



Planning Approval Consistency Assessment Form

SM-17-00000111

Sydney Metro – Metro Body of Knowledge (MBoK)

Assessment Name:	Replacement of Victoria Cross mid-block signalised crossing with upgrade to existing crossing at Pacific Highway/Miller Street.
Prepared by:	Sydney Metro
Prepared for:	Sydney Metro
Assessment number:	TfNSW 78
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1. Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

SSI_7400 Sydney Metro City & Southwest – Chatswood to Sydenham including Modifications 1-9 as described below.

Date of determination:	Infrastructure approval date - 9 January 2017, including subsequent Modifications 1-9 listed below: <ul style="list-style-type: none"> · SSI 7400 MOD 1 – Victoria Cross and Artarmon Substation (determined 18 October 2017) · SSI 7400 MOD 4 – Sydenham Station and Metro Facility South (determined 13 December 2017) · SSI 7400 MOD 2 – Central Walk (determined 21 December 2017) · SSI 7400 MOD 3 – Martin Place Metro Station (determined 22 March 2018) · SSI 7400 MOD 5 – Blues Point Acoustic Shed (determined 2 November 2018) · SSI 7400 MOD 6 – Administrative Changes (determined 21 February 2019) · SSI 7400 MOD 7 – Administrative Changes (determined 29 June 2020) · SSI 7400 MOD 8 – Blues Point Access Site (determined 25 November 2020) · SSI 7400 MOD 9 – Standard Construction Hours (determined 30 June 2022) 	Type of planning approval:	Part 5.2 - Critical State Significant Infrastructure
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Relevant background information (including EA, REF, Submissions Report, Director General’s Report, MCoA):

Chatswood to Sydenham Environmental Impact Statement (EIS) – May 2016
 Chatswood to Sydenham Submissions and Preferred Infrastructure Report – October 2016
 Victoria Cross Station and Artarmon Substation Modification Report - June 2017
 Victoria Cross Station and Artarmon Substation Modification Submission Report - 2017
 Critical State Significant Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Consolidated Conditions of Approval (CoA) – June 2022.

Description of existing Approved Project you are assessing for consistency:

The Chatswood to Sydenham component of Sydney Metro City & Southwest comprises a new metro rail line, approximately 16 kilometres long, between Chatswood and Sydenham. New metro stations are being provided at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, as well as new underground metro platforms at Central Station.

This Consistency Assessment relates to the new Victoria Cross Station, strategically located within the North Sydney CBD. The station as per the Approved Project includes:

- two station entrances including a northern entrance opening to Miller and McLaren streets, and a southern entrance via the pedestrian plaza opening to Miller, Denison and Berry streets
- a commercial building above the station’s southern entrance (Lendlease is delivering the Sydney Metro Victoria Cross integrated station development which includes a 40-storey (plus 2-storey rooftop plant) commercial building above the station’s southern entrance, integrating retail opportunities)
- a station concourse and platforms beneath Miller Street

- a sustainable, high-quality commercial and retail hub in the heart of North Sydney
- enhancement of pedestrian infrastructure around the station, as well as **a new signalised mid-block pedestrian crossing on Miller Street**, new bike parking at the northern entrance, and new kiss and ride bays on Berry Street
- improvements to the public domain.

2. Description of proposed change which is the subject of this assessment

The proposed change relates to the new signalised mid-block pedestrian crossing on Miller Street, as identified in Table 6-5 of the EIS. This pedestrian crossing would be removed from the pedestrian infrastructure design and no longer delivered as part of the project. Instead, the existing signalised pedestrian crossing at Miller Street and Pacific Highway is proposed to be upgraded (specifically widened) as per design drawings provided in Appendix A (the proposal). The approved project includes widening of the existing pedestrian crossing at the corner of Miller Street/Berry Street, and together these wider crossings would provide suitable access for pedestrians such that the new signalised mid-block pedestrian crossing would not be required. The Interchange Access Plan (IAP) was updated to include the widening of the crossing at Pacific Highway/Miller Street and approved by DPE on 27 January 2023. It states that the mid-block crossing is not part of the implementation plan for the project.

The proposal involves the following:

- Widening of the northern marked foot crossing of Miller Street from 3.3m to 7.0m including adjustment of the skew angle to maintain compliant dimension from the stop line to the existing bus shelter.
- Carriageway line marking removal and installation.
- Footpath kerb ramp installation and modifications.
- Relocation of statutory 'no stopping' signage.
- Traffic signal post/lantern and detector adjustments/installation.

The proposal would be carried out by Connect Sydney on behalf of Transport for NSW as part of a package of works including the closure of the existing left turn lane from Pacific Highway to Miller Street. The closure of the existing left turn lane and associated stormwater works are considered out of the scope of this Consistency Assessment. This package is under separate design and construction approvals with Transport for NSW via a Step 2 memo (provided in Appendix B).

The work would require lane closures of Miller Street and Pacific Highway, and would be undertaken outside of standard construction hours. Out of Hours approval documentation would be prepared under Transport for NSW Out of Hours Approval Protocol and respite would be coordinated with Sydney Metro where feasible.

Consultation has been carried out with Transport for NSW, North Sydney Council and other stakeholders local to the proposed works. Specifically:

- Consultation with the Traffic and Transport Liaison Group has taken place as part of the update of the IAP at meetings held 19 October 2022 and 9 December 2022, in accordance with CoAs E75 and E92
- Pedestrian modelling results were discussed with TTLG on 19 October 2022 and 9 December 2022 and in out of session meetings with North Sydney Council and TfNSW, in accordance with CoA E78
- Regular meetings with North Sydney Council relating to the public domain design are ongoing
- North Sydney Council as owner/road authority for Miller Street has been consulted in relation to Road Occupancy Licences required during construction, which have been granted
- A Road Safety Audit was completed for all design stages and all issues subsequently closed out, in accordance with CoA E76. If required, a pre-operational safety assessment would be scheduled for Q1 2024.

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3. Timeframe

The package of works (including the proposal) carried out by Transport for NSW, has an anticipated construction duration of 12 weeks, and commenced in mid-October 2023. Works relating to the widening of the crossing would commence in late November 2023. Works will be undertaken outside of standard working hours from 7pm to 5am from Sunday to Thursday. Weekend work proposed to take place across two weekends in November would not include work on the pedestrian crossing; it would be limited to other elements in Connect Sydney scope.

There would be no timeframe implications for the completion of the public infrastructure compared to the Approved Project.

4. Site description

The proposal is located at the corner of Miller Street and Pacific Highway, within the North Sydney CBD, as shown on Figure 1. Photos of the site are provided in Figure 2.

The intersection of Miller Street and the Pacific Highway is currently a standard signalised intersection with two lanes in the north-south direction along Miller Street and three lanes in the east-west direction along the Pacific Highway. Pacific Highway at this location is a classified road, operated by Transport for NSW. Miller Street is an arterial road owned and operated by North Sydney Council.

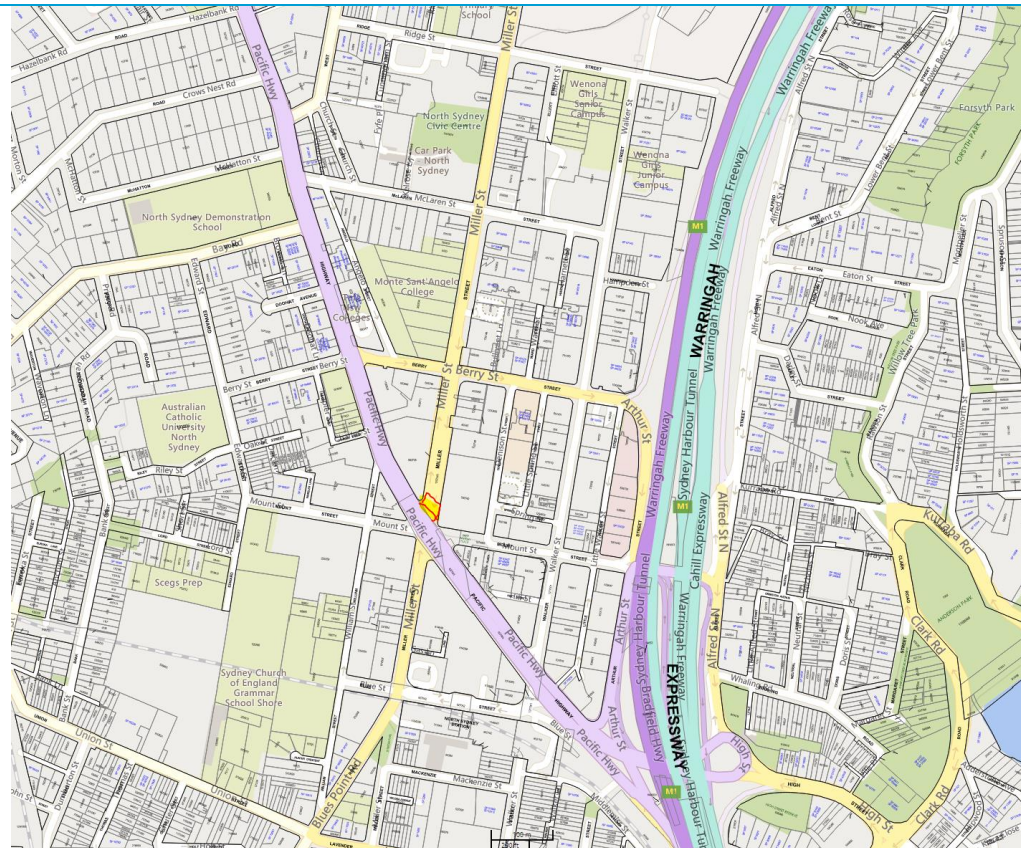


Figure 1 Location of the proposal



Google Maps: View looking South along Miller Street from Miller Street.



Google Maps: View looking North along Miller Street from Pacific Highway intersection.

