Construction Traffic Management Sub Plan
TAP04 Redfern Station Upgrade

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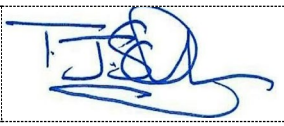
Troy Schneider	Laing O'Rourke	Traffic Management Lead	7-06-2022	

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1 Context

This Construction Traffic Management Plan (CTMP), is a sub plan of the Construction Environmental Management Plan (CEMP), as required under the Environmental Impact Statement (EIS) for the Redfern Station Upgrade – New Southern Concourse project (the Project).
The CTMP has been prepared to address the following requirements:

- Minister's Conditions of Approval (CoA) SSI 10041
- Applicable Environmental Management Measures from the Project *Environmental Impact Statement*
- Project contract requirements

This CTMP describes how Novo Rail will manage construction traffic and transport access impacts during delivery of the Project. The term "traffic", wherever used in this CTMP, encompasses vehicle, cyclist and pedestrian movements.

1.1 Project overview

Transport for NSW (TfNSW) is the lead agency for the integrated delivery of public transport services across all modes of transport in NSW and is responsible for the delivery of projects within the Transport Access Program.
The Transport Access Program (TAP) is an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

The Redfern Station Upgrade Project (the Project) which is scheduled to commence in mid-December 2020 until end of-2022, involves construction of a new pedestrian concourse to the south ofthe existing Lawson Street concourse, extending between Little Eveleigh Street and Marian Street inthe suburbs of Redfern and Eveleigh. The new concourse would provide both lift and stair access to Platforms 1-10. Additional project elements include:

- an upgraded station entrance at Marian Street, and a new station entrance at Little Eveleigh Street, both including station services and customer amenities
- Kiss and Ride Signage to be installed on Gibbons street
- formalisation of a shared zone on Little Eveleigh Street
- upgrade of the Marian Street/Cornwallis Street/Rosehill Street area
- relocation of the shuttle bus zone from Little Eveleigh Street to Lawson Street
- kiss and ride on Lawson Street and Gibbons Street, including associated footpath upgrades
- footpath widening on Ivy Street
- relocation of a building on Platform 1 to accommodate the concourse
- repurposing, relocations and alterations to platform building features and other platform features, including platform resurfacing and associated drainage alterations and addition of platform canopies
- Service relocations, including relocation of overhead wiring structures and installation of a new rail signal between Platforms 1 and 2.
- installation of station operational components and infrastructure including wayfinding and signage, tactile ground surface indicators (TGSI), rubbish bins, CCTV cameras, passenger information system (e.g. passenger information display, public address and hearing loops) and emergency equipment (e.g. for fire and life safety).

2 Abbreviations

Term or Acronym	Definition
ATAC	Accessible Transportation Advisory Council
CoA	Conditions of Approval
CEMP	Construction Environmental Management Plan
CSM	Community & Stakeholder Manager
CLMP	Community Liaison Management Plan
CLT	Community Liaison Team
CMS	Consultation Management System
CoS	City of Sydney Council
CTMP	Construction Traffic Management Plan
EIS	Environmental Impact Statement
IMS	Integrated Management System
NHVR	National Heavy Vehicle Regulator
PAA	Project Alliance Agreement (between TfNSW and Novo Rail)
The Project	Redfern Station Upgrade – New Southern Concourse
RSU	Redfern Station Upgrade - New Southern Concourse (The Project)
SSI	State Significant Infrastructure Project
SZA	Speed Zone Authorisation
TAP	Transport Access Program
TCP	Traffic Control Plan The revised management plan (Rev 6) refers to Traffic Guidance Schemes and not TCPs, to allow for consistency with the "Traffic control at work sites Technical Manual", version 6.
TfNSW	Transport for NSW
TMC	Transport Management Centre (now part of Customer Journey Management at TfNSW)
Track Work	Routine maintenance periods on the rail network, scheduled by Sydney Trains and usually occur from 2am Saturday morning to 2am Monday morning
TGS	Traffic Guidance Scheme
TSR	TfNSW Standard Requirements
VMP	Vehicle Movement Plan
WCAG	Web Content Accessibility Guidelines

2.1 Scope

The Construction Traffic Management Plan (this Plan) is a sub plan to the CEMP and is part of a suite of project management plans that will be submitted to TfNSW to illustrate how Novo Rail will collectively plan, deliver, monitor and continuously improve during delivery of the Project.

This Plan outlines the mitigation and management measures Novo Rail will use to address potential impacts arising from traffic, transport and access during construction while complying with relevant approval, statutory and contract requirements. Sections 4.3-4.6 provide compliance tables identifying where in this sub plan relevant CoA and other requirements are addressed.

This Plan is applicable to all activities during construction of the Project including all areas where physical works will occur or areas that may be otherwise impacted by the construction works and under the control of the Project. All Project staff and sub-contractors are required to operate under the requirements of this Plan and related environmental management plans for the duration of the construction program.

To ensure minimal disruption to the general public and work on site, the control and management of traffic will involve the co-ordination and control of the following:

- All delivery trucks and their loading and unloading
- Any construction works impeding road or footpath 'normal' use
- Concrete pumping including pump and delivery trucks
- Vehicular and pedestrian traffic past the work areas
- Maintenance of safe separation of project movement and work areas from vulnerable road users

It is not practicable for this CTMP to cover all situations that could arise due to unpredictable factors outside of the Projects control. It may therefore be necessary for the qualified traffic controller who is managing the specific activity on site to modify the control measures to address the particular circumstances based on the hazard(s) identified and note this on the relevant TCP. If such a situation arises, any changes that impose more restrictive measures on road users than is allowed for in the CTMP or relevant TCP will be subject to a risk assessment and authorisation by the Construction Manager prior to implementation.

Note: The CTMP shall be amended to include all significant changes to traffic management requirements and will be kept in a live register on the project, updated by the Novo Rail Senior Project Engineer.

3 Purpose and objectives

3.1 Purpose

The purpose of this Plan is to describe how Novo Rail will manage traffic, transport and access during delivery of the Project works.

3.2 Objectives

The key objective of the CTMP is to ensure that traffic impacts during construction are minimised and are within the scope permitted by the Planning Approval and Program Alliance Agreement (PAA). This includes minimising delays, ensuring consideration is given to the needs of all road and transport users, property owners and maintaining safety for both workers and the general public.

To achieve these objectives, Novo Rail will undertake the following:

- Ensure appropriate controls and procedures are implemented during construction activities to address potential traffic and access impacts associated with the Project works
- Ensure measures are implemented to address the relevant CoA and Project requirements
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements
- Plan and stage all work activities to effectively minimise road and footpath occupancy and potential impacts on the road and footpath networks

3.3 Targets

The following targets have been established for the management of traffic, transport, pedestrians, cyclists and access impacts arising from construction activities:

- Provide advance notice to affected stakeholders of changes to traffic conditions
- Develop agreed strategies for providing access to properties, in consultation with property owners, businesses and tenants
- Respond to issues identified by the City of Sydney (CoS), Transport Management Centre (TMC) or Transport for NSW (TfNSW), as required, within agreed timeframes
- Ensure adequate and appropriate approvals are obtained prior to conducting traffic works.

Strategies to achieve these targets are detailed within this Plan. Performance against targets will be assessed through analysis of stakeholder feedback, CoS, TMC approvals processes and via the Traffic Audits and review of compliance with this Plan. Stakeholder or community complaints or concerns relating to the work activities and any associated impacts are recorded within TfNSW's Consultation Management System (CMS) and compiled by TfNSW on a Complaints Register.

4 Relevant legislation and guidelines

4.1 Legislation and regulatory requirements

Identified regulatory requirements include:

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

4.2 Guidelines

The main guidelines, specification and policy documents relevant to this Plan include:

- TfNSW Traffic Control at Work Sites Technical Manual Ver. 6.0 (2020)
- AUSTROADS Guide to Traffic Management 2019
- AUSTROADS Guide to Road Safety Parts 6 & 6A Road Safety Audits 2019
- Australian Standard AS 1742.3 2019 Manual of uniform traffic control devices
- AUSTROADS Guide to Road Design Parts 3, 4, 4A & 6

4.3 Ministers Conditions of Approval

The CoA relevant to this Plan are listed in the table below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

CoA No.	Condition Requirements	Document Reference	How Addressed
	General		
A1	A1 The Proponent must carry out the SSI in accordance with the conditions of this approval and generally in accordance with the description of the SSI in:		
(a)	Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020)	The SEEWMP The CEMP This Sub-Plan	The documents referenced addresses the requirements of the documents outlined in CoA #A1. Specific responses to the clauses relevant to the CTMP are detailed in these tables.
(b)	Redfern Station Upgrade – New Southern Concourse Response to Submissions (Transport for NSW, September 2020	The SEEWMP The CEMP This Sub Plan	The documents referenced addresses the requirements of the documents outlined in CoA #A1. Specific responses to the clauses relevant to the CTMP are detailed in these tables.
(c)	Redfern Station Upgrade – New Southern Concourse Construction Environmental Management Framework (Transport for NSW, October 2020)	The SEEWMP The CEMP This Sub Plan	The documents referenced addresses the requirements of the documents outlined in CoA #A1. Specific responses to the clauses relevant to the CTMP are detailed in these tables.
A2	The SSI must be carried out generally in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	This Sub Plan	Specific responses to the clauses relevant to the CTMP are detailed in these tables.

A4	The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to:		
(a)	the environmental performance of the SSI	The SEEWMP The CEMP and Sub plans	Specific responses to the clauses relevant to the CTMP are detailed in these Plans.
(e)	any audit of the construction or operation of the SSI	Section 13.0	Traffic audits will be undertaken to assess the effectiveness of traffic management measures, compliance with the Sub-plan and other relevant approvals and guidelines. Traffic audits will occur during the Design phase, on implementation of traffic changes to enable construction work activities to occur and at completion of the works. The audit will be carried out by a suitably qualified Road Safety Auditor.
(f)	the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);	The SEEWMP The CEMP and Sub plans	Specific responses to the clauses relevant to the CTMP are detailed in these Plans.
A5	Where a document / plan / program must be submitted to the Planning Secretary or ER and the terms of this approval require it to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted with the document / plan/ program. The evidence must include:		

(a)	documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval	Section 5.0	Section 5.0 outlines the consultation requirements of this Sub plan. The Sub plan will be submitted to TfNSW and CoS for review and approval prior to commencement of construction. The results of this consultation will be incorporated into the Sub plan and summarised in the Table within Section 5.1.
(b)	a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them	Section 5.0	The results of consultation will be incorporated into the Sub plan and summarised in the Table within Section 5.1.
(c)	documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations	Section 5.0 CMS	Documentation of attempts to consult will be included in the Table within Section 5.1. Consultation and/or attempts at consultation with stakeholders is also included in the TfNSW Consultation Management System (CMS).
(d)	outline of the issues raised by the identified party and how they have been addressed	Section 5.0 CMS	Issues raised during consultation will be incorporated into the Sub plan and summarised in the Table within Section 5.1. Correspondence relating to these issues will also be uploaded into TfNSWs CMS.
(e)	a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	Section 5.0 CMS	The Table within Section 5.1 will outline any reasons why issues raised by any party have not been addressed. Correspondence relating to these issues will also be uploaded into TfNSWs CMS.
	Use of Major Construction Ancillary Facilities		
A15	The use of a major construction ancillary facility for construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C6 and the Construction Noise and Vibration Monitoring Programs required	This Plan CEMP	The CEMP and relevant Sub plans, including this CTMP, will be endorsed by the ER prior to the use of major construction ancillary facilities. Section 5 outlines the consultation and publication requirements for the CTMP.

	by Condition C8 have been approved by the ER and made publicly available.		
	Minor Construction Ancillary Facilities		
A18	Lunch sheds, office sheds, portable toilet facilities, temporary minor spoil and materials storage and the like that are not identified by description and location in the documents listed in Condition A1, can be established and used where they satisfy the following criteria: (b) have been assessed by the ER to have: (b) (i) minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts	Section 6.1.4	Section 6.1.4 outlines the requirements the Project will meet if additional Minor Construction Ancillary facilities are required.
	Environmental Representative		
A29	For the duration of the Work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must:		
(d)	approve documents identified in Conditions A9, A14, C1, C6, and C8 after verifying all relevant matters set out in this approval pertaining to those documents have been met and make a written statement to the Planning Secretary to this effect	Section 5.0 CEMP	Section 5.0 outlines the approval and consultation requirements of this Sub plan.
(e)	regularly monitor the implementation of the documents listed in Conditions A14, C1, C6 and C8 to ensure implementation is being	Section 5.0 Section 14.1.1 CEMP	Sections 5.0 and 14.1.1. outline the ER requirement for monitoring and identify the input and continuous improvement requirements for this Sub plan

	carried out in accordance with the document and the terms of this approval;		
	Construction Environmental Plan		
C4	The CEMP must be submitted to the ER for approval before the commencement of construction or where the construction is staged, before the commencement of that stage. Construction must not commence until the ER has approved the CEMP and all CEMP Sub-plans. The CEMP and all CEMP Sub-plans must be implemented for the duration of construction.	Section 5.0 CEMP	Section 5.0 outlines the approval and consultation requirements of this Sub plan. The Sub plan will be submitted to TfNSW and CoS for review and approval prior to commencement of construction.
C5	The approved CEMP and CEMP Sub-plans must be made publicly available before the commencement of construction.	Section 5.0	The CEMP and Sub plan will be made publicly available on the TfNSW website and be WACG compliant
C6	The following CEMP Sub-plan must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan: (a) Traffic and transport – consultation with City of Sydney Council	Section 5.0 This Plan	Section 5.0 outlines the approval and consultation requirements of this Sub plan. The Sub plan will be submitted to TfNSW and CoS for review and approval prior to commencement of construction.
C7	The CEMP Sub-plans must state how:		
(a)	The environmental performance outcomes identified in the documents listed in Condition A1 will be achieved	Section 15.1	Section 15.1 outlines the performance outcomes relevant to this Sub plan
(b)	The mitigation measures identified in the documents listed in Condition A1 will be implemented	Section 15.2	Section 15.2 outlines the mitigation measures relevant to this Sub plan
(c)	The relevant terms of this approval will be implemented	This Plan	This management plan addresses the conditions of approval relevant to Traffic and Transport
(d)	Issues requiring management during construction, as identified through ongoing environment risk analysis will be managed	Section 5.0 Section 6.2.8 CLMP	Issues raised during consultation will be incorporated into the Sub plan and summarised in the Table within Section 5.1. Management of safety or incident issues will follow the Project

			Incident and Near Miss Notification procedure outlined in Section 6.2.8. Correspondence relating to these issues will also be uploaded into TfNSWs CMS. Protocols for the management of Community & Stakeholder issues are outlined in the CMP.
	Traffic and Access		
D56	The Proponent must consult with the City of Sydney Council on the use of any local roads for hauling spoil and fill that have not been identified for haulage in the documents listed in Condition A1. Use of any additional local roads for haulage must not be undertaken until the Proponent has consulted with the Council.	Appendix I	Heavy vehicle operators will be provided with the Heavy Vehicle route map approved under this Project which includes the local roads identified for use. Extensions and minor adjustments to this map were sought from City of Sydney Council in December 2020, and February 2021.
D57	All requests to the Planning Secretary must:		
(a)	include a swept path analysis	Section 6.2.1	A swept path analysis will be provided if additional local roads are considered.
(b)	demonstrate that the use of local roads will not compromise the safety of the public and have no more than minimal amenity impacts	Section 6.2.1	An assessment will be undertaken of the local road use, public safety and amenity prior to any additional local road being considered.
(c)	provide details as to the date of completion of the road dilapidation surveys for the subject local roads	Section 6.2.1	Details of the date of completion of road dilapidation surveys will be provided if any additional local roads are considered.
(d)	describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during peak times for operation.	Section 6.2.1 CLMP	Section 6.2.1 identifies measures to be implemented for use of local roads past sensitive receivers. Consultation with the community will be ongoing throughout delivery of the Project as outlined in the CLMP.
D58	Before any local road is used by a heavy vehicle for the purposes of construction of the SSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report	Section 6.1.5	Road dilapidation surveys will be undertaken prior to the commencement of major construction and provided to CoS.

	must be provided to the City of Sydney Council within three weeks of completion of the survey and at least five (5) business days before the road is used by heavy vehicles associated with the construction of the SSI.		
D59	If damage to roads occurs as a result of the construction of the SSI, the Proponent must either (at the relevant road authority's discretion): (a) compensate the relevant road authority for the damage so caused (b) rectify the damage to restore the road to at least the condition it was in pre-construction within three (3) months of the subject road no longer being used in association with the construction of the SSI, unless an alternative timeframe is agreed to by the relevant road authority	Section 6.1.5	Section 6.1.5 outlines the requirement to reinstate roads where damage has occurred as a result of the project work activities.
D60	During construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, residences, businesses and other affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access must be developed in consultation with affected residents, businesses and other affected property owners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Section 6.2 CLMP	Measures to address pedestrian, vehicular and parking access in the vicinity of residents and businesses are detailed across various sections of this Plan. Disruptions or impacts will be clearly communicated via consultation and notification and sign posted to direct the community and members of the public. Communication and stakeholder engagement will be ongoing throughout delivery of the Project as outlined in the CLMP.
D61	The SSI (including new or modified local roads, parking, pedestrian and cycle infrastructure) must be designed to meet relevant design, engineering and safety guidelines, including the		The Project will be designed and delivered in accordance with all relevant standards and regulations.

	Austroads Guide to Traffic Management, and Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017) and relevant Australian Standards for off-street parking, and take into consideration relevant City of Sydney Council design codes and technical specifications.		
D62	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, an alternate route must be provided and signposted. Note: The City of Sydney Council is the relevant road authority under the Roads Act 1993 for local roads in the vicinity of the SSI. If a consent(s) under section 138 of the Roads Act 1993 is required for the SSI, Section 5.24(1)(f) of the EP&A Act requires that any such consent be substantially consistent with this approval.	Section 6.2.2 Section 6.2.5	Safe pedestrian and cyclist access will be maintained during construction with temporary diversions in place at various times around work areas.
D63	The Proponent must investigate, in consultation with the City of Sydney Council, the feasibility of providing access to the Little Eveleigh Street car park via Wilson Street, Redfern (near the intersection of Ivy Street). If the investigation indicates that it is feasible to access the car park via Wilson Street, then this access must be considered in the detailed design of the SSI. A report on the investigation must be submitted to the Planning Secretary for information within six (6) months of commencing construction.	With TfNSW	Investigation of Little Eveleigh Street Car Park options has been completed and provided to DPIE for information. The options report concluded that there was no feasible alternate access to the car park.

	Note: Changes to the approved access arrangements may need to be further assessed under the EP&A Act.		

4.4 Response to Submissions to the EIS

Clause	Response to Submissions to the EIS	CTMP Reference	Revised Performance Outcome
RPO20	Safe and efficient access routes are provided for pedestrians, cyclists and road users, including buses, during construction	Section 6.2	Safe and efficient access routes will be provided during construction with temporary diversions in place at various times around work areas.
RPO21	Access for all customers to Redfern Station, while the station is operational is maintained	Section 6.2.3	Access will be maintained to Redfern Station while the station is operational.
RPO22	Access to residences and commercial properties is maintained	Section 6.2.2	Access to all properties will be maintained unless directly negotiated with the property owner. Periodic and temporary diversions may be in place during construction of roads and footpaths.
RPO23	Access for emergency vehicles, waste management services and deliveries is maintained	Section 6.2.1 Section 6.2.4	Emergency, waste management services and delivery access will be maintained.
RPO24	The local community, relevant authorities and other proponents undertaking concurrent work close to the Project are consulted to minimise disruptions to road, active transport and public transport users	Section 5.2 Section 6.2.7 CLMP	Consultation with adjacent builders/developers will be carried out to identify potential cumulative impacts and mitigation measures.
RPO25	The local community and relevant authorities are consulted notified regarding upcoming Project construction activities to minimise disruptions to road, active transport and public transport users	Section 5.2 Section 6.2.2 Section 6.3.2 CLMP	Community and stakeholder consultation will be ongoing as outlined in the CLMP and Section 6.2.2. Applications for road or footpath access are obtained from the relevant authority prior to work occurring.

RPO26	The Project provides convenient, safe and direct access for customers to the station during operation	Section 6.2	Access will be maintained to Redfern Station while the station is operational. Some diversions will occur around work areas such as footpath or road work.

4.5 Revised Management and Mitigation Strategy

Clause	Revised Management and Mitigation Strategy	CTMP Reference	Revised Performance Outcome
T1	Relocation of bus stops would be carried out by TfNSW in consultation with the City of Sydney, Royal Prince Alfred Hospital, bus operators and other relevant authorities. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	Section 5.2 Section 6.2.2 Section 6.2.3 Section 15.1.2	Consultation with stakeholders will continue during construction of the Project. Where changes are made to existing services, consultation, advance notification, static signage and wayfinding will be provided.
T2	The new offset parking facilities on Little Eveleigh Street would be constructed prior to the removal of parking, to accommodate parking spaces displaced to facilitate construction activities	Section 6.2.2 Section 15.1.2	The offset car park will be constructed prior to the removal of parking within Little Eveleigh Street
T3	Road Safety Audits would be carried out to address vehicular access and egress, and pedestrian, cyclist and public transport safety. Road Occupancy Licenses (or equivalent) for temporary road/lane closures would be obtained where required. The audit locations would be outlined in the Construction Traffic Management Sub-Plan.	Section 6.2.5 Section 7.1.2 Section 13.0 Section 15.1.2	Road safety audits will be carried out during the design phase and operation stages across the Project locations. Additional audits will be carried out where long term traffic changes are put in place. Audits will be carried out by a suitably qualified Road Safety Auditor
T4	Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained. Access	Section 6.2.2 Section 6.2.5 Section 15.1.2	Signage, line marking and wayfinding will be in place and maintained. Ongoing consultation with ATAC (Accessible

	would include guidance for customers with access requirements for disability, including wheelchair users and people with a visual impairment.		Transportation Advisory Council) via TfNSW will ensure disability groups are kept informed of any changes.
T5	Community notifications would be issued in advance for any proposed road and pedestrian network changes through appropriate channels and forms of communication	Section 5.2 Section 6.2.2 Section 15.1.2 CLMP	Community notifications will be issued at least monthly and will include notice of any changes to the pedestrian or road network. In addition to be delivered to the community, notifications are issued electronically to all registered stakeholders.
T6	Access to existing properties and buildings would be maintained, where possible, in consultation with property and business owners. If access needs to be restricted during some periods during construction, this would be communicated to the resident or business owner.	Section 6.2.2 Section 15.1.2	Access will be maintained to all properties however temporary impacts will occur during footpath and road works. Any identified access impact will be discussed and negotiated with the property owner.
T7	Construction sites would be managed to minimise construction worker parking on surrounding streets. Workers would be encouraged to use public or active transport and ride share with the implementation of a Green Travel Plan initiative. A workers' reward scheme would be implemented for those who adhere to the initiative.	Section 6.2.2 Section 15.1.2	The Green Travel Plan initiative will be supported and a rewards scheme established to promote use of public or other modes of transport to work.
T8	Construction site traffic would be managed to minimise traffic impacts during the peak periods through scheduling construction vehicle movements outside the peak hours. Where possible, group deliveries would be restricted.	Section 6.1 Section 7.1.1 Section 15.1.2	Where possible, out of peak deliveries will occur. With a prediction of up to 60 vehicle movements a day over 3 sites the Project work is expected to have a minor impact on the road network.

4.6 Construction Environment Management Framework

The Construction Environment Management Frameworks (CEMF) requirements relevant to this Plan are listed in the Table below. A cross reference is also included to indicate where the requirement is addressed in this Plan or other Project management documents.

Clause	Requirements within Appendix C of the Construction Environmental Management Framework (CEMF)	CTMP Reference	How addressed
2.1	Key legislative requirements: Roads Act 1993 Roads and Maritime Service (RMS). As TfNSW is a public authority, approval from the relevant roads authority (city of Sydney Council) is not required however ongoing consultation will occur. Relevant Road Occupancy Licences (ROLs) or local Council equivalent will be obtained for any road closures required	Section 6.2.3 Section 6.3.1 Appendix A	Consultation with CoS and TMC will be ongoing through the delivery of the Project. No work shall commence without the appropriate approvals in place. ROLs will be obtained for out of hours oversized deliveries.
3.10	**Construction document approvals.** CEMP and sub-plans Performance and compliance monitoring and reporting	This Plan SEEWMP Section 6.3	Compliance and monitoring performance as outlined in these Plans.
5.7	**Reinstatement:** – Mitigation measures for reinstatement will be produced in consultation with TfNSW, the community and stakeholders. Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: – All working areas and accesses be cleared and cleaned at project completion – All land, including roadways, footpaths, loading facilities or other lane having been occupied temporarily will be returned to their pre-existing condition or	Section 6.1.5 Section 6.1 Section 6.1.5	These sections outline the requirement to reinstate roads, footpaths, assets where damage has occurred as a result of the Project work activities

	better in consultation with City of Sydney Council or other relevant stakeholders – Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction – Specific mitigation measures for ancillary facilities, in particular the Gibbons Street ancillary facility	 Section 6.1.5 Section 6.1.5	
5.8	**Cumulative impacts** – The Project will coordinate with other projects being constructed in the area to minimise cumulative impacts	Section 6.2.7 CLMP	Pro-active investigation of and consultation with other building works within the Project area will be carried out
6.1.2	**Construction Traffic Management Plan** Implementation of a Construction Traffic Management Plan, which will as a minimum: – Implement traffic and transport mitigation measures as detailed in the EIS – Be developed in consultation with the relevant road authority and/or transport operator – Set out the overall traffic management resources, processes and procedures for the management of traffic and transport during construction of the works – Identify types and volumes of construction vehicles and associated route and time restrictions – Identify traffic generation from other infrastructure developments, impacts from construction traffic and haulage routes – Identify potential activities that could result in the disruption to traffic and transport networks, including pedestrian, cyclist and public transport networks and during special events	This Plan Section 15.1.2 Section 6.3 Section 6.3 EIS Section 12 Section 6.2.7 Section 6.2 Section 7.1.1	These requirements are responded to in various Sections within this Sub plan and in the Traffic and Transport Section 12 of the EIS.

	– Comply with and address the requirements of RMS Traffic Control at Worksites Manual and AS 1742.3 Manual of Uniform traffic Control Devices Part 3: Traffic control for works on roads, relevant Austroads Guides and RMS Supplements to Austroads and Australian Standards	Section 6.1	
	Traffic staging plans: – Include road design drawings showing traffic lane configurations for traffic passing through work areas during various construction stages, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, work areas and pedestrian area, drainage signs and pavement markings – Note: above included as per TCPs and staging diagrams	Appendix J Appendix K	Staging of road reinstatement in Little Eveleigh Street and Marian Street is not finalised. Staging diagrams will be added to the CTMP once finalised. Swept path drawings are provided in the Appendices.
	Traffic Control Plans (TCPs) now to be changed to TGS to reflect the TC@WS manual version 6 – Set out the specific traffic and transport management arrangements to be implemented at specific locations during construction of the works	Appendices B – I	Example TCPs are included in the Appendices. Additional TGSs will be produced during construction of the Project and will be submitted to TfNSW for review where required.
	Pedestrian Management Plans (PMPs) – A diagram showing the allocated travel paths for workers or pedestrians around or through a work area. A PMP may be combined with or superimposed on a TCP – A diagram showing all signs and devices used to guide the workers or pedestrians – Note: TCPs will address project-specific PMP requirements	Appendix C	Marian Street PMP for permanent footpath closure is outlined on the TCP in Appendix C. Additional PMPs / TCPs will be produced during construction of the Project as staging is finalised.

	Parking Management Plans – Parking requirements and on and offsite parking arrangements and associated impacts – Remote parking arrangements and associated access – Communication and parking management measures – Proposals for relocation of impacted users for kerbside use impacts during the construction period – Note: Parking requirements will be addressed in the CTMP	Section 6.2.2 Section 15.1.2	On-site parking will be available for the majority of project staff and contractors. Where displacement of existing street parking occurs there is sufficient on-street parking available within 400m of the work sites as outlined in Section 12 of the EIS Any impact to parking will be communicated via notifications and static signage at the relevant locations.
	Consultation Consultation during preparation of management plans, and in relation to the approval of related licences for works, will be undertaken with: – TfNSW – Transport Management Centre (TMC) – NSW Police – City of Sydney Council – Emergency services – Bus operators – Sydney Trains – NSW TrainLink – Potentially affected stakeholders –	Section 5.0 Section 5.2 Section 6.2.7 CLMP	Prior to any work being carried out on the road network, consultation and approvals will be sought with the various road authorities and transport operators.
	Monitoring / Inspections		

	– Monitoring and inspections will include: – Road Safety Audits – Road Condition Reporting	Section 6.2.5 Section 7.1.2 Section 6.1.5 Section 13 Section 15.1.2	
	Compliance The following compliance records will be kept: – Records of all traffic licences or approvals – Records of community enquiries and complaints and the responses provided	Section 6.3 CMS CLMP	
6.1.3	**Construction Traffic Mitigation** Traffic measures to be considered during construction will include: – Minimising heavy vehicle movements during peak traffic times – Avoidance of local roads for heavy vehicles routes – Providing safe pedestrian and cyclist movements are the work areas	Section 6.1 Section 7.1.1 Section 15.1.2	Traffic volumes will be low on the Project however vehicle movements and conflicts with pedestrians and community will be managed to minimise the interface

5 Consultation

5.1 Consultation requirements under the Project Approval

In accordance with CoA A1 and A5, this Sub plan has been developed for submission with the City of Sydney for review and comment, no later than one month before main construction.

This consultation will assist in the development and finalisation of the Construction Traffic Management Sub Plan and comments incorporated into this Sub plan, as required. The table below summarises relevant stakeholder reviews and responses to review and will be updated within this document to provide a summary of consultation.

Additionally, stakeholder engagement, attempts at engagement, responses and comments from stakeholders are recorded and uploaded within the TfNSW Consultation Manager Database and are available for review on request.

Table – Summary of Consultation (note that this Sub plan will be updated once comments are received from the City of Sydney and TfNSW).

Agency	Requirement	Status	Response	Date
City of Sydney Council	Sect. 6.2.2: No parking on public roads	Comments have been incorporated into Revision 5	Section 6.2.2: reference within the second paragraph to no parking on public streets.	22/12/20
City of Sydney Council	Appendix C: wording in regards to vehicle movement	As above	Appendix C, TCP 2: Document adjusted to reflect intermittent stopping when a vehicle “leaves” the site. Stopping would be for a standard vehicle if a truck is exiting.	22/12/20
City of Sydney Council	Appendix H: Query regarding Mitchell Rd being resumed by the RMS?	As above	Appendix H: Revised to include Heavy Vehicle Route map under the management plan	22/12/20
City of Sydney Council	The TMP is to address the City’s standard requirements	As above	Appendix N has been added to the TMP to include City of Sydney standard requirements.	22/12/20

This Sub plan will be uploaded onto the TfNSW website and made publicly available once approved by CoS, TfNSW and the ER prior to commencement of construction..

5.2 Consultation with other parties

As outlined in the Community Liaison Management Plan (CLMP), consultation on work activities, traffic, road and pedestrian impacts will be undertaken with, but not limited to, the following stakeholders:

- NSW Police
- Bus and Transport operators
- Prince Alfred Hospital
- Carriageworks
- Vision Australia
- Key College
- Residents
- NSW Ambulance
- Sydney Trains
- University of Sydney
- Mirvac
- TAFE NSW - Eora
- Cycling NSW
- Commuters
- SES
- TrainLink
- Aboriginal Land Council
- South Eveleigh Precinct
- National Centre of Indigenous Excellence
- Local businesses

Community notifications will be provided to the adjacent communities outlining work activities and identifying any traffic, footpath, parking, bus service relocations access changes. Static information signs,wayfinding and directional signs would be used to direct the community accordingly. Meetings or direct consultation (via phone or over the internet) will be held with any affected parties to discuss specific mitigation measures that may be required. Consultation between TfNSW, CoS and shuttle bus services currently located in Little Eveleigh Street occurred during the EIS process. It was agreed to relocate this shuttle service to Lawson Street, on the western side of Little Eveleigh Street.

If additional permanent relocation of bus or other transport services are required, TfNSW will undertake consultation with the relevant transport operators.

