the context of risk management, the distinction between hazard and risk must be understood:

- Hazard.
 - Is any aspect that can cause harm or damage to humans, property, or the environment. In the context of TTM, a hazard is focussed on any item or event that affects the safety of road workers or road users.
- Risk
 - o Is the probability that exposure to a hazard will lead to a negative consequence. Importantly a hazard poses no risk if there is no exposure to the hazard. Risks can include a range of other items that are risks to a project but may not be a safety risk

The risk assessment in this TMP is focussed on the operational safety risk associated with traffic and the risks associated with traffic flow and impact to local business and residents. Refer to *Appendix A*.

3.1 Risk Management Context and Process

The context of risk management in this case is represented by the potential for uncontrolled interaction between passing vehicles and the work site or between passing traffic and the work site. This exists for all road users including motorists, motorcyclists, pedestrians, cyclists, and workers.

The risk management process applied includes:

- Step 1 Determine site risk rating
- Step 2 Determine required level of planning
- Step 3 Consider risk at the work site
- Step 4 Consider Risk Control Measures
- Step 5 Select Risk Controls

The following information has been provided from the community.

3.2 Road Category & Risk Classification

Vital Design Solutions estimation of the road categories as per the Austroads Guide to Temporary Traffic Management: Part 8 is as per the below:

- Constitution Avenue Category 2
- Getting Crescent Category 1

These estimates are based on traffic counts provided by the ACT Government and may not accurately describe the current volume of traffic being generated in the area.

Due to:

- The separation of works from the roadway via barriers
- The nature of works requiring exclusion of pedestrians; and
- The permanent installation of line marking associated with the works;

The proposed works associated with this development are regarded as 'low' risk. However, the requirement of the verge closure and road encroachment require a site specific TGS.

3.3 Risk Management Strategy & Summary

Given the high-risk nature of heavy vehicle operations for the delivery of goods and manoeuvring of said goods, the following Risk Management Strategies have been adopted for the duration of works:

- Elimination of Pedestrians etc from the general works site area
- Separation of the public from site via concrete barriers and high fencing.

These strategies, as applied via the Traffic Guidance Scheme proposed, take all of the potential risks discussed in *Appendix A* and reduce the risk classification from original to low or negligible while not impacting the public significantly.



4.0 **Input Data**

The following input data has been collected as per Table 3.3 of Part 2 of the Austroads Guide to Temporary Traffic Management.

4.1 Contractor

The following information has bee provided by the contractor (Lendlease):

- Works Duration
 - Permanent
- Start and Finish dates as per application
- Project Staging Requirements include
 - o No staging proposed due to the permanent nature of the TGS implementation.
- Traffic requirements within site
 - None specific, only access for deliveries NA
- Materials storage
- Works procedures to comply with
 - To be managed by Hindmarsh

4.2 Community

The following information has been provided from the community:

- **Property Access**
 - o Remains unaffected generally
 - Consideration for access to neighbouring properties was considered in design. Refer to the Traffic Movement Plan for Swept Path Analysis.

4.2 Road Users

Refer to Section 2.8 of this Traffic Management Plan for the results of the traffic survey.

5.0 Consultation

The proposed Traffic Management Plan has been developed in accordance with the site requirements as advised by Hindmarsh.

6.0 **Consideration of other options**

Numerous other options have been considered for:

- Site Extents
- Public Traffic and Pedestrian interaction with site included review of through/past TGS
- Alternate Construction Vehicle Access arrangements and associated TGS arrangements
- A number of bus stop locations have been considered. Discussions with the NCA and ACTION Buses have been undertaken and the proposed locations subsequently approved by both entities.

The required site area and associated Risk Assessment has shown that the documented approach is the most appropriate methodology to achieve the project requirements.



7.0 Pedestrians ignoring detour - Ministerial Level Complaint

RoadsACT advised the project team that a Ministerial Level complaint has been received in relation to pedestrians utilising the on-road, South-East bound cycle lane adjacent site and the northern verge of Constitution Ave. This is in direct contradiction to the TGS measures and the detour proposed.