Figure 2 Site photos

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5. Site Environmental Characteristics

The proposal is located within North Sydney CBD. The predominant surrounding land use are zoned as E2 – Commercial Core on the North Sydney Local Environment Plan 2013 (the NSLEP). To the west of the site, across Pacific Highway, is the Post Office, a public administration building with SP2 – Special infrastructure zoning that is listed as having Local and State heritage significance. To the east, the MLC Building is also listed on the NSLEP as having local heritage significance. The prominent heritage related views and vistas in this area are defined as along Pacific Highway to the Post Office and between buildings on the east side of Miller Street, between Berry and McLaren Streets.

Basic Aboriginal Heritage Information Management System (AHIMS) search was performed on the 21st of March 2023 and determined zero Aboriginal items located within 500 metres of the proposed works.

Given the urban nature of the site, nearby vegetation is limited to several matures trees along surrounding streets and the grassed area along Miller Street that is locally designated a Special Area to promote landscaping and protect amenity within North Sydney Centre. The nearest tree is a London Plane tree, of which the canopy extends over the eastern extent of the proposal. There are no waterways in close proximity to the proposal location, though existing stormwater drains are located adjacent to the existing crossing on Miller Street, which ultimately discharge to Sydney Harbour. Bio-Net search conducted on the 21st of March 2023 via SEED portal found no threatened, endangered, or vulnerable species sightings within 100 metres of the proposed works. The closest endangered species named the ‘Common Ringtail Possum’ (*Pseudocheirus Peregrinus*) is approximately 1.1 kilometres away from the proposed work site.

6. Justification for the proposed change

The works are required to accommodate the safe and efficient movement of the customers. This design change was informed by detailed dynamic and static pedestrian modelling that took place during Q2 2022 and indicated an acceptable level of service (LoS C) for 2026 and 2036 scenarios without the mid-block crossing. Customer accessibility will be improved for pedestrians crossing Miller Street and (along with the approved widening of the existing pedestrian crossing on the corner of Miller/Berry Streets) increases crossing capacity in response to forecast increased pedestrian demands without significant changes or impact on traffic flow.

7. Environmental Benefit

The removal of the mid-block intersection would result in improved traffic flow during operation compared to the approved project.

The widening of the existing signalised crossing as part of Sydney Metro Victoria Cross Station project will improve accessibility and is supported by North Sydney Council.

8. Control Measures

Will a project and site specific EMP be prepared?	<input checked="" type="checkbox"/> Yes	Are appropriate control measures already identified in an existing EMP?	<input checked="" type="checkbox"/> Yes
	<input type="checkbox"/> No		<input type="checkbox"/> No

Will the proposed change be consistent with the conditions of approval?	<input checked="" type="checkbox"/> Yes
	<input type="checkbox"/> No

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10. Impact Assessment – Construction

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed change, relative to the relevant impact in the Approved Project	Proposed Control Measures in addition to project CoA and REMMs	Consistent Impact Y/N	Do any CoA need to be changed? Y/N	Endorsed	
					Y/N	Comments
Biodiversity	No change from Approved Project. No vegetation will be removed, and the works are restricted to the disturbed zone only.	No additional measures required	Y	N	Y	
Water	No change from Approved Project.	No additional measures required	Y	N	Y	
Soils and contamination	No change from Approved Project.	No additional measures required	Y	N	Y	
Air quality	No change from Approved Project.	No additional measures required	Y	N	Y	
Noise and vibration	A noise and vibration assessment for construction is provided in Appendix B. This concludes that noise impact (incurred from the night shifts) may be experienced by sensitive receivers for up to 305 metres from the works (no line of sight) per the TfNSW construction and Maintenance Noise Estimator Tool. However, the machinery and materials used would be standard construction machinery that's already consistent with the project. The minimum working distances for vibratory plant from heritage items will be maintained.	No additional measures required	Y	N	Y	
Aboriginal Culture and Heritage	An AHIMS search on the 21st of March 2023 confirmed there are no recorded Aboriginal sites in the proposal area. Works will be limited to the road corridor only. Therefore, the impact to Aboriginal heritage items is unlikely to occur from the proposed works.	No additional measures required	Y	N	Y	
Historic Heritage	Works associated with the proposal would be approximately 100 metres closer to the listed heritage items (MLC Building and Post Office) than the crossing as part of the Approved Project. However, there are no predicted direct impacts,	No additional measures required	Y	N	Y	

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Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed change, relative to the relevant impact in the Approved Project	Proposed Control Measures in addition to project CoA and REMMs	Consistent Impact Y/N	Do any CoA need to be changed? Y/N	Endorsed	
					Y/N	Comments
	and indirect impacts to the setting of these items would be temporary and minor in nature. Assessment to Historic Heritage during construction is provided in Appendix B. Overall, the proposed works are not significantly expected to increase the impact to nearby heritage items and are considered to be consistent with the Approved Project.					
Community and socio-economic	Minor temporary diversions or disruptions to the existing crossing would occur during construction. However, work would be carried out outside of standard construction hours where feasible, in order to reduce impacts. Overall, the proposal is not significantly expected to increase the impact to the community and it is considered to be consistent with the Approved Project.	Traffic control /diversion signs to be in place, in accordance with existing controls. (See Appendix B)	Y	N	Y	
Traffic and transport	The works will take place out of hours and would require temporary partial closure of Miller Street. However, work would be carried out outside of standard construction hours where feasible, in order to reduce impacts. No temporary parking impacts are expected. Given lane closures would be required as part of the Approved Project, the proposal is considered to be consistent.	No additional measures required. (See Appendix B for controls)	Y	N	Y	
Waste and resource management	No change from Approved Project.	No additional measures required	Y	N	Y	
Visual	Minor temporary impact on views due to the presence of construction work. This work would be closer to receivers at the southern end of	No additional measures required	Y	N	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed change, relative to the relevant impact in the Approved Project	Proposed Control Measures in addition to project CoA and REMMs	Consistent Impact Y/N	Do any CoA need to be changed? Y/N	Endorsed	
					Y/N	Comments
	Miller Street, but further from receivers at the northern end of Miller Street. Visual changes would be consistent with the Approved Project.					
Land use and property	No change from Approved Project.	No additional measures required	Y	N	Y	
Hazard and risk	No change from Approved Project.	No additional measures required	Y	N	Y	
Other	No change from Approved Project.	No additional measures required	Y	N	Y	

11. Impact Assessment – Operation

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed change, relative to the relevant impact in the Approved Project	Proposed Control Measures in addition to project CoA and REMMs	Consistent Impact Y/N	Do any CoA need to be changed? Y/N	Endorsed	
					Y/N	Comments
Biodiversity	No change from Approved Project.	No additional measures required	Y	N	Y	
Water	No change from Approved Project.	No additional measures required	Y	N	Y	
Soils and contamination	No change from Approved Project.	No additional measures required	Y	N	Y	
Air quality	No change from Approved Project.	No additional measures required	Y	N	Y	
Noise and vibration	No change from Approved Project.	No additional measures required	Y	N	Y	
Aboriginal Culture and Heritage	No change from Approved Project.	No additional measures required	Y	N	Y	
Historic Heritage	No change from Approved Project.	No additional measures required	Y	N	Y	
Community and socio-economic	Removal of the mid-block crossing may result in informal crossing of Miller Street, which may lead	No additional measures required	Y	N	Y	

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Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed change, relative to the relevant impact in the Approved Project	Proposed Control Measures in addition to project CoA and REMMs	Consistent Impact Y/N	Do any CoA need to be changed? Y/N	Endorsed	
					Y/N	Comments
	to pedestrian safety issues. However, this would be mitigated by the proposal, and the approved widening of the existing crossing at Miller and Berry Streets. The proposal would have beneficial impacts for users of the existing Miller Street/Pacific Highway crossing. This is generally a busy crossing during peak periods and a wider crossing would improve capacity and accessibility.					
Traffic and transport	Removal of the approved midblock signalised intersection would allow traffic to flow more freely on Miller Street, compared to the approved project.	No additional measures required	Y	N	Y	
Waste and resource management	No change from Approved Project.	No additional measures required	Y	N	Y	
Visual	No change from Approved Project.	No additional measures required	Y	N	Y	
Land use and property	No change from Approved Project.	No additional measures required	Y	N	Y	
Hazard and risk	No change from Approved Project.	No additional measures required	Y	N	Y	
Other	No change from Approved Project.	No additional measures required	Y	N	Y	

12. Consistency with the Approved Project

Question	Response
Is the project (including the proposed changes) consistent with the conditions of approval?	Yes. The proposed works would be consistent with the conditions of approval.
Is the project (including the proposed changes) consistent with the objectives and functions of elements of the Approved Project?	Yes. The proposed works would be consistent with the objectives and functions of the Approved Project as they would
Are the environmental impacts of the proposed change consistent with the impacts of the Approved Project?	Yes. The environmental impacts of the proposed works would remain consistent with the impacts as assessed in the project approval.
Are there any new environmental impacts as a result of the proposed works/project changes?	No. There would be no new environmental impacts as a result of the proposed works.
Are the impacts of the proposed activity/works known and understood?	Yes. The impacts of the proposed works are known and understood.
Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?	Yes. The impacts of the proposed works can be managed so as to avoid an adverse impact
Would any Conditions of Approval be required to be changed as a result of the proposed change (having regard to the above assessment)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the proposed change/s consistent with the approval (having regard to the above assessment)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

13. Other Environmental Approvals

Identify all other approvals required for the proposed works:	Road occupancy licences for the closure of Miller Street/Pacific Highway during the works.
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14. Recommendation

Based on the above impact assessment, and with reference to the Chatswood to Sydenham Environmental Impact Statement, including the conditions of approval, it is recommended that:

		Tick relevant box
The proposed change has negligible or more than negligible impacts on the environment or community however is consistent with the Approval, including the conditions of approval. The proposed impacts are consistent with those assessed for the Approved Project (i.e., does not trigger a change to the conditions of approval).	<input checked="" type="checkbox"/>	
The proposed change is not consistent with the Approved Project including the conditions of approval and would be subject to a separate modification application.	<input type="checkbox"/>	
The proposed change is not substantially the same as the Approved Project and is considered a radical transformation. A new planning pathway should be considered.	<input type="checkbox"/>	

Author certification

I certify that to the best of my knowledge this Consistency Checklist:

- Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the proposed change; and
- Examines the consistency of the proposed change with the Approved Project; is accurate in all material respects and does not omit any material information.