Specific notifications will be prepared for the Accessible Transportation Advisory Council (ATAC) and provided to them via TfNSW to ensure disability groups are kept informed of changes to platforms, access, roads and footpaths.

6 Project areas and traffic impacts

This CTMP covers the program of works taking place on the Project. The Project has been separated into the three (3) areas outlined below for traffic management arrangements where traffic control measures and pedestrian or cyclist route changes may be required.

All principal work areas are located adjacent to and accessed from the local road network, although Area 1 (Marian Street site) will have large construction vehicle access directly from Gibbons Street, a TfNSW state road. Sites 2 and 3 are accessed via the local road network within the City of Sydney Council area. This section summarises the impact of the Project work on the surrounding road network and the traffic, cyclists and pedestrians that interface with the Project.

Further details regarding the traffic volumes, proposed road, traffic and access changes and site facility areas are provided in Chapter 12 – Traffic, transport and access of the EIS. The EIS identifies the small daily volume of traffic expected as part of the Project work. That is, up to 20 large vehicle movements and 40 small vehicle movements per day over 3 site areas. The analysis states that the additional vehicles from the Project work activities would have minimal impact on the traffic network.

A survey was carried out in March 2020 to review traffic, pedestrian and cyclist movements on Marian and Little Eveleigh Streets. The summary report is provided as Appendix M.

A risk register for the project is included in the CEMP, with an ongoing review undertaken monthly and as required. Risk associated with traffic related impacts, discussed in Section 6 and are managed through the implementation of the controls outlined in Section 15.1.

6.1 Location of work areas, facilities and access

Table 1.1: The Redfern Station Upgrade project footprint comprises two major ancillary facilities and several non-major ancillary facilities as listed below:

Facility	Site activity description	Vehicle access	Planning approval*
Sydney Trains Car Park (NE Car Park) Ancillary Facility No: 02	Erection of site sheds and car parking facilities Construction laydown and temporary waste storage facility Location accessed from either Carriage works Way or Little Eveleigh Street Construction parking facilities and rail corridor access Fabrication activities: assembly prior to installation within the rail corridor	Rosehill/Marian/Corn wallis via Gibbons Street	SSI no: 10041 approval
Marian Street Car Park and Gibbons Street Reserve Ancillary Facility No: 03	Laydown area for construction equipment & infrastructure Temporary waste storage facility Designated area for fabrication activities	Via Carriageworks/Little Eveleigh Street	SSI no: 10041 approval
Sydney Yard/Central Laydown area /	Hi-rail launch Temporary storage of waste, materials, plant and equipment and access way	Via Regent Street	ER04 (21/01/21)
Newtown Laydown area	Temporary storage of materials, spoil and equipment and access way	Via Station Street	ER05 (15/02/21)
Macdonaldtown Laydown area	Hi-Rail launch Temporary storage of waste, materials, plant and equipment and access way	Primary access gate off Erskineville Road Secondary access off Burren Street is permitted where the primary access gate is unavailable	SSI no: 10041 approval
Sydney Signal Box No:02	Hi-Rail launch Temporary storage of waste, materials, plant and equipment and access way	Via Gibbons Street	SSI no: 10041 approval
Novo Rail Temporary car park	Temporary car parking	Via Carriageworks/Little Eveleigh Street	ER06 (13/06/21
Carriageworks carpark	Short-term storage of materials Minor fabrication Parking and movement of light vehicles and plant/equipment	Via Carriageworks/Little Eveleigh Street	ER07 & ER08 (30/06/21)
North Eveleigh Car Park	Parking/movement of light vehicles and plant/equipment	Via Carriageworks/Little Eveleigh Street	ER09 (01/07/21)
Mezzanine Site Office	Work office Temporary vehicle parking	Via Sydney Trains Car Park, off Rosehill St	EDC04 (22/04/20)
Wilson Street	Temporary access route during Little Eveleigh Street road closure	Via Wilson Street	ER10 (20/12/21)

Little Eveleigh Street	Installation of temporary offset carpark	Via Wilson Street	CA003 (09/06/21) CA006 (26/10/21)

*Nb: Non Major Ancillary Facilities are required to approved by the Environmental Representative under the Project in line with CoA A18.

6.1.1 Traffic requirements – general

The following general traffic requirements are to be implemented or adhered to under the Project:

- All vehicles, trucks and plant must abide by NSW road rules and regulations whilst on Sydney roads
- Where possible, deliveries will be planned to avoid peak hour traffic
- All traffic controllers shall be licensed and wear the required PPE at all times e.g. hard-hats, safetyboots and high visibility vests etc
- All vehicles and plant must obey traffic controllers' instructions, signage and directions at all times

Specific/additional requirements at the various sites are noted below and provided in the TCP's completed by the Traffic Control subcontractor. Note: TCPs' in this revised management plan are now referred to as Traffic Guidance Schemes, consistent with "Traffic control at work sites Technical Manual", version 6.

At the completion of works the Project locations and access points will be cleared and cleared and/or repaired to their previous condition prior to demobilisation.

6.1.2 Marian Street Car Park and Gibbons Reserve, Ancillary Facility No:03

Novo Rail has established a small site compound at the Marian Street Car Park and Gibbons Reserve and which is referred to under the Project's planning approval as Ancillary Facility No:03. A temporary office accommodation, namely Mezzanine Compound, located within the Project footprint also exists in proximity and is utilised on a needs basis. Access to the compound and office accommodation is from the shared road/footpath at the intersection of Rosehill and Marian Streets. Refer to figure 1.1 Map. General construction equipment such as hand tools and work vehicles utilise this location.

Construction equipment at the site compounds generally includes excavators, trucks, semi-trailers, light vehicles, cranes, elevated work platforms, concrete trucks, concrete pumps, generators, light towers, vacuum trucks, track machinery and various small tools. The Marian Street site compound is also utilised for the establishment of cranage deployment and associated activities. The facility is also to be used to facilitate the construction of the new concourse. This area ultimately becomes the Marian Street entrance to Redfern Station.

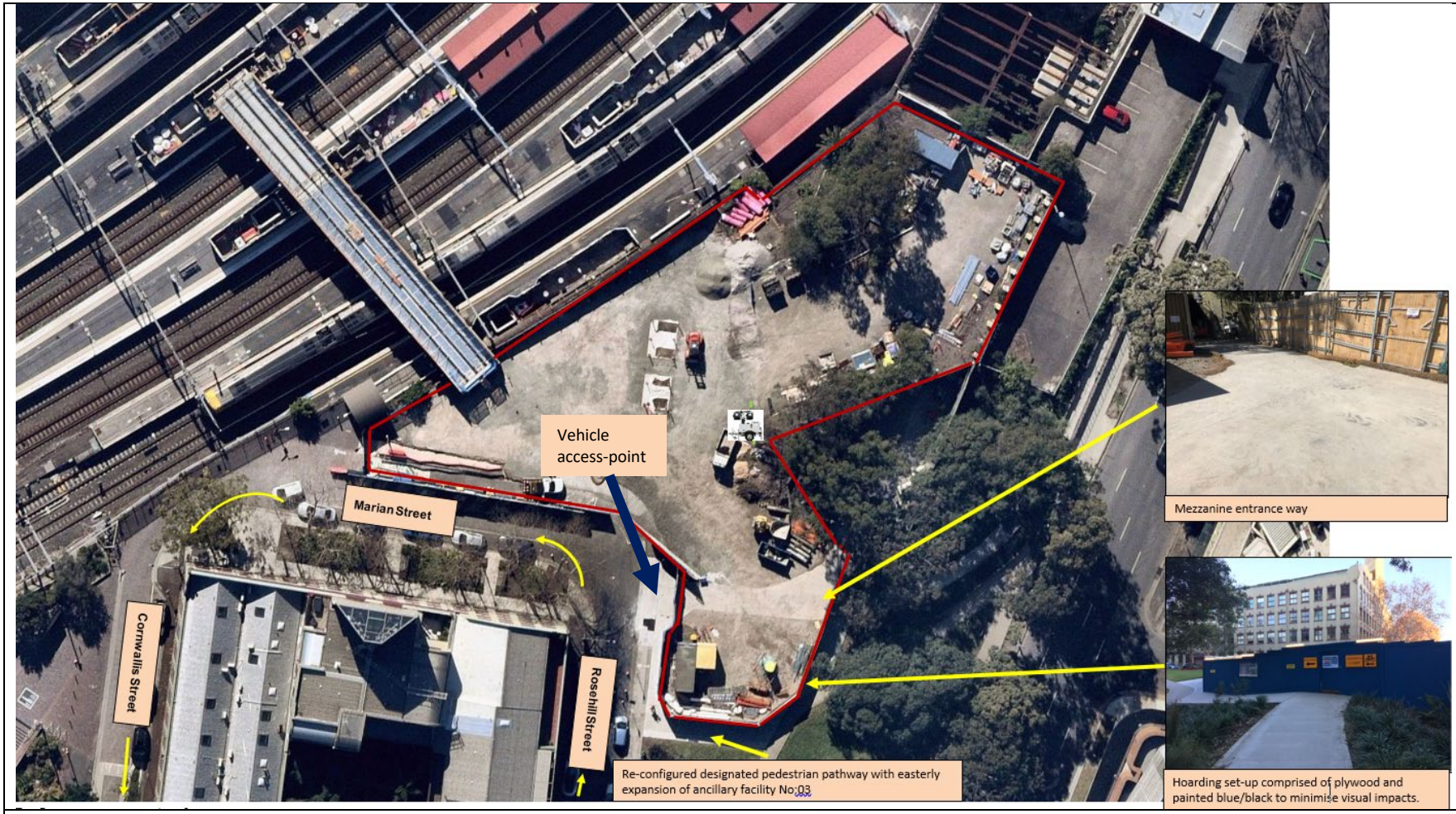


Figure 1.1: Marian Street Car Park and Gibbons Street Reserve, Ancillary Facility No: 03. Access to Facility and adjoining Streets, Rosehill/Marian/Cornwallis Streets via Gibbons Street.
Refer to TCP 2 in Section C of this Management Plan which detail road access, pedestrian and cyclist management to this area.

Early Works

Delivery and establishment of the crane and other heavy equipment carried though at the Marian Street Car Park and Gibbons Street Reserve, Ancillary Facility No: 03 over the Christmas 2020 Sydney Trains 5 day rail shut down. The plant and equipment was delivered to site in the week preceding Christmas – from 21 December – and was removed in the first week of January 2021.

Rosehill Street and Marian Street were accessed for this purpose, requiring parking along the east and north kerbs to be removed to provide adequate clear width to safely deliver wide loads. The additional road width was to ensure a safe clearance to remaining on-street parked cars during these movements. Theaccess restrictions and interfaces were managed by Traffic Controllers positioned at all locations wherethe project vehicles interfaced with other road users. Over dimension vehicles using Rosehill Street duringthis operation were escorted past the on-street parked cars to prevent conflict with other road users.

To meet CoS Traffic Committee meeting requirements, an Early Works Traffic Management Mini-Plan was provided to CoS on 30 October to enable review and assessment of the road closure requirements for Christmas 2020. The Mini-Plan and associated TCPs provided for this are attached in Appendices C and L.

Construction Site Access

The temporary site access track to be installed through Gibbons St Reserve will provide access between Gibbons Street and the Marian Street construction site for deliveries and other heavy vehicle movements. Car parking along Rosehill Street will then not require temporary removal for the ongoing project works.

6.1.3 Little Eveleigh Street

The two storey building located at 125-127 Little Eveleigh Street is owned by TfNSW. The previous tenant, The Big Issue publication, has been relocated as the building will become the western access to the New Southern Concourse.

To manage the increase in pedestrian movements along Little Eveleigh Street, the road will be permanently formalised into a Shared Zone to accommodate pedestrians, commuters, cyclists and vehicles. Resident parking will be relocated to the western end of Little Eveleigh Street with 20 parking timed / residential permit parking spaces constructed to counter the removal of 20 on-street parking timed / residential permit parking spaces. Refer to figure 1.2 for more information.

There is a dedicated access gate into rail land at the western end of Little Eveleigh Street, opposite Ivy Lane, providing access into the North Eveleigh site compound and adjacent Sydney Trains parking area. Access to this area is also available from Carriageworks Way.

- Eveleigh Street

Figure 1: Little Eveleigh Street and Big Issue Building

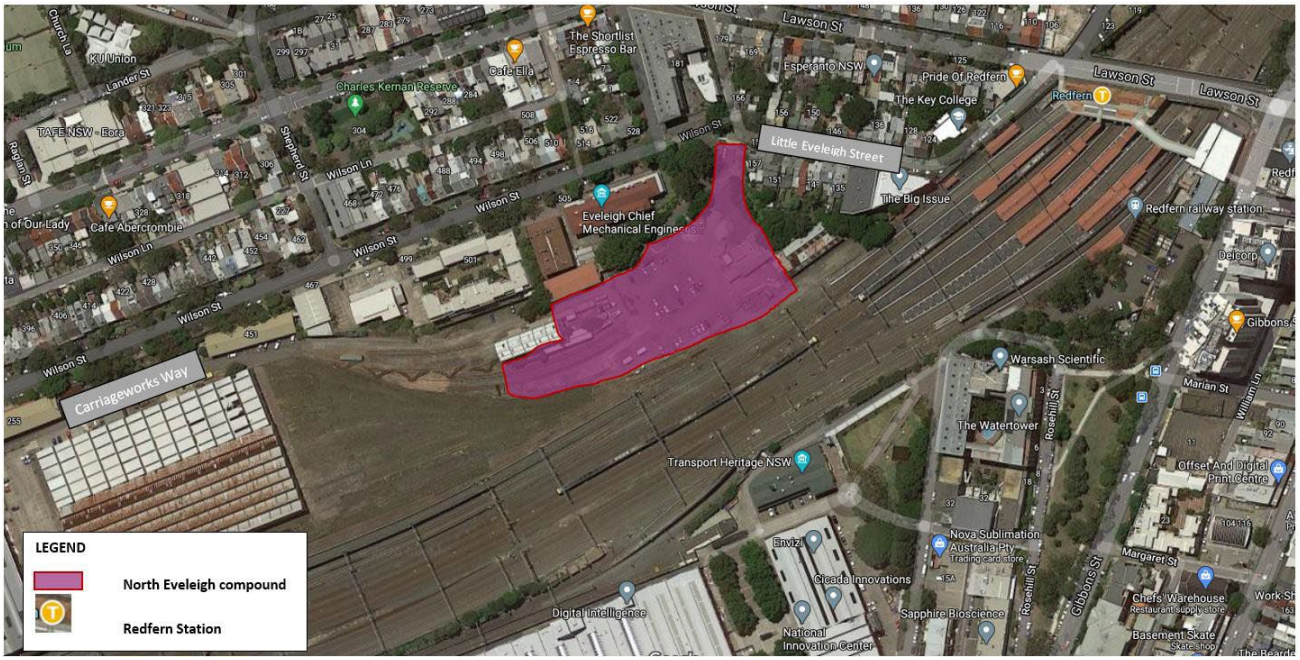
Figure 1.2: Little Eveleigh Street and 125-127 building works.

– Motor vehicle traffic is diverted down Ivy Street off Abercrombie/Lawson during road closure
– Cyclists travel north to south, as indicated by green cycle-way along Lawson Street, Ivy Steet and Ivy Lane.

6.1.4 North Eveleigh site compound

A site compound also exists at the Sydney Trains Car Park at North Eveleigh and is referred to under the SSI approval as Ancillary Facility No:02. Access is via the existing electric gateto the Sydney Trains car park on Little Eveleigh Street or via Carriageworks Way. Access via Carriageworks Way will be the preferred route to the North Eveleigh compound. Refer to figure 1.2 below for further information.

- Access to area is via Little Eveleigh Street or Carriageworks Way
- All large vehicle access is via Carriageworks Way
- Refer to TCPs / VMPs provided in Appendices F, G, H and I

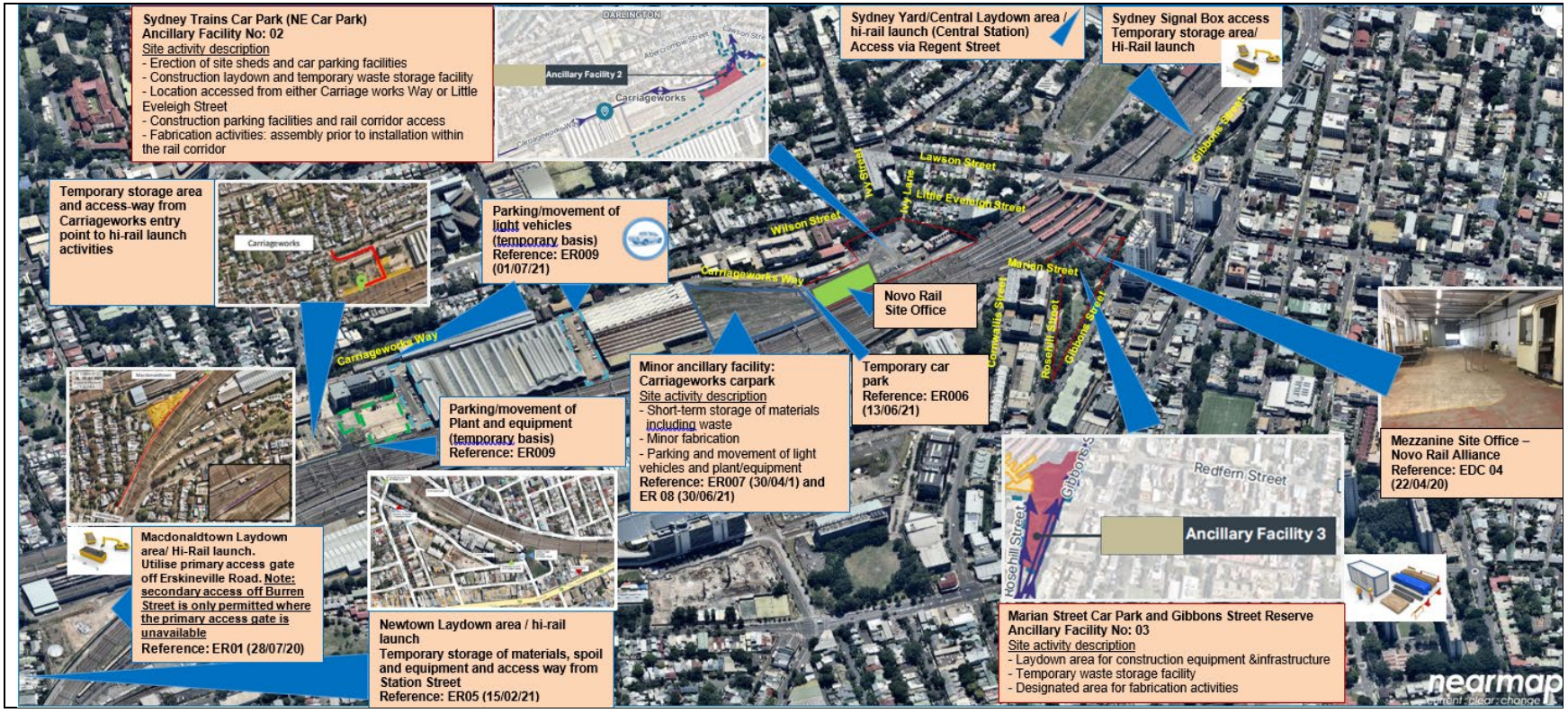


6.1.5 Minor Construction Ancillary Facilities

Minor ancillary facilities have been identified for access to hi-rail pads to enable plant to access the rail tracks, temporary materials storage and laydown area are listed under Table 1.1 and shown on Figure 1.4 in this Management Plan. A Consistency Assessment and Environmental Reviews have been prepared and approved to permit the use of these work-zones under the Project. been carried out and approved for the above.

A submission will be made to the ER, in accordance with Condition A18, if additional minor construction facilities such as lunch sheds, office sheds, portable toilet facilities, temporary minor spoil and materials storage are required and where theyhave not been identified by description and location in the documents listed in Condition A1.

An overview of work-zones and vehicle access points is provided below in figure 1.4:



The Project will ensure any additional facilities:

- are located within the construction boundary or within the rail corridor
- have minor amenity impacts to surrounding residences and businesses, and in consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts

6.1.6 Pre-condition and dilapidation reports

Condition reports for existing local roads, parks and existing infrastructure in the road reserve will be undertaken before commencement of construction. The report will identify the current condition of the asset and a copy will be provided to the asset owner within three weeks of completion of the survey and at least five (5) business days before the road is used by heavy vehicles for construction of major works. Condition surveys are populated under the Project's Property Condition Survey Register for tracking purposes, together with photographic recording.

With the exception of damage resulting from normal usage of the road, the Project will repair damage that has resulted from the construction of the Project works to at least the condition it was in pre-construction within three (3) months of the subject road no longer being used in association with the construction of the SSI, unless an alternative timeframe is agreed to by the relevant road authority. Repair may occur through compensation to the asset owner or through restoring the asset to its pre-condition prior to the damage.

Where reinstatement occurs in public space such as Gibbons Street Reserve, opportunities will be provided for community input. Consultation with CoS will also occur as they are currently the asset manager although the land is owned by TfNSW. Community and stakeholder consultation is detailed within the CLMP.

6.2 Road network changes and impacts

6.2.1 Traffic

Key roads for the Project include Gibbons Street, Lawson Street, Little Eveleigh Street and the Rosehill, Marian Street, Cornwallis Street loop.

Little Eveleigh Street and the Rosehill/Marian/Cornwallis Street loop are local roads that provide access to driveways, properties and car parking. Site observations made during the development of the EIS indicated low traffic volumes with good network performance and minimal delays and queuing.

Lawson Street is also part of the local road network, but acts as a principal connector road between the state road network and significant residential and special purpose precincts (University of Sydney campuses, etc.). Traffic demand varies widely, with a number of peak demand periods associated with commuter movements and higher education programming. Heavy traffic movements include higher utilisation by pedestrian and cyclist modes.

Gibbons Street is a state road with single direction flow in the vicinity of the project, carrying large volumes of light and heavy vehicles during network peak hours. Reduced traffic speeds with some queuing extending into the project area are evident during peak periods. Numerous bus routes utilise Gibbons

Street, with bus stops located adjacent to Gibbons Street Reserve. Site observations for the EIS showed that delays and queueing were evident. However network performance did not generally appear to be at capacity or at unacceptable levels.

As outlined in Section 12.4 of the EIS, the Project will generate only a marginal number of additional traffic movements on the road network (about 20 heavy vehicle movements and up to 40 light vehicle movements per day) during peak construction periods. Heavy vehicles would generally follow established heavy vehicle routes (state and regional roads) to access the construction facilities and only use local roads where required to complete their trip.

Traffic modelling has not been undertaken (except in Little Eveleigh Street at the intersection of Little Eveleigh and Lawson Street and on Marian Street) to assess the impact to intersection or network performance as a result of the low volume of Project construction vehicle movements. Traffic volume increases of this nature would create negligible traffic flow impacts on the key local and regional access routes as traffic from the Project would result in only a minor percentage increase in traffic volumes for these key routes. No noticeable impacts are expected on traffic signal operations on Gibbons Street due to construction vehicles accessing or egressing the road network or Reserve. Table in Section 6.2.2 summarises the key road network and parking changes and associated mitigation measures associated with these works.

During construction, if additional local roads not currently approved for use are identified as required, an application will be made to the City of Sydney via TfNSW. Any such request will include:

- a swept path analysis
- demonstration the use of the local road will not compromise the safety of the public and have no more than minimal amenity impacts
- provide details of the date of completion of road dilapidation surveys for the subject roads
- describe the measures to be implement to avoid, where practicable, the use of local roads past schools, aged care facilities and child care facilities during peak times. Such measures would include a review of the communities adjacent to the road by the Community & Stakeholder Manager to identify any risks and potential mitigation measures.
- where sensitive receivers are identified, an alternative route will be considered. Where there is no alternative route, consultation will the sensitive receivers will occur.

6.2.2 On-Street Parking Effects

On-street parking on the immediate road network will be affected to varying degrees, depending on the construction activity at the time, to provide sufficient width and safe conditions for other road network users.

Workers will be encouraged to car pool or catch public transport. When this is not possible, parking for construction workers will be nominated within the Marian Street as required and at designated areas within the Sydney Trains Car Park, Ancillary Facility No:03. North Eveleigh site compounds and not on the public roads. In accordance with Condition A18, additional areas for worker parking were approved by the ER as Minor Construction Ancillary Facilities in June and July 2021. These areas include selected locations within the North Eveleigh precinct including the fan of tracks adjacent to the former workshops and areas of temporary (during possession) parking off Carriageworks Way, in consultation with other

occupants. Under the Sustainability Management Plan, a Green Travel initiative will be implemented where safe to do so under COVID-19 conditions. These features will minimise impacts on local residents, businesses and station customers.

The Table below summarises the key road network and parking changes and mitigation measures associated with these changes.

Road	Changes to Traffic /Parking Conditions	Mitigation Measures
Gibbons Street	– Minor traffic interruptions related to the construction of the temporary site access road through Gibbons Street Reserve – Momentary use of the pedestrian path between Gibbons Street and Marian Street as vehicles traverse from the Reserve into the Marian Street site compound. – Removal of 3 untimed parking spaces to install the temporary construction road access into Gibbons Street Reserve and then for the installation of the new Kiss and Ride – Parking impacts during the footpath and kerb reinstatement	– Consultation with RMS, CoS, Sydney Buses, Sydney Trains, NSW TrainLink, Taxi Council NSW, Cycling NSW – ROL for Gibbons Street access construction – There will be no impact to bus operations – TGSs with pedestrian and cyclist movements included – Community notifications outlining the nature and timing of any changes – Regulatory traffic signage – Directional and information signs for pedestrians and cyclists
Rosehill Street	– Temporary parking removal to provide access for large or oversized deliveries. Mainly required for Early Work activities until the Gibbons Street Reserve access road is installed – Road closure during 5 day rail shutdown in December 2020 on Rosehill and Marian Streets between Margaret and Cornwallis Streets – Permanent removal of 16 car parking spaces, 11 restricted, five unrestricted and 1 car share scheme for the extension and formalisation of the shared zone in the Rosehill/Marian/ Cornwallis Street loop	– Consultation with CoS – Maintain residential, waste management services, deliveries and emergency vehicle access during road closure – TGSs with pedestrian and cyclist movements included – Community notifications outlining the nature and timing of any changes – Temporary removal of parking signs – Caution signs for cyclists to slow down and watch for vehicles
Marian Street	– Removal of 4 untimed parking spaces and 1 Car Share space on the north side of Marian Street to widen the access gate, relocate the boundary fence and install a crane pad within the site compound	– Consultation with CoS – Consultation with Mirvac and South Eveleigh precinct stakeholders – Consultation with the Watertower and Ariana residential buildings

Road	Changes to Traffic /Parking Conditions	Mitigation Measures
	– A work zone will then be established adjacent to the entrance gate – Road closure during 5 day rail shutdown in December 2020 on Rosehill and Marian Streets between Margaret and Cornwallis Streets – Permanent removal of 16 car parking spaces, 11 restricted, five unrestricted and 1 car share scheme for the extension and formalisation of the shared zone in the Rosehill/Marian/ Cornwallis Street loop	– Maintain residential, waste management services, deliveries and emergency vehicle access during road closure – Relocation of one Car Share space by CoS – TGSs with pedestrian and cyclist movements included – Community notifications outlining the nature and timing of any changes – Signs advising of parking removal – Caution signs for cyclists to slow down and watch for vehicles
Cornwallis Street	– Vehicles egressing from the Marian Street work site will use Cornwallis Street to access the road network – Access for local vehicles, pedestrians, cyclists, garbage trucks, and access to the South Eveleigh precinct area will be maintained however some temporary diversions may be required	– As above – Large vehicle egress is restricted to right turn into Garden Street to Henderson Road. No left turn access to Boundary Street.
Little Eveleigh Street	– Repurposing 125-127 Little Eveleigh Street as a station entrance will require the establishment of a Work Zone and temporary removal of parking adjacent to the building at various times – Construction of the new shared zone will require removal of 18 resident/restricted parking spaces, one accessible parking space and one car share scheme parking space. – The same number of parking spaces will be relocated to the new car park at the western end of Little Eveleigh Street prior to the removal of the parking spaces	– Consultation with CoS – Consultation with Carriageworks – Ongoing consultation with residents and businesses – Ongoing consultation with Little Eveleigh Street residents and businesses – Maintain access to all driveways and properties, unless specifically negotiated – The new offset parking facility will be construction prior to the removal of all parking on Little Eveleigh Street – TGs with pedestrian and cyclist movements included – Community notifications outlining the nature and timing of any changes

Road	Changes to Traffic /Parking Conditions	Mitigation Measures
		– Signs advising of temporary or permanent parking removal – Caution signs for cyclists to slow down and watch for vehicles
Lawson Street	– Construction of a new Kiss & Ride will require the temporary removal of 4 parking spaces and permanent removal of 3 spaces in total once constructed – The Kiss & Ride will be installed at the same time as the footpath upgrading – Temporary partial lane closures will be required for the above and during the tie-in of the Little Eveleigh Street Shared Zone with Lawson Street – Shuttle bus stop relocated from Little Eveleigh Street to Lawson Street (near Little Eveleigh Street) for services from Prince Alfred Hospital, University of Sydney, Tribal Warrior, etc	– Consultation with RMS, CoS, Sydney Buses, Sydney Trains, NSW TrainLink, Taxi Council NSW, Cycling NSW, local Transport Operators, Prince Alfred Hospital and University of Sydney and Lawson Street local businesses – ROL for Lawson Street – TGSs with pedestrian and cyclist movements included – Maintain pedestrian and cyclist access however diversions may be required for public safety – Maintain access to local businesses – Community notifications outlining the nature and timing of any changes – Regulatory traffic signage – Directional and information signs for pedestrians and cyclists and potentially local businesses
Ivy Street	– On-street parking spaces and the eastern side footpath will be temporarily impacted during footpath widening work – Additional on-street parking is available within 400m of this street	– Consultation with CoS and adjacent businesses and residents – Maintain access to all driveways and properties, unless specifically negotiated – TGSs with pedestrian and cyclist movements included – Community notifications outlining the nature and timing of any changes – Signs advising of temporary or permanent parking removal – Caution signs for cyclists to slow down and watch for vehicles

6.2.3 Public Transport

There will be periodic closures within the railway corridor which will affect train movements and are part of Sydney Trains routine operations (Track Work) to undertake maintenance and upgrades within the rail corridor. Alternative Transport Bus services are provided to mitigate the impacts to public transport users however this may increase travels times due to extra buses on the road network. This bus replacement service is managed by Sydney Trains across the rail network.

During a five (5) day Track Work period between 26 and 30 December 2020, construction hoardings will be installed on a number of the platforms to enable work on the footings, piles and lifts shafts on the platforms during mid-week train operations. The hoardings will reduce platform widths at the southern end of Redfern Station. It is anticipated there will be some customer congestion, especially during peak periods and when customers disembark and this will be managed with the assistance of Sydney Trains Customer Service staff, directional signage and station announcements.

Bus services along Gibbons Street will continue to operate during construction activities however there may be very minor delays due to construction vehicle movement into and out of the Gibbons Street Reserve. Traffic volumes will be low and are included in the previously identified count of 20 heavy vehicles and 40 light vehicle movements per day over the three locations.

There is an existing shuttle bus zone on Little Eveleigh Street which will be relocated to Lawson Street, on the western side of Little Eveleigh Street. The distance to the relocated stop is similar to the existing distance from the station entrance. Static information and directional signage will be installed to direct users to the relocated stop in addition to consultation with the transport operators. Consultation on the relocation of this shuttle bus zone has been carried out by TfNSW in consultation with CoS and was outlined in the EIS.

6.2.4 Emergency Services Access

An emergency is defined as an unforeseen event which requires urgent attention to protect life or property or an occasion when emergency services (Police, Fire Brigade, Ambulance or State Emergency Services) take control of a portion of the road network. During emergency situations, the Project will immediately comply with any instructions from the NSW Police Service or relevant Authority to re-open a lane, shoulder, footpath or shared path without delay, whether or not that area was closed by prior agreement.

In the event that construct works create a requirement to undertake emergency work, the Project will contact the TMC Transport Operations Room or CoS (the relevant road owner) immediately and follow staff instructions.