Discussions have shown that the TGS is to be updated to provide for pedestrians in this area and reduce their risk where possible. Following discussions with RoadsACT and ACTION Buses have found the following to be an appropriate risk reduction strategy given the constraints applicable.

- Retention of site fence in the current location
 - o This is due to the highly restricted nature of the construction servicing area and the requirement for on-going servicing
- Retention of the existing pedestrian detour signage
 - o This remains the preferred strategy for pedestrian movements in this area
- Provision of a 1.5m clear path external to the barriers
 - o This is the minimum width of path in the ACT under TCCS Standards
 - o It is not proposed as a fully functional shared path for cyclists and pedestrians as the space requirements are not possible to be provided under the conflicting stakeholder constraints and requirements
- Provision of barriers to separate the 1.5m path from the vehicular carriageway
 - o This provides a reduced risk relative to the current arrangement for pedestrians in terms of interaction with vehicles within the carriageway
 - The barriers will be lead with a SLED End Terminal to reduce the risk to motorists approaching the barriers.
 - There is no opportunity to provide an exclusion zone behind the barriers due to the conflicting stakeholder constraints and requirements
- Provision of speed cushions within the Temporary Traffic Management arrangement to induce the low speed zone adjacent site
- Overlapping of the 3.7m wide lanes required by ACTION buses by 600mm
 - This will lead to a provision of:
 - 2 x 3.1m Lanes (One each way)
 - A 600mm painted median that will allow for the 3.7m width for buses in one direction at a time.
 - This can be managed further by ACTION buses by informing their drivers to not pass each other in front of the site.
 - ACTION buses has been advised of this additional management strategy

The above and redocumented traffic measures are proposed as a risk reduction to the current in place operation of the TGS due to pedestrians ignoring the detour. This does not eliminate the risk.

The above measures have been discussed with RoadsACT and ACTION Buses and has been agreed as the best possible outcome given the constraints at hand.