Name:	Carys Scholefield	Signature:	
Title:	Environment Manager		
Company:	Sydney Metro	Date:	21/11/23

Environmental Representative Review


As an approved ER for the Sydney Metro City & Southwest (Chatswood to Sydenham) project, I have reviewed the information provided in this assessment. I am satisfied that mitigation measures are adequate to minimise the impact of the proposed work.

Name:	Swathi Gowda	Signature:	
Title:	Environmental Representative		
		Date:	21/11/2023

Assessment Supporting Signature

ER Comments: reviewed from an operational aspect only, with TfNSW covering construction and related mitigation measures.

Application supported and submitted by

Name:	Yvette Buchli	Date:	22/11/2023
Title:	Director Planning Approvals	Comments:	
Signature:			

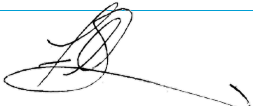
Assessment Endorsement

Based on the above assessment, are the impacts and scope of the proposed change consistent with the existing Approved Project?

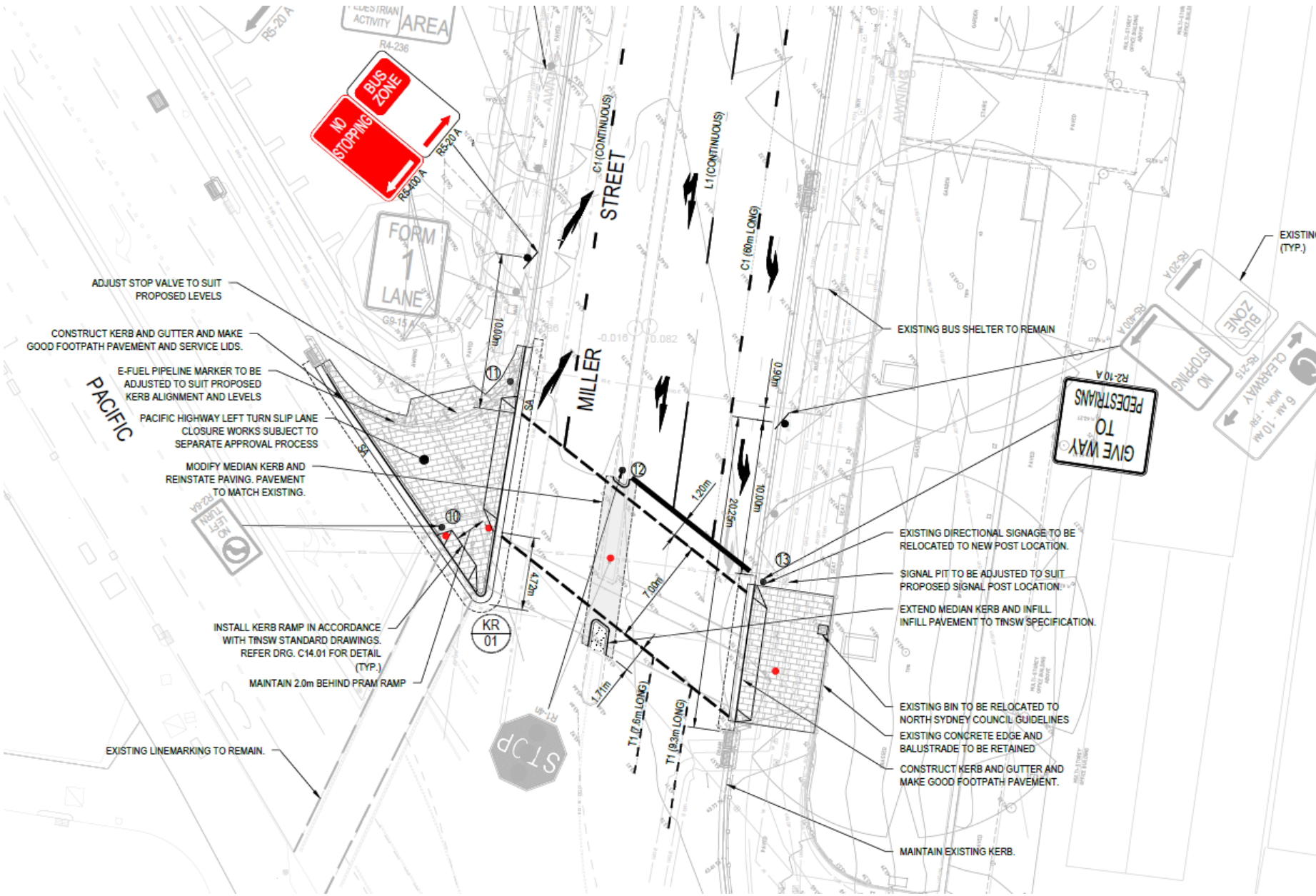
Yes The proposed change is consistent with the Approved Project and no further assessment is required.

No The proposed change is not consistent with the Approved Project.

A modification or a new activity approval/ consent is required. Advise Senior Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	Fil Cerone	Date:	23 November 2023
Title:	Director Environment Sustainability & Planning CSW	Comments:	
Signature:			

Appendix A – Design drawing



LEGEND	
	TRAFFIC SIGNAL NUMBER
	KERB RETURN LABEL
	KERB RAMP
	SA KERB TO TNSW STANDARDS
	SAWCUT

PAVEMENT LEGEND	
	PAVEMENT TYPE 1 FLEXIBLE PAVEMENT REINSTATEMENT MILL 100mm AC WEARING COURSE AND GRANULAR BASE MATERIAL REPLACE WITH: 2x50mm AC14 ON 7mm LOW CUTTER SEAL
	PAVEMENT TYPE 2 PAVER FOOTPATH 60mm PAVER TO NORTH SYDNEY COUNCIL REQUIREMENTS ON: 30mm 3:1 SAND AND CEMENT MORTAR BED (30 MPa) ON 150mm CONCRETE (40MPa) WITH SL82 MESH WITH 55 TOP COVER ON EXISTING BASE MATERIAL

PAVEMENT MARKING LEGEND	
STOP LINE	
CONTINUITY LINE	
PEDESTRIAN CROSSING	

Further information of the pedestrian island & Crossing on Pacific Highway and Miller Street

	TRAFFIC SIGNAL NUMBER
	EXISTING TRAFFIC SIGNAL

Appendix B - Transport for NSW Step 2 Memo

Minor works step 2 memo

To	John Brooks, Environment and Sustainability, Transport for NSW
Cc	Jarita Zeng, Senior Environment and Sustainability Officer, Transport.
From	Dylan Kularatne, Environmental Advisor, ConnectSydney
Priority	URGENT
Date	Monday, 16 October 2023
Subject	Minor works step 2 memo – Pedestrian Island Upgrade on the Intersection of Pacific Highway and Miller Street in North Sydney

Issue

In accordance with the Transport for NSW *Environmental assessment procedure – routine and minor works* (EMF-PA-PR-0081) and the *Environmental Planning and Assessment Act 1979* (EP&A Act), it is necessary to consider the appropriate level of environmental assessment for the following works. This memo has been prepared:

- To seek general advice on environmental assessment requirements for the proposed works

Project name

Pacific Highway and Miller Street Pedestrian Island Upgrade in North Sydney

Project scope

On behalf of Transport NSW (TfNSW) it is proposed to extend the existing kerb up to the existing pedestrian refuge and permanently close the existing left turn slip lane from Pacific Highway southbound into Miller Street northbound. The proposed works would increase safety by providing a larger refuge for pedestrians. Currently there is not enough space on the refuge for the existing volume of pedestrians and demand is expected to increase once the Sydney Metro Victoria Cross Station starts operation in 2024. It is proposed to

- Extend the existing kerb up to the existing pedestrian refuge to permanently close the left turn slip lane into Miller Street from Pacific Highway.
- Installation of a drainage system on Pacific Highway
- Widening the existing pedestrian crossing along Miller Street with installation of traffic control systems

- Removal of signage and updating the traffic control system along Miller Street.
- Reinstatement of pavement along Miller Street and Pacific Highway in North Sydney.

The proposed works are aimed to increase safety for pedestrians

Currently, the slip lane is blocked by a jersey barrier. The proposed work footprint in the disturbed area would be approximately 524 square metres (see Figure 1 below). The proposed works do not require an ancillary compound site or stockpiling. Vegetation removal is not required to complete the proposed pedestrian island on Pacific Highway and Miller Street. See figure 1 for the proposed construction footprint below.

Location of proposed works.

The proposed works is in North Sydney between Pacific Highway and Miller Street and is within the North Sydney Local Government Area. The proposal area is zoned as SP2 Infrastructure under North Sydney LEP 2013. E2 Medium Density commercial building is approximately 2 metres away from the proposed works. See figure 3 for the land zoning map.