6.2.5 Pedestrians and Cyclists

Pedestrian and cyclist access requirements and impacts as a result of construction will be assessed and considered during the development of site specific TCPs and be developed in consultation with the relevant road authority. The application of TCPs with pedestrian/cyclist detours included, advance notice and clear warning signage will ensure appropriate levels of safety and guidance are provided during these times. Details of the requirements is provided in various part of AUSGTROADS Guide to Traffic Management.

Swept path analysis has been performed on Marian Street and Little Eveleigh Street where potential integration or conflict may occur, to ensure safe separation and clearances are provided without the need to manually control or monitor ongoing operations. Relevant swept path overlays are provided at Appendix K.

The swept paths for Little Eveleigh Street reflect the travel paths required to ensure different sized trucks do not traverse into the cycle lane in Little Eveleigh Street. Construction in 125-127 Little Eveleigh Street will require vehicles of this size to enter the street. Further review will occur to identify the most appropriate and safe approach in delivering these works. One example would be temporary removal of parking spaces on the bend in Little Eveleigh Street. Review to occur in early 2021.

The changes to road user conditions will typically be required from the commencement of works in the relevant areas and apply 24/7 to ensure the availability of safe movement areas and expedite the construction process.

There will be temporary disruptions at various stages of work to the existing pedestrian and cycle routes around the station, in Little Eveleigh Street, Lawson Street, Ivy Street and within the Rosehill/Marian/ Cornwallis street loop.

Cyclist and pedestrian impacts, especially for those pedestrians with disabilities or with a visual impairment and for customers in a wheelchair or with children would include, but are not limited to:

- Longer travel distance for pedestrians accessing or egressing from Platform 10 at Marian Street during Platform 10 closures and during construction of the shared zone and footpath widening on Marian Street. Customers would be diverted via Gibbons Street
- Detours from the north side of Marian Street footpath to the south side of Marian Street footpath, within the shared zone
- Pedestrian diversion along Gibbons Street from the western to the eastern side of the road during proposed footpath upgrades at Gibbons Street associated with the new kiss and ride facility
- Pedestrian diversions on Lawson Street associated with the proposed kiss and ride at this location
- Partial road closure of Little Eveleigh Street during construction of the shared zone resulting in pedestrians being detoured around the work area and cyclists via Ivy Street to Lawson Street.

Cyclist warning signs identifying conflicting road use will be installed and consultation with Cycling NSW and local cycling groups will be undertaken to inform cyclists of the work activities within the local roads. Consultation with Disability Groups such as Vision Australia will also occur.

To provide a safe environment for pedestrians, the Project will clearly define the boundaries of all work areas and, where required, provide defined travel paths. Physical traffic management controls and signage will be implemented to direct pedestrians. All physical barriers, hoardings and fencing will be appropriately secured to prevent injury to the public or obstruction of traffic lanes.

Temporary lighting will comply with AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting, to ensure targeted illumination is achieved without causing obtrusive light spill to adjacent receivers.

In Area 1, where vehicles will traverse between Gibbons Street Reserve and the site entry at Marian Street car park, traffic controllers will ensure the pedestrian path between the two areas is clear of pedestrians or cyclists prior to any vehicle movement. Signposting of vehicle movements will be located on the pathway. As access across this path will only occur during site work hours and managed by authorised traffic controllers, these conflicts can be reduced to a very low risk.

Area 2 involves a section of low speed local road. Although the available road pavement of Little Eveleigh Street is narrow, the marked cycleway helps to provide a relatively safe environment for cyclists. The potential removal of four (4) on-street car parking approaching the corner near 125-127 Little Eveleigh Street would improve cyclist safety when large vehicles traverse the road. An effective signposting regime in this section of Little Eveleigh Street should remind road users of the potential conflict risks. Appendix K provides swept path analysis of various vehicle lengths that currently access this road and the impacts to the cycle lane.

Pedestrian movements are also significant during the higher education precinct active periods. The very low speed environment should aid the effectiveness of warning signs and road user guidance.

Road safety audits will be carried out during the design phase and during the commencement of operations across the Project locations. Additional audits will be carried out where long term traffic changes are instituted. Audits will be carried out by a suitably qualified Road Safety Auditor.

As part of the Project's site safety requirements, weekly Work Health Safety & Environment (WHS&E) inspections are carried out which includes traffic management installation and completed on Inspection form E-T-8-0905 Management Site Safety and Environment Inspection.

Novo Rail also carries out Fatal and Severe Risks Inspections (FSR's) across the Project which includes traffic management inspections. The FSR inspection includes, but is not limited to, ensuring all planning and staging of work applies the safety hierarchy of controls, relevant approvals for asset owners and TCP's are in place and work areas are isolated form passing traffic with approved safety barrier treatments.

6.2.6 Impacts on Traffic Movements

Construction vehicle movements and effects on the road network traffic will vary, depending on the progress of the construction program and prevailing traffic flows. As volumes of project generated construction traffic are planned to be light, with widely spaced individual vehicles only integrating into road network traffic flows, the effects on traffic are expected to be very minor. If some site activities are likely to generate multiple vehicle integration, these will be separated by manual control to alleviate delays to road network traffic flows. Impacts related to the individual project areas are summarised below:

Area 1 – Early works involve the use of Rosehill Street to access the area until a new access route is constructed within the Gibbons Street Reserve, into a secured, temporary site compound. Subsequent construction vehicles using Rosehill Street will be restricted to light vehicles. Egress movements for all vehicles will be via Cornwallis Street, with large vehicles restricted to turning right into Garden Street to Henderson Road. The site access / egress point on Marian Street will

involve integration of general traffic with construction vehicles. Sight distances are good for both approaches and egress movements of large vehicles will be managed by an authorised Traffic Controllers to ensure safe passage for all road users. Safe operation of the temporary access road through Gibbons Street Reserve includes the potential conflict of heavy vehicles accessing from Gibbons Street being momentarily delayed by pedestrian movements. Direct management of this conflict area will prevent large vehicles stopping and obstructing northbound traffic lanes on Gibbons Street

Area 2 – Construction traffic volumes are expected to be relatively light, with access and egress via Little Eveleigh Street, using the existing driveways of 125-127 Little Eveleigh Street building. Heavy vehicles will be restricted to maximum 12 tonne bogie axle rigid trucks to facilitate movements between site and the road network. By removing a portion of the parking spaces east of the site access driveways and utilising Project traffic controllers to manage access and egress movements, integration of construction vehicles with other road users is expected to be easily manageable.

Area 3 – Light vehicle access is via Little Eveleigh Street with heavy vehicle access via Carriageworks Way. Construction vehicles entering and exiting at the electric security gate at the western end of Little Eveleigh Street have good sight distance to oncoming traffic and these movements are regularly performed under normal use of this site access. Carriageworks Way provides a regularly used heavy vehicle route from the public road network to site. When non-standard large construction vehicles require access, any potential conflict areas with general traffic and pedestrians will be managed by Project traffic controllers

6.2.7 Cumulative Impacts

A number of projects are identified for construction in and around the Redfern area. Predominantly affordable housing and mixed use multi storey buildings, work within the Mirvac site area and construction of the Waterloo Metro Station. Details of the current and proposed projects are outlined in Section 23 of the EIS.

These projects currently, and will continue, to deliver additional construction traffic into the Redfern area arriving into the area on major feeder routes designed for high traffic volumes. The Novo Rail CSM will contact the builders and developers of work sites in the vicinity of the project to discuss their work schedules and identify potential cumulative impact periods and mitigation measures. These stakeholders will be placed on the contact list for project communications, keeping them informed of the Project progress. The CSM will also liaise regularly with CoS and obtain updates on adjacent potential developments plus review the CoS development application register (https://cityofsydney.nsw.gov.au/development/development-applications)

6.2.8 Incident Management

Unplanned incidents on the road can have a significant impact on road user delay. Similarly, incidents that occur outside the Project work area, on the surrounding road network, can temporarily restrict or affect construction activities.

The types of unplanned incidents that may occur include:

- motor vehicle crashes or breakdowns
- environmental spills
- construction incidents
- structural failures
- inclement weather conditions
- flooding
- anti-social behaviours
- bomb threats

In responding to an incident, the Project Safety Manager is immediately contacted and the Project Incident and Near Miss Notification procedure (TAP04-PRO-SA-0001) Is implemented.

Incident management and response is detailed in the Construction Work Health and Safety Management Plan TAP04-PLN-SA-0001. The Incident and Near Miss Notification procedure sits within this plan.

6.3 Compliance Management

6.3.1 Roles and Responsibilities

The organisational structure and roles and responsibilities for the Project are outlined in Section 10 of the SEEWMP.

The CTMP has been drafted by the Community & Stakeholder Manager who has 15 years of experience in producing Traffic Management Plans and has previously held Prepare Work Zone Traffic Management Plan qualifications. The CTMP has also been reviewed by the Novo Rail Safety Manager and Construction Manager and by an independent and qualified Road Safety Auditor Level 3 Auditor RSA-02-0327 who also holds a current Prepare Work Zone Traffic Management Plan Certificate 0051718998.

Where required, this CTMP will be updated to reflect the inclusion of new TCPs throughout the development of the Project. Particular focus areas will be suitability and operation of the numerous boundary gates used by the project for deliveries into the rail corridor that have not been explicitly defined in this CTMP. Specific Traffic Control Plans (TCP's) may be required at some of these locations, to be supplied by the nominated Traffic Management Subcontractor.

6.3.2 Novo Rail Senior Project Engineer'(s)

The role of the Senior Project Engineer in relation to traffic management include:

- Ensuring all licences, permits and any written permission necessary are obtained from the relevant authority before any work in a road reserve is commenced by Novo Rail or a person or organisation working on behalf of Novo Rail
- All personnel working in the Project area are suitably qualified for their tasks, have been formally inducted to site and attended any briefings and verified acceptance of all site conditions and guidelines
- Verify that all daily and other site personnel briefings are performed and records of attendance are maintained
- All works are using correct and relevant TCPs to ensure safe and efficient operations
- All site related works are correctly barricaded and sign-posted using the relevant approved signs
- All signs and devices used are in good condition and are removed at the completion of the work
- All site related works do not commence until all signage is in place, even in an emergency it is essential that safety is observed for both project personnel and other road users
- The CTMP is reviewed regularly to ensure it is still suitable
- Ensure the drug and alcohol monitoring regime is in place and practiced satisfactorily taking into consideration any COVID-19 requirements as per Novo Rail's COVID-19 Safety Plan.
  If any person is injured, the incident is immediately reported to the Project Manager, Safety Manager and relevant authorities and the Novo Rail Near Miss Notification procedure (TPA04-PRO-SA-0001) is implemented. Information recorded includes:
  - Names and addresses of those involved;
  - Names and addresses of any witnesses;
  - Actual types of signs and devices at the site;
  - Photographs of signs and devices at the site at the time of the incident;
  - Details of the surface and the width dimension of the travelled path;
  - Details of any hazard at the site; and

- Details of the prevailing weather.

Full details of incident and response management is detailed in the Construction Work health and Safety Management Plan TAP04-PLN-SA-0001.

6.3.3 Traffic Control Supervisors (supplied by the Traffic Control subcontractor)

The role of the Traffic Control Supervisors is to:

- Hold a Prepare Work Zone Traffic Management Plan qualification
- Manage the day to operations and work load of the traffic control teams
- Manage the implementation of traffic control layouts ensuring adequate number of staff and equipment are on site
- Undertake pre-starts for each traffic control team at the beginning of every shift, in addition to attending Novo Rail pre-starts
- Provide relevant copies of TCPs, ROLs and SZAs to the traffic control teams
- Undertake daily inspections of short-term traffic control, maintain records and provide copies the Novo Rail Senior Project Engineer
- In conjunction with the Novo Rail Senior Project Engineer and Safety Manager investigate traffic related incidents/hazards, identify preventative measures and manage the implementation of actions to mitigate future occurrences

Site Employees

- Workers have a general awareness of traffic safety issues
- Workers are informed of the public relations aspect of their work and instructed they should not allow themselves to be provoked by members of the public
- Where required, all workers have access to and properly use the following safety equipment and PPE:
  - High visibility vest or shirt; UV protection eyewear and sunscreen (SPF 30 standard or better);
  - Wide brimmed hat/safety helmet, Steel cap safety footwear;
  - Appropriate clothing to protect against UV radiation;
  - Hearing protection (where appropriate);
  - Eye protection (where appropriate) and
  - Face masks as per COVID-19 Safety Plan

6.3.4 All Other Persons

All other persons carrying out work activities on or immediately adjacent to the site shall:

- Always take reasonable care for their safety and that of those around them;
- Follow the applicable requirements of this CTMP and any other relevant site instructions and plans;
- **Prior** to proceeding with any work, contact their supervisor or a Novo Rail Site Management Team member for clarification of any requirement applicable under this CTMP, if they are uncertain of what is required or how it is implemented;
- Wear high visibility vest or shirt where required under this CTMP;
- Always obey the applicable road rules for pedestrians and drivers;

- Always follow safe driving practices, including using the correct thoroughfare in accordance with any posted speed limits and safety requirements in a manner that does not put at risk their safety or that of any other persons (e.g. passengers, fellow workers or members of the public); and
- Park as per any applicable parking signs and rules and avoid creating any form of safety hazard when parking or parked.

7 Traffic Management

7.1 Traffic Management

When Novo Rail Site Management Team members, subcontractors or their workers conduct work on the road or footpath it creates an abnormal situation that requires the provision of suitable signage, barricading, guarding, etc, for users including vehicular and pedestrian traffic.

Regardless of the nature of the work, the complexity or how long it shall take, the purpose of this CTMP is to ensure the safety of the public and community, road users, the Project team, subcontractors, their workers and the users of the road and to minimise the inconvenience to all parties.

The basic communication requirements of the CTMP are to provide:

- Advance warning of a change in traffic conditions in time for the users to adjust; and
- Information and guidance as to where to go to safely negotiate the work site. That is delineation of travel path and its separation from the work site and any necessary barricading.

7.1.1 Traffic Demand

The Novo Rail Senior Project Engineer shall identify the most suitable time of the day to conduct any work this CTMP is applicable to during the approved hours of work, and ensure that sufficient road reserve space remains available to provide an acceptable level of service and convenience to all users. Consideration will be made to reduce any work activities during peak hour traffic, however as previously identified, there will be limited vehicle movements (up to 20 heavy vehicle and 40 small vehicle movements) across the three work zones per day.

Novo Rail and/or the Traffic Control subcontractor will ensure these road times will comply with all approved ROL's issued by TMC or Road Opening Permits issued by CoS, as well as any conditions therein.

7.1.2 Road Occupancy

Road occupancy is defined as any activity that shall or is likely to obstruct or have effect of restricting, closing, interfering with or obstructing the free flow of traffic on any lane or shoulder of a public road opened to traffic.

Except in the case of an emergency, or when directed by Police, TfNSW or Emergency Services, the Traffic Control subcontractor will obtain an ROL, on behalf of Novo Rail, in accordance with the TMC Road Occupancy Manual prior to the commencement of any works which:

- Slows, stops or otherwise delays traffic
- Diverts traffic from its normal course along the road carriageway, including lane closures, turning restrictions, side-tracks, detours and diversions
- Occupies any portion of the road that is normally available for traffic, including road shoulders.

Where work is required on local roads or footpaths, the Traffic Control Subcontractor will apply for the relevant occupancy, permit, approval of that road authority, CoS.

All road occupancies, permits or approvals will be subject to the specific period of operation stated on the approved ROL or permit and conditions on obtaining any other necessary approvals.

7.1.3 Traffic Routing

Heavy vehicle access routes have been identified within the EIS and are provided as Section H for the Project area. Heavy vehicles are required to travel on roads approved by the relevant road authority while travelling throughout the national road network to their destination.

A Revised Heavy Vehicle route is also identified in Section I, extending the existing routes outlined in the EIS to connect with state roads that connect to the M8 motorway. The Revised Heavy Vehicle route is being consulted with City of Sydney Council. Additional environmental assessment has been undertaken for Redfern Station Upgrade, Consistency Assessment (01). The Consistency Assessment includes the revised heavy vehicle haulage route, and has been approved by TfNSW on 17 December 2020.

Recent changes to the Heavy Vehicle Permit system may have altered these and other conditions for oversized and non-standard vehicles. Current and updated requirements and/or restrictions will need to be confirmed with the National Heavy Vehicle Regulator (NHVR) prior to these vehicles travelling to site.

7.1.4 Traffic Control

Traffic control shall be provided by the relevant Novo Rail Site Team member or subcontractor, as applicable, where required under this CTMP or the SWMS for the activity undertaken.

The relevant person for Novo Rail/Traffic Control subcontractor shall ensure:

- The level of control implemented is suitable for all traffic conditions occurring during the work activity e.g. traffic controller, police, other means of traffic control; and
- Traffic control measures take into consideration emergency vehicles and vehicles with special requirements such as buses, their stops and terminals.

7.2 Delivery of Oversize Materials

An accompanying TSG / VMP prepared by an authorised person is required for the delivery of oversize materials such as pre-fabricated elements and any other materials or equipment that may be required. All over dimension vehicles must only use the routes nominated, and at the times approved, on the relevant individual permit issued by the NHVR. These permits will be obtained by the haulage contractor or project materials / equipment supplier. Copies of the relevant permits are to be provided to the Novo Rail Senior Project Engineer to meet project planning deadlines.

Where travel times are restricted, the supplier and their haulage contractor must ensure that despatch and travel plans, including layover locations, are adhered to so that arrival to site meets agreed timeframes and complies with all regulatory requirements as defined on the Heavy Vehicle Permit.

The Novo Rail Senior Project Engineer will ensure that prior to delivery:

- Traffic controllers are in place
- Travel to site is to be only on routes approved by NHVR for oversize and over mass vehicles
- An agreed route to the site compound is determined with the supplier and delivery party
- Travel on roads is within accepted operating hours for oversize and over mass vehicles (as defined on the Heavy Vehicle Permit)
- Movements within the site compound for both delivery trucks and cranes for unloading are to be detailed in specific VMPs, with TCPs prepared where relevant
- Egress routes and site provisions are in place and compliant with regulations and any additional conditions , as defined by the NHVR or TfNSW.
- If the delivery is required to occur out of hours CoA D16 (a-h) will be followed depending on the specific requirements.

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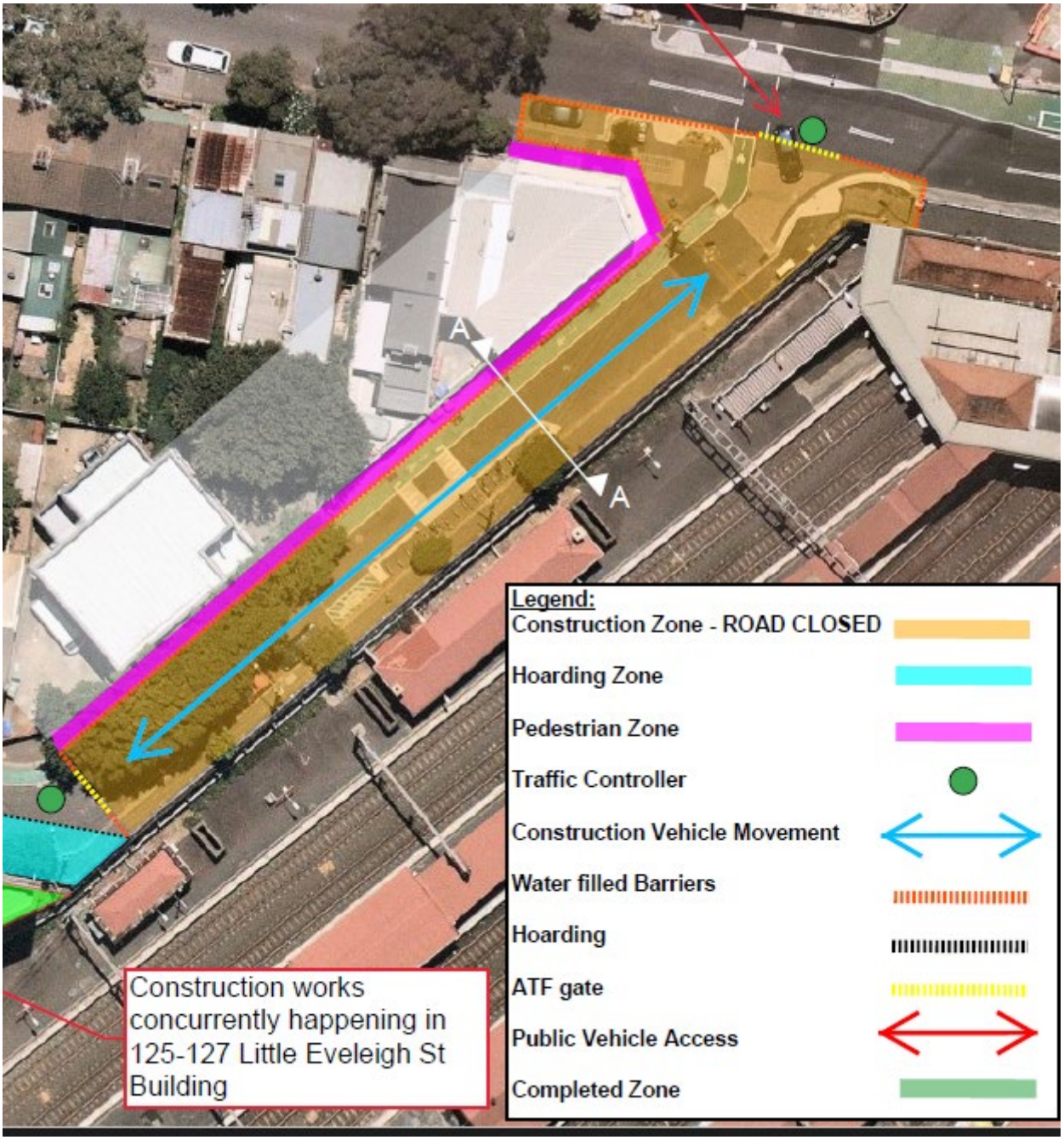
7.3 Typical Road Works Control Layout

The example figure below illustrates a typical road works control layout plan for a work site.

Novo Rail's Traffic Control subcontractor shall ensure that those components that are relevant to their work site are identified and the appropriate traffic management scheme applied in each particular case.



7.4 Work Site Signage

Novo Rail's Site Supervisor and –Project Engineer shall ensure the requirements and recommendations for signs and devices in each of the areas identified above are as follows:

- Signage only to be erected as per TCP and by licenced Traffic Controllers
- If the conditions on site have substantially altered, or change during the work shift, the relevant TCP can only be amended by an approved Traffic Controller. A copy of any amended TCP must be provided to the Novo Rail Senior Project Engineer as soon as practicable after the changes have been made. This must be accompanied by a copy of the risk assessment conducted on the amended TCP.

Advance Warning Area

- General requirements for the display of advance warning signs and devices will vary according to factors including:
  - posted speed limit and actual speed of approaching traffic
  - the degree to which the hazard requires modification of speed or diversion of travel path
  - extra vigilance for other reasons
  - sight distance available to the hazard, including sight obstruction caused by other traffic.

Transition (Taper) Area

- If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area (see Clause 8.2.1) and, wherever possible, should be located so that its full length is visible to approaching traffic.

Work Area/Clearance Area

- The work area is where the work is physically being carried out and is preceded by a clearance area that provides a safety barrier.
- The clearance area should be large enough to accommodate any work trucks or plant etc, however, if the work is hidden from approaching traffic (e.g. by a crest or curve) the clearance area should extend back to a point where it can be adequately seen by approaching traffic.

Termination Area

- Signs indicating the end of the works and where appropriate, terminating a roadwork's speed limit zone, are placed at the end of the termination.

Note: For further details see Section 8 - Traffic Signage and Control.

8 Traffic Signage and Control

8.1 Appropriate Signing

8.1.1 Principles of Signage

Novo Rail's Site Supervisor/Traffic Control Subcontractor shall ensure no matter how briefly the work site is occupied, careful consideration is given to signage of the site to:

- Provide advance warnings to drivers of changes in the surface of the roadway and/or in the changed traffic conditions and that personnel and/or plant are engaged in work;
- Adequately instruct and guide traffic safely through, past or around the work site; and
- Provide separation of the travel path and the works area.

Novo Rail's Site Supervisor/ Project Engineer and Traffic Control Subcontractor shall ensure the following important principles are observed regarding traffic management signage:

- Signs and devices comply with those listed in AS 1742.3;
- Signs and devices are be erected and displayed before work commences;
- On approaches to the work area signs are erected in the following sequence and then removed in the reverse order:
  - Advance warning signs
  - Other warning signs
  - Instruction signs
- Signs are placed within the driver's line of sight and at the same time not obscure other traffic devices from the driver's line of sight;
- All signs and devices are placed in the most advantageous positions having regard for the location and nature of the hazard, and the warning being conveyed, to provide the maximum visual impact for approaching traffic. Such signs and devices shall have an adequate clear view in advance of them (minimum 50m for 60 km/h, minimum 100m for 100 km/h);
- Signs and devices are placed in a manner and position so they are not obscured from view by vegetation or parked vehicles;
- Signs and devices are placed in a manner and position so as not to become a possible hazard to workers, pedestrians or vehicles (e.g. divert traffic into an undesirable path);
- Signs and devices shall be regularly checked for effectiveness and maintained in a satisfactory condition;
- Signs and devices are selected and placed in a manner so as not to require a driver to disobey a law unless so directed by an authorised officer such as a police officer;
- Permanent signs which conflict with the signs required for the temporary work situation are covered or removed; and
- Signs and devices are removed from the site when practical once the hazard ceases to exist. This not only restores the road/footpath to normal but is also an essential part of maintaining the credibility of the signs.

8.1.2 Erection and Location of Signs

Novo Rail's Site Supervisor/Project Engineer or Traffic Control Subcontractor shall ensure:

- All road signs are used with approved stands or erected on posts set into the ground, where permitted by the relevant authorities;
- All signs are placed in the most advantageous position, having regard for the nature of the hazard and the warning being conveyed, to provide the maximum visual impact for approaching drivers;

Where signs are erected on posts set into the ground the following applies:

- The outer edge of the road shoulder, line of guide posts or face of the guard measured towards the property boundary. The clearance should not be less than 1m nor more than 5m from the edge of the travelled way and the height of the sign should be 1.5m above the nearest edge of the travelled path;
- On kerbed roads signs should be located back from the face of the kerb not less than 300 mm no more than 1.0m;
- On urban roads that are not kerbed the distances given for rural areas above should apply. The height of the sign should be about 2.2m above the kerb or footpath to reduce the interference from parked cars; and
- Where the signs are erected on temporary stands for short term work they should be erected on the road shoulder in un-kerbed areas no closer than 600 mm to the running lane. In kerbed areas the provisions outlined above for post-mounted signs shall be followed.

8.1.3 Advance and Intermediate Advance Warning Signs

Advance and Intermediate Advance Warning Signs alert approaching vehicles of changed road conditions so road users may negotiate any travel path at an acceptable level of risk.

- For Novo Rail purposes the Advance Warning Signs are limited to:
  - Workers Ahead; and
  - Roadwork Ahead.
- Intermediate Advance Warning Signs are used where, in addition to a general warning of the onset of the roadwork's, a warning is needed either of a specific action of a driver or of the condition of the road. The intermediate advance warning signs for Novo Rail purposes are:
  - Detour Ahead; and
  - Prepare to Stop.
- The minimum distance for positioning of the advance warning signs shall be 2 x D metres where D is the speed limit in km/h or the approach speed where it is significantly different from the speed limit, e.g. if the approach speed is about 60 km/h then the sign is placed at about 120m;
- The distance shall be measured from the sign position to the beginning of the taper area or the beginning of the diversion associated with the work site;
- Where there is more than one advance sign position, such as for detours, etc. then the advance sign nearest the work area shall be placed 2 x D m from the transition area, and the other advance sign positions at spacing of x D further in advance of work area, e.g. "Detour Ahead" sign would be at the 2 x D spacing with the "Roadwork Ahead" sign at the x D spacing; and

Advance warning signs for vehicular traffic are not required in the following situations:

- Where work is sufficiently remote from the roadway that no action or extra vigilance is required of a driver other than would be normally required on that section of road; and

– Where approach speeds are so low that no devices are needed to give advance warning i.e. signs and devices can be seen in plenty of time for drivers to take necessary action.

8.2 Traffic Control

8.2.1 Approach Taper Partially Closed Lane

If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area and, wherever possible, should be located so that its full length is visible to approaching traffic.

Traffic cones or bollards are used after the appropriate advance signs on the approach side of the hazard, forming a taper from the kerb to the outer limits of the clearance area. Table 1 below provides a guide to the recommended taper length for two-lane, two-way roads to be closed for various approach speeds based on a lane width of 3.5m.

The distances in the columns in the Table 1 are applied as follows:

Traffic control at beginning of taper

Applicable at a location where there is a traffic controller just prior to a diverge e.g. into a single lane that is being controlled by a controller.

Diverge taper

Applicable where traffic is simply required to shift laterally without conflict with another stream of traffic.

Merge taper

Applicable where one lane of traffic is required to merge onto another lane of traffic.

8.2.2 Traffic Controller's Check

Traffic Controllers shall record that all the appropriate signs and traffic control requirements have been implemented according to the TGS in place.

Taper Lengths			
Recommended taper length			
Approx. Approach speed	**Traffic control at beginning of taper**	**Diverge taper**	**Merge taper**
less than 60 km/h **	15 m	15 m	30 m
60 to 80 km/h	30 m	70 m	140 m
81 to 100 km/h	30 m	90 m	180 m
More than 100 km/h	30 m	100 m	200 m
** - Typically a low speed residential or commercial street.			

8.2.3 Termination Taper

This is the area indicating the end of the works. The use of three traffic cones or bollards should be sufficient in a termination taper. The typical spacing would be 5.0 to 15.0m.

9 Delineation at Work Site - Travel Paths

9.1 Delineation of the Travel Path

Suitable, adequate and appropriate delineation of the travel path is perhaps the greatest need of road users. To give satisfactory guidance for road users, traffic control measures shall provide for both short and long range delineation for the travel path and must be continuous and unambiguous.

Long range delineation provides drivers with an advance view of the site indicating the general direction of the trafficable path and short range delineation guides the driver through the works once they have entered.

Depending on the circumstances, movement of traffic in connection with a work site shall be achieved in one of the following ways:

- Through the work area;
- Past the work the area; and
- Around the work area by a detour which may be via a side track or an existing road.

9.1.1 Through the work area

Unless there is no practicable alternative, passage through a work area shall only be considered on lightly trafficked roads and where traffic and the work can be satisfactorily controlled so that the risk to any person on site and traffic is kept as low as possible.

9.1.2 Past the Work Area

Where the traffic is conducted past the work area there needs to be a minimum distance of 1.2m clearance between the edge of the work area and the edge of the travel path as a no-go buffer zone. This clearance shall be defined on both sides of the travel path to avoid inadvertent intrusion by any persons and shall be provided by the use of containment fences such as barrier tapes, mesh fences, interconnected lightweight units or bollard fences.

9.1.3 Around the work area

When it is not practical to allow traffic through or past the work area it may be catered for by means of either a detour using existing roads or a specially constructed side-track. This practice, in general, would require the advice from the relevant road authority.

9.1.4 Pedestrian and Vehicle Separation in the Site Compound

Within the site compound, pedestrian and vehicle travel paths will be physically separated. Internal access routes will have a minimum corridor width of 1200mm. Pedestrian and vehicles will be separated with jersey barriers or similar.

9.2 Excavations

If workers are present at the excavation work site at all times then the bollard and tape type barriers may be sufficient.

Under certain circumstances such as for a major excavation, it may be necessary to provide a more formidable barrier such as the use of rails etc. in lieu of the bollards and tape. If it becomes necessary to divert the pedestrian traffic around the work site, trucks and/or major plant, then barrier posts and rails together with appropriate road warning signs must be installed.

Where excavations leave insufficient footpath width to allow for a reasonable path for pedestrians to pass the work site safely, then some form of containment fence, together with appropriate road warning signs, shall be installed from the footpath to the road and then back again onto the footpath.

10 Traffic Controllers

10.1 Traffic Controllers

Where Novo Rail work requires vehicles to be stopped or slowed down to navigate through or past the work site then it shall be necessary to use Traffic Controllers. A Traffic Controller is a person who has graduated from an accredited course to Traffic Controller. Traffic controllers are also required to maintain a log book of traffic control related information.