Appendix A: Common Issues and Associated Risks



Issue	Potential Risk	Site Specific Impact	Proposed Management of Risk
Vulnerable Road Users	1 Stellitar Mar	one openine ampace	11000000 Hallagement of Riok
Pedestrians, Cyclists, People with	Unable to pass safely past the site	The closure of the verge directly	Detours with an accessible path of travel provided to guide pedestrians around the work site.
disabilities and other vulnerable	using existing paths	adjacent site to exclude the pedestrians	Detours with an accessible path of travel provided to guide pedestrians around the work site.
road users such as children,	using existing patris	from the site.	Update: For pedestrians ignoring the detour, additional barriers have been provided to reduce the risk they
parents with prams, users of		from the site.	are taking. This is described in the above report.
small-wheeled vehicles and		The closed ways autombs town any vilv	are taking. This is described in the above report.
		The closed verge extents temporarily	
mobility aides and the elderly		close the accessible path of travel along	
Authority to a compared to the contract of the section of		the northern Constitution Avenue verge.	and your borough of the Proposition of the proposit
Unacceptable length detour	Detours have a much larger impact on	Detours have been proposed for	The length of pedestrian detours is acceptable and well signposted to guide pedestrians.
	people walking.	pedestrians, the length of which is	
		acceptable.	Update: For pedestrians ignoring the detour, additional barriers have been provided to reduce the risk they
			are taking. This is described in the above report.
Path Users			
Clear direction for path users	Unfamiliar and illegible paths which are	The detours use existing paths within the	The use of existing alternate paths within the precinct to guide pedestrians to/from and the application of
	not used by path users	precinct and are well signposted.	appropriate signs mitigates this risk.
			Update: For pedestrians ignoring the detour, additional barriers have been provided to reduce the risk they
			are taking. This is described in the above report.
Surfacing of Temporary Paths	Surface not appropriate for prams,	Trip hazards	NA - Not applicable as there are no temporary paths
	storllers, wheelchairs and the visually		
	impaired		
Location of Pedestrian Crossings	Crossing position unfamiliar to path	Unpredictable pedestrian behaviour	NA - Only existing crossing points utilised
	users	when crossing roads	
Site/Location			
Site Access	Compromised safe access to worksite	Worker injury due to unexpected vehicle	The site is fully enclosed to prevent access from unexpected vehicles and pedestrians. Therefore the risk of
Site Access	Compromised sale access to worksite	entry to worksite	unexpected vehicles is minimized.
		Chary to Workshite	'Keep Left' Signage proposed near the site access to avoid any confusion through the site approach lateral
			taper.
Lawath of Washalta	Forester langel of weathers	Description deliver behavior as a cibia	
Length of Worksite	Excessive length of worksite	Dangerous driver behaviour resulting from excessive length of queues because	NA - The site length is relatively short (within length of block).
		of time needed to manage reversible	
		flow.	
		Infrequently used property access in the	
		middle of the site may not be adequately	
		monitored resulting in unsafe site entry.	
		End of queue collisions.	
Traffic Impacts			
Traffic queues and delays	Unacceptably long delays to road users	Aggressive driver behavior and lack of	NA – No change to traffic speed proposed.
	X X1 × 0	community acceptance of worksite	
End of Queue Collisions	Inadequate warning of traffic queue	Multiple vehicles in queue affected by	NA – No stopping required.
	results in collision	collision resulting in injury and property	
		damage	
Detouring of traffic on a major	Volume of detoured traffic has	Property and business access is	NA - No detouring of traffic on major multi lane road.
multi lane road	unacceptable impact on surrounding	compromised	
	areas	Increased volume of traffic on residential	
	Detoured traffic experiences	streets leading to compromised safety	
	unacceptable delays	outcomes for residents	
Interference with the operation of	Compromised legibility of traffic	Road user confusion leading to increased	NA - No interference with existing traffic controls proposed.
permanent traffic signals	controls for road users	likelihood of traffic incidents	145 - 16 interpretation with existing traine controls proposed.
			NA No complete electro of turning operation lands
Complete closure of turning lanes	Removal of option for road users	Road user confusion leading to increased	NA - No complete closure of turning specific lanes.
	Compromised legibility of road layout	likelihood of traffic incidents	
	for road users	Compromised property and business	
		access leading to lack of community	
		acceptance of worksite	
		Increase congestion on other areas of	
		the road network	
6:1-1	Sight distance or vision of road user	Injury to road users and roadworkers as	Site is expected to operate throughout the day, during standard daylight hours only so there is no low
Site in operation during times of		F 1 1 7 2	visibility period expected.
low visibility	compromised on approach to	a consequence of reduced stopping	visibility period expected.
		distance	
	compromised on approach to worksite/worksite approach		Should the works extend into multiple shifts, the works are proposed only to be undertaken during standard
			Should the works extend into multiple shifts, the works are proposed only to be undertaken during standard operation hours. The TGS has been designed suitably to allow for the closure to remain in place overnight including the