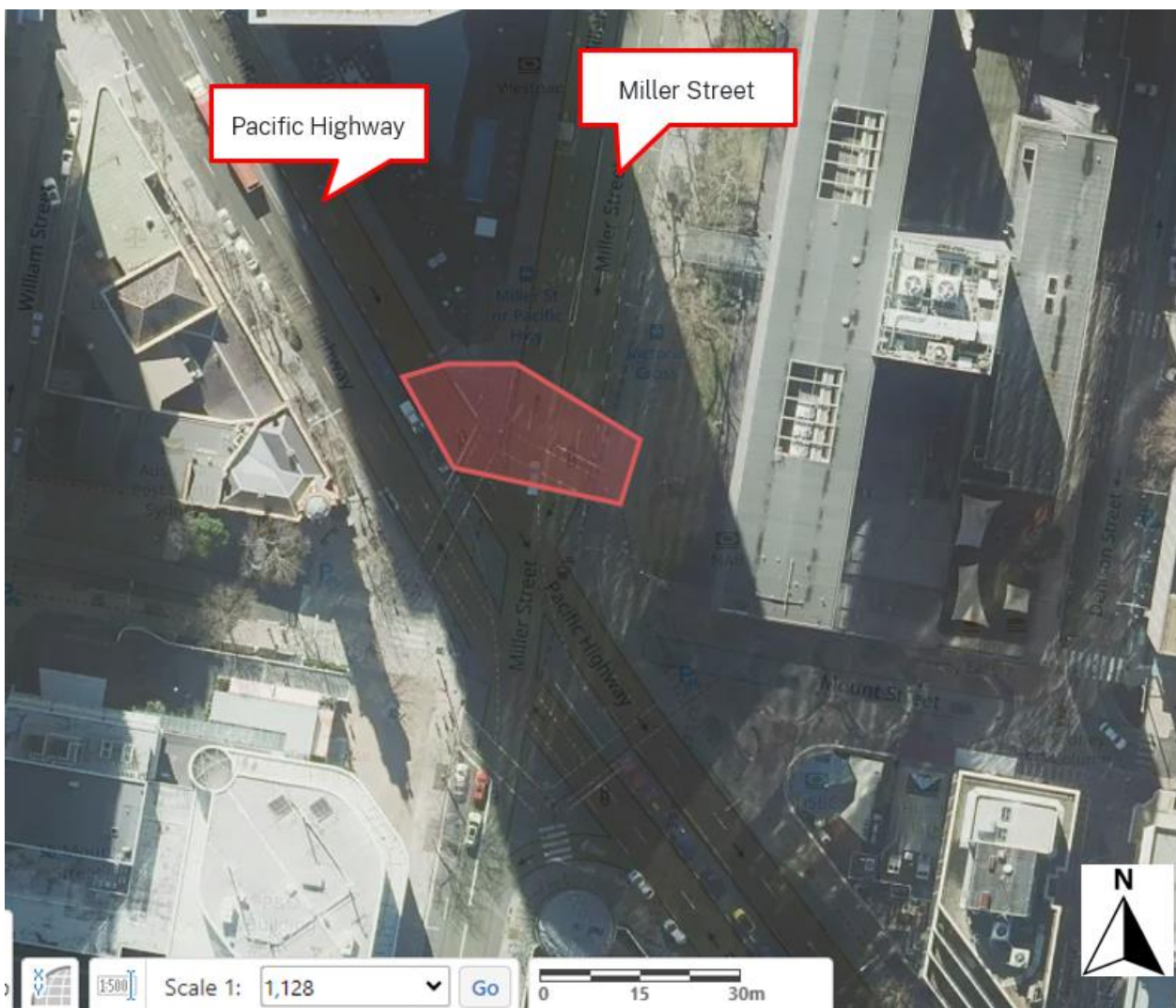


Figure 1 – Proposed footprint of the works on Pacific Highway and Miller Street in North Sydney Shaded in red.



Figure 2 detailed scope for each section of the proposed works

Scope	
1	Drainage Works <ul style="list-style-type: none"> • Additional stormwater pit at kerb • Enlargement of inspection pit/chamber at lane 2 with new connection
2	Sliplane Works <ul style="list-style-type: none"> • Extend kerb to incorporate ped island • Increased storage capacity for pedestrians
3	Crossing Works <ul style="list-style-type: none"> • Relocation of 3 x TCS, detector loops • Median works • Widen Kerb Ramps

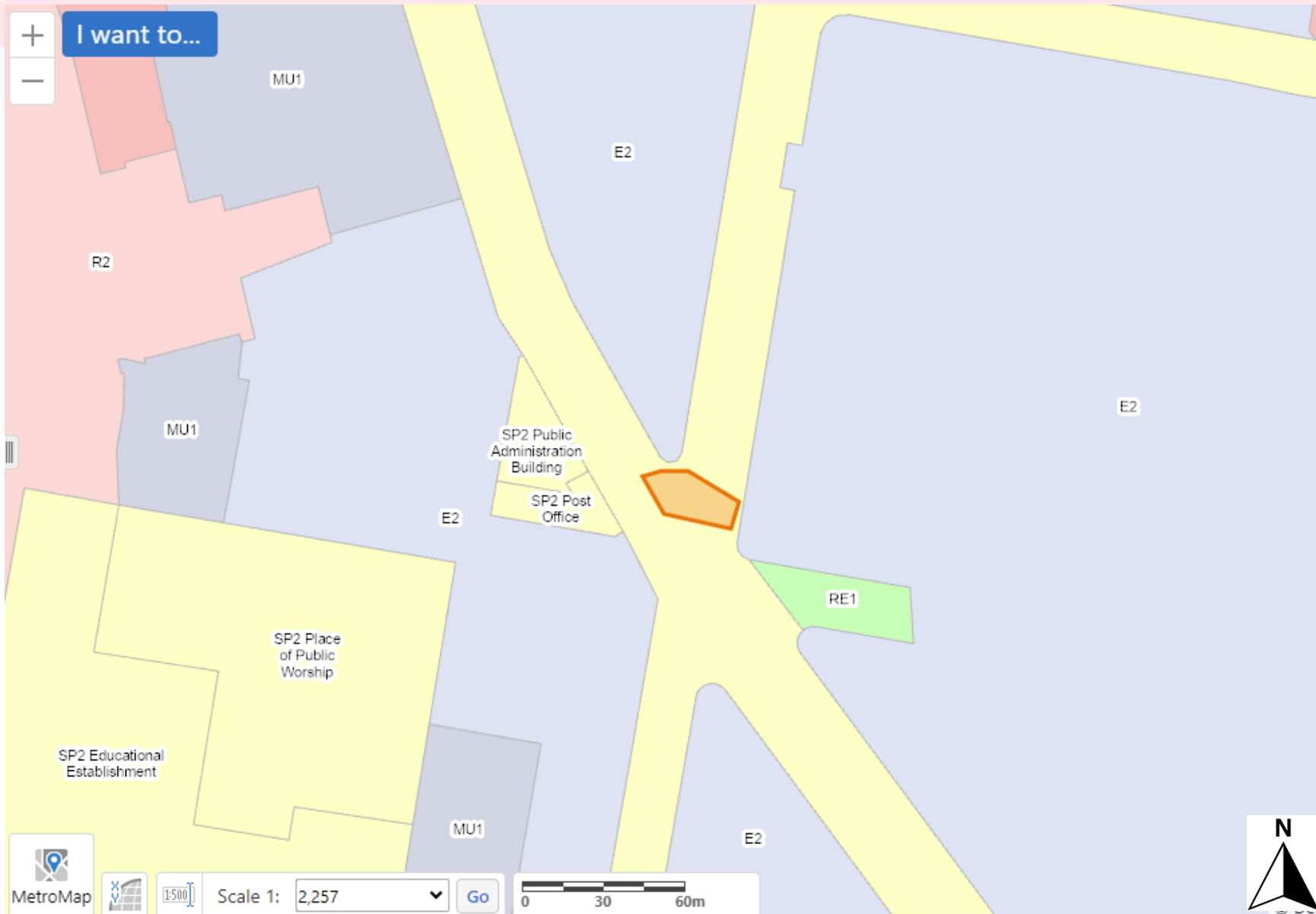


Figure 3 - Land zoning map for Miller Street and Pacific Highway in North Sydney. Proposed works is shaded in orange.

Work Methodology

The proposal is anticipated to involve the following methodology:

Mobilisation

- Single lane closure of the slow lane on Pacific Highway and Miller Street.
- Site establishment including erosion and sediment controls
- Mobilisation of equipment

Pedestrian island and slip lane works

- Remove the existing left turn slip lane and extend kerb line on Pacific Highway and Miller Street
- Saw cut and remove the kerb beside the proposed kerb ramp/footpath
- Trench approximately 200 millimetres deep, 500 millimetres in width and 5 metres in length on Pacific Highway to install new storm water drainage pipes with a diameter of approximately 375 millimetres under the proposed median strip (see attachment B and figure 1 and 2 for detailed design)
- Construct extended pram ramp on the proposed median strip
- Concrete encasement would be provided for shallow depth of the stormwater drainage, including integration with new kerb and pavement works
- Widen the kerb ramps aligned with the upgraded pedestrian crossing along Miller Street

Traffic Control System Works

- Trench approximately 700mm by 700mm with a depth of 1200mm with 12t excavator with hammer and saw cutter, for relocation of 4 traffic control systems and detector loops along Miller Street (see Attachment B and figure 1 and 2 for design).

Asphalting and line marking Works

- Mill approximately 250 millimetres deep and 8metres wide and 25 metres in length on Pacific Highway southbound direction
- Mill and resurface approximately 250 millimetres deep and 4 metres wide and 30 metres in length on Miller Street northbound direction
- Apply yellow stop line marking around the proposed pedestrian island
- Reinstate pavement on Pacific Highway and Miller Street in North Sydney after the extension of the pedestrian island, drainage and TCS works.
- Reinstate arrow line marking around the proposed pedestrian island
- Reinstate merging arrow on Miller Street northbound direction on slow lane

Signage Works

- Remove pedestrian walkway sign on existing median strip
- Reinstate proposed signage

Once works are completed

- Cleaning of the site at the end of the work
- Demobilisation

Equipment

- Generators, lighting towers
- Non-Destructive digger
- Tandem Steel Drum Roller
- Traffic control equipment
- Skid Streeer Brush
- 4t Vibrator Roller
- 12t Excavator with Hammer
- Line-marking Truck
- Multi-tyred pneumatic roller
- Concrete Saw
- Road Suction Sweeper
- Concrete truck
- Asphalt tack coat spray truck
- Profiler
- Various size tipper Trucks
- Jack hammer
- Asphalt paver

Project Duration & Hours of Work

The proposed start date for the works is expected to occur during the middle of October 2023. The works are anticipated to require up to four months to complete, weather permitting. Works will be undertaken outside of standard working hours from 7pm to 5am from Sunday to Thursday. However, weekend works is proposed on the 3rd to 5th of November 2023 and 9th to 10th of December 2023. The works would be undertaken under duration respite; this is working up to five shifts in week. An Out of Hours Work Application would be drafted in accordance with TfNSW standards for approval.