10.1.1 Use of Traffic Controllers

Some typical situations where traffic controllers can be used are shown in the Table below:

Traffic Controllers	
Situation	**Purpose**
One lane of a two-lane/two-way road is closed.	Restrict traffic flow to a single direction and alternate direction of flow over available width of carriageway.
Conditions at the work site are such that low speed operations are essential.	Warn or slow down the traffic.
Blasting works are being carried out on or adjacent to trafficked roads.	Stop traffic, inform motorists of delays, deny entry to blasting area until All Clear given and safe to proceed.
Construction machinery regularly crosses or enters an existing road.	Avoid conflict between construction and road traffic.
Sight distance to the work site is limited.	Control and warn motorists of the presence of works machinery and/or personnel.

10.1.2 Number of Traffic Controllers

One (1) Traffic Controller may be used operating alone with a STOP/SLOW bat and any other relevant signs provided that all of the following conditions are met:

- Road is a very lightly trafficked road with less than 400 vehicles/day or 50 vehicles/hour;
- Line of sight distance exceeds 200 m from the site in both directions or, for residential area with approach speeds of less than 60 km/h, is about one and half times the speed limit in metres;
- Visibility to the drivers approaching from both directions is maintained and not obscured by machines or equipment during such operations; and
- The work area is less than 30 m in length.

Two (2) Traffic controllers equipped with two-way radios should be used for all other conditions.

10.1.3 Traffic Controller(s) shall:

- Check the existing speed limit is 60 km/h or less. If the speed limit is in excess of 60 km/h reduce in steps of 20 km/h with approximately 500 m intervals between successive signs;
- Ensure that all relevant signs and devices are in place before commencing traffic control;
- Prohibit parking on both sides of the carriageway between the “Prepare to Stop” sign and the start of the work zone. This parking prohibition should also apply to Novo Rail vehicles;
- Ensure an adequate escape path is available at the control position before commencing;
- Stand clear of other workers;
- Stand facing the traffic but just outside the path of vehicles;
- If possible, stand in a position that allows them to see both the end of the work nearest to them and the other controller;
- Ensure they are visible at dawn, dusk, against low morning, evening sun and when in shadow on a sunny day and if traffic control is required at night times ensure the control site is illuminated;
- Stand so that they can see and be seen by approaching vehicles from at least one and a half times the speed limit in metres;
- Where possible, limit the delay to traffic to a desirable maximum of about 15 minutes;
- Wear high visibility clothing and carry their traffic control identification;
- Maintain an approved logbook to record experience gained as a trainee Traffic Controller;
- Not obstruct drivers’ view of or be partially hidden by other road signs and devices;
- Give definite and clear signals; and
- When two traffic controllers are used, be visible to one another or have radio communication so that the flow of traffic from each direction can be co-ordinated.

11 Work on Footpaths

11.1 Pedestrian Considerations

Due consideration to pedestrians shall be given before proceeding with Novo Rail works on or adjacent to footpaths. By definition catering for pedestrians means catering for the different modes of travel used by pedestrians such as walking or cycling and for people with different characteristics such as disabilities. It also means that Novo Rail shall take into account the fact that pedestrians are often distracted or in a hurry.

A TCP will be produced for review and approval by the relevant road authority for any work on Footpaths and adjacent traffic /parking lane impacts.

Some of the considerations that may need to be taken in any design for a travel path are listed below.

11.1.1 Width of Travel Path

- People with ambulant disabilities (i.e. using a walking aid) require a clear width of 1,000 mm;
- People who use wheel chairs require a clear width of 1200 mm; and
- If it is not practical to provide the above widths on the footpath it may be necessary to consider part closure of the road together with appropriate barriers, etc.

11.1.2 Pedestrian Safety Points

The following pedestrian safety points should be included in the final control measures by the Novo Rail Supervisor or Project Engineer. These points should be observed before the work is commenced. This is not an exhaustive list and should be updated by the supervisor according to the circumstances at the work site.

11.1.3 All pedestrians

- Always look at the pedestrian's routes. For example can pedestrians safely negotiate the work site? Can they negotiate any “squeeze” points in and around the work site?;
- Check that the pedestrians’ routes are continuous through/adjacent to the work site;
- Determine the most applicable time of the day to conduct the works taking into account both normal and peak hour times;
- Determine what is the most appropriate means for pedestrians to negotiate the site? That is either through, past or around the site?
- Where applicable ensure that any barriers erected do not force pedestrians to cross at an inappropriate location; and
- Can parking of the Novo Rail vehicles be managed to maximise the sight lines?

11.1.4 Elderly Pedestrians

- Is the travel path relatively smooth and clear of overhanging foliage?
- Is the work site adequately illuminated?
- Are the underfoot conditions appropriate?

11.1.5 Young Pedestrians

- Are barriers erected to guide children past or through the work site?
- Are travel paths continuous through the scheme?
- Shall any road signs/devices obstruct the vision of or visibility to, the young pedestrian?
- Can parking of the Novo Rail vehicles be managed to maximise the sight lines?

11.1.6 Intoxicated Pedestrians

- Is the area one in which intoxicated pedestrians can be expected?
- Where appropriate are barriers in place to guide them past or through the work site?
- Are drivers given every chance of seeing the pedestrian?
- Can parking of the Novo Rail vehicles be managed to maximise the sight lines?

11.1.7 People with Disabilities or Prams

- Can the work site be identified by visually impaired people?
- Is the width of the travel path sufficient to cater for wheelchairs, prams, etc.?

11.1.8 Construction Traffic and Vehicles

- When considering the traffic control measures it should be noted that construction traffic and vehicles needs to be taken into account as this can affect the traffic control measures adopted.

12 On-site key contacts

Position	Name	Mobile number
Senior Project Manager	Jerome Cargnino	0408 821 466
Construction Manager	George Bechara	0409 479 321
Construction Manager	Marijan Harris	0428 673 164
Engineering Manager	John Robertson	0499 018 665
Project Engineer	Karl Chann	0428 936 294
Senior Project Engineer	Ariane Yu	0498 880 283
Safety Manager	Terry Askew	0409 012 528
Communication and Stakeholder Relations Manager	Sarah Guilfoyle	0447 817 846
Environment Manager	Kim Purkiss	0416 210 609

13 Auditing

Audits will be undertaken to assess the effectiveness of traffic management measures, compliance with the Sub-plan and other relevant approvals and guidelines.

Audits are undertaken during the Design phase of the project and on implementation of operations at the completion of construction works. Additional audits will also occur where long term traffic changes are instituted. Audits will be carried out by a suitably qualified Road Safety Auditor.

Audits are carried out by a suitably qualified Road Safety Auditor.

14 Review and improvement

14.1.1 Continuous improvement

Continuous improvement of this Sub plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets. The continuous improvement process is designed to:

- Identify areas of opportunity for improvement of traffic management
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventive actions
- Document any changes in procedures resulting from process improvement

The independent ER engaged by TfNSW will, for the duration of the work until commencement of operation:

- review and approve relevant documents including the CEMP and associated Sub plans
- consider and recommend any improvements to work practices to avoid or minimise adverse impacts to the environment and community
- monitor the implementation of this Sub plan

Recommendations and changes to this Plan will be incorporated, where appropriate, and reflected in the Consultation Table identified in Section 5.

14.1.2 CTMP updates and amendments

The CTMP will be reviewed six monthly or as a result of any identified improvements or additions. Additional TGSs that may be produced during the delivery of the Project, will be submitted to TfNSW for review where required.

A copy of the updated Sub plan and changes will be provided to the ER for review and approval prior to distribution to relevant stakeholders such as COS.

15 Management and mitigation

15.1.1 Performance Outcomes

The following are the performance outcomes identified within the EIS to be delivered in relation to traffic, transport and access for the Project:

- Safe and efficient access routes provided for pedestrians, cyclists and road users, including buses
- Maintain access for all customers to Redfern Station, while the station is operational
- Access to residences and commercial properties is maintained
- Access for emergency vehicles, waste management services and deliveries is maintained
- The local community, relevant authorities and other proponents undertaking concurrent work close to the Project are consulted to minimise disruptions to road, active transport users
- The local community and relevant authorities are consulted regarding upcoming Project construction activities to minimise disruptions to road, active transport and public transport users
- The Project provides convenient, safe and direct access for customers to the station during operation

Measurement of these performance outcomes are identified within this document and outlined in the Table below in Section 15.1.2.

15.1.2 Mitigation Measures

To achieve the performance outcomes listed above, the mitigation measures will be implemented during construction:

ID	Mitigation measures during construction	Applicable locations
T1	Relocation of bus stops will be carried out by TfNSW and Novo Rail in consultation with the City of Sydney, University of Sydney, Royal Prince Alfred Hospital, bus operators and other relevant authorities. Wayfinding and customer information will be provided to notify customers of relocated bus stops.	– Little Eveleigh Street – Lawson Street – Evidence of consultation will be uploaded into CMS by TfNSW
T2	The new offset parking facilities on Little Eveleigh Street will be constructed prior to the removal of all parking, to accommodate parking spaces displaced to facilitate construction activities	– Little Eveleigh Street – Programmed to occur in this sequence.
T3	Road Safety Audits will be carried out to address vehicular access and egress, and pedestrian, cyclist and public transport safety. Road Occupancy Licenses (or equivalent) for temporary road/lane closures will be obtained where required.	– Little Eveleigh Street – Lawson Street – Marian Street – Audits undertaken during design and at commencement of operations and when

ID	Mitigation measures during construction	Applicable locations
		long-term changes are instituted. – ROLs to be obtained prior to work on roads and ROL spreadsheet will be maintained.
T4	Appropriate signage and line marking, as required, will be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained. Appropriate access measures will further be developed to guide customers with access requirements for disability, including wheelchair users and people with a visual impairment.	– The Project area – Reflected in TMPs. Pedestrian management reflected on TMPs. – Consultation with Disability groups
T5	Community consultation will be carried out and notifications issued in advance for any proposed road and pedestrian network changes through appropriate channels and forms of communication	– The Project area – Community notices issued at least monthly and supported with static information and wayfinding signs – Direct consultation with relevant stakeholders will occur, especially in relation to out of hours works
T6	Access to existing properties and buildings will be maintained, where possible, in consultation with property and business owners.	– The Project area – Access maintained except where negotiated directly with property owners during road and footpath work in front of properties
T7	Construction sites will be managed to minimise construction worker parking on surrounding streets. Workers will be encouraged to use public or active transport and ride share with the implementation of a Green Travel Plan initiative. A workers' reward scheme will be implemented for those who adhere to the initiative.	– The Project area – Green Travel Plan initiative implemented. Worker parking provided at Marian Street site compound and North Eveleigh compound.
T8	Construction site traffic will be managed to minimise traffic impacts during the peak periods through scheduling construction vehicle movements outside the peak hours. Where possible, group deliveries would be restricted.	– The Project area – Senior Project Engineer will review delivery requirements and schedule vehicles out of

ID	Mitigation measures during construction	Applicable locations
		peak where possible. Low number of vehicles accessing site will have minimal impact on the road network.

Note that the Project is expected to cause temporary impacts to the existing pedestrian, cycle, public transport and surrounding road networks during construction. The implementation of the mitigation measures will reduce these impacts however there would still be potential for construction impacts from the Project to contribute to cumulative impacts with other surrounding projects.

Appendix A Schedule of Traffic Control Plans (TGSs)

The Senior Project Engineer will maintain a live register of TGSs, approvals and any related permits including SZA's and any relevant CoS or Police permits, as outlined below:

Novo Rail TAP04 TCP/TGS		
Location	**TCP/TGS No.**	**Current/Expired**
Cornwallis St	21-0-190	Current
Gibbons St	21-0-161	Current
Gibbons St	21-0-093	Current
Gibbons St	20-0-350	Current
Ivy St	22-0-153	Current
Lawson St	20-0-062	Current
Lawson St	20-0-138	Current
Lawson St	20-0-140	Current
Marian St	21-0-276	Current
Marian St	20-0-216	Current
Marian St	20-0-144	Current
Marian St	20-0-162	Current
Marian St	20-0-363	Current
Marian St	21-0-098	Current
Marian St	21-0-122	Current
Marian St	21-0-225	Current
Rosehill St	20-0-063	Current
Rosehill St	20-0-351	Current
Rosehill St	20-0-565	Current
Rosehill St	20-0-567	Current
Rosehill St	22-0-019	Current
Rosehill St	22-0-020	Current
Erskineville Rd	22-0-204	Current
Little Everleigh St	22-0-260	Current
Little Everleigh St	22-0-261	Current
Little Everleigh St	21-0-175	Current
Little Everleigh St	20-0-061	Current
Little Everleigh St	21-0-109	Current
Little Everleigh St	20-0-161	Current
Little Everleigh St	20-0-352	Current

TGSs will be provided to the relevant road authority for review and approval of the relevant road authority. Additional TGSs produced, as and when required, for the works areas during the various construction stages will be included within this document. TGSs created to date are provided in the following Appendices.

Appendix B TCP 1 – Novo Rail office compound access route

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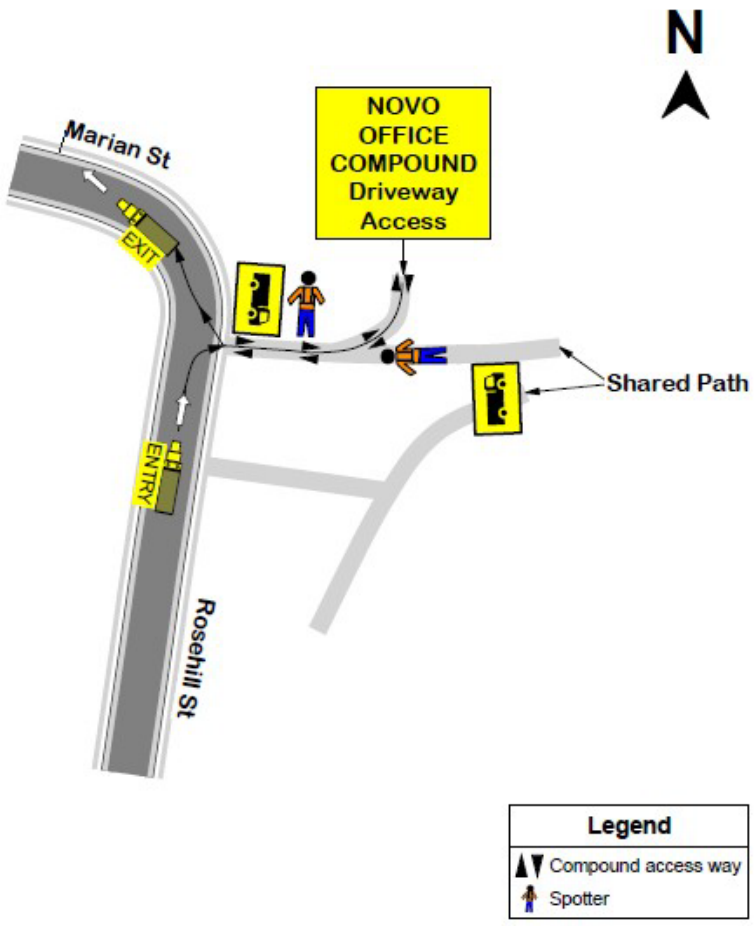
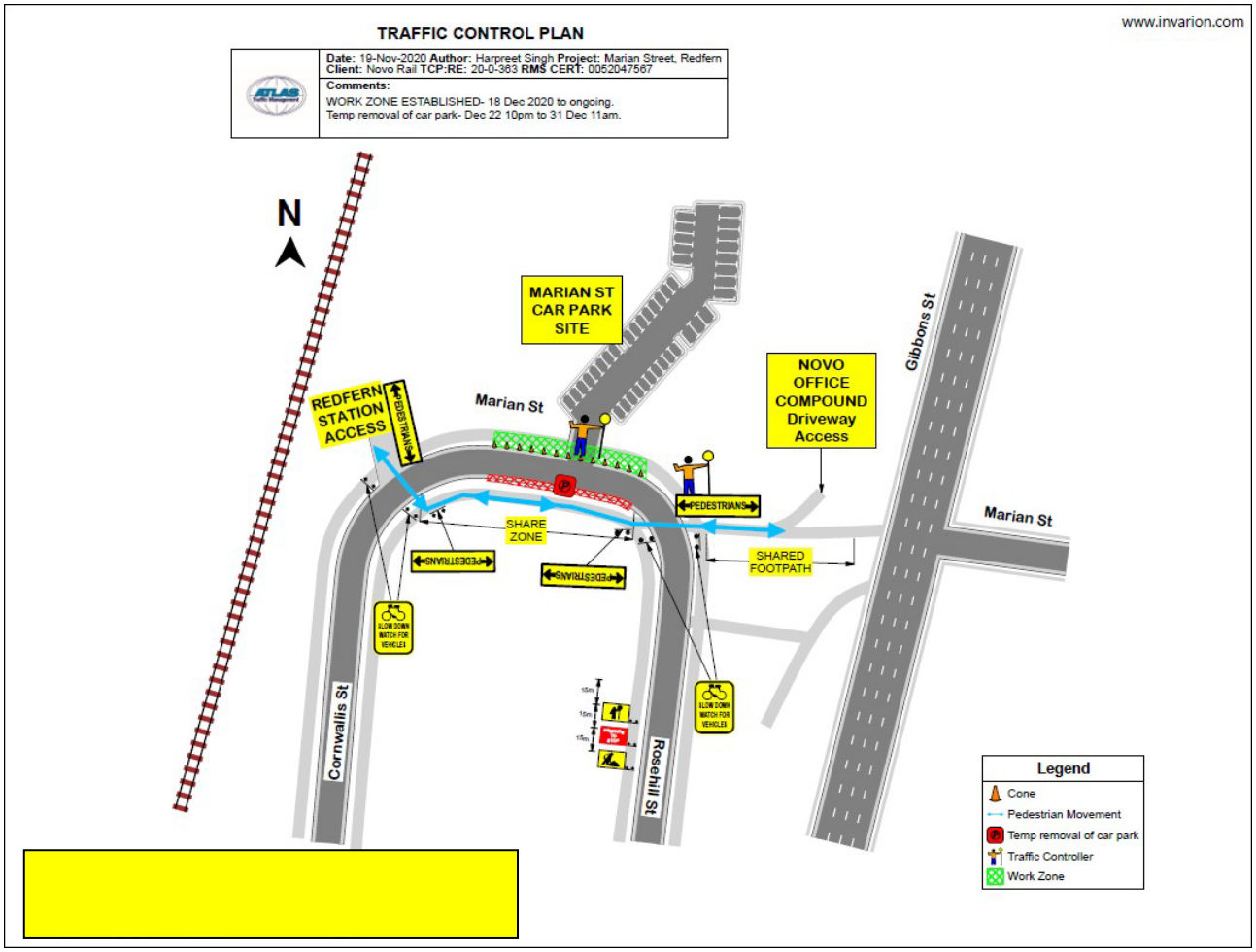
TRAFFIC CONTROL PLAN

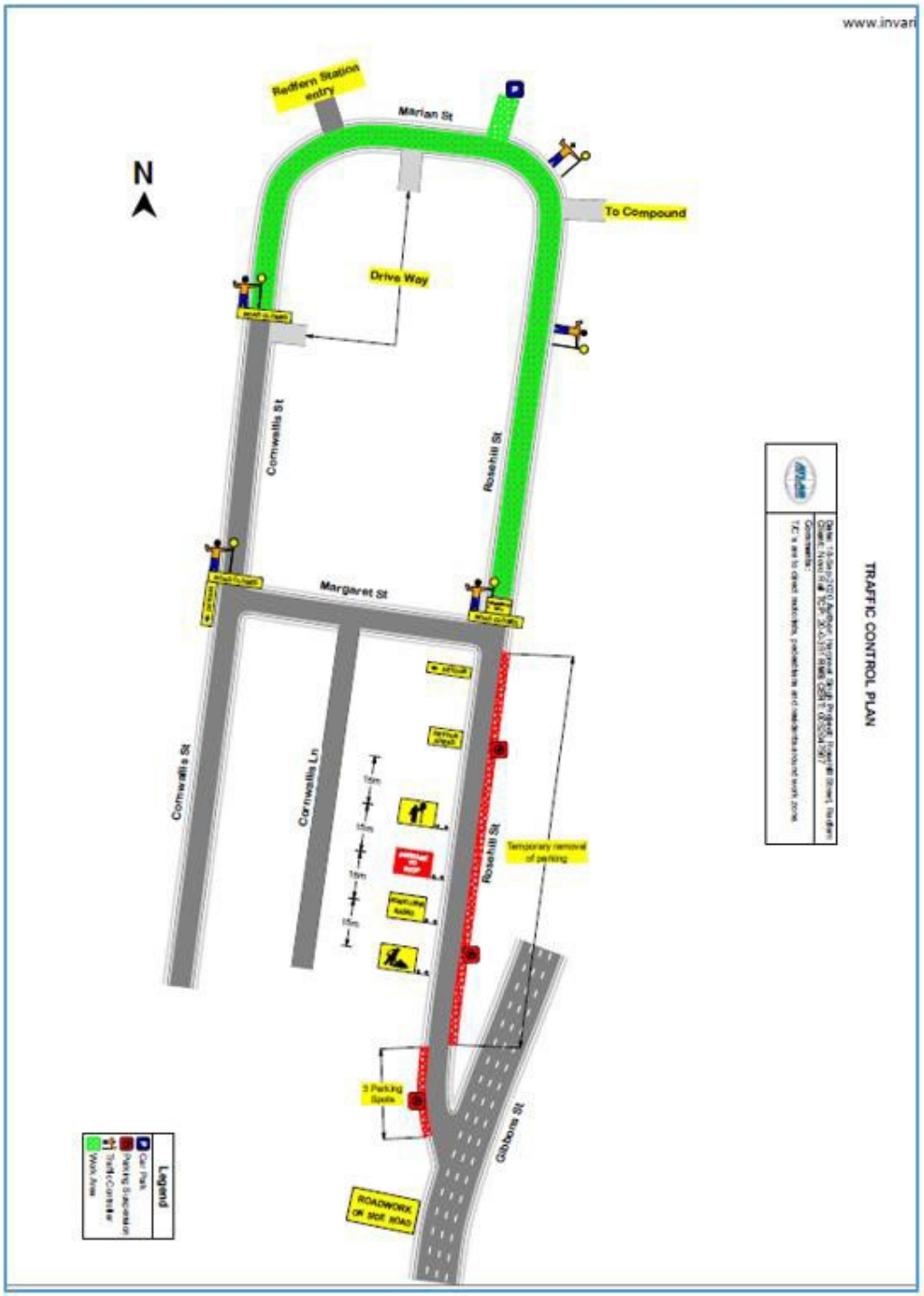
	Date: 19-Nov-2020 **Author:** Harpreet Singh **Project:** Marian Street, Redfern **Client:** Novo Rail **TCP:RE:** 20-0-144 **RMS CERT:** 0052047567
	Comments: Spotters to assist with any reversing vehicles and/or plant.



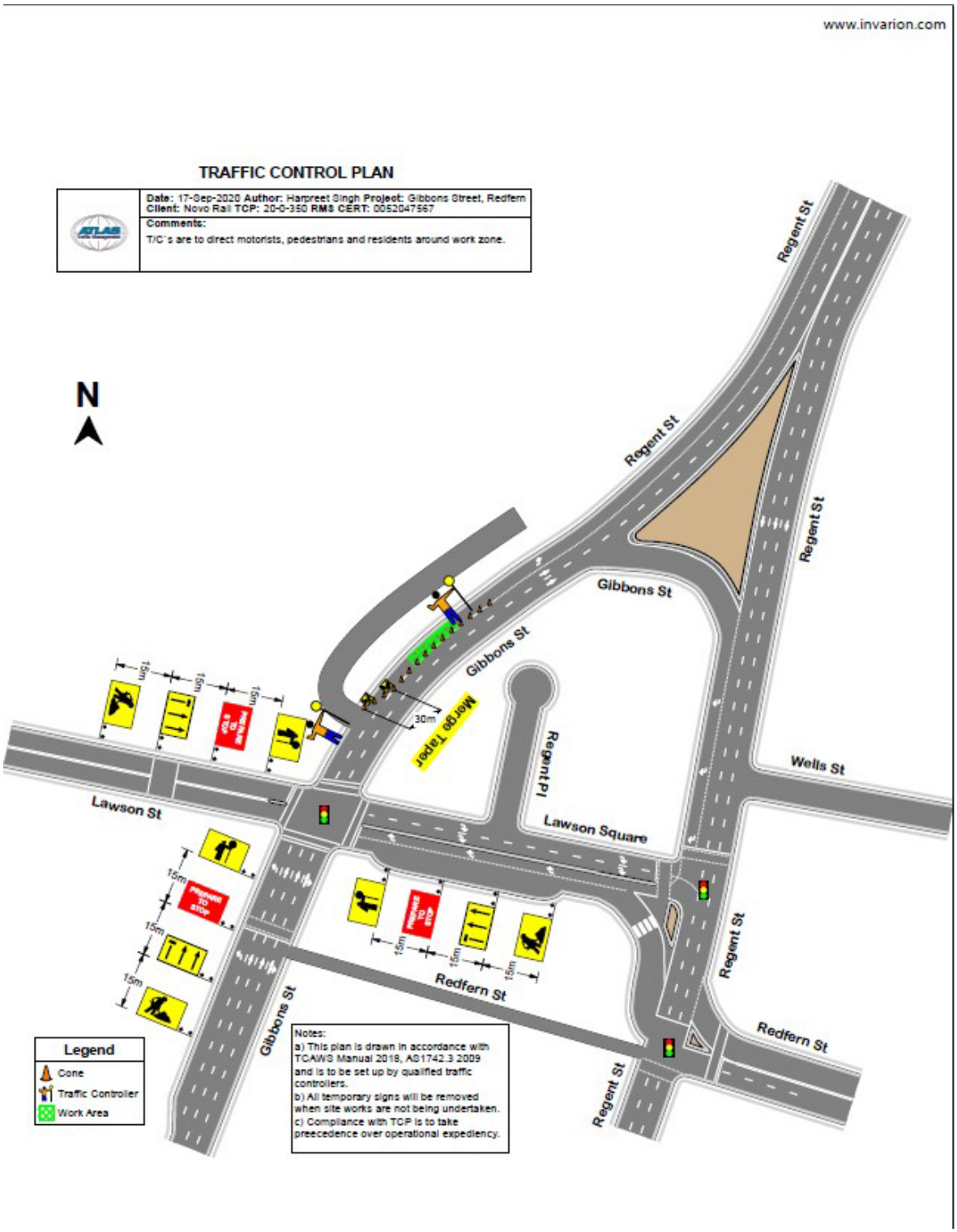
Appendix C TCP 2 – Marian Street Work Zone and temporary removal of parking – commencing December 2020



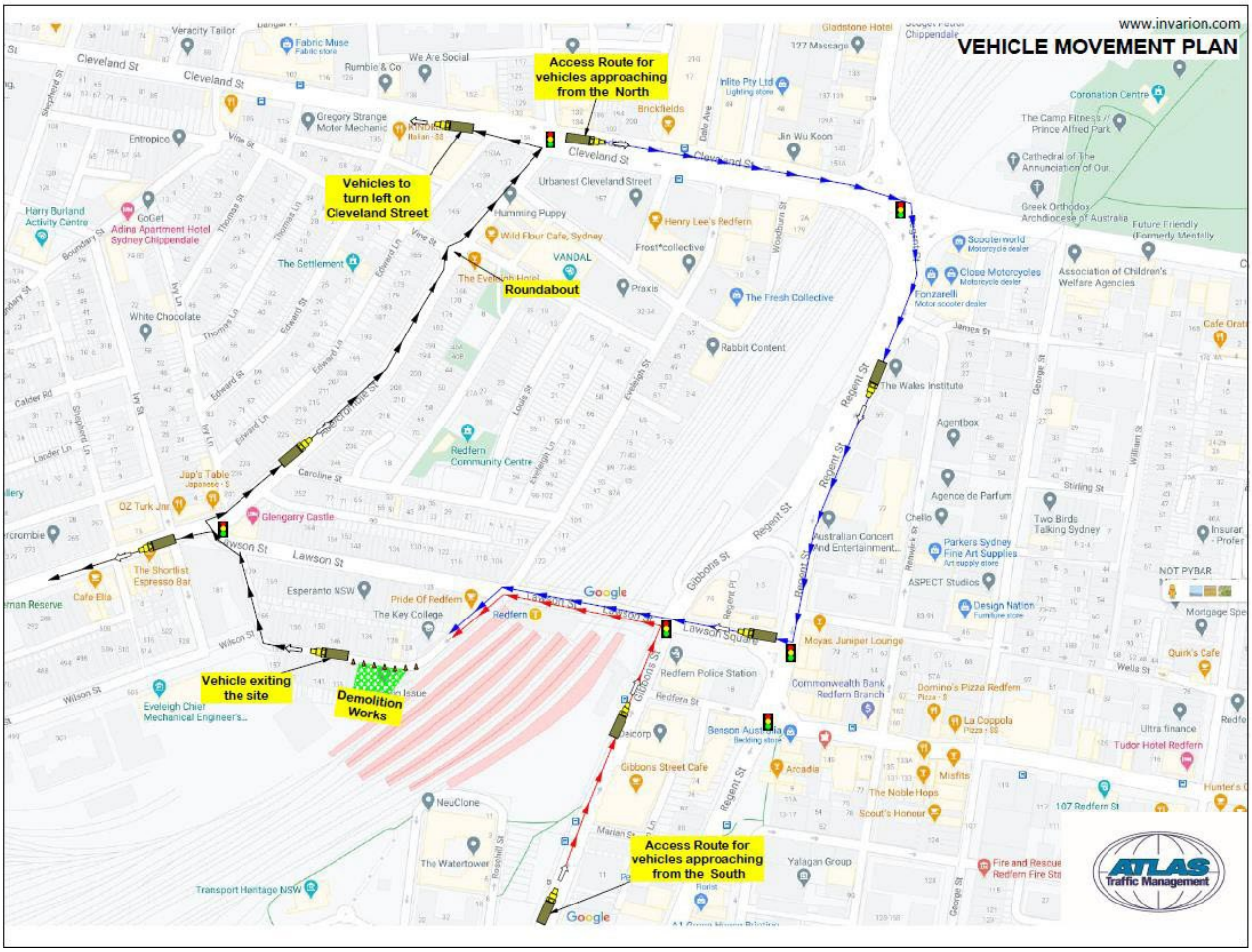
Appendix D TCP 3 - Marian St – temporary road closure and Rosehill Street temporary parking removal - Christmas 2020



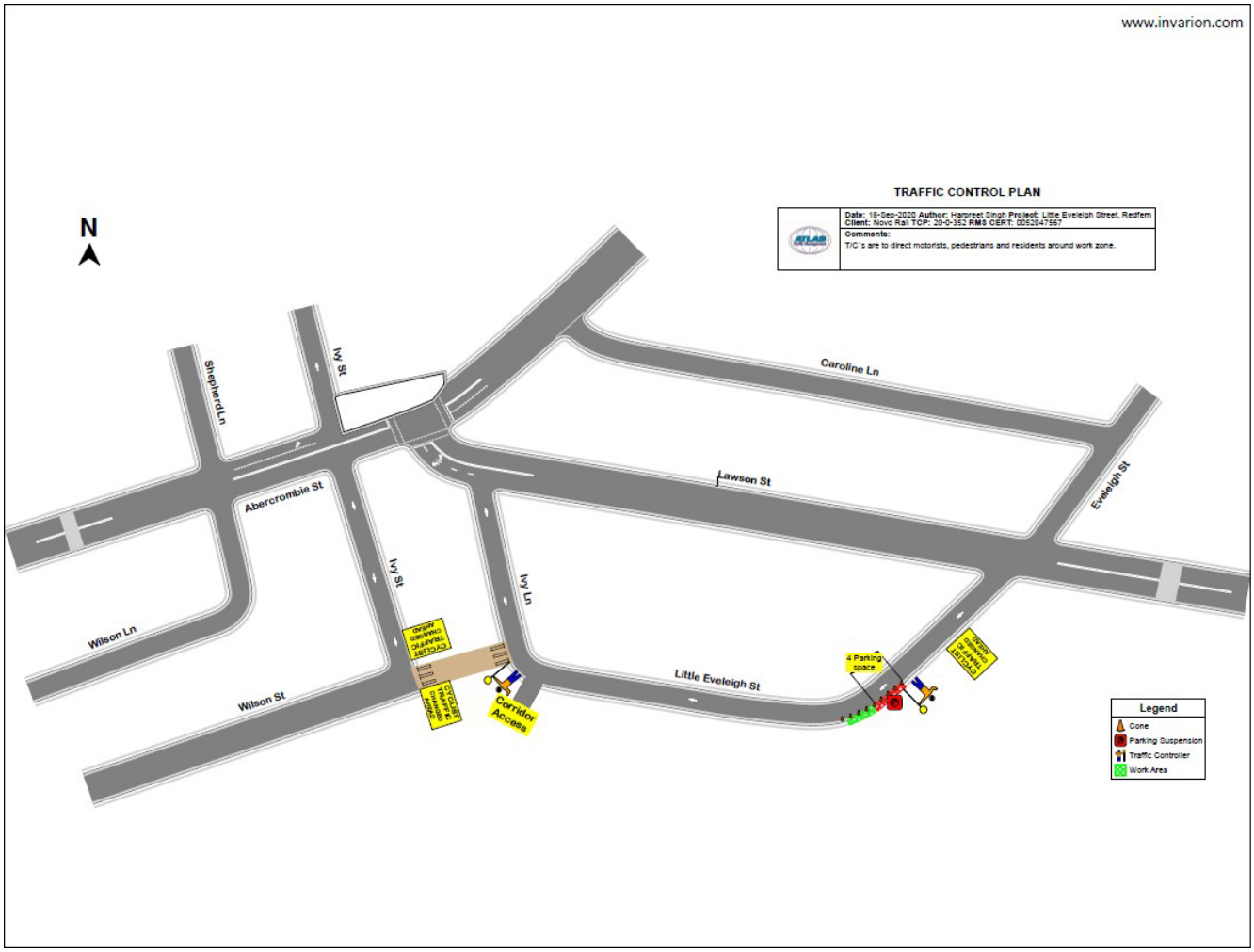
Appendix E TCP 4- Gibbons Street, north – plant deliveries



Appendix F VMP 1 – 125-127 Little Eveleigh St access route



Appendix G TCP 5 – 125-127 Little Eveleigh St – Work zone



Appendix H Heavy Vehicle Access Routes

The heavy vehicle access routes provided below were displayed within the EIS and are the routes approved for use in delivering the Project.