<u> </u>		90	
Incorrect placement of devices	Sight distance or vision of road user compromised on approach to worksite	Injury to road users and roadworkers as a consequence of reduced stopping distance	Devices are to be installed as per the TGS. TGS has been designed in accordance with the Austroads guide to TTMP.
Lane Availability			
Need to maintain a minimum	Traffic volume not adequately	Road User confusion leading to increased	No permanent closures are required for the duration of the works.
number of available lanes	accommodated	likelihood of traffic incidents Compromised property and business access leading to lack of community acceptance of worksite. Increased congestion on other areas of the road network	Traffic Counts suggest a minimum of one lane is required to be maintained in each direction. This has been maintained. Update: The shared lane width availability for buses has been discussed with RoadsACT and ACTION buses and agreed. Described in the above report.
Closure of high volume traffic	Inadequate provision made for high	Road structure being used is above	NA - No closure of high volume traffic lanes
lanes and impact on remaining traffic lanes	volume of traffic Volume of traffic in remaining lanes becomes unacceptably high	design capacity Extensive delays on road network leading to increased travel times	
Times of Operation			
Periods in which work can and	Work occurs at inappropriate times of	Disruption to residential areas.	Works are to be undertaken during standard operating hours.
cannot occur	the day	Interference with known peak traffic times Frequent interference with usual business activity Dust and noise impacts on surrounding areas	The works are generally undertaken on site, minimal traffic expected to add to the traffic generation around site.
Requirement to implement the	Staff fatigue	Decreased concentration of road workers	NA – Standard shift times
TMP for more than 14 hours within a single shift		leading to increased likelihood of accidents	
Speed Choices		accidents	
Credible speed limits considering	Road users travel at inappropriate	Increased likelihood and severity of	Speed is reduced to 40km/hr adjacent site.
the safety of workers and road	speeds due to lack of understanding of	incidents	STATE OF THE STATE
users	applicable speed limits		Update: Speed cushions have been provided to induce the lower speed zone.
Specifications, Standards, Rules			
Clarity of applicable specifications, standards rules and policies. Some documents may change from project to project.	Application of incorrect or expired specifications, standards, rules and policies. Older works may be governed by older standards, roles, specifications and/or policies	Confusion regarding mandatory safety regulations leading to inconsistent application. Worksite not in line with required Safety Standards.	Worksite is designed in accordance with the Austroads Guide to Temporary Traffic Management and AS1742.3. These are the only applicable standards for Temporary Traffic Management Planning in the ACT.
Stakeholders			
Stakeholders must be consulted regarding the project and its impacts Environmental Risk	Stakeholder opposition to project	Delays as complaints are addressed and resolved	Vital Design Solutions has been engaged to prepare a Traffic Management Plan as per the project requirements by Hindmarsh.
Existing Vegetation	Obscured position of signs and devices	Road User is unaware when approaching changed traffic conditions (e.g. taper)	Generally, the vegetation of the approach roads is set back from the carriageway allowing sufficient space for the installation of signs in visible locations.
Shadowing, fog or glare on roads in East-West direction	Impact on visibility of traffic control devices	Road user collides with work equipment parked in the shoulder	No work equipment is to be parked in the shoulder, therefore there is no risk of collision.
Inclement weather or smoke	Impact on visibility of traffic control devices Change in condition of road surface	Traffic speed has not been reduced adequately resulting in loss of driver control of motor vehicle	Existing speed limit of 50km/hr on Getting Crescent is suitable for the proposed works. Existing speed limit of 60km/hr on Constitution Avenue is suitable for the proposed works.
Night Conditions	Reduced legibility of worksite or visual overload with retroreflective devices	Confusion as to intent of signage resulting in incidents	No night work proposed therefore no risk to workers at night. The static layout has been designed suitably.
Conflict between existing signage or infrastructure and proposed temporary signage	Compromised legibility of worksite	Confusion as to intent of signage resulting in incidents	The existing sign work is generally in accordance with the ACT Traffic Control Device database and the proposed signs have been designed in co-ordination with this. Any signs to be covered have been noted accordingly on the TGS.
Personnel Access	Han of the name of the state of	Chadam nahiala sallistas mutosassassas	Consul site and formation and the formation of formation and the state of the state
Requirement for construction traffic to exit and enter the traffic stream	Use of inappropriate exit and entry points Unsafe exit and entry to the traffic stream	Shadow vehicle collides with general traffic leading to road user or road worker injury.	General site access/egress is proposed as forward in and forward out, reducing risk by the elimination of reverse manoeuvres from site. Sight distances provided where necessary.