Pedestrian & Vehicle Access

Pedestrian Access

There would be temporary changes to pedestrian movement due to the works taking place adjacent to and on the footpath. Traffic controllers would implement signage and a demarcated exclusion zone. Signage would be installed to divert pedestrians around the works. Traffic controllers would guide pedestrians where needed. There would be no long-term negative impacts on pedestrian safety and movement during construction. In the long term the project would have a positive impact on pedestrian safety since the current refuge island is unsafe for pedestrians.

Pacific Highway & Miller Street Traffic Control

A two lane closure would be required on Pacific Highway to allow sufficient space to safely undertake the proposed works. This would result in temporary disruptions (at night) to the traffic flow. Miller Street would experience partial road closure when completing each section of Miller Street. However, this would be minor in nature as traffic controls would be implemented to redirect traffic to use the other opposite lane. The lane would reopen to traffic at the end of each shift.

Vehicular access will be maintained and temporary traffic and lane closures or changes will be managed by traffic controllers on site. In addition, Variable Message Signs (VMSs) will be used to inform motorists of the changed traffic conditions where appropriate.

Temporary parking impacts

The existing parking arrangements near the proposed works are shown in the Figure 4 below.



Figure 4 - Location of parking signs near the proposed works

The existing loading zone may be temporarily impacted during the Pac Highway drainage works but no other temporary parking impacts are expected.

All equipment and plant will be parked in the authorised lane closure during the shift.

Assessment of Environmental Components

Aboriginal cultural heritage

Basic Aboriginal Heritage Information Management System (AHIMS) search was performed on the 21st of March 2023 and determined zero aboriginal items located within 500 metres of the proposed works. Works will be limited to the road corridor only. Therefore, the impact to aboriginal heritage items is unlikely to occur from the proposed works. If any Aboriginal Heritage Items are uncovered during the works would be mitigated by the implemented safeguards in Attachment A. AHIMS search results are provided in Attachment C.

Non-Aboriginal cultural heritage

Non-Aboriginal heritage search conducted on the 21st of March 2023 from NSW heritage database, State Heritage Registry (SHR) Commonwealth Heritage list, Australian Heritage Places Inventory and Local Environmental Plans (LEP) determined the following items within the radius of 50 metres from the proposed works.

- I0893 MLC building (LEP) is approximately 4 metres from the proposed works. (No high vibratory tools required adjacent to the building, saw cutter would be used instead).
- I0953 Court House (*Former Police Station*) (LEP) is approximately 18 metres from the proposed works
- 1071 North Sydney Post Office (SHR) is approximately 19 metres from the proposed works

Aerial visuals of the location of the heritage items from the proposed works are in Attachment D.

Therefore, the risk of vibration damages is negligible to nearby heritage items from the proposed the works based on the distance. Unexpected heritage finds will be mitigated by safeguards in Attachment A.

Biodiversity

Bio-Net search conducted on the 21st of March 2023 via SEED portal found no threatened, endangered, or vulnerable species sightings within 100 metres of the proposed works. The closest endangered species named the 'Common Ringtail Possum' (*Pseudocheirus Peregrinus*) is approximately 1.1 kilometres away from the proposed work site. See attachment E for the location of the sensitive biodiversity items near the proposed works. No impact is expected on any known threatened, endangered, or vulnerable species during the proposed work. No vegetation will be removed, and the works are restricted to the disturbed zone only.

Noise Assessment

The distanced based (noisiest plant) ‘13T Excavator with hammer’ is selected for this noise assessment. There are residential properties up to 300 metres away, with the nearest residential receiver located 123 metres away from Pacific Highway. Refer to attachment F for the location of the nearest receiver. The closest commercial receivers located up to 16 metres (as measured using the LISA GIS portal). The Vibe Hotel is located approximately 56 metres away in the north direction of the proposed works and would experience 10-20 dB(A) noise impact from the proposed works. All sensitive receivers would be notified 5 business days prior to the start of works. The Vibe Hotel and Astra apartment would receive a call from ConnectSydney about the proposed scope and duration of the works.

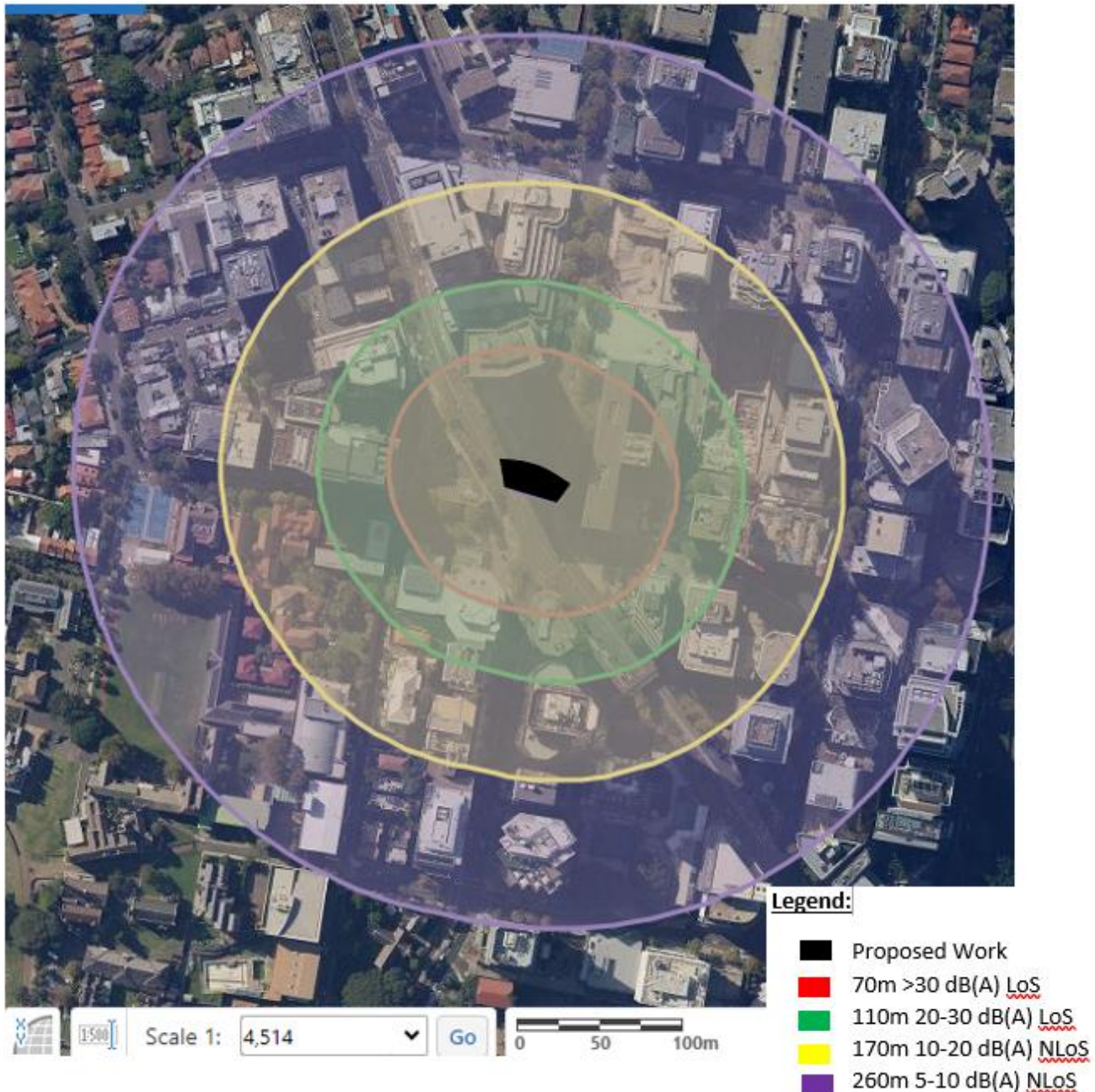
Noise impact (incurred from the night shifts) may be experienced by sensitive receivers for up to 305 metres from the works (no line of sight) per the TFNSW construction and Maintenance Noise Estimator Tool.

The representative noise category R4 is selected for the proposed works for the noise assessment (table 1). R4 is selected based on the surrounding environment comprised of developed commercial receivers and skyscrapers. The nearest traffic counter (permanent classifier) is located 2.8 kilometres in the south-west direction from the proposed work on Pacific Highway and Miller Street and has an Annual Average Daily Traffic (AADT) of 49,953.

Table 1 – Distance based noise assessment for residential receivers for developed settlements

Noise impact above RBL	Mitigation level (dB(A))	Recommended additional mitigation measures	Distance (LoS) m	Distance (NLoS – behind substantial solid barrier) m
>30 dB(A)	75 – Highly Intrusive	AA, N, PC, SN, R2, DR	<u>70</u>	
20-30 dB(A)	65 – Moderately Intrusive	N, PC, SN, R2, DR	<u>170</u>	
10-20 dB(A)	55 – Clearly audible	N, R2, DR		<u>170</u>
5-10 dB(A)	50 – Noticeable	N		<u>260</u>

Noise Impact Map



Vibration

The 12t excavator with hammer would produce the most vibration for the proposed works on Pacific Highway and Miller Street. The minimum distance for using 12t excavator with hammer is 7 metres for light framed structures and 19 metres for heritage structures. The vibratory Roller (4 tonnes) would also emit vibration up to 12 metres for non-heritage structures and 33 metres for heritage structures. However, the vibratory roller would be put into static mode. In accordance with the Transport for New South Wales Construction Noise and Vibration

Guideline (2021), vibration producing works should maintain minimum working distances from heritage items (vibratory roller 4tonne) keeping a 12 metres distance indicated in table 2 below). The jackhammer would emit vibration up to 1 metre for non-heritage structures and 2 metres for heritage structures.