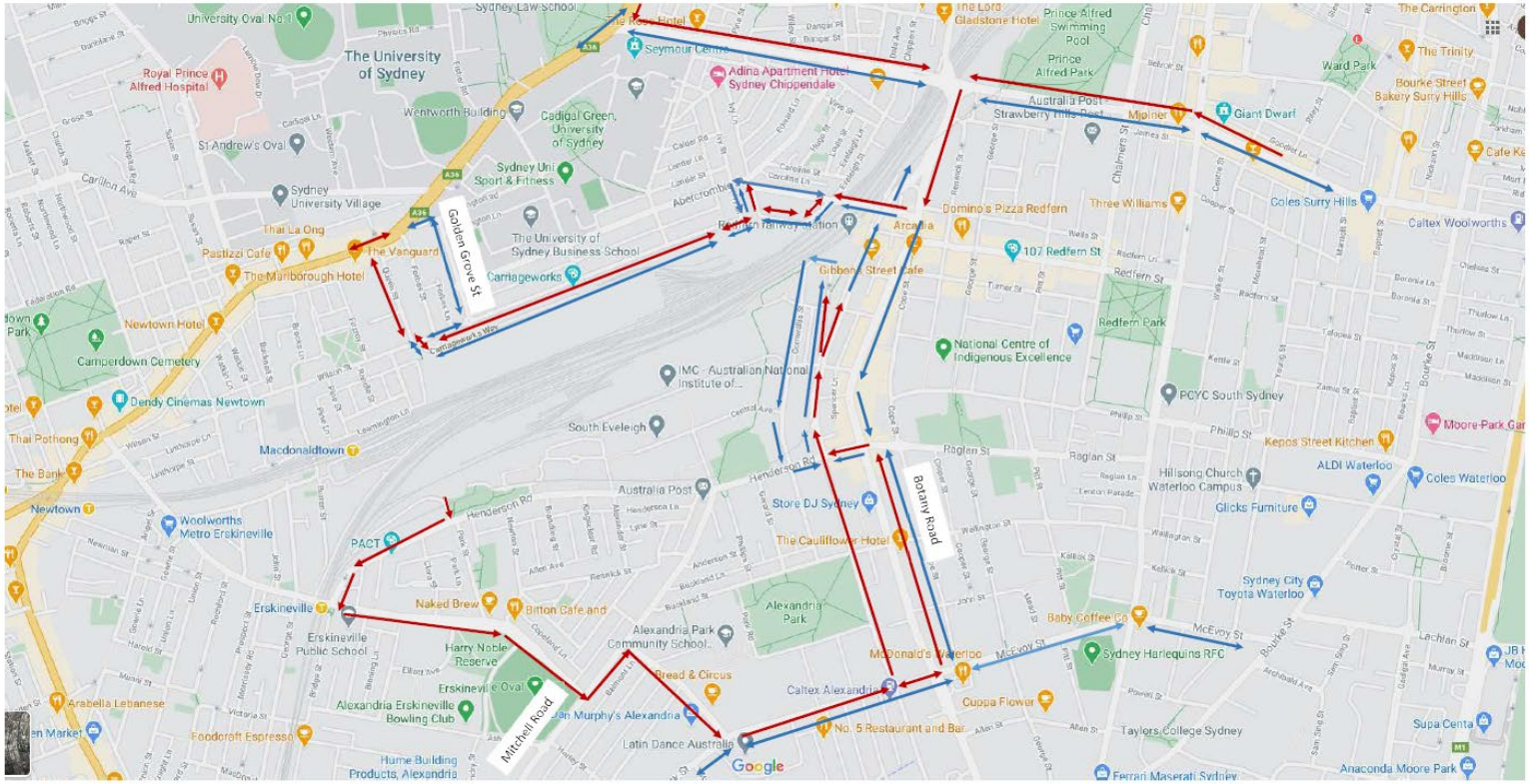
A review of this Heavy Vehicle Route has identified:

- two of the local roads do not operate in the directions provided on the map, being Little Eveleigh Street, Redfern and Queen Street, Darlington which are both one way and not bi-directional
- an opportunity to adjust the routes, providing more direct access to motorways such as the newly opened M8.

An additional Heavy Vehicle Haulage route has been produced reflecting the existing approved route (in maroon) and recommended changes to the routes (in blue) and are provided in Appendix I. The changes would include:

- Cleveland Street – adjust to two way traffic, not just incoming
- Regent Street/Botany Road – adjust to two way traffic, not just southbound
- McEvoy Street – extend the route, state road connector
- Gibbons Street – extend route northbound to Cleveland Street connection
- Identify outbound route for Marian Street site work, exiting via Cornwallis Street – one way road system – to Henderson Road
- Henderson Road – direct exiting traffic to Botany Road
- Providing southbound travel along Regent Street, Redfern, past Lawson Street and turning right at Henderson Road. This is an existing heavy vehicle route.
- Botany Road may also be used for southbound traffic to McEvoy Street, a state road, which also connects to the M8
- Reflecting one way traffic on Little Eveleigh Street only. Travel direction is south off Lawson Street and then west towards Ivy Lane and Wilson Street

Reflecting a change from ingress and egress between City Road/Kind Street, Newtown and Carriageworks Way. Instead of using Queen Street, Newtownwhich is one way northbound only and a narrow street, vehicles would access via Darlington Road, Newtown to Golden Grove Street, Wilson Street and into Carriageworks Way. This travel path was approved by CoS, TMC and SCO when Laing O'Rourke had undertaken discussions with these bodies within the last year to bring heavy vehicles into this area.Submission of this CTMP and further discussions with the road authorities, Planning Secretary and ER will be undertaken and approvals sought prior to any changes being made and to ensure the most appropriate routes are clearly identified. A swept path analysis of the recommended local road changes at Darlington Road and Golden Grove Street will be produced and provided in the submission for change and road dilapidation surveys undertaken and provided to the asset owner.

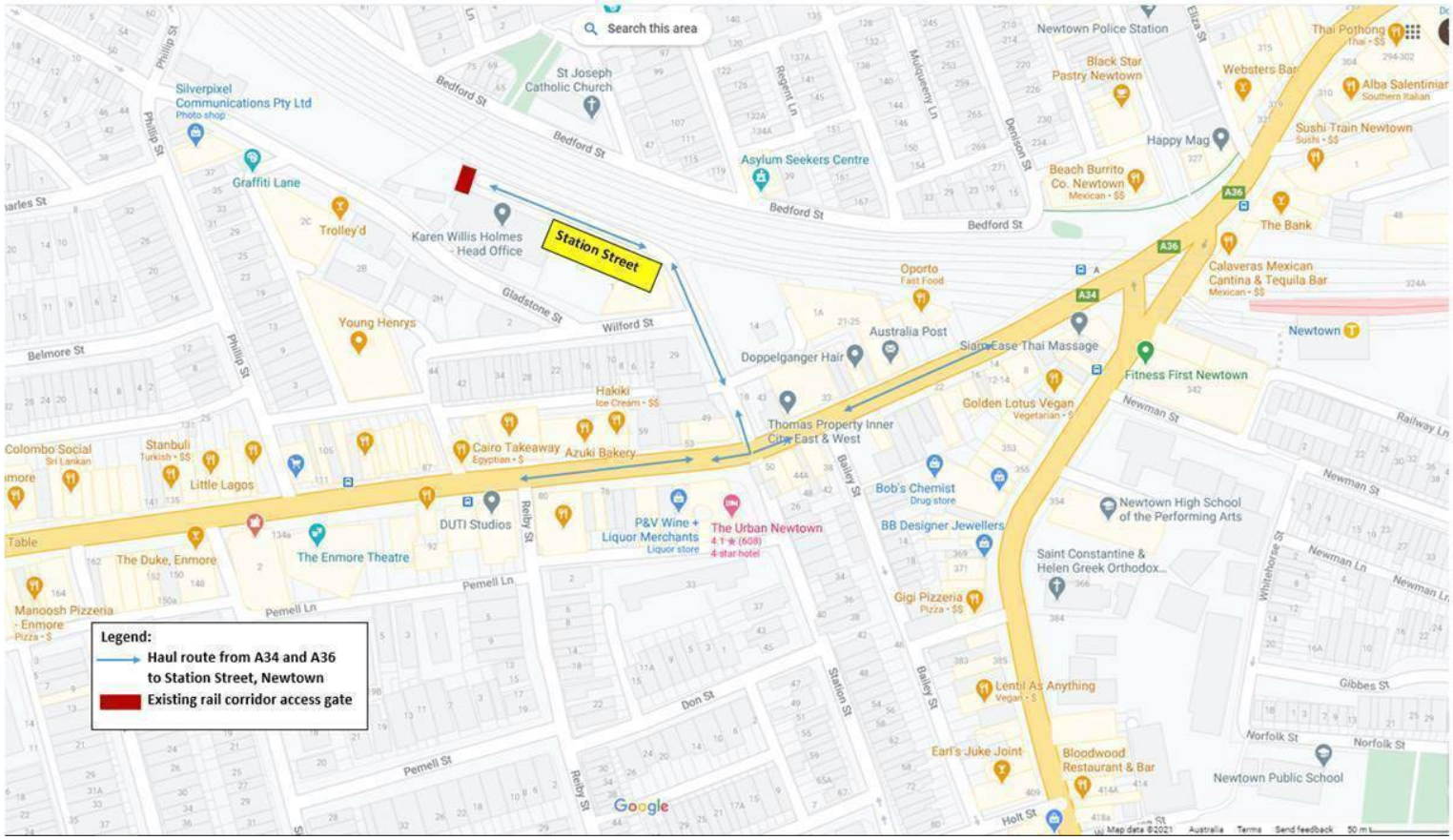


Travel paths in Figure 12-1 of the EIS → Adjustments and expanded routes

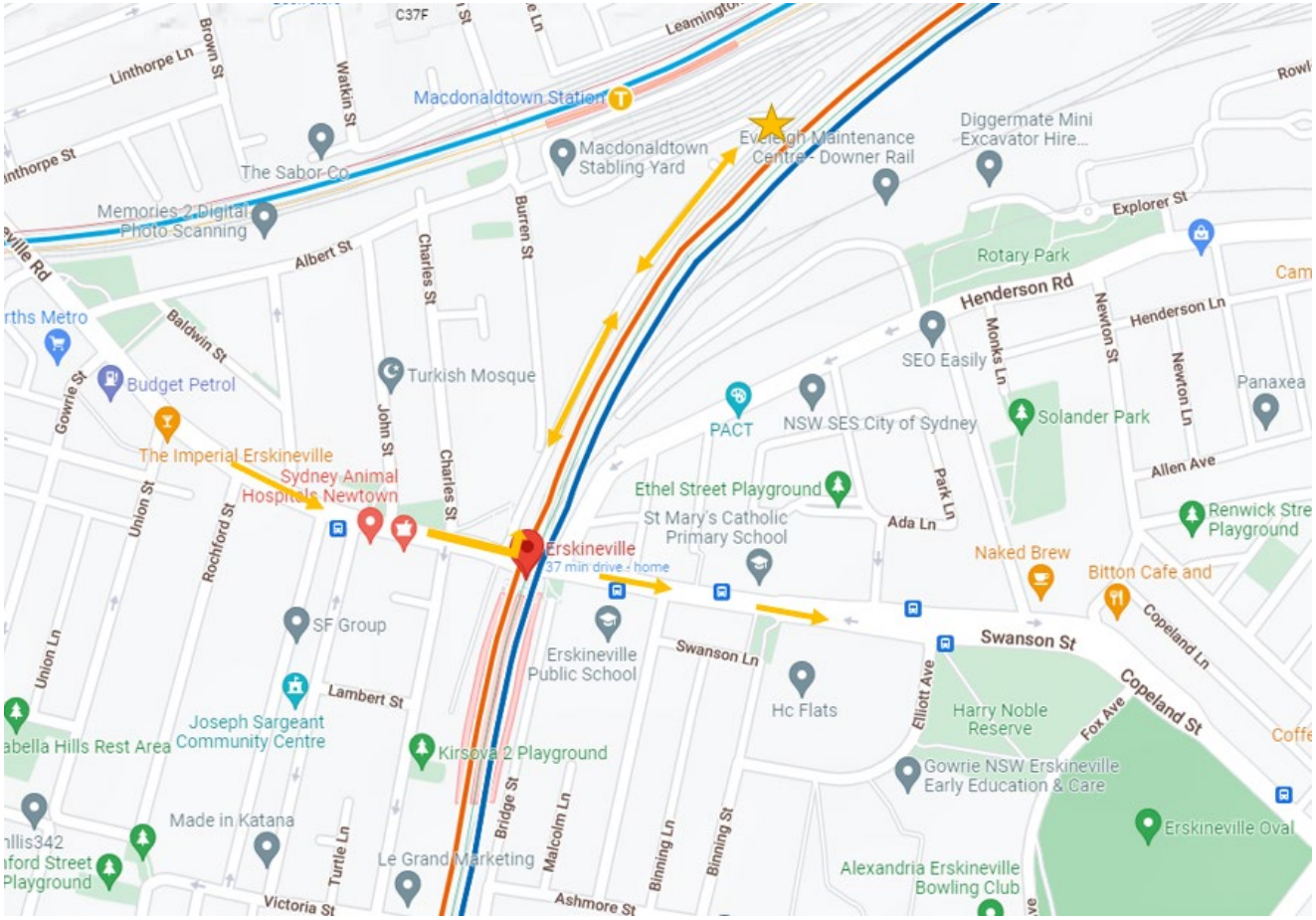
The paths identified by the red colour are the routes shown in the EIS. The blue routes are adjustments or additions.

Suggested changes and identified issues in the existing route identified:

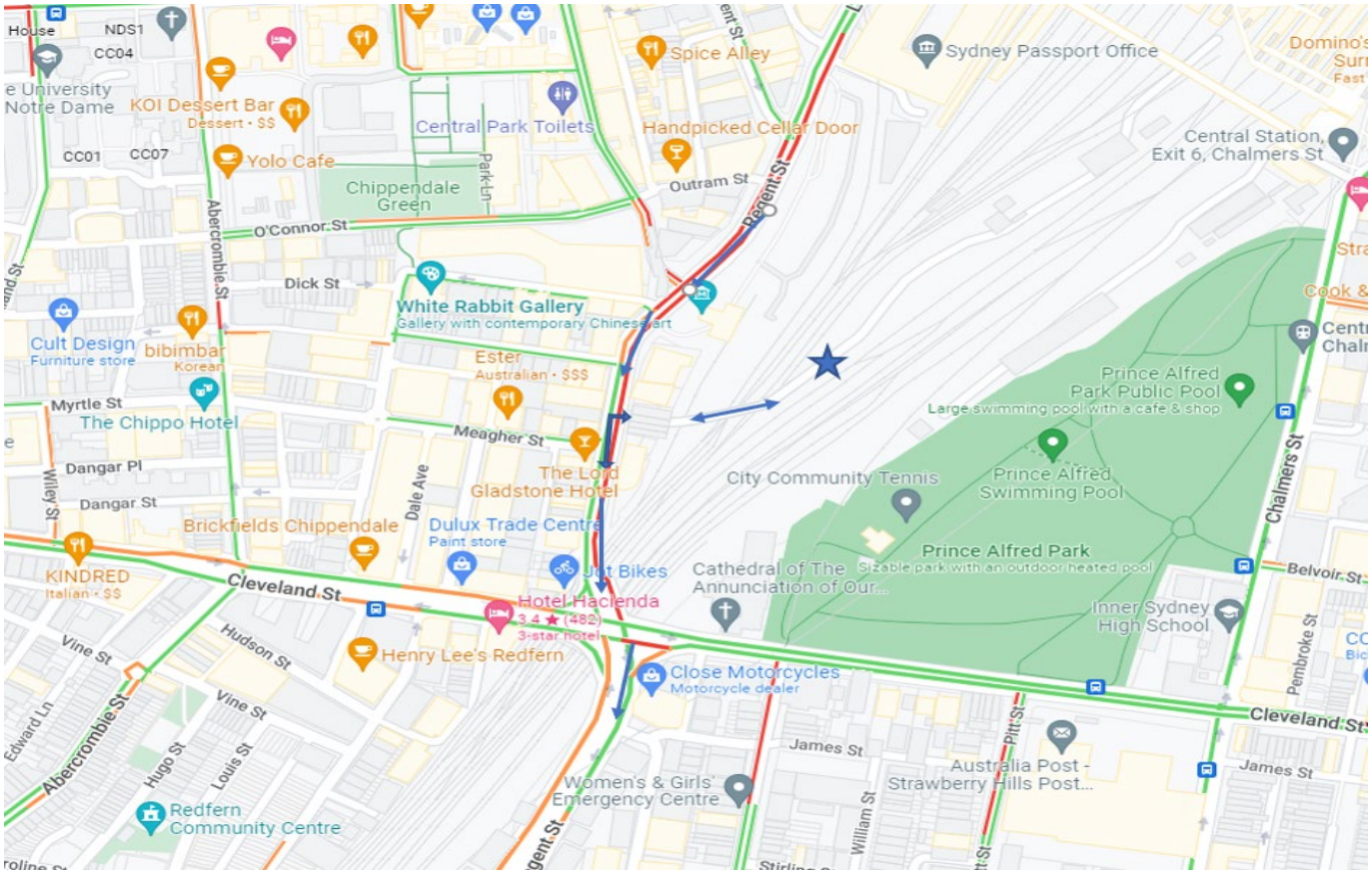
• Cleveland Street – adjust to two way traffic, not just incoming	• Regent Street /Botany Road – adjust to two way traffic, not just southbound	• McEvoy Street – extend the route, state road connector
• Gibbons Street – extend route northbound to Cleveland Street connection	• Identify outbound route for Marian Street work, exiting via Cornwallis Street – one way road system – to Henderson Road	• Henderson Road – direct exiting traffic to Botany Rd
• Little Eveleigh Street – one way southbound, not two way	• Carriageworks – Queen Street is one way northbound and road narrow, not two way • CoS, SCO and TMC previously reviewed the route and identified access via Darlington Road and Golden Grove Street as shown in blue on map	



Newtown Access haulage route

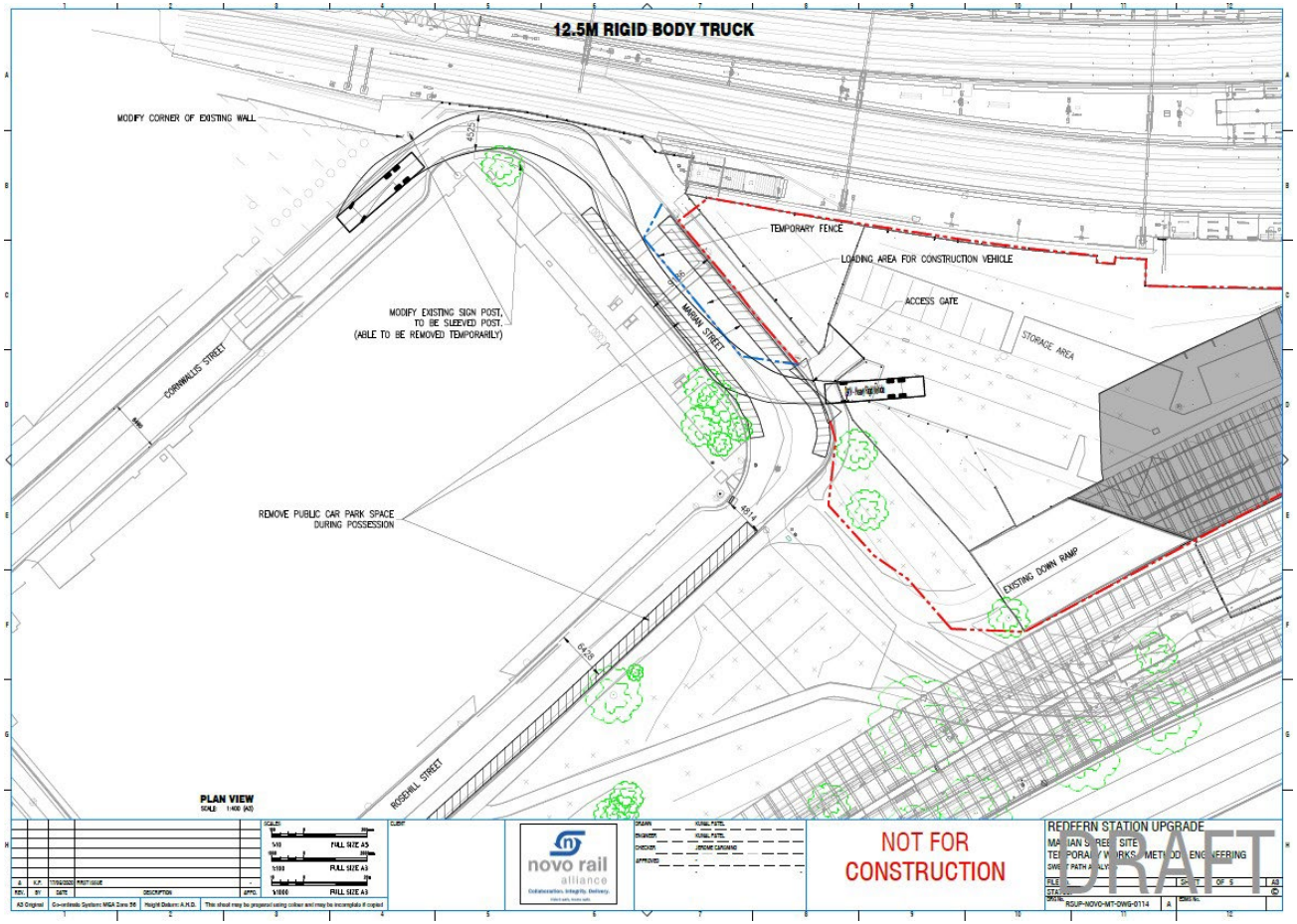


Erskineville Access haulage route



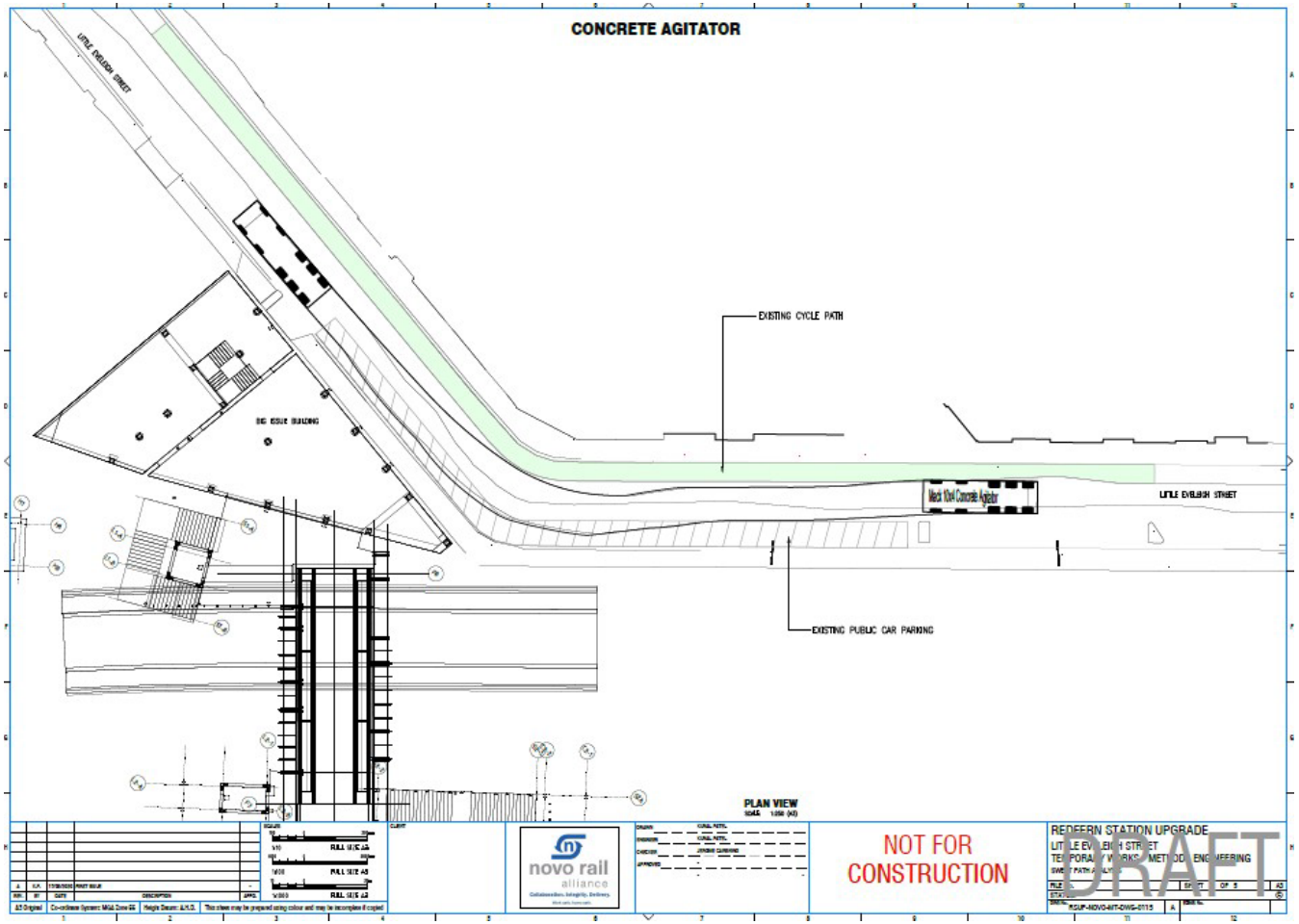
Central Access haulage route via Regent St.

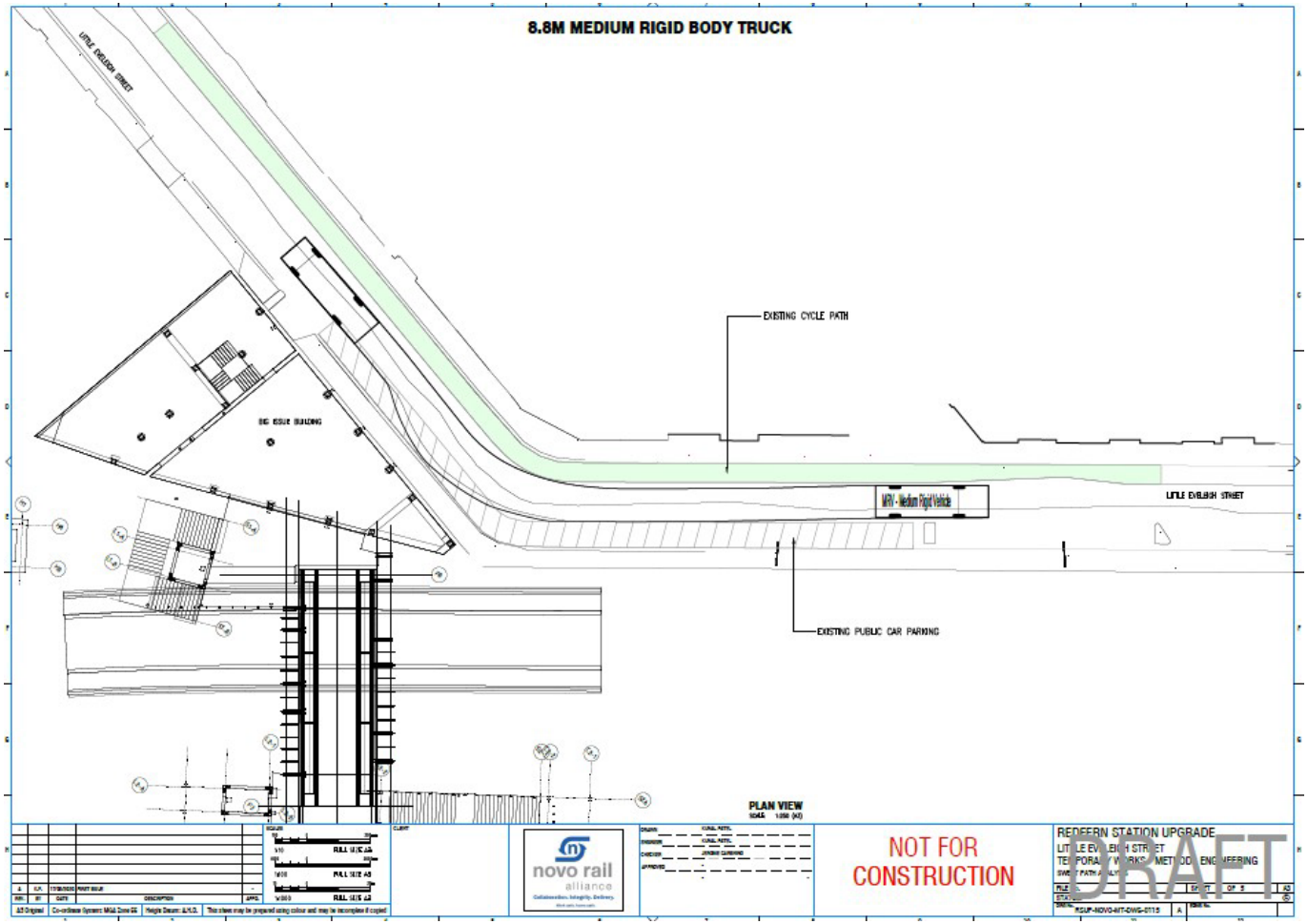
Appendix I – Swept Path Analysis – Marian Street – 2022

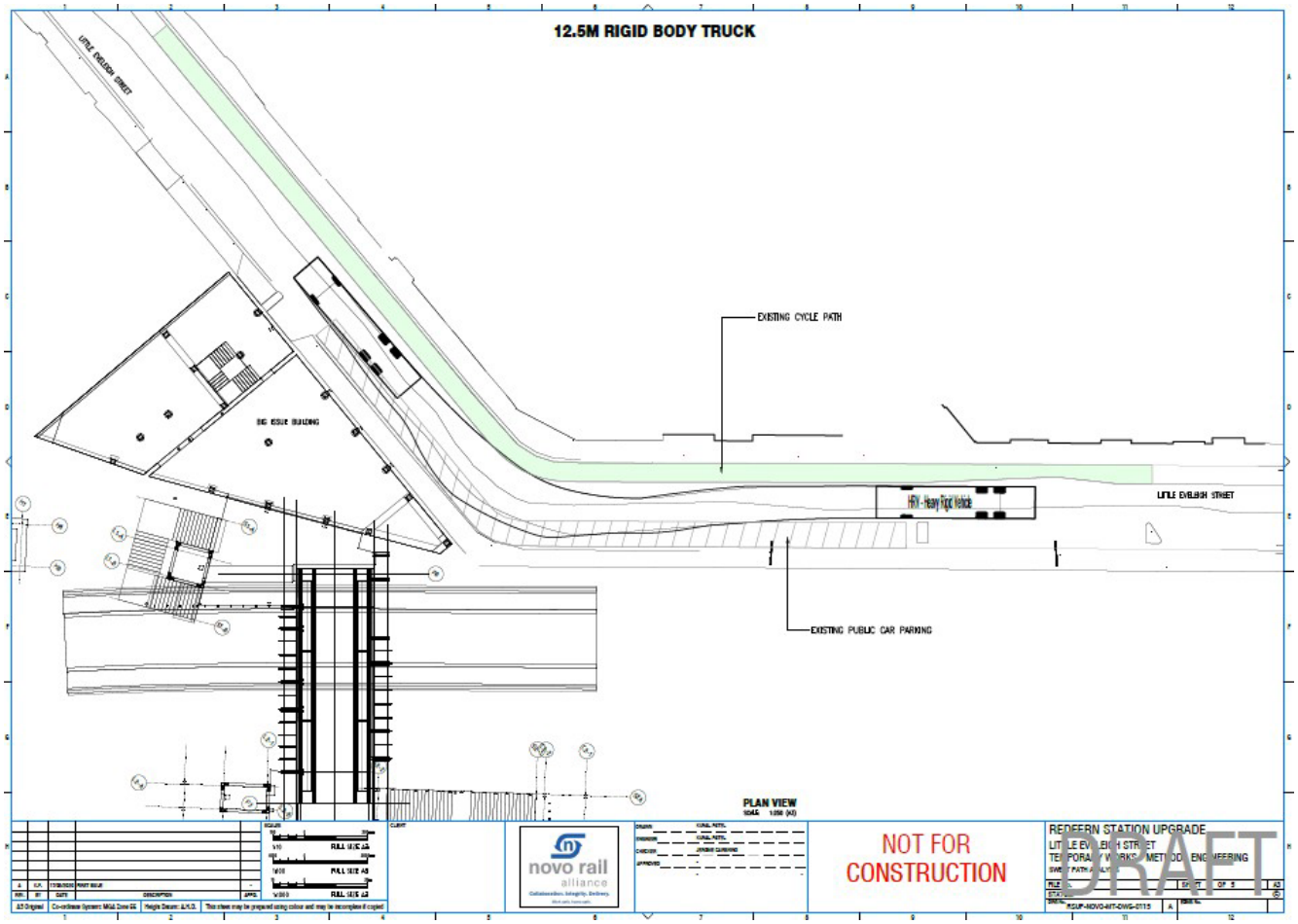


Appendix J – Swept path analysis – Little Eveleigh Street

The swept paths for Little Eveleigh Street reflect the travel paths required to ensure different sized trucks do not traverse into the cycle lane in Little Eveleigh Street. Construction in 125-127 Little Eveleigh Street will require vehicles of this size to enter the street. Further review will occur to identify the most appropriate and safe approach in delivering these works. One example would be temporary removal of parking spaces on the bend in Little Eveleigh Street. Review to occur in early 2021.