Site constraints with no escape	Workers cannot escape traffic incidents	Worker is injured as a result of traffic	Workers have adequate space to escape any traffic incidents on-site.
route for workers or traffic	on site	incident on-site	Temporary fencing can easily be removed in the event of an emergency.
controllers			
Emergency Vehicle Access	In the second	l	
Emergency vehicle access to site	Delay to emergency services travelling through site Delay to emergency services attending emergencies on site	Emergency services unable to respond to emergencies in a timely manner.	The site does not affect the existing level of service on Constitution Avenue or Getting Crescent. Emergency Vehicles can access site quickly via the proposed access point.
Public Transport			
Bus stops, tram stops and railway crossings located within the traffic control zone	Impact on provision of usual public transport services	Negative community perception of impact of worksite Unpredictable public transport passenger movements near the worksite.	Bus stops in both directions on Constitution Avenue have been relocated further away from site to avoid congestion, confusion and risk. All signage proposed to be updated and temporary bus stops installed with the required signage. Bus stops have generally been relocated only a short distance from the existing location. Bus stops located as per the locations agreed with NCA and ACTION. Additional TGSI's provided on the bus stop adjacent ASIO to allow shore lining due to lack of path edge. Update: The shared lane width availability for buses has been discussed with RoadsACT and ACTION buses
			and agreed. Described in the above report.
Access to adjoining developmen			
Adjoining properties with access near or at the site	Compromised access to adjoining development for property owners and occupiers	Decreased community acceptance of presence of worksite	Access to both neighbouring properties has been assessed as part of the vehicle movement plan ensuring safe and effective access/egress to waste vehicles, Heavy rigid vehicles and general passenger vehicles.
Rural Area			
Presence of stock crossing	Disruption of essential stock crossing times	Disruption of local, rural economic activity	NA – Works are not in a rural area
Low quality of road surfacing	Existing road surface unsafe for worksite	Damage to worksite equipment and vehicle	NA – Works are not in a rural area
Existing Parking Facilities			
Parking facilities exist within the proposed temporary worksite	Reduction in available parking facilities in the local area	Illegal or unsafe parking practices may occur if alternative parking and/or clear	NA - Worksite does not incorporate existing parking areas.
		signage is note provided	Construction Parking Plan has been designed to allow for parking elsewhere.
Impact on adjoining road work	T =		
Change of traffic flow impacts on surrounding road network	Excessive queue lengths Excessive delays	Impact on road user travel time Congestion Frustration with presence of worksite leading to decreased community acceptance	NA – Works are not expected to halt the flow of traffic.
Heavy and oversize vehicle and			
Accommodation of truck traffic and oversized loads	Inadequate lane widths Inadequate provision for turning movements Inadequate vertical alignments	Turning Truck catches parked vehicles in the shoulder.	Swept path analysis has been undertaken as part of the Vehicle Movement Plan demonstrating heavy vehicles and articulated vehicles navigating past site and through site with no issues.
Other issues as specified by Roa			
NA - none identified	NA - none identified	NA - none identified	NA – none identified

Appendix B: Risk Matrix	c – Likelihood Descri	ptions, Consequence	Descriptions & Matrix

The following are extracts from Austroads Guide to Temporary Traffic Management in relation to Risk Classification.

Table 2.3: Risk matrix - likelihood descriptions

Likelihood	Description
Almost certain	 Expected to occur in most circumstances or Expected to occur at least 8 in 10 times the event or action occurs, i.e. more than a 80% chance of occurrence or Will probably occur with a frequency in excess of 10 times per year.
Likely	 Expected to occur multiple times during any given year or Expected to occur between 8 in 10 and 1 in 10 times the event or action occurs, i.e. between a 10% to 80% chance of occurrence or This risk is known to occur often but less than 10 times per year
Possible	 Expected to occur once during any given year or Expected to occur between 1 in 10 and 1 in 100 times the event or action occurs, i.e. 1% to 10% chance of occurrence or This risk is known to have occurred on occasions
Unlikely	 Expected to occur once every 1 to10 years or Expected to occur between 1 in 100 and 1 in 1000 times the event or action occurs, i.e. 0.1% to 1.0% chance of occurrence or This risk could occur but not often
Rare	 Not expected to occur in the next 10 years ie less than once every 10 years or Expected to occur less than 1 in 1000 times the event or action occurs, i.e. less than 0.1% chance of occurrence or It is unusual that this risk occurs, but it has happened

Source: Modified from Roads and Maritime Services (2018).