Works performed adjacent to the MLC heritage building would not use any high vibratory equipment. Instead, low-emitting vibratory tools would be used instead, for the proposed works near MLC heritage buildings. Instead, it is proposed to use the Non-Destructive Digger and saw cutter to perform the trenching TCS works near heritage buildings.

Based on the Table 2 indicates the recommended minimum working distances to comply with high vibratory equipment proposed to use for Pacific Highway and Miller Street pedestrian island upgrade.

Table 2 – Distance based vibration assessment for minimum working distance for structures.

Plant item	Rating / Description	Minimum working distance		
		Cosmetic damage (BS 7385) Light-framed structures	Cosmetic damage (DIN 4150) Heritage and other sensitive structures	Human response (EPA's Vibration guideline)
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	14 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	16 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	33 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	41 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	54 m	100 m
	> 300 kN (> 18 tonnes)	25 m	68 m	100 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	7 m	19 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	22 m	60 m	73 m
Vibratory Pile Driver	Sheet piles	20 m	50 m	100 m
Pile Boring	≤ 800 mm	2 m (nominal)	40 m	4 m
Jackhammer	<u>Hand held</u>	1 m (nominal)	2 m	2 m

Consultation

North Sydney Council previously conducted work on the intersection of Pacific Highway and Miller Street that involved the removal of parking signs, the installation of a jersey barrier on the existing slip lane, and installation of pedestrian fence. The installation of the jersey barrier has been implemented for approximately 2 years.

Residents that would be potentially affected will be notified of the proposed works through a Start of Works (SoW) letter issued at least five business day prior to the commencement of the proposed construction within a 260m radius. The letter will inform the community about the nature, timing, and duration of the proposed construction along Pacific Highway and Miller Street in North Sydney. It will include information of the partial road closure, parking impacts, information about the proposed works and contact details for enquiries and complaints. Updates will be provided advising on upcoming works and progress against the project schedule when required. Traffic conditions would be communicated via Livetraffic.com and ongoing communication with key stakeholders including local businesses would be performed.

Safeguards

Refer to Attachment A for a list of all the safeguards proposed.

Attachments

Attachment A – Safeguard

Attachment B – Detail Design Attachment

Attachment C – Temporary Parking Impacts

Attachment D– AHIMS Search Results

Attachment E – Non-Aboriginal Heritage Results

Attachment F – BioNet Search Result

Attachment G–Closest residential receiver from the proposed works

Attachment H – Noise Assessment figures.

Declaration

The above information provides the full details of the proposed works.

Prepared by: Dylan Kularatne

Dylan Kularatne

ConnectSydney Environmental Advisor

Monday, 16 October 2023

Recommendation

The proposed works as described in this memo:

- Can commence with the implementation of the safeguards, MAPs or ASEC identified in this memo (are not activities or development under the EP&A Act or constitutes exempt development under that Act).

Recommended by:

A handwritten signature in black ink, appearing to be "John Brooks".

John Brooks, Environment and Sustainability Officer, Transport for NSW

Monday, 16 October 2023

Endorsed by:

A handwritten signature in black ink, appearing to be "Jarita Zeng".

Jarita Zeng, Senior Environment and Sustainability Officer, Transport for NSW

16 October 2023

Attachment A – Safeguards

General		☒
G1.	If the scope of the works changes at any time, review under the Transport for New South Wales Environmental assessment procedure for routine and minor works (EIA-PO5-1) and complete any further requirements prior to undertaking works associated with the changed scope.	☒
G2.	No new access tracks to be created for the works.	☒
G3.	Parking of vehicles and storage of plant/equipment is to occur on existing paved areas. Where this is not possible, vehicles and plant/equipment are to be kept away from environmentally sensitive areas and outside the dripline of trees	☒

Erosion and sedimentation		☒
E1.	<p>Erosion and sediment control measures are to be implemented and maintained to:</p> <ul style="list-style-type: none"> • Minimise sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site. <p>(in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)).</p>	☒
E2.	Erosion and sedimentation controls (e.g. sandbags) are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request.	☒
E3.	Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised.	☒
E4.	Work areas are to be stabilised progressively during the works.	☒

Water quality		☒
W1.	There is to be no release of dirty water into drainage lines and/or waterways.	☒
W2.	Excess debris from cleaning and washing is removed using hand tools.	☒

Noise and vibration		☒
N1.	Noise impacts are to be minimised in accordance with the <i>Construction Noise and Vibration Guideline</i> (Roads and Maritime Services, August 2016).	☒

Noise and vibration		<input checked="" type="checkbox"/>
N2.	Vibration intensive works must be carried out in line with minimum working distances refer to “ <i>Construction noise and Vibration Guidelines</i> ” (Roads and Maritime Services, August 2016) for specified or vibration equivalent/ plant machinery used on site.	<input checked="" type="checkbox"/>
N3.	Noisy works (12t Excavator with Hammer, Jack Hammer, saw cutter etc) to be completed by midnight.	<input checked="" type="checkbox"/>
N4.	No more than five nights of works will be undertaken each week.	<input checked="" type="checkbox"/>
N5.	Measures, including allowing adequate distance that rollers and other vibration producing equipment can come to adjacent buildings and/or using non vibration producing equipment, to minimise or prevent vibration impacts.	<input checked="" type="checkbox"/>
N6.	Noise curtains are to be established around noisy works and in front of sensitive receivers.	<input checked="" type="checkbox"/>

Biodiversity		<input checked="" type="checkbox"/>
F1.	If unexpected, threatened fauna or flora species are discovered, stop works immediately and follow the Transport for New South Wales <i>Unexpected Threatened Species Find Procedure</i> in the <i>Roads and Maritime Services Biodiversity Guidelines 2011 – Guide 1 (Pre-clearing process)</i> .	<input checked="" type="checkbox"/>
F2.	Measures to further avoid and minimise the construction footprint and native vegetation or habitat removal will be investigated during detailed design and implemented where practicable and feasible.	<input checked="" type="checkbox"/>

Traffic		<input checked="" type="checkbox"/>
T1.	Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays.	<input checked="" type="checkbox"/>
T2.	A traffic control plan will be prepared in accordance with the ‘ <i>Traffic control at work sites manual</i> ’ (RMS, 2018) and Australian Standard 1742.3 <i>Manual of uniform control devices</i> .	<input checked="" type="checkbox"/>

Non-Aboriginal Heritage		<input checked="" type="checkbox"/>
H1.	If unexpected heritage items are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in the Transport for New South Wales <i>Unexpected Heritage Items: Heritage Procedure 02</i> . A Transport for New South Wales Senior Environment Specialist – Heritage must be contacted immediately.	<input checked="" type="checkbox"/>
H2.	If an existing heritage item or item identified on the Roads and Maritime Services s.170 register is on site or in the near vicinity of the works, the item is to be protected to prevent any damage or disturbance.	<input checked="" type="checkbox"/>

Aboriginal heritage	<input checked="" type="checkbox"/>
B1. If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Transport for New South Wales Aboriginal cultural heritage officer and regional environment manager contacted immediately. Steps in the Transport for New South Wales Unexpected Heritage Items: Heritage Procedure 02 must be followed.	<input checked="" type="checkbox"/>

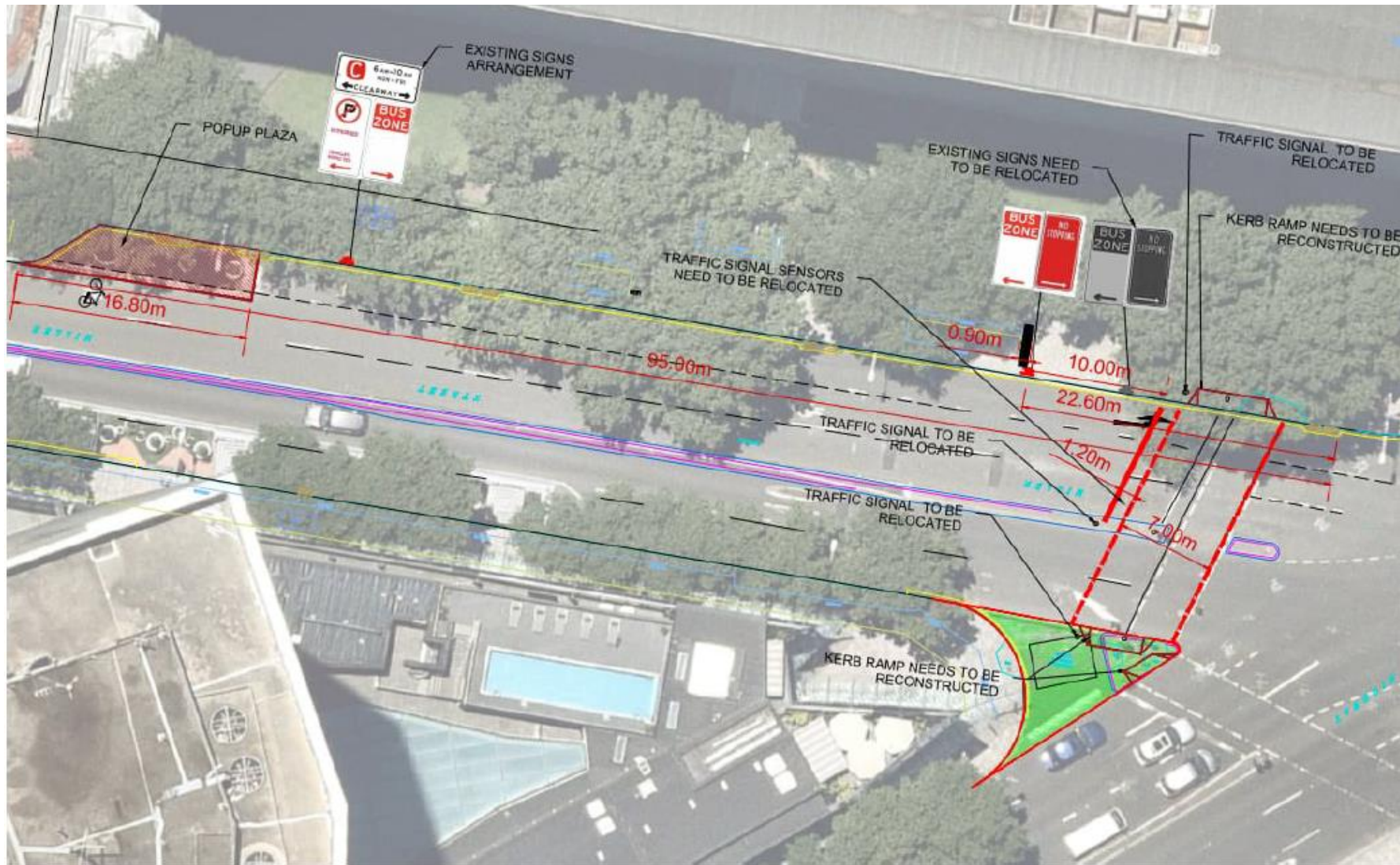
Waste management	<input checked="" type="checkbox"/>
M1. Resource management hierarchy principles are to be followed: <ul style="list-style-type: none"> • Avoid unnecessary resource consumption as a priority • Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery) • Disposal is undertaken as a last resort (In accordance with the <i>Waste Avoidance & Resource Recovery Act 2001</i>).	<input checked="" type="checkbox"/>
M2. There is to be no disposal or re-use of construction waste (removed signage) on to other land.	<input checked="" type="checkbox"/>
M3. Waste material is not to be left on site once the works have been completed.	<input checked="" type="checkbox"/>
M4. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of the currenting ongoing shoulder widening project.	<input checked="" type="checkbox"/>

Hazard and risk	<input checked="" type="checkbox"/>
R1. An emergency spill kit is to be kept on site at all times and maintained throughout the construction work. The spill kit must be appropriately sized for the volume of substances at the work site.	<input checked="" type="checkbox"/>
R2. If an incident (eg spill) occurs, the Transport for New South Wales Environmental Incident Procedure is to be followed and the Transport for New South Wales Contract Manager notified as soon as practicable.	<input checked="" type="checkbox"/>
R3. Emergency contacts will be kept in an easily accessible location on vehicles, vessels, plant and site office. All workers will be advised of these contact details and procedures.	<input checked="" type="checkbox"/>
R4. All workers will be advised of the location of the spill kit and trained in its use.	<input checked="" type="checkbox"/>
R5. Vehicles and plant must be properly maintained and regularly inspected for fluid leaks.	<input checked="" type="checkbox"/>

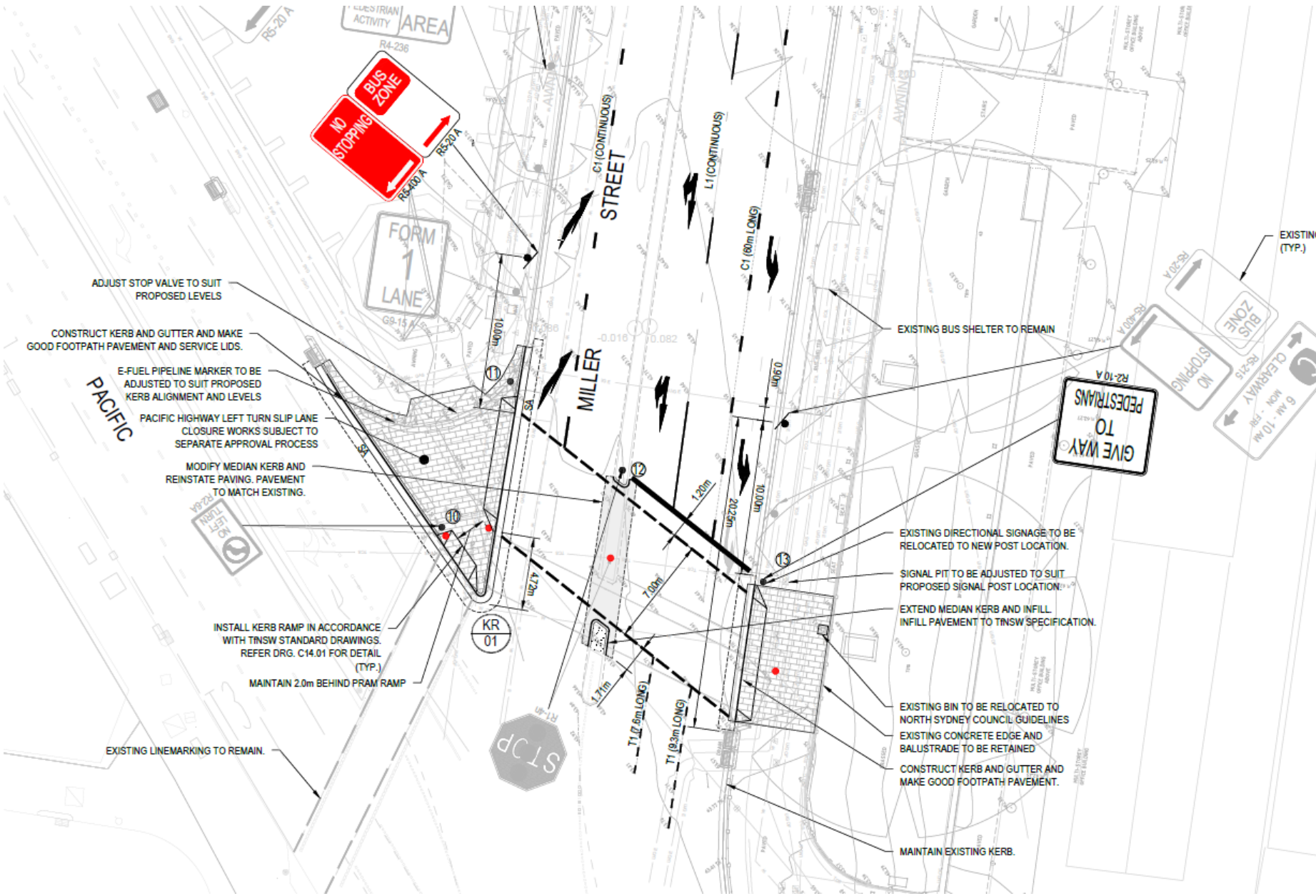
Community consultation	<input checked="" type="checkbox"/>
C1. All complaints are to be recorded on complaints register and attended to promptly.	<input checked="" type="checkbox"/>

Community consultation	☒
C2. Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner.	☒
C3. The community must be notified of all work outside standard hours which have the potential to impact noise sensitive receivers and receivers with possible impact from the sign replacement work.	☒
C4. Local businesses would be notified ahead of the sign replacement work via phone/email.	☒

Attachment B – Design



Area of the proposed median strip & Pedestrian crossing on Pacific Highway & Miller Street



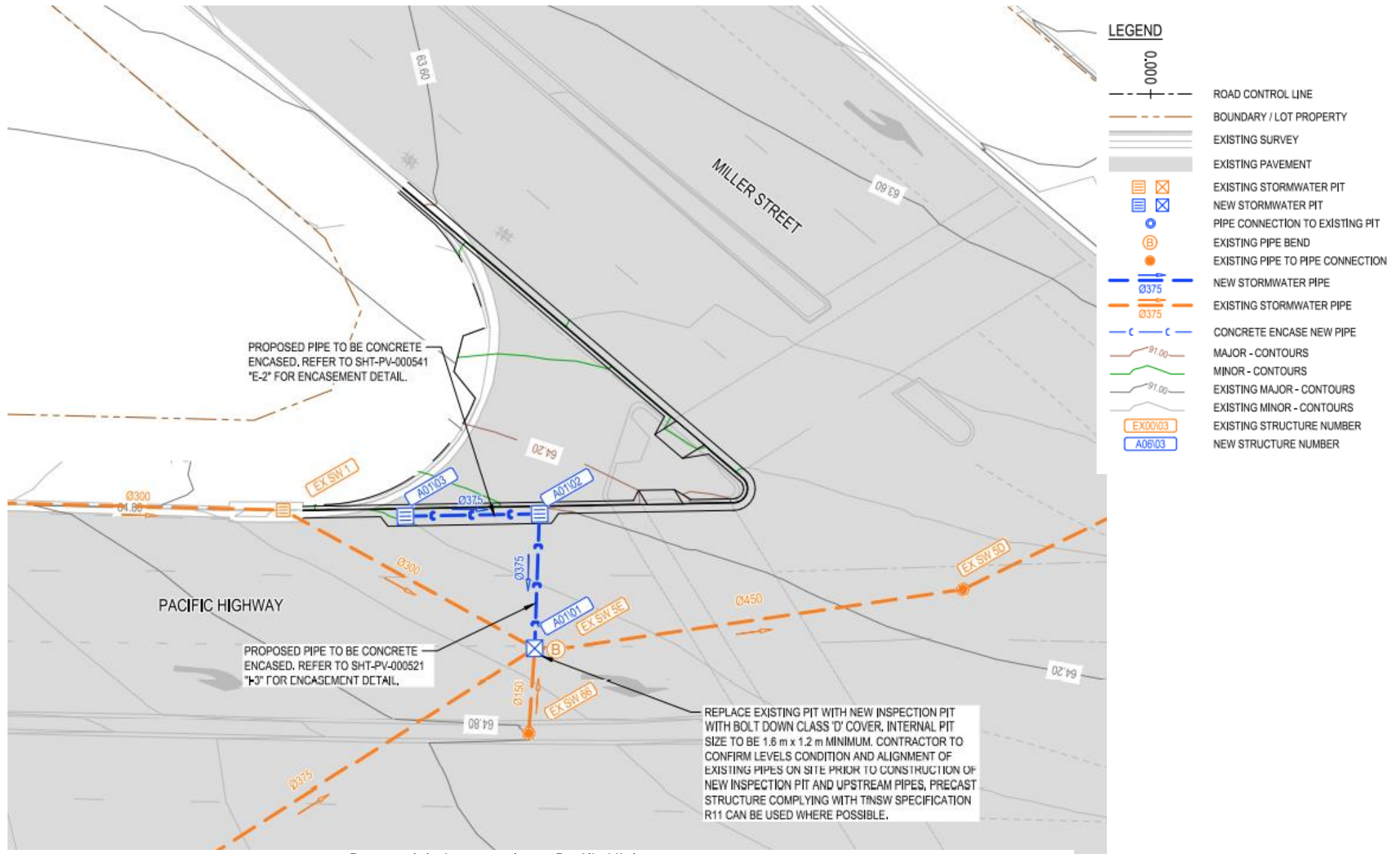
LEGEND	
	TRAFFIC SIGNAL NUMBER
	KERB RETURN LABEL
	KERB RAMP
	SA KERB TO TNSW STANDARDS
	SAWCUT

PAVEMENT LEGEND	
	PAVEMENT TYPE 1 FLEXIBLE PAVEMENT REINSTATEMENT MILL 100mm AC WEARING COURSE AND GRANULAR BASE MATERIAL REPLACE WITH: 2x50mm AC14 ON 7mm LOW CUTTER SEAL
	PAVEMENT TYPE 2 PAVER FOOTPATH 60mm PAVER TO NORTH SYDNEY COUNCIL REQUIREMENTS ON: 30mm 3:1 SAND AND CEMENT MORTAR BED (30 MPa) ON 150mm CONCRETE (40MPa) WITH SL82 MESH WITH 55 TOP COVER ON EXISTING BASE MATERIAL

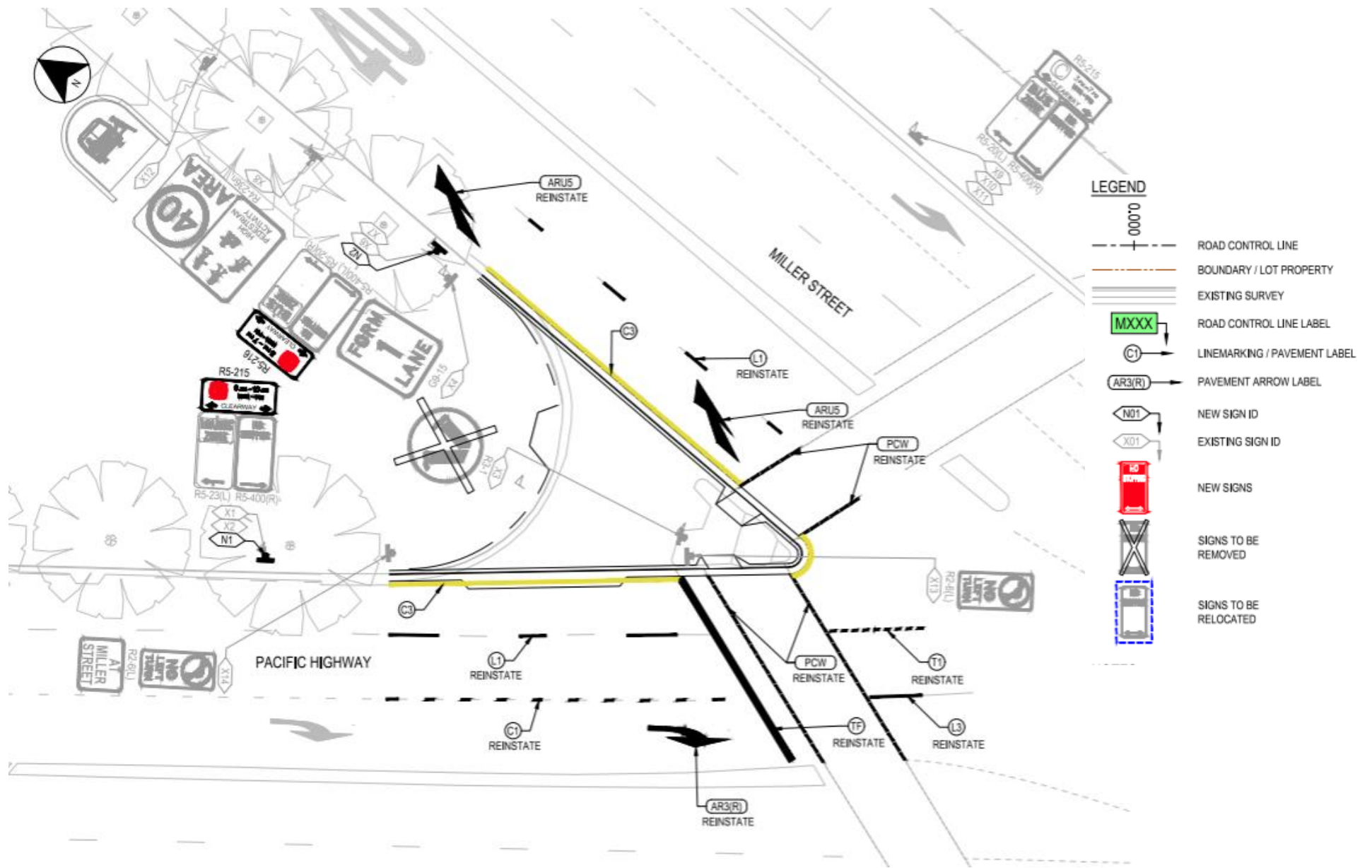
PAVEMENT MARKING LEGEND	
STOP LINE	
CONTINUITY LINE	
PEDESTRIAN CROSSING	

Further information of the pedestrian island & Crossing on Pacific Highway and Miller Street

	TRAFFIC SIGNAL NUMBER
	EXISTING TRAFFIC SIGNAL

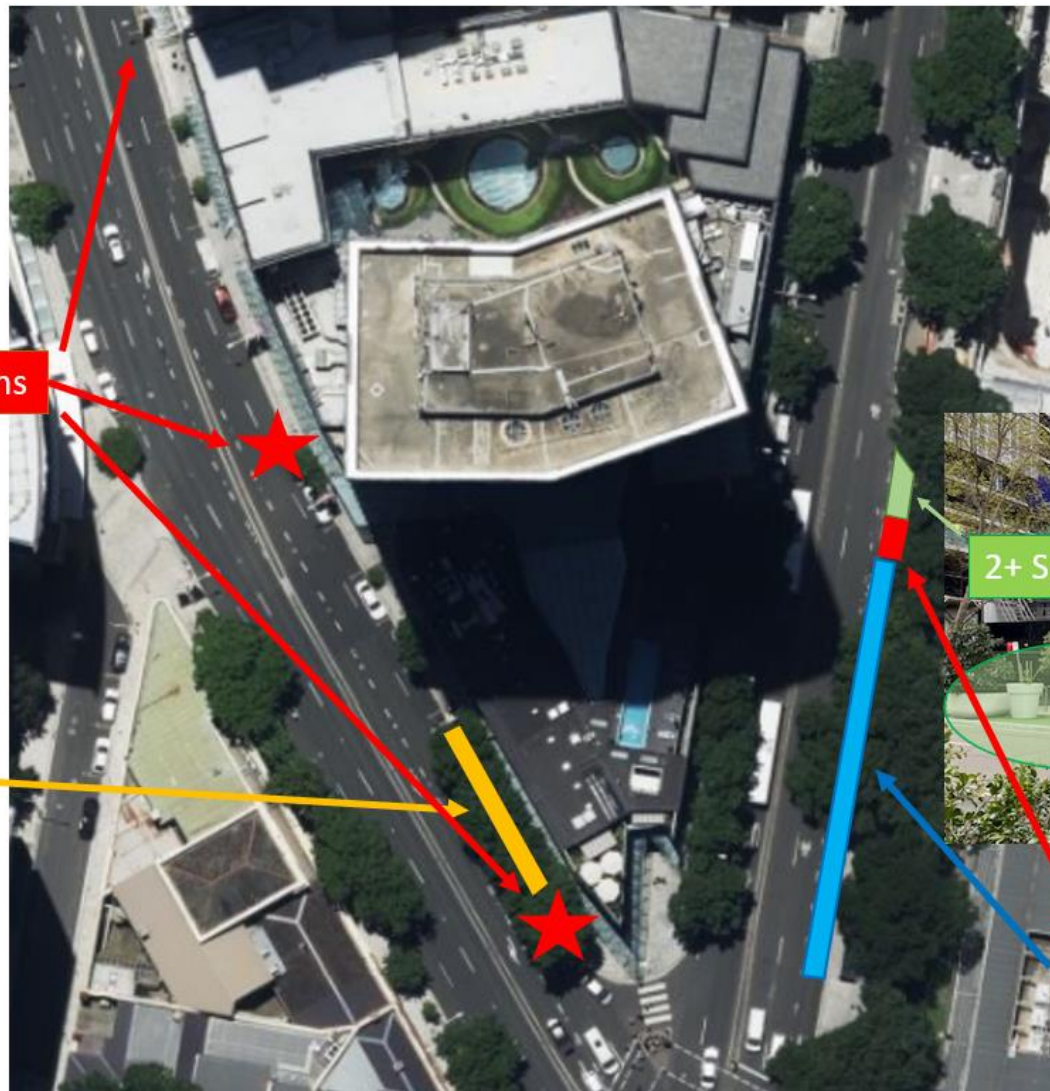


Proposed drainage works on Pacific Highway



Proposed signage works along Pacific Highway & Miller Street.

Attachment C – Existing Parking Environment



1 x Authorised Vehicle Only

Bus Zone

Attachment D – AHIMS Search Results