CONCRETE AGITATOR
LITTLE EVELEIGH STREET
EXISTING CYCLE PATH
BIG ISSUE BUILDING
West 10m3 Concrete Agitator
LITTLE EVELEIGH STREET
EXISTING PUBLIC CAR PARKING
PLAN VIEW
NOT FOR CONSTRUCTION
REDFERN STATION UPGRADE
DRAFT

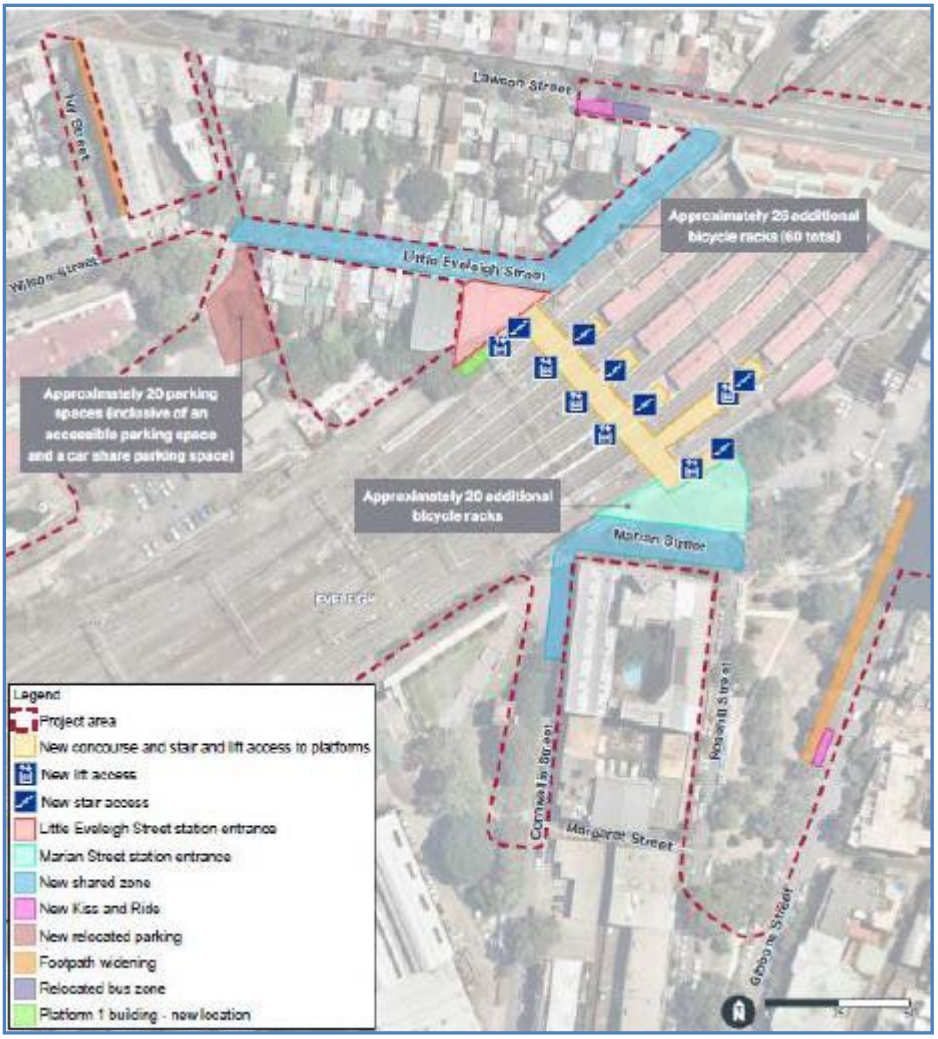

8.8M MEDIUM RIGID BODY TRUCK
LITTLE EVELEIGH STREET
EXISTING CYCLE PATH
BIG ISSUE BUILDING
MRV - Medium Rigid Vehicle
LITTLE EVELEIGH STREET
EXISTING PUBLIC CAR PARKING
PLAN VIEW
NOT FOR CONSTRUCTION
REDFERN STATION UPGRADE
DRAFT


12.5M RIGID BODY TRUCK
LITTLE EVELEIGH STREET
EXISTING CYCLE PATH
BIG ISSUE BUILDING
HRV - Heavy Rigid Vehicle
LITTLE EVELEIGH STREET
EXISTING PUBLIC CAR PARKING
PLAN VIEW
NOT FOR CONSTRUCTION
REDFERN STATION UPGRADE
DRAFT

Appendix K – Mini-TMP issued to City of Sydney on 30 October 2020

This Mini TMP had to be issued to Council to meet the timelines for their Traffic Committee meeting for December 2020.

Redfern Station Upgrade – New Southern Concourse Project
Traffic Management Plan
December 2020 to January 2021



Map of the key features of the Redfern Station Upgrade – New Southern Concourse

1 Introduction

The Redfern Station Upgrade – New Southern Concourse Project (the Project) involves construction of a new pedestrian concourse to the south of the existing Lawson Street concourse, extending between Little Eveleigh Street and Marian Street in the suburbs of

Redfern and Eveleigh. The new concourse will provide both lift and stair access to Platforms 1-10. Additional project elements include:

- an upgraded station entrance at Marian Street, and a new station entrance at Little Eveleigh Street, both including station services and customer amenities
- formalisation of a shared zone on Little Eveleigh Street
- upgrade of the Marian Street/Cornwallis Street/Rosehill Street area
- relocation of the shuttle bus zone from Little Eveleigh Street to Lawson Street
- kiss and ride on Lawson Street and Gibbons Street, including associated footpath upgrades

- footpath widening on Ivy Street
- relocation of a building on Platform 1 to accommodate the concourse
- repurposing, relocations and alterations to platform building features and other platform features, including platform resurfacing and associated drainage alterations and addition of platform canopies
- service relocations, including relocation of overhead wiring structures and installation of a new rail signal between Platforms 1 and 2.
- installation of station operational components and infrastructure including wayfinding and signage, tactile ground surface indicators (TGSI), rubbish bins, CCTV cameras, passenger information system (e.g. passenger information display, public address and hearing loops) and emergency equipment (e.g. for fire and life safety).

Novo Rail will be delivering this Project on behalf of Transport for NSW, once planning approval has been granted which is expected in December 2020.

2 About this plan

This Traffic Management Plan has been created to cover the pre and post work activities required for a scheduled Sydney Trains 5 day Trackwork period between 26 and 31 December 2020. This includes pre and post work activities between 11 December 2020 and 8 January 2021. A Construction Traffic Management Plan is currently being produced to cover the main Project delivery period between January 2021 and mid 2022 and will be provided to Council for review in November.

3 Identification and assessment of proposed measures

There are a number of traffic and parking impacts that will need to be in place to enable early work to occur in advance of and during the Sydney Trains 5 day Christmas Shutdown period from 10pm 25 December to 11am 31 December 2020. While some of the traffic and parking arrangements are temporary, a number will become permanent from February/March 2021 in accordance with the design of the Project and as outlined in the Environmental Impact Statement.

The following are the early construction work activities that will occur within the rail corridor that are supported by these traffic arrangements:

- Bridge foundation piling and concrete work
- Overhead wire modifications, above the rail tracks
- Platform service relocations
- High voltage and low voltage cable re-routing
- Tree and vegetation removal at the Marian Street Sydney Trains Car Park
- Removal of fencing and installation of temporary fencing between the footpath and Marian Street Sydney Trains Car Park
- Construction of a temporary crane pad inside the Marian Street Sydney Trains Car Park

In order for these work activities to occur, the following traffic and parking arrangements are required. Note details of these arrangements are listed in the table on the next page.

3.1 Marian Street, Redfern

Permanent removal of 5 parking spaces on the north side of Marian Street, between Rosehill and Cornwallis Streets, including a Go Get ride share parking space, commencing 18 December 2020.

This parking removal is included in the Project design and identified within the Environmental Impact Statement (EIS) that was on display in mid 2020. This area will form part of the new Marian Station entrance to Redfern Station and will be reconstructed to expand the existing raised shared zone.

Removal of this parking in December is necessary to undertake vegetation removal, fencing removal and relocation plus preparatory work in the car park adjacent to Marian Street which is currently being used as a car park for Sydney Trains, Police and Novo Rail.

A temporary road closure in Marian Street, between Margaret and Cornwallis Streets is required from 10pm on 25 December to 11am on 31 December to enable plant, equipment and deliveries to move freely within this area, including delivery of a 350 tonne crane which will operate from the Marian Street car park and adjacent footpath during the 5 day shutdown period. Residential and emergency service access will be maintained. Note that this temporary road closure has previously been instituted by Mirvac during their work activities in Marian Street.

Temporary removal of the 6 parking spaces in front of the Watertower building will also be required from 8am on 23 December to 11am 31 December to ensure this section of the roadway is clear for the 5 day closedown period and provide sufficient space for work and construction activities.

See attached TCP 1.

3.2 Rosehill Street

Temporary removal of parking on the Gibbons Reserve side (eastern side) of Rosehill Street, between Gibbons Street and Marian Street from 7am on 21 December to 11am on 31 December to provide adequate space for the large vehicles and deliveries accessing the Marian Street car park area. Rosehill Street is very narrow and the temporary removal of parking on the eastern side of the street will provide sufficient space for construction vehicles to pass the parked cars on the western side of Rosehill Street.

Note that the first four parking spaces on the western side of Rosehill Street when you enter off Gibbons Street would also be temporarily removed to safely enable sufficient swing path for truck access off Gibbons Street.

See attached TCP 2.

4 Mitigation Measures

4.1 Assessment of impact

Rosehill and Marian Streets are low traffic roads with 2 hr timed parking and permit parking for residents. The apartments adjacent to these roads have parking available within their buildings for residents.

Parking on the western side of Rosehill Street will be maintained for overflow residential parking.

The half-road closure in Marian Street has previously been implemented during work activities by Mirvac. Extensive consultation and notification with stakeholders and advance signage will be installed to communicate the arrangements.

4.2 Measures to ameliorate the impact of re-assigned traffic

Low level traffic roads – minimal impact. Consultation with adjacent stakeholders.

4.3 Assessment of public transport services affected

No impact to public transport services as they do not operate on these roads.

4.4 Details of provision made for emergency vehicles, heavy vehicles, cyclists and pedestrians

Emergency service access will be maintained with traffic control in place.

For heavy vehicle access for the unit blocks and Mirvac, such as garbage and removalist trucks, this will be maintained with the traffic controllers providing access on an as-required basis. During stakeholder consultation, discussions will include requirements for truck access during this period.

Cyclist and pedestrian access is maintained.

4.5 Assessment of effect on existing and future developments with transport implications in the vicinity of the proposed measures

No assessment required for this work period and location. Novo Rail aware there is a DA in place for construction of a new Affordable Housing development on Cornwallis Street however this project has not commenced.

4.6 Assessment of effect of proposed measures on traffic movements in adjoining Council areas

No assessment is required. Area of impact is contained within the one-way road system of Rosehill, Marian and Cornwallis Streets.

4.7 Public consultation process

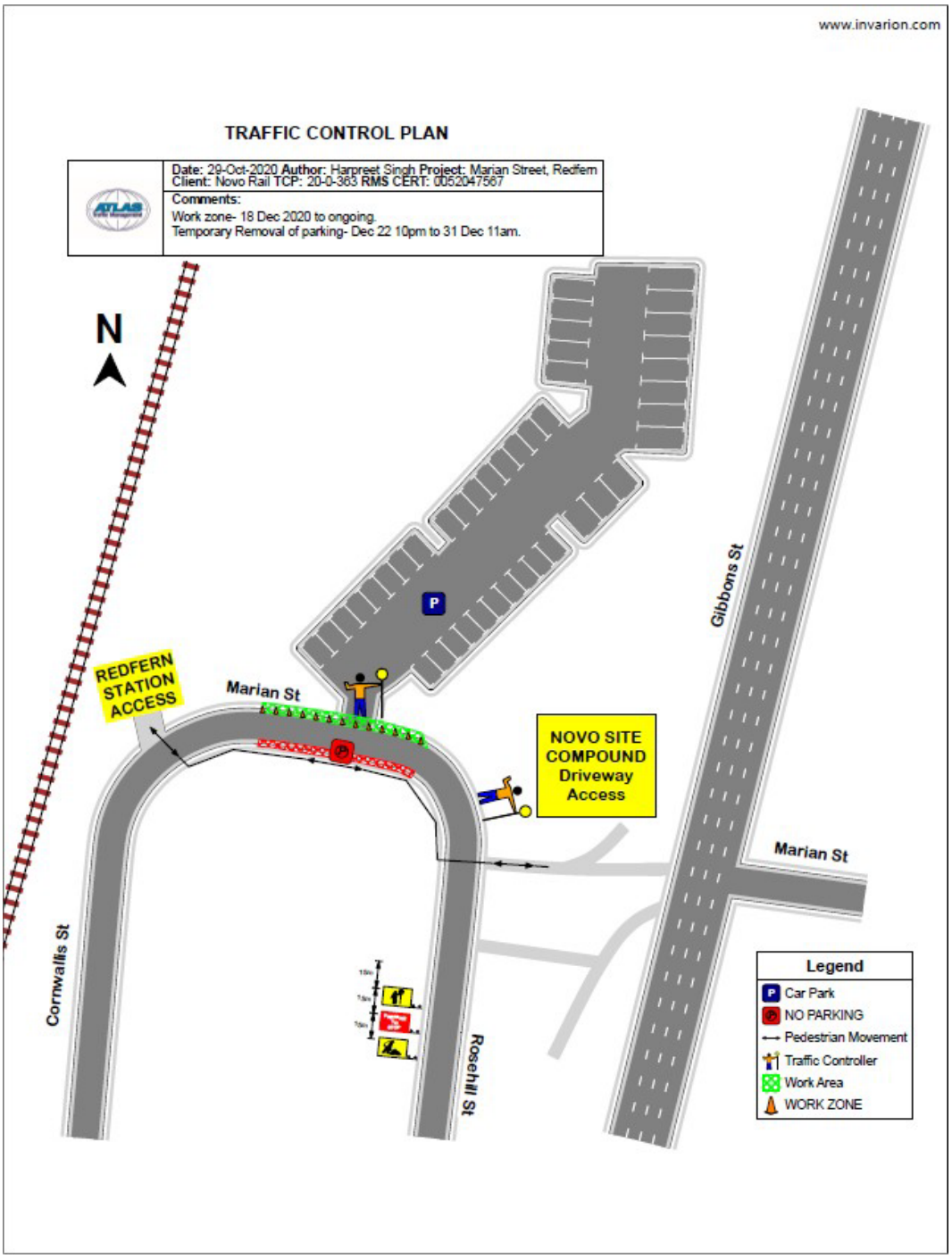
To minimise the impact on the local community and provide sufficient advance notice, the following communication measures will be carried out:

- Late November/early December - Consultation in person with the Body Corporate of The Watertower building on Marian Street and the Ariane building at 32 Cornwallis Street in late November and early December
- Community Notifications provided in early and mid December to inform residents and the community of upcoming work and changes to parking and road access
- Static signage to inform residents and commuters of changes to parking 10-15 days prior to changes
- Installation of static signage within Gibbons Street Reserve, facing northbound traffic in Rosehill Street, advising of changed traffic conditions
- Installation of static signage on Marian and Cornwallis Streets for cyclists advising “Caution - vehicle movements”
- Traffic control in place to provide traffic and pedestrian management during work activities and providing access to resident vehicles, garbage trucks, etc
- Consultation with other stakeholders including City of Sydney Council, Police and Emergency Services, TMC, Cycling NSW, Sydney Trains
- Newspaper advertisement if required

Traffic Arrangements	Date	Purpose	Mitigation Measures
Marian Street between Rosehill Street and Cornwallis Street (TCP 1)			
Permanent removal of parking spaces on the north side of Marian Street (including a Go Get ride share parking space) Closure of north side footpath on Marian Street (between the Redfern Station entrance and the footpath leading to Gibbons Street) and detour pedestrians to south side footpath Removal of galvanised street parking posts on Marian Street north side footpath	18 Dec - ongoing	– Establishment of a Work Zone – Tree and vegetation removal within the Sydney Trains Car Park area on Marian Street prior to the installation of a temporary crane pad for the Christmas work period – Installation of water barriers and ATF fencing around the Work Zone including the north side footpath. – Removal and relocation of fencing to existing car park which becomes a construction site area and ultimately the new Marian Street entrance to Redfern Station	– Consultation with residents and stakeholders – Community Notifications – Advance static signage to indicate permanent and temporary removal of parking and closure of footpath – Wayfinding signage installed to direct pedestrians to the footpath on the south side of Marian Street – Traffic controllers in place to manage vehicle and pedestrian movements
Temporary removal of 6 parking spaces on the southern side of Marian Street, in front of the Watertower building	22-31 December	– During tree removal chipper and trucks will be located on the north side of Marian Street and temporary fencing, impacting the road width and requiring the parking opposite to be temporarily removed. – Also required during the Christmas closedown period due to crane outriggers and general construction vehicle movements in the area	As above
Marian Street between Margaret Street and Cornwallis Street (Refer TCP 2)			

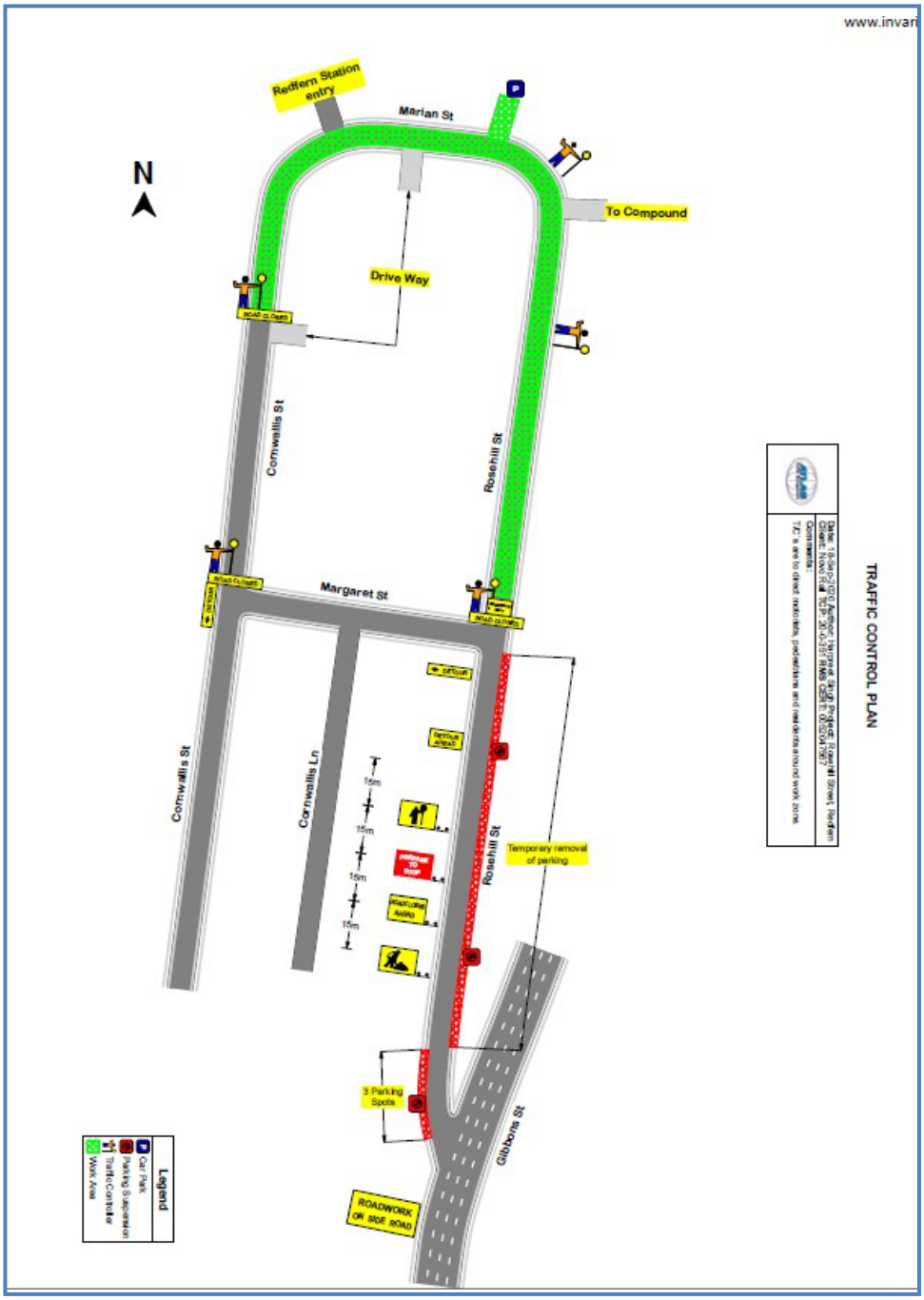
Temporary road closure - Marian Street **Resident access to be maintained**	25 to 31 Dec 10pm 25 December to 11am 31 December	– Temporary road closure to establish a temporary crane pad in Sydney Trains Car Park on Marian Street and onto the north side footpath (See Appendix 1) and provide sufficient space for construction vehicle movements in the area – Extensive work activity will occur 24/7 during Sydney Trains 5 day Christmas shutdown and from this car park / work compound area	– As above – Emergency services will be informed of the road closure however access for these services will be maintained – Newspaper advertisement, if required
Rosehill Street between Gibbons Street and Marian Street (See TCP 2)			
Temporary removal of parking spaces on Rosehill Street	5am 21 December to 11am 31 December	– Temporary removal of parking spaces on Rosehill Street to provide adequate space for delivery of a crane and large vehicles to Sydney Trains car park / Marian Street site compound during the 5 day closedown.	– Community Notification – Advance static signage to advertise temporary removal of parking – Specific Notification produced for local residents – Ongoing consultation with Watertower and local residents to advise access changes – Traffic controllers to provide pedestrian and traffic management – Emergency services will be informed of the road closure however emergency service access will be maintained

TCP 1 – Marian Street – Closure of northside footpath, work zone installation (north side) and temporary parking removal (south side)



Visual layout of TCP1 in operation for Work Zone

TCP 2 – Marian Street – Half Road Closure and Rosehill Street Temporary Parking Removal – Christmas 2020



Appendix L – Redfern Station Survey Summary March 2020

Redfern Station Survey Summary

5 May 2020

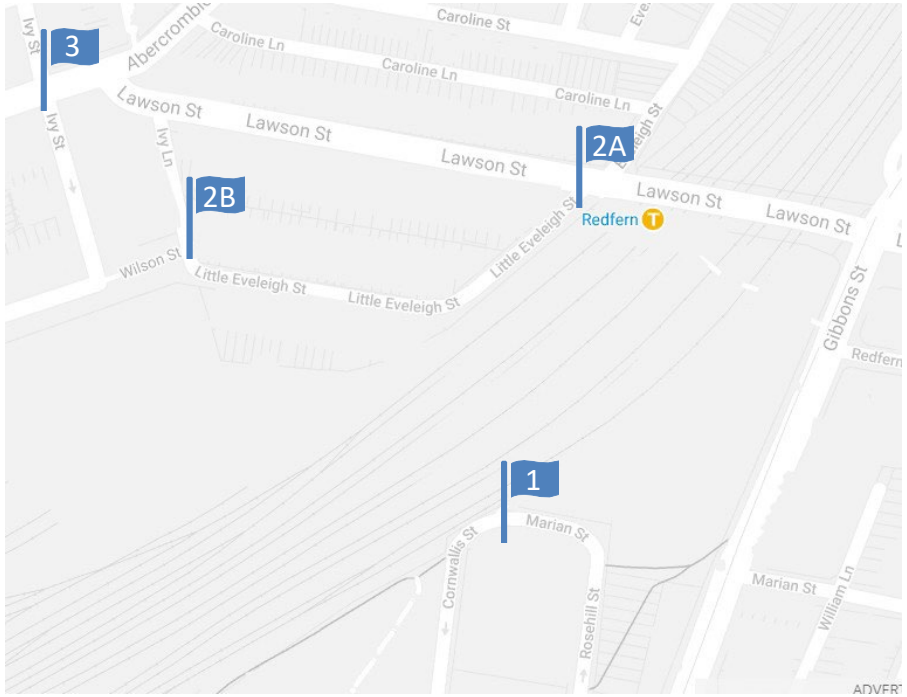
Table of Contents

1. Austraffic Survey
2. Qualitative overview
3. Location based summary
4. Mode based summary

Figure 1: Area of Scope

1. Austraffic Survey

Austraffic was engaged by Novo Rail to conduct site surveys across four locations to quantify pedestrian, cycling and vehicle movements. Data was recorded across the whole 24hr day in 15 minute intervals between Friday, 6 Match 2020 and Tuesday, 10 March 2020.



1. Marian St – ATP entrance

2A. Lawson St and Little Eveleigh St

2B. Little Eveleigh St and Ivy Ln (Corner)

Ivy St and Abercrombie St

2. Overview of Qualitative Location Demand

Weekday Average (Monday, Tuesday and Friday)

The busiest modes for each of the following locations are as follows:

- Location 1:
- Location 2A:
- Location 2B:
- Location 3:

Weekend Average (Saturday and Sunday)

The busiest modes for each of the following locations are as follows:

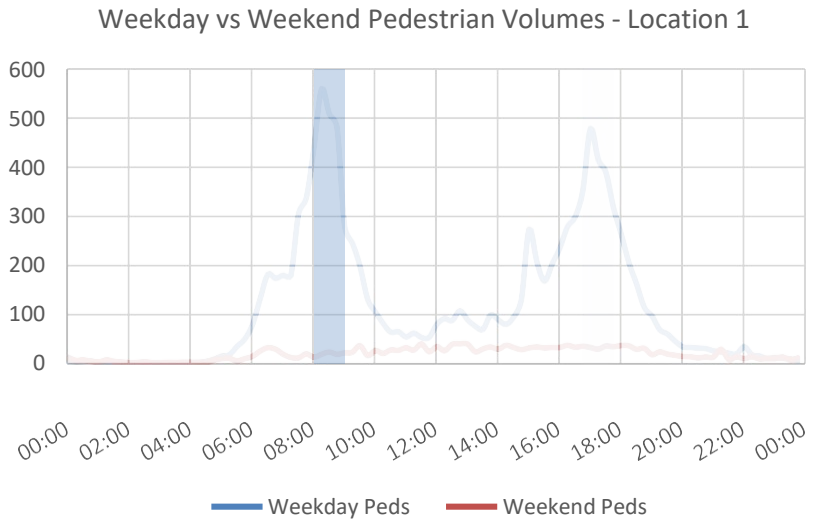
- Location 1:
- Location 2A:
- Location 2B:
- Location 3:

3. Location 1: Marian St – ATP Entrance

Characteristics

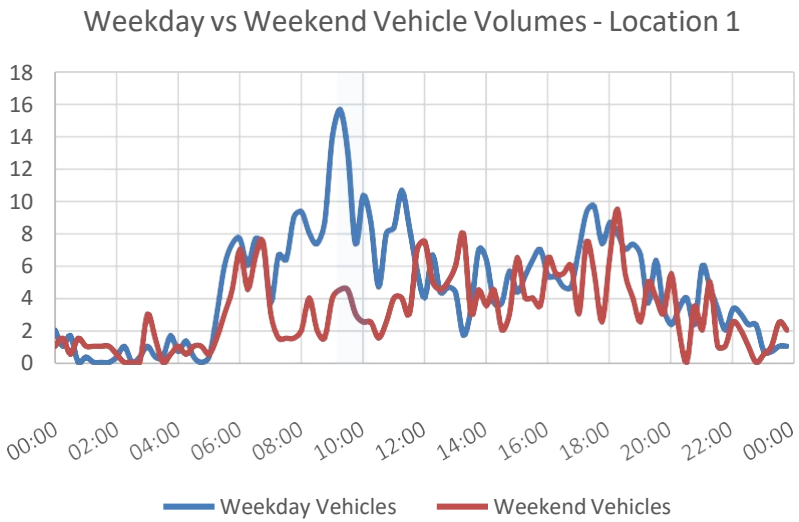
- One-way shared zone with a 10kmh speed limit for vehicles.
- Provides direct pedestrian access to Australian Technology Park (ATP).