Table 2.4: Risk matrix - consequence descriptions

Rating	Traffic Impacts	Vulnerable road user (VRU) Impacts	Property Damage Impacts	Safety and Health Impacts
Insignificant	 Hourly traffic flow per lane is equal to or less than the allowable lane capacity detailed in AGTTM03. No impact to the performance of the network. 	No impact to paths or routes.	No property damage	No treatment required
Minor	Hourly traffic flow per lane is greater than the allowable road capacity and less than 110% of the allowable road capacity as detailed in AGTTM03. Minor impact to the performance of the network.	 Minor impact to paths or routes. Some exposure to rough surfaces in the work site. Minor additional exposure to road traffic. 	Minor property damage	First aid treatment required
Moderate	 Hourly traffic flow per lane is equal to and greater than 110% and less than 135% of allowable road capacity as detailed in AGTTM03. Moderate impact to the performance of the network. 	 Moderate impact to paths or routes. Rough path surfaces. Exposure to shallow excavations and manual workers / tools. Moderate additional exposure to road traffic and additional road crossings. 	Moderate property damage	Medical treatment required or Lost Time Injury
Major	 Hourly traffic flow per lane is equal to and greater than 135% and less than 170% of allowable road capacity as detailed in AGTTM03. Major impact to the performance of the network. 	 Major impact to paths or routes. Unformed path surfaces. Exposure to deep excavations and work plant. Major additional exposure to road traffic and multiple additional road crossings. 	Major property damage	Single fatality or major injuries or severe permanent disablement
Catastrophic	 Hourly traffic flow per lane is equal to and greater than 170% of allowable road capacity as detailed in AGTTM03. Unacceptable impact to the performance of the network. 	 Unacceptable impact to paths or routes. No suitable alternative route. Exposure to deep excavations and multiple heavy plant items. Major additional uncontrolled exposure to road traffic. 	Total property damage	Multiple fatalities

The consequence/likelihood risk matrix in Table 2.5 can be used to identify the level of risk for each event identified at the proposed work site.

Table 2.5: Consequence / likelihood risk matrix

		Likelihood				
		Almost certain	Likely	Possible	Unlikely	Rare
	Catastrophic	Very high	Very high	High	High	Medium
nce	Major	Very high	Very high	High	Medium	Low
Consequence	Moderate	High	High	Medium	Low	Low
Con	Minor	High	Medium	Low	Low	Low
	Insignificant	Medium	Low	Low	Low	Negligible

Table 2.6: Suggested treatment approach for risk levels

Risk	Suggested treatment approach		
Very high	Unacceptable. Must be corrected.	Significant and urgent action is required to eliminate the safety risk or reduce the consequence or likelihood of the risk and overall risk exposure.	
High	Should be corrected or the risk significantly reduced, even if the treatment costs are high.	Immediate action is required, and effort must be made to ensure that the safety risk is eliminated so far as is practicable or minimised so far as is practicable if elimination is not reasonably practicable.	
Medium	Should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high.	Action is required and effort must be made to ensure that the safety risk is eliminated so far as is practicable or minimised so far as is practicable if elimination is not reasonably practicable.	
Low	Should be corrected or the risk reduced, if the treatment cost is low.	A level of safety risk that requires monitoring and review to ensure that the safety risk remains at this level.	
Negligible	No action required	Safety risk has been determined to be so low that no further action is required. In this case the consequence is considered to not result in any injury to any person.	