3. Location 1: Marian St – ATP Entrance



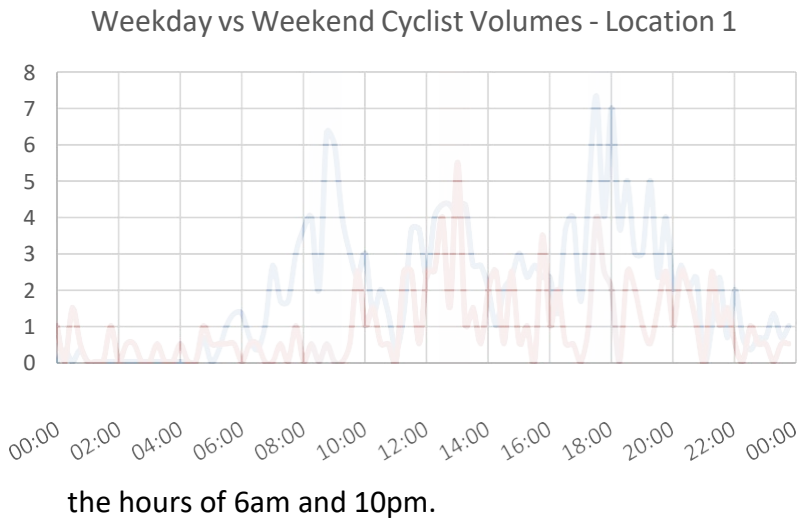
Weekday Total: **11,055 pedestrians**
Weekend Total: **1,752 pedestrians**

- Marian St experiences high levels of pedestrian movements during the weekday within and AM peak hour (8am-9am) with1,986 pedestrian and PM peak hour (4:45-5:45pm) with 1,632 pedestrians.
- Weekend pedestrian demand is lower as the ATP is predominately an employment area.



Weekday Total: **456 vehicles**
Weekend Total: **301 vehicles**

- Weekday vehicle demand peaks between 9-10am registering 50 vehicles. This could be an outcome of station users avoiding the AM peak for pick-up and drop-off.
- Weekend vehicle demand maintains quite consistent with an average of four vehicles per 15mins between



the hours of 6am and 10pm.

3. Location 1: Marian St – ATP Entrance

Weekday Total: **193 cyclists**
Weekend Total: **95 cyclists**

- Weekday AM peak hour cyclist movement occurs between 8:15-9:15am with 18 cyclists. This is followedby a PM peak period between 5:15-6:15pm with 23 cyclists.

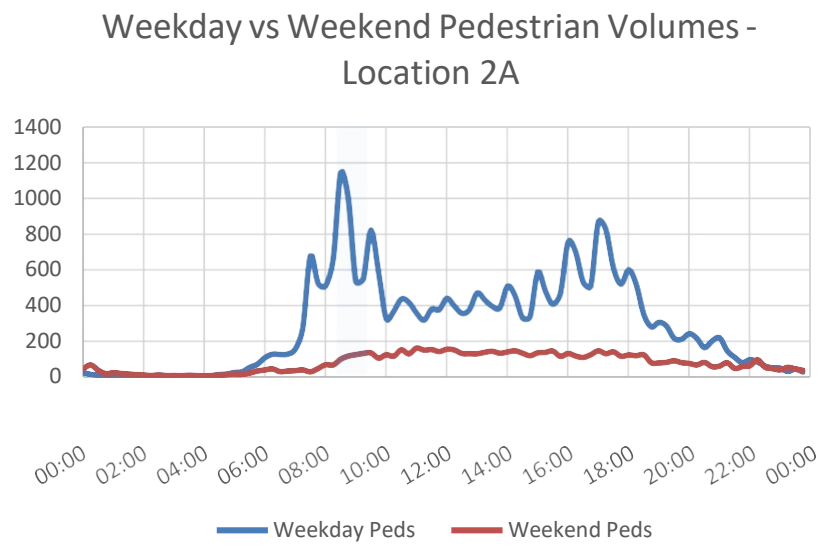
- During the weekend, riding around midday is popularwith 14 cyclists riding between 12:15-1:15pm.

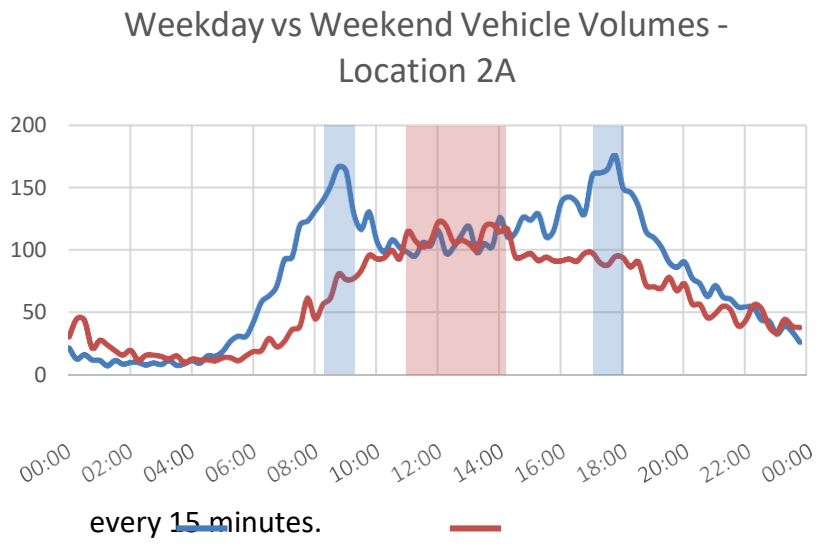
3. Location 2A: Lawson St and Little Eveleigh St

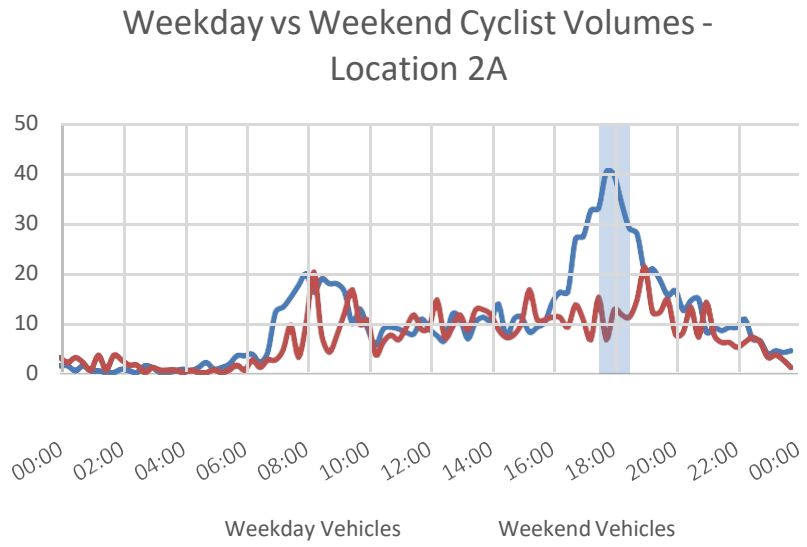
Characteristics

- Location 2A is the busiest of the four sites in terms of vehicle, pedestrian and cycling movements.
- Lawson St is a key local road providing an East - West connection over the railway lines.
- Little Eveleigh St is currently a quiet one-way street with a dedicated cycling lane.

3. Location 2A: Lawson St and Little Eveleigh St







Weekday Total: **27,440 pedestrians**
Weekend Total: **7,066 pedestrians**

- Lawson/Little Eveleigh St experiences peak AM pedestrian movements between 8:15am-9:15am of 3,299 pedestrians and a PM peak of 2,781 pedestrians between 5-6pm.
- Weekend pedestrian is consistently between the hours of 9am and 6:30pm with an average of 126 pedestrians

every 15 minutes.

Weekday Total: **7,692 vehicles**
Weekend Total: **5,856 vehicles**

- Weekday morning vehicle demand peaks between 8:15am and 9:15am recording 616 vehicles and in the afternoon between 5pm and 6pm recording 657 vehicles.
- Peak weekend vehicle demand occurs between 11am and 2:15pm with an average of 111 vehicles every 15

3. Location 2A: Lawson St and Little Eveleigh St

minutes.

Weekday Total: **986 cyclists**
Weekend Total: **667 cyclists**

- Weekday AM peak hour cyclist movement occurs between 8am and 9am with 72 cyclists. This is followedby a more significant PM peak period between 5:30- 6:30pm with 146 cyclists. Dinner time food delivery services contributes to the high level of PM cycling.

- Cycling during the weekends tends to occur between8am and 9pm, averaging 11 cyclists every 15mins.

3. Location 2A: Street Level Analysis

Further analysis was conducted at the street level to gain a better understanding of vehicle, pedestrian and cycling demand along Lawson and Little Eveleigh St.

Figure 2 and 3 illustrates the recorded movements from the Austraffic surveys and Table 1, below, separates those movements into Lawson St and Little Eveleigh St.

Table 1 includes a high level assessment of the weekday and weekend total movement which has identified pedestrians as the dominant user of Lawson and Little Eveleigh St. Vehicle movements are more prominent along Lawson St compared to Little Eveleigh St for both the weekday and weekend. Cycling is also more popular along Little Eveleigh St due to the availability of a bike path.

		Vehicles	Pedestrians	Cyclists
Lawson St	Movement	2,4	AD,DA	AD,DA
	Weekday Total	6,972	23,039	414
	Weekend Total	5,252	4,658	297
Little Eveleigh St	Movement	1,5	AB,BA,BD,DB,CD,DC, CA,AC	AB,BA,BD,DB,CD,DC,AC ,CA
	Weekday Total	720	4,209	547
	Weekend Total	604	2,300	357

Table 1: Location 2A – Street Level Movements

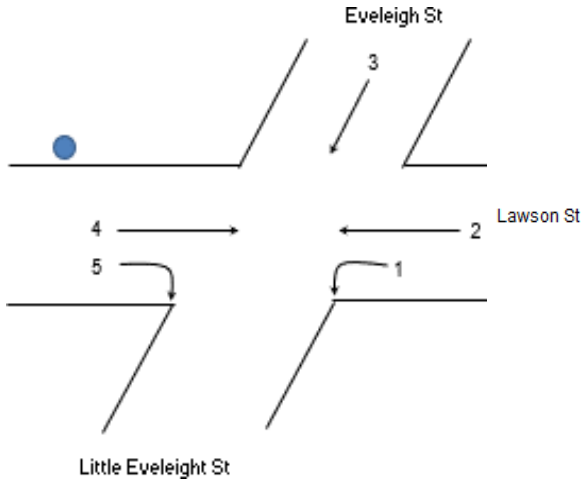


Figure 2: Location 2A – Vehicle and Cycling movements

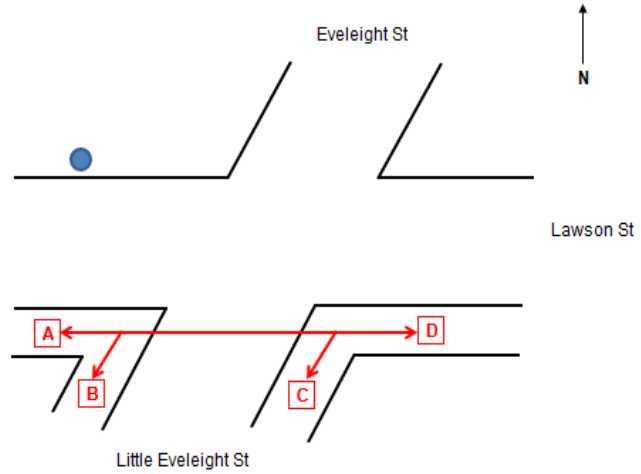
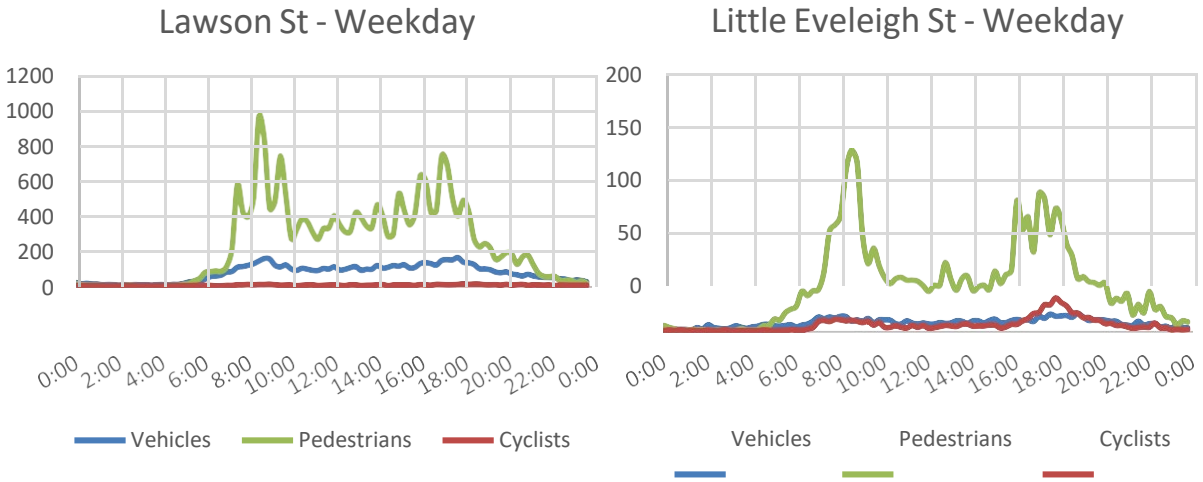
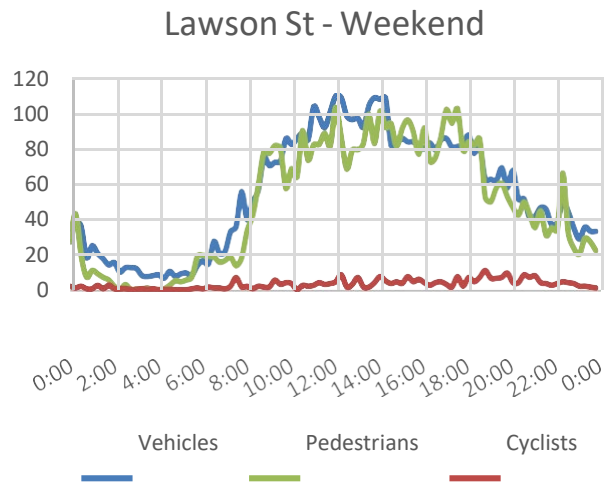


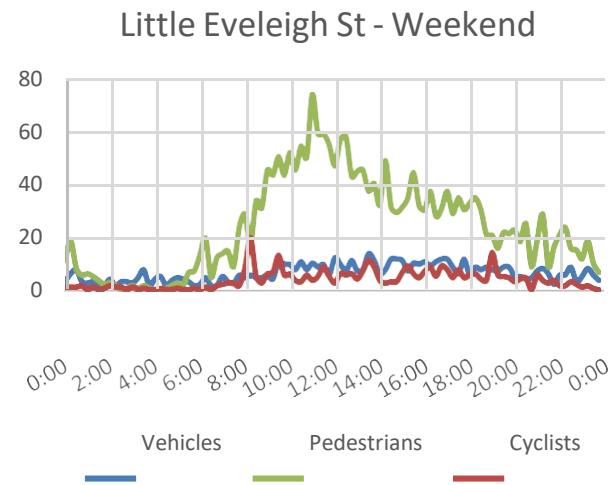
Figure 3: Location 2A – Pedestrian and Cycling movements

3. Location 2A: Street Level Analysis

Detailed street level analysis for the weekday and weekend are illustrated below:







During the weekday peak periods, a comparison of the mode split illustrates that pedestrians are the dominant users of Lawson St achieving over 5,000 total movements across the AM and PM peak hour. Vehicles are more likely to continue through Lawson St rather than turn into Little Eveleigh St.

During the weekends, Lawson St experiences more vehicles and pedestrians compared to Little Eveleigh St, but less in cyclists.

		Vehicles	Pedestrians	Cyclists
Lawson St	Movement	2,4	AD,DA	AD,DA,2,4
	Weekend 12pm-1pm	412	336	18
Little Eveleigh St	Movement	1,5	AB,BA,BD,DB,CD,DC, CA,AC	AB,BA,BD,DB,CD,DC,AC ,CA,1,5
	Weekend 12pm-1pm	40	203	20

Lawson St	8:15am-9:15am	574	2,728	34
	PM Peak hour 5pm-6pm	602	2,321	32
Little Eveleigh St	Movement	1,5	AB,BA,BD,DB,CD,DC,CA,AC	AB,BA,BD,DB,CD,DC,AC,CA,1,5
	AM Peak hour 8:15am-9:15am	41	571	36
	PM Peak hour 5pm-6pm	55	460	97

Table 2: Location 2A – Weekday Street Level Movements by Mode

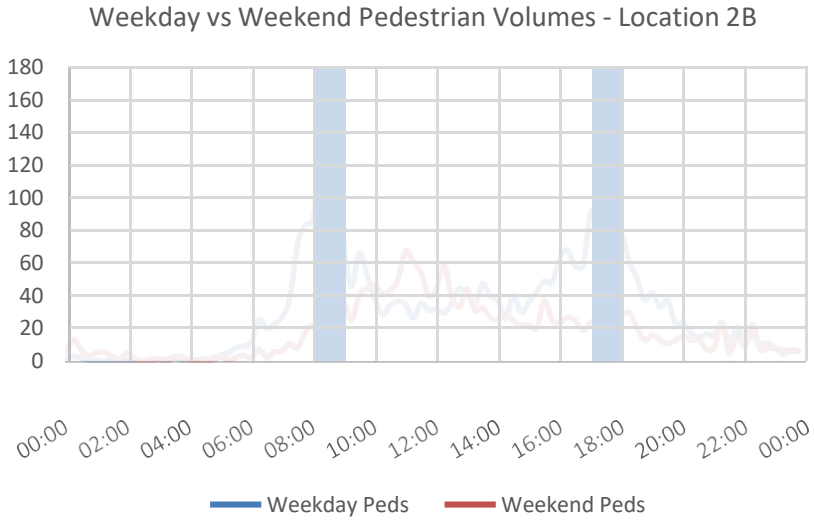
Table 3: Location 2A – Weekend Street Level Movements by Mode

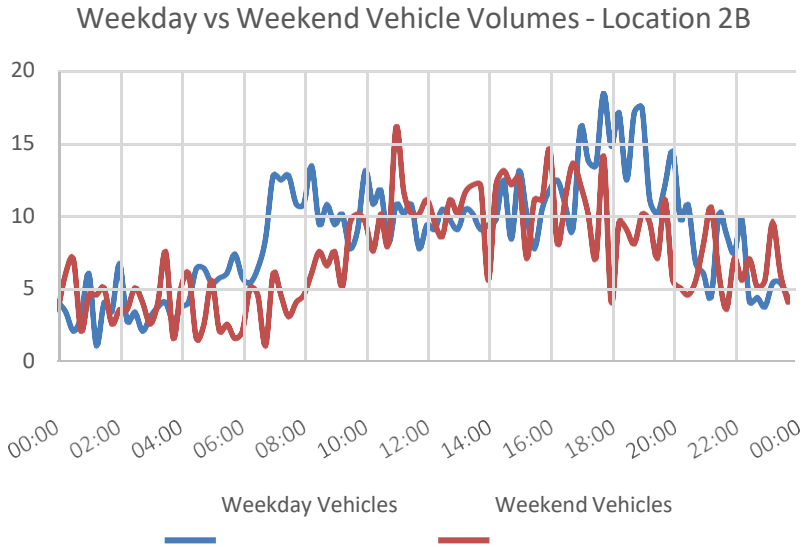
3. Location 2B: Little Eveleigh St and Ivy Ln (Corner)

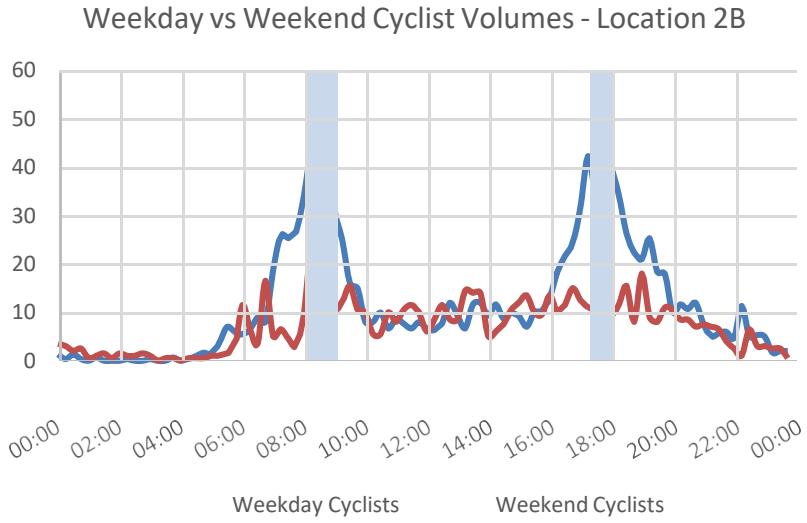
Characteristics

- The corner of Little Eveleigh St and Ivy Ln is the least busy of the four survey locations.
- This location is where the one-way Little Eveleigh St transitions to the one-way Ivy Ln.
- Little Eveleigh St has a dedicated bike path which continues through Wilson St. Ivy Ln does not have a dedicated bath path.
- Behind the fence is a Sydney Trains car park.

3. Location 2B: Little Eveleigh St and Ivy Ln (Corner)







Weekday Total: **3,125 Pedestrians**
Weekend Total: **1,774 Pedestrians**

- Pedestrian utilisation of Little Eveleigh St/Ivy Ln is low compared to other locations. Peaks in activity occurs during the AM peak (8am-9am) with 521 pedestrians and PM peak (5-6pm) with 346 pedestrians.
- Weekend demand stays relatively consistent between

10am and 6:30pm with an average of 127 pedestrians every 15 minutes.

Weekday Total: **824 Vehicles**
Weekend Total: **688 Vehicles**

- During the weekday, vehicle demand is active between 7am and 8pm with the peak period between 5pm and 7pm.
- Weekend vehicle demand maintains consistent with an average of 11 vehicles per 15 minutes between the

3. Location 2B: Little Eveleigh St and Ivy Ln (Corner)

hours of 11am and 6pm.

Weekday Total: **1,164 Cyclists**
Weekend Total: **681 Cyclists**

- Little Eveleigh St/Ivy Ln forms part of a dedicated cycling route. The weekday experiences an AM peak (8am-9am) with 172 cyclists and a PM peak (5:15pm-6:15pm) with 160 cyclists.

- The weekend experiences an average of 11 cyclistsevery 15 minutes between 8am and 7pm.

3. Location 2B: Street Level Analysis

Further analysis was conducted to identify the number of movements into and out of the Sydney Trains Car Park (Figure 4). From Table 4, the car park was accessed 190 times during the weekday and 154 times during the weekend (total sum of movement 3 and 4). However, the number of vehicles using the car park may be less as the same vehicle may have accessed the car park multiple times a day.

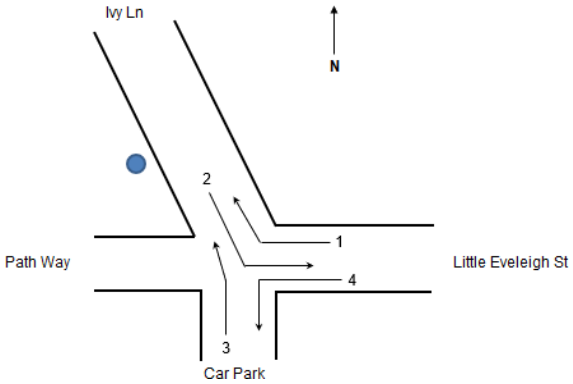
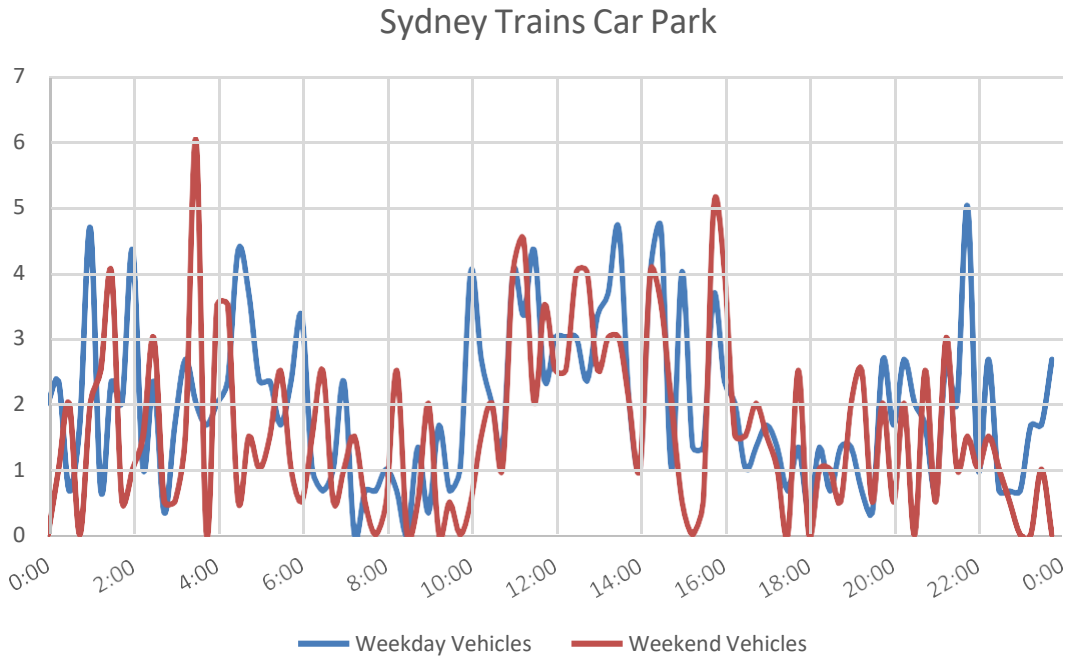


Figure 4: Location 2 – Vehicle movements

	Vehicles
Weekday Total	190
Weekend Total	154

Table 4: Location 2 – Car Park access



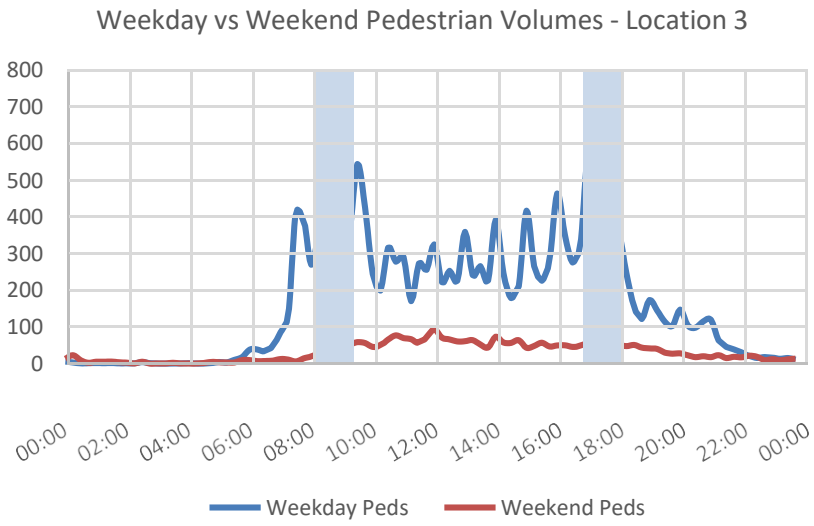
From the graph above, the car park is utilised at all times of the day. This is due to day time and night time track work and ongoing maintenance of the station and rail lines.

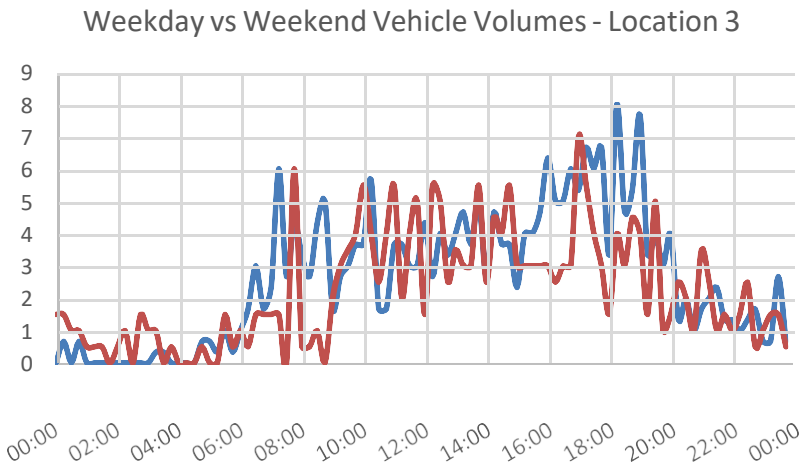
3. Location 3: Ivy St and Abercrombie St

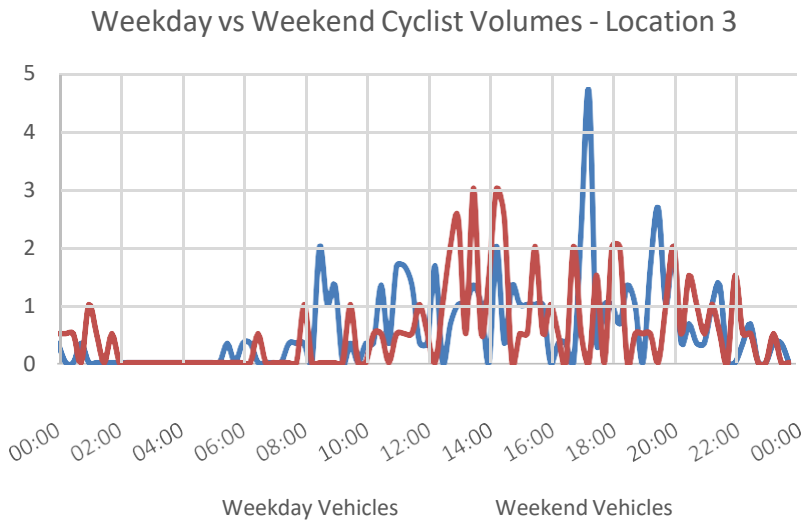
Characteristics

- Experiences the lowest vehicle demand of the four survey locations.
- Abercrombie St is a local road bordering the southern side of the University of Sydney.
- Ivy St is a one-way street. It is only accessible through a left-turn from Abercrombie St.
- The road treatment of Ivy St signals to drivers to be more vigilant of pedestrians while turning highlighting a strong pedestrian and cyclist presence in the area.

3. Location 3: Ivy St and Abercrombie St







Weekday Total: **16,582 Pedestrians**
Weekend Total: **3,019 Pedestrians**

- Ivy St/Abercrombie St experiences a significant peak of 2,128 pedestrian between 8:15am and 9:15am. Demand falls around midday, slowly increasing throughout the afternoon to reach a PM peak between 4:45pm and 5:45pm with 1,617 pedestrians.

- Weekend pedestrian demand is much lower observing less than 100 pedestrians every 15 minutes.

Weekday Total: **253 Vehicles**
Weekend Total: **214 Vehicles**

- Weekday vehicle demand is lowest of the four survey locations. Between 7:15am and 7pm, there is an average of four vehicles every 15 minutes.

- The weekend vehicle demand profile is similar to the weekday with demand concentrated between 7:45am and 7:30pm. During this period, there is an average of

3. Location 3: Ivy St and Abercrombie St

three vehicles every 15 minutes.

Weekday Total: **55 Cyclists**
Weekend Total: **52 Cyclists**

- During the weekday, cyclists are active in low levels.Between 8am and 8pm there is an average of one cyclist every 15mins.
- The weekend is just as quiet with an average of one cyclists every 15 minutes concentrated between 1 and8pm.

3. Location 3: Street Level Analysis

Further analysis was conducted at the street level to gain a better understanding of vehicle, pedestrian and cycling demand along Abercrombie and Ivy St. Figure 5 illustrates the recorded movements of vehicles entering and exiting Ivy St from Abercrombie St. Ivy St is a one-way street and can only be entered via a left turn from Abercrombie St, therefore vehicle movements 1, 2 and 3 are illegal.

Figure 6 illustrates the recorded movements from the Austraffic surveys and Tables 5 and 6, below, separates those movements into Lawson St and Little Eveleigh St. The tables includes a high level assessment of the peak 1-hour period which has identified pedestrians as the dominant user of Lawson and Little Eveleigh St.

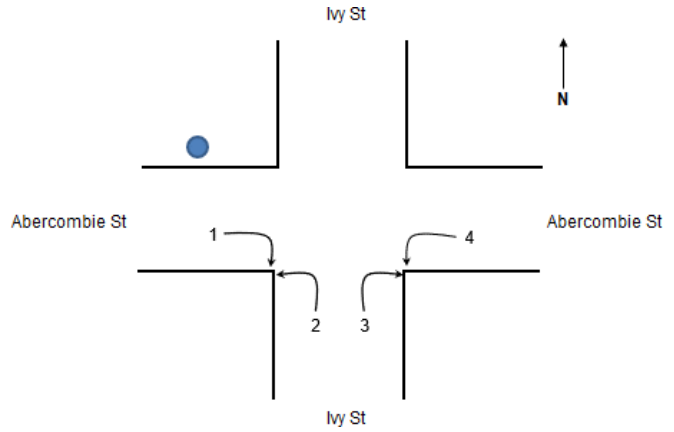


Figure 5: Location 3 – Vehicle movements

		Pedestrians	Cyclists
Abercrombie St	Movement	AC, CA	AC, CA
	Weekday Total	16,298	26
	Weekend Total	2,815	22
Ivy St	Movement	BA, AB, BC, CB	BA, AB, BC, CB
	Weekday Total	284	29
	Weekend Total	204	30

Table 5: Location 3 – Street Level Movements (Pedestrians and Cyclists)

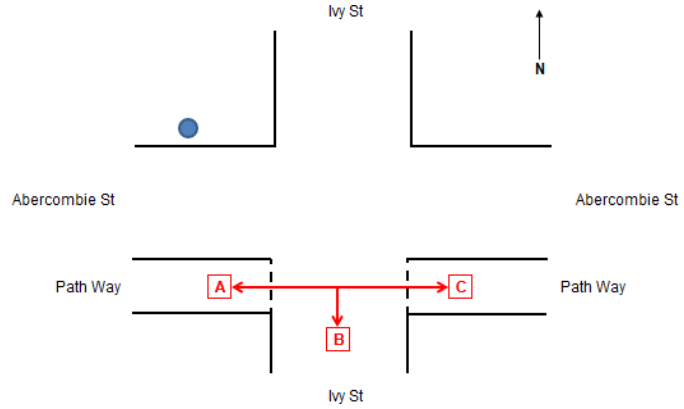


Figure 6: Location 3 – Pedestrian and Cycling movements

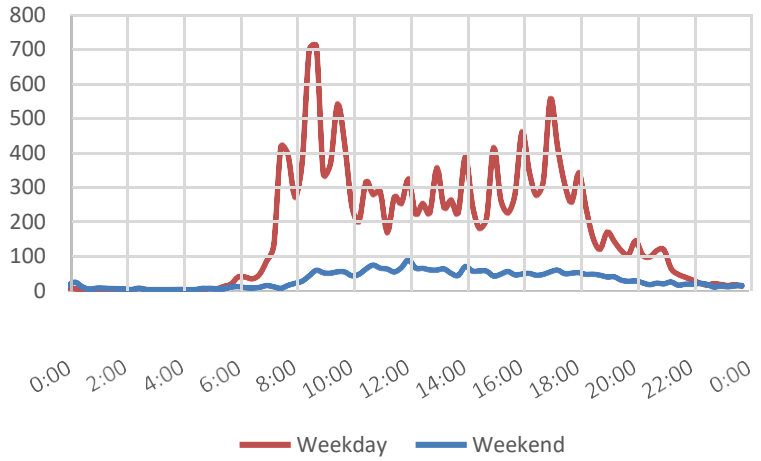
		Vehicles
Ivy to Abercrombie	Movement	2,3
	Weekday Total	7
	Weekend Total	7
Abercrombie to Ivy	Movement	1,4
	Weekday Total	246
	Weekend Total	208

Table 6: Location 3 – Street Level Movements (Vehicles)

3. Location 3: Street Level Analysis

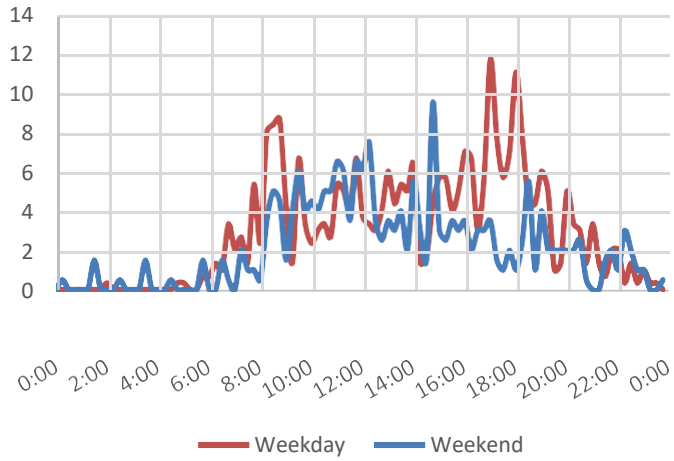
Detailed street level analysis for the weekday and weekend are illustrated below:

Location 3 – Abercrombie St - Pedestrians



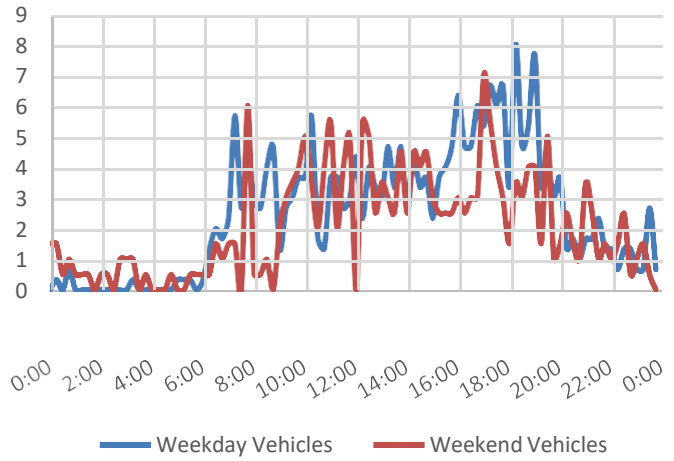
Abercrombie St is a major road through Redfern and hence experiences a lot of through movements. 16,298 pedestrian travel along Abercrombie St during the weekday and 2,815 during the weekend.

Location 3 – Ivy St - Pedestrians



Ivy St is a small one-way road between Abercrombie St and Wilson St. It doesn't experience a lot of pedestrian movements recording 284 pedestrians over an average weekday and 204 during an average weekend.

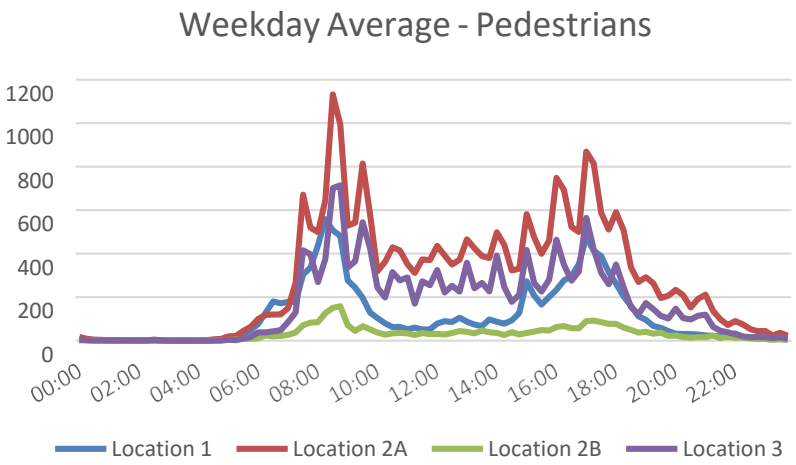
Abercrombie St into Ivy St - Vehicles

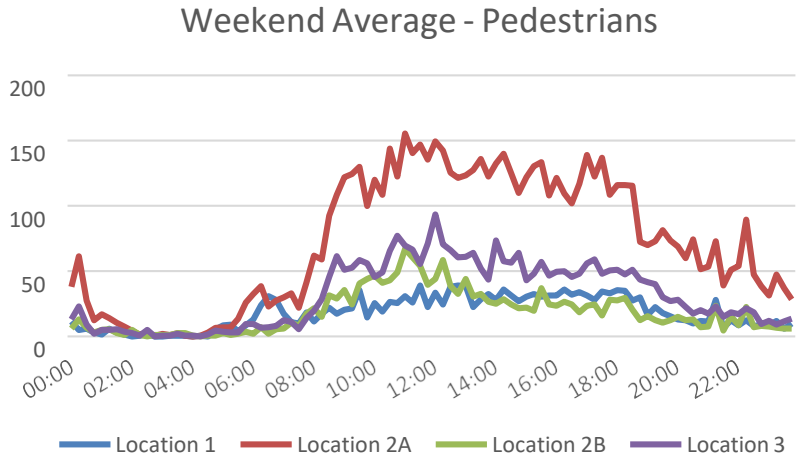


Of the four vehicle movements captured by the survey, three of them are illegal. Only the legal movement of a left turn from Abercrombie St to Ivy St is shown in the graph above. For this movement, the weekday and weekend experiences similar demand between 7am and 7pm.

4. Comparison by Mode Choice

Pedestrians





Comparison by location:

- Location 2A (Lawson and Little Eveleigh) receives the most amount of pedestrian traffic. In comparison to Location 2B (Little Eveleigh and Ivy Ln) which receives an hourly maximum of 158 pedestrians.
- Across the four locations, there is a distinct AM and PM peak period occurring anywhere between 8 and 10am, 4 and 6pm respectively.
- Differences between the numbers of recorded pedestrians along Little Eveleigh St between 2A and 2B are noted. Contributions to the variations include The Key College, residents and other business located between 2A and 2B.

Comparison by location:

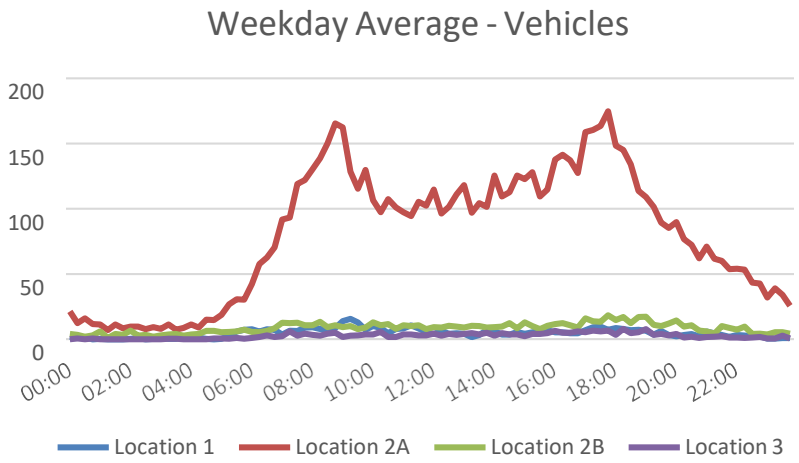
- The weekend pedestrian profile peaks during the daylight hours between 8am and 6pm as this corresponds to the time where most pedestrians would be walking outside.
- Location 2A (Lawson and Little Eveleigh) receives the most amount of pedestrian traffic as it is located outside Redfern Station.
- Similarly to the weekday, the weekend also records a difference in pedestrians along Little Eveleigh St between 2A and 2B.

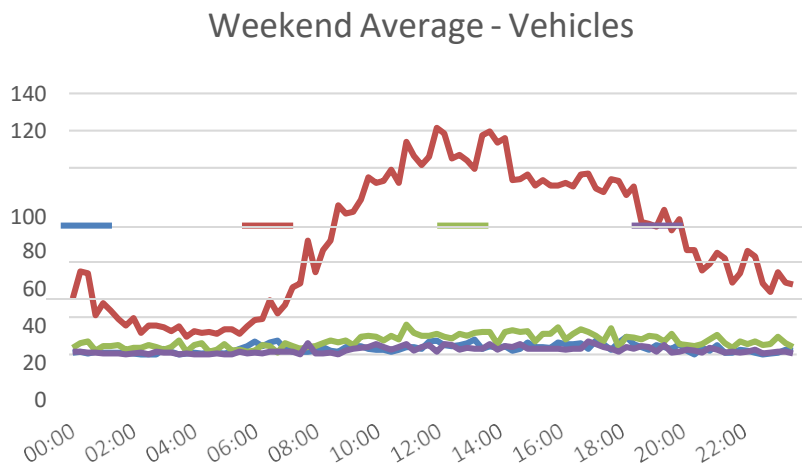
Weekday Total Pedestrians

Weekend Total Pedestrians

4. Comparison by Mode Choice

Vehicles





Comparison by location:

- Location 2A (Lawson and Little Eveleigh) by far experiences the heaviest amount of vehicle traffic across the whole day. The other three locations all experiences less than 20 vehicles every 15 minutes.
- AM and PM peak periods is most noticeable at location 2A but is also experienced at the other three locations.
- Across the average weekday, the total number of vehicles turning into Little Eveleigh St from Lawson St is 720. There are 190 total vehicle movements into and out of the Sydney Trains Carpark and 241 vehicles turning left from Abercrombie St to Ivy St.

Comparison by location:

- Location 2A (Lawson and Little Eveleigh) receives the most amount of vehicle traffic as it is located

Location 1 Location 2A Location 2B Location 3

Weekday Total Vehicles

Weekend Total Vehicles

4. Comparison by Mode Choice

on the corner of Redfern Station.

- The weekend is busiest between 10am and 2pm.
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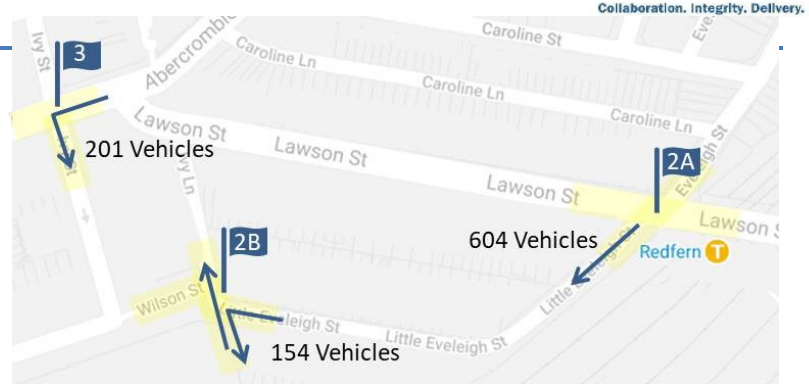
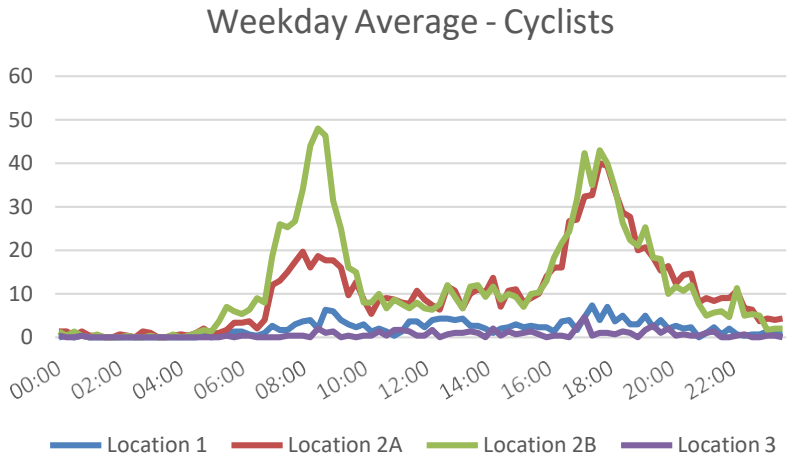
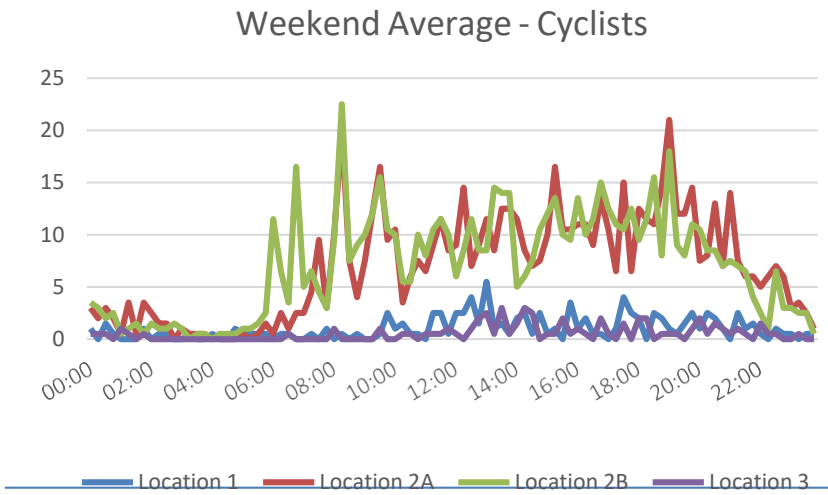
d, the total number of vehicles turning into Little Eveleigh St from LawsonSt is 604. There are 154 total vehicle movements into and out of the Sydney Trains Carpark and 201vehicles turning left from Abercrombie St to Ivy St.



4. Comparison by Mode Choice

Cyclists





Comparison by location:

- Location 2B experiences the most cyclists out of the four sites due to a dedicated cycling path between Redfern and Newtown. Location 2A has a PM peak larger than the AM peak due to increased food deliveries occurring in the evening.
- The 617 cyclists difference recorded between 2A and 2B is due to on-road cyclists at 2A Little Eveleigh St only recorded in the one-way direction resulting in cyclists travelling towards Lawson St being not recorded. There is also a 20-25 capacity bicycle parking located between the two sites.

Comparison by location:

- Location 2A and 2B experience similar levels of cycling activity which is concentrated between 6am and 10pm.
- Similar to the weekday, cyclists travelling on-road towards Lawson St at 2A were not recorded in the site surveys resulting in a difference of 324 cyclists between Locations 2A and 2B.

Weekday Total Cyclists

Weekend Total Cyclists

Appendix M – City of Sydney Standard Requirements forConstruction Traffic Management Plan

The City of Sydney
Standard Requirements for Construction Traffic Management Plan

The Applicant or contractor undertakes to follow and abide by the following requirements at all times during the demolition, excavation and construction work for the Redfern Station Upgrade – New Southern Concourse project

1. Details of routes to and from site and entry and exit points from site – site specific
2. Details of roads that may be excluded from use by construction traffic i.e. roads with load limits, quiet residential streets or access/turn restricted streets – site specific
3. The approved truck route plan shall form part of the contract and must be distributed to all truck drivers.
4. All vehicles must enter and exit the site in a forward direction (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).
5. Trucks are not allowed to reverse into the site from the road (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).
6. The Applicant must provide the City with details of the largest truck that will be used during the demolition, excavation and construction.
   NOTE: No dog trailers or articulated vehicles (AV) to be used (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).
7. Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a one-off occasion is obtained from the City's Traffic Operations Unit). Requests to use these vehicles must be submitted to the National Heavy Vehicle Regulator (NHVR) 28 days prior to the vehicle's scheduled travel date. For more information please contact the NHVR on 1300 696 487 or www.nhvr.gov.au.
8. No queuing or marshalling of trucks is permitted on any public road.
9. Any temporary adjustment to Bus Stops or Traffic Signals will require the Applicant to obtain approval from Transport for NSW (TfNSW) prior to commencement of works.
10. All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off street area or be encouraged to use public transport and not park on the public road.
11. All loading and unloading must be within the development site or at an approved "Works Zone".

12. The Applicant must apply to the City's Traffic Works Co-ordinator to organise appropriate approvals for Work Zones and road closures.

13. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for partial road closures.

14. The Applicant must apply to TfNSW's Transport Management Centre for approval of any road works on State Roads or within 100m of Traffic Signals and receive an approved Road Occupancy Licence (ROL). A copy of the ROL must be provided to the City.

15. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for temporary driveways, cranes and barricades etc.

16. The Applicant must comply with development consent for hours of construction.

17. All Traffic Control Plans associated with the CTMP must comply with the Australian Standards and TfNSW's Traffic Control At Work Sites Guidelines.

18. Traffic Controllers are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - **the vehicles already on the road have right-of-way.**

19. Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e. **at all times the pedestrians have right-of-way on the footpath not the trucks**.

20. Physical barriers to control pedestrian or traffic movements need to be determined by the City's Construction Regulations Unit prior to commencement of work.

21. The Applicant must obtain a permit from the City's Construction Regulation Unit regarding the placing of any plant/equipment on public ways.

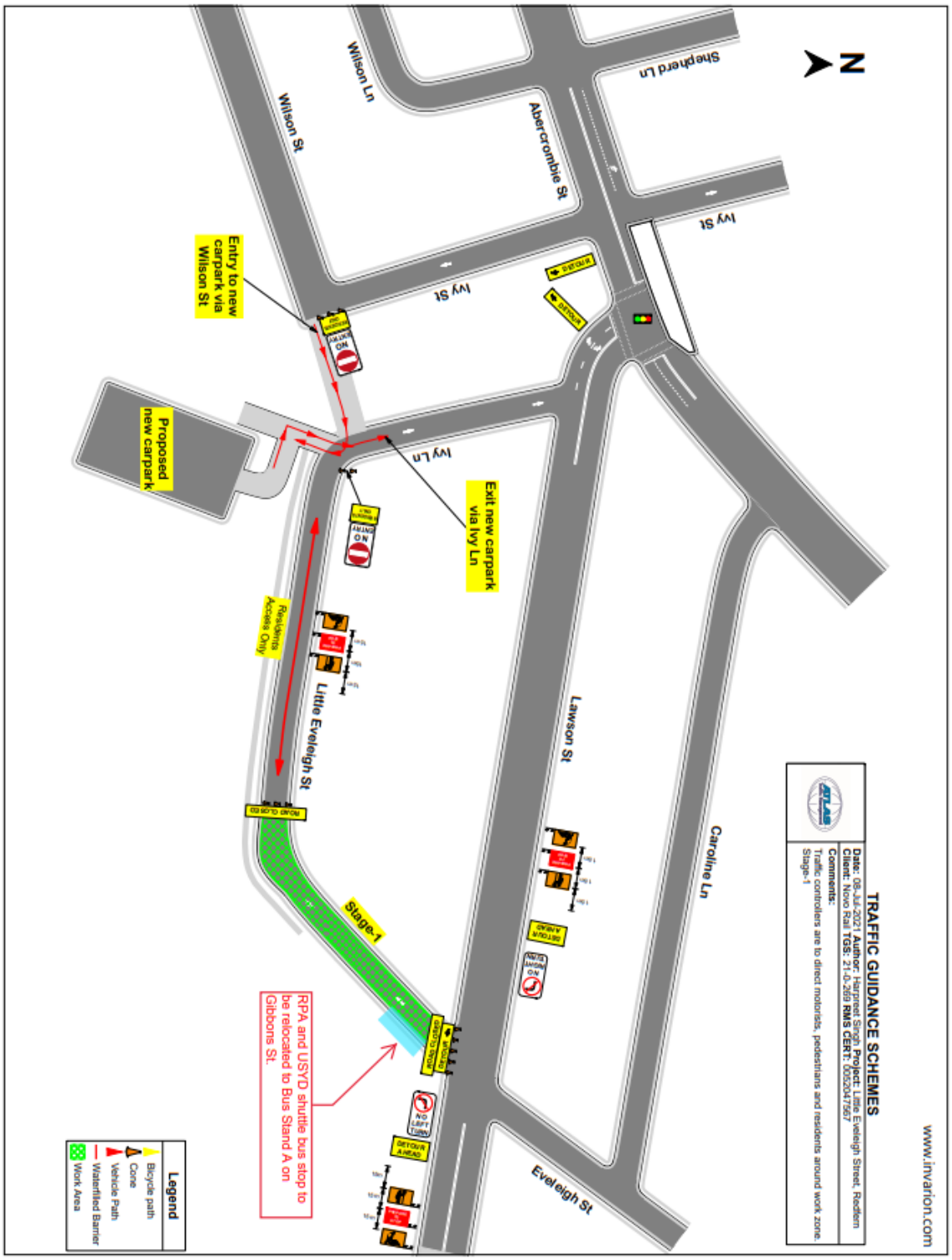
22. The Applicant must apply to the City's Building Approvals Unit to organise appropriate approvals for hoarding prior to commencement of works.

23. The CTMP is for the excavation, demolition and construction of building works, not for road works (if required) associated with the development. Any road works will require the Applicant or the contractor to separately seek approval from the City and/or TfNSW for consideration. Also WorkCover requires that Traffic Control Plans must comply with Australian Standards 1742.3 and must be prepared by a Certified Traffic Controller (under TfNSW regulations).

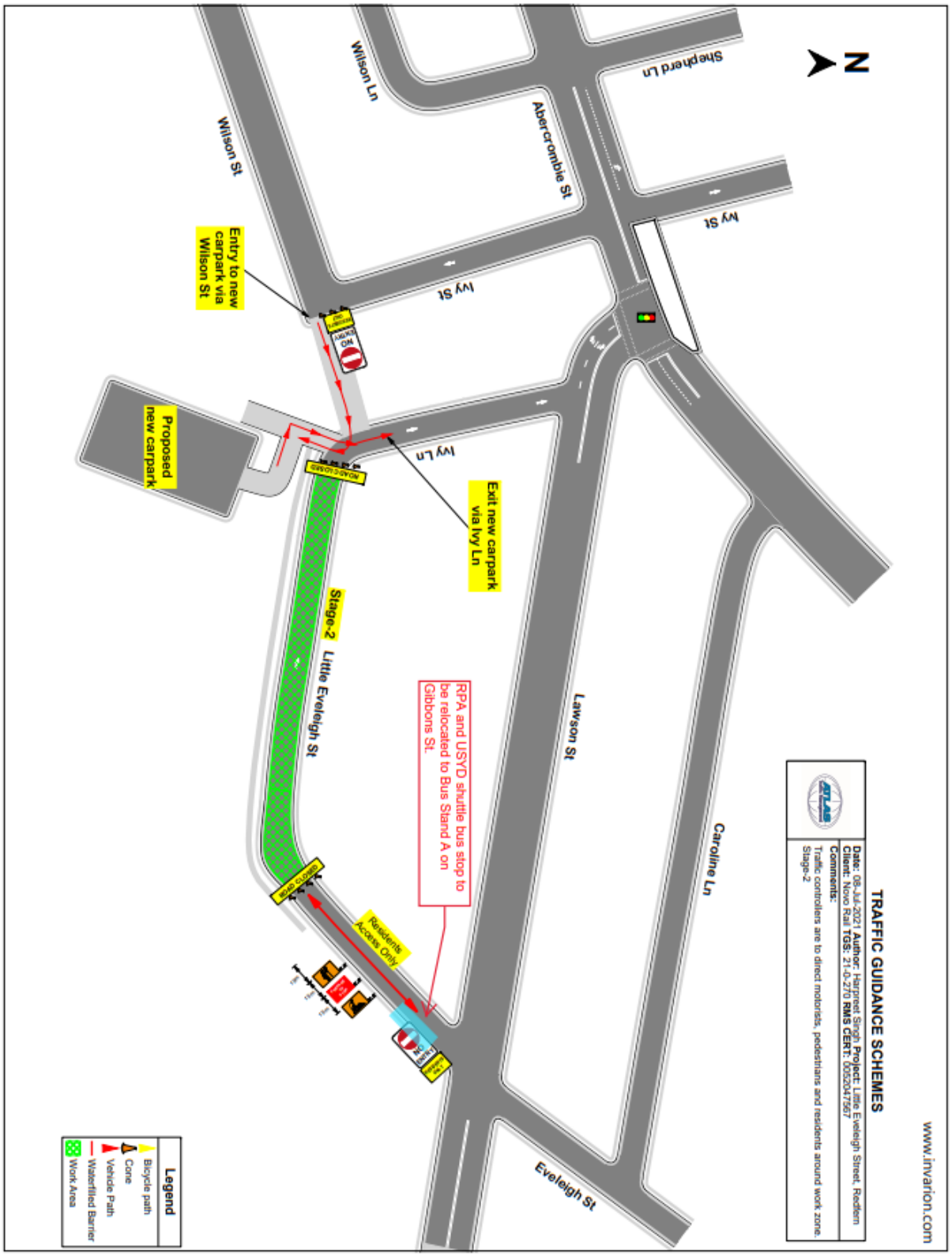
24. Please note that the provision of any information in this CTMP will not exempt the Applicant from correctly fulfilling all other conditions relevant to the development consent for the above site.

Appendix N – Wilson St/Little Eveleigh St Heavy Vehicle Access VMP/TCP

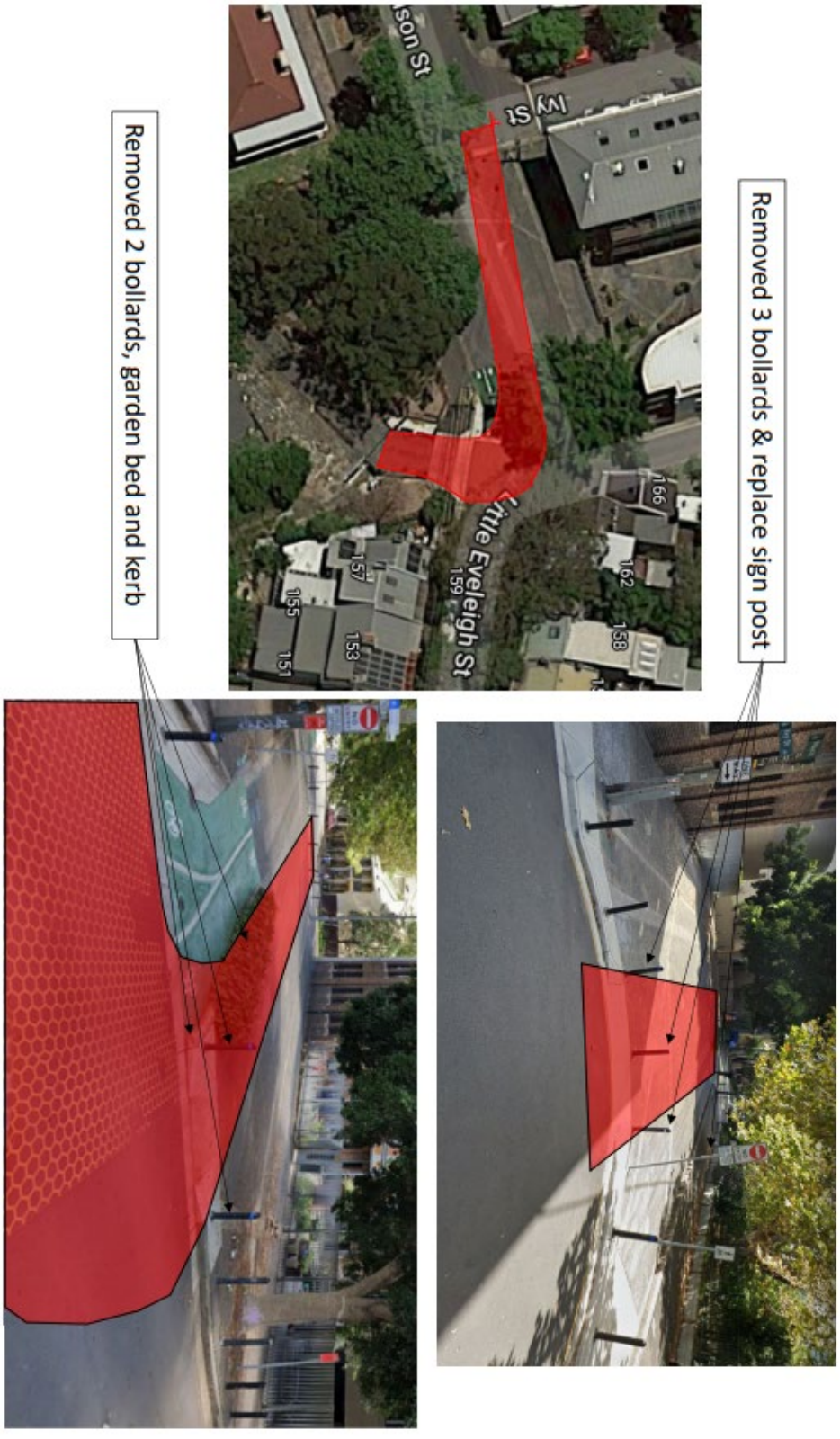
TCP – Wilson St Access (LES Roadworks Stage 1)



TCP – Wilson St Access (LES Roadworks Stage 2)



Visual Layout – Wilson St Access (LES Roadworks Stage 1 and 2)



Appendix O – Atlas Traffic Management Plan

Appendix P – Traffic Controllers Certifications

Appendix Q – Atlas Registration