Figure 2.4: Hierarchy of controls

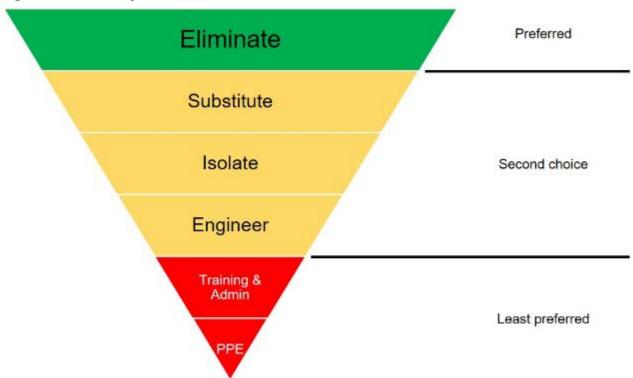


Table 2.7: **Example TTM mitigations**

Control	Description	TTM Control Example
Eliminate	The most effective control measure involves eliminating the hazard and associated risk. The best way to do this is by, firstly, not introducing the hazard into the workplace. Eliminating hazards is often cheaper and more practical to achieve at the design or planning stage of a product, process or place used for work. In these early phases, there is greater scope to design out hazards or incorporate risk control measures that are compatible with the original design and functional requirements. It may not be reasonably practicable to eliminate a hazard if doing so means that you cannot make the end product or deliver the service. If you cannot eliminate the hazard, then you must minimise as many of the risks associated with the hazard as reasonably practicable.	Redirecting traffic "Around the work area" to eliminate the risk of traffic impact on workers or implementation of contraflow to eliminate the risk of traffic impact on traffic controllers.
Substitute	Substitute the hazard with something safer. This may not remove all the hazards associated with the process or activity and can introduce different hazards, but the overall harm or health effects will be lessened.	Portable traffic control devices to substitute the requirement of a traffic controller working in or near traffic.
Isolate	Isolate the hazard by physically separating the source of harm from people by distance or barriers. For example, restrict contact with plant and equipment, lock hazardous chemicals away and only use them under strict controls	Undertaken by the use of "Through the worksite" and "Past the worksite" arrangements and appropriately rated safety barriers.
Engineer	Look for technological solutions that reduce risk, eg use machines to do work that would be hazardous to humans, or use more modern plant with in-built safety features	Truck mounted attenuators to protect workers in place of a typical work vehicle.
Training and Admin	Develop and document safe methods of work e.g. safe work procedures or safe work method statements and provide appropriate training, instruction and information to reduce the potential for harm	Developing safe methods of work e.g. safe work method statements, providing appropriate training and instructions and police enforcement etc.
Personal Protective Equipment (PPE)	Personal protective equipment (PPE) reduces workers' exposure to the hazard. PPE includes safety gloves, protective eyewear, earmuffs, hard hats, aprons, safety footwear and dust masks. PPE is the last line of defence and must be used in conjunction with one or more of the other control measures.	Hi Vis equipment and clothing, hard hat and safety boots etc.

Source: Roads and Maritime Services (2018).

Table 2.8: Common worksite risks and TTM control measures

	Hierarchy of control			
Safety hazard/risk factors	Consider the practicability of controls, from left to right. Select the most practical given the circumstances and the level of risk. Record the reason if a higher-level control is not considered practicable.			
	Elimination/substitution	Engineering/isolation	Administrative/behavioural	
Clearance to traffic (between the lane carrying traffic and the work area)	Road closure Detour Side-track	Safety barriers Lane closure Vehicle crash attenuators	Speed restriction Warning signs/VMS Delineation of travel path	
High speed traffic through the worksite	Road closure Detour Side-track	Safety barriers Lane closure Portable traffic signals Vehicle crash attenuators	Speed restriction Warning signs/VMS Traffic controller	
Poor advance sight distance to the worksite (<200 metres)	Road closure Traffic diversion	Safety barriers Lead and/or tail vehicles	Extra advanced warning signs/VMS Speed reduction Delineation of the travel path Traffic controller	
Poor observance by motorists of directions/instructions	Road closure Traffic diversion	Lane closure Portable traffic signals	Speed reduction Police presence on site Extra signs/VMS Reassessment of information provided	
Narrow pavement width with no escape route (< 2.9 metres width)	Road closure Traffic diversion	Safety barriers	Speed reduction Delineation of travel path	
Presence of workers at the worksite	Road closure Traffic diversion	Safety barriers Increase separation from vehicular traffic	Speed reduction Warning signs Delineation of travel path and worksite	
Excavation adjacent to traffic (>300 mm deep within 1.2 m of traffic)	Road closure Traffic diversion	Different construction method Safety barriers	Speed reduction Delineation of travel path	
Presence of unprotected hazards within clear zone	Road closure Traffic diversion	Safety barriers	Speed reduction Delineation of travel path	
Rough or unsealed road surface due to roadworks	Road closure Traffic diversion		Speed reduction Warning signs/VMS	
High volume of traffic through the worksite (>10 000 vehicles per day)	Road closure Detour Side track	Safety barriers Lane closure Portable traffic signals	Speed reduction	
High volume of heavy vehicles through the worksite	Road closure Detour Side track	Safety barriers Lane closure Portable traffic signals	Speed reduction	
Works vehicles entering/leaving the worksite		Safety barriers Lane closure Portable traffic signals	Speed reduction Warning signs/VMS Delineation/control of access points	
Cyclists/pedestrians through the worksite	Alternate pathway Close traffic lane for use by cyclists / pedestrians Eliminate impacts on pedestrians/cyclists	Adequate separation of shared road space	Speed reduction Warning signs/VMS Delineation from other traffic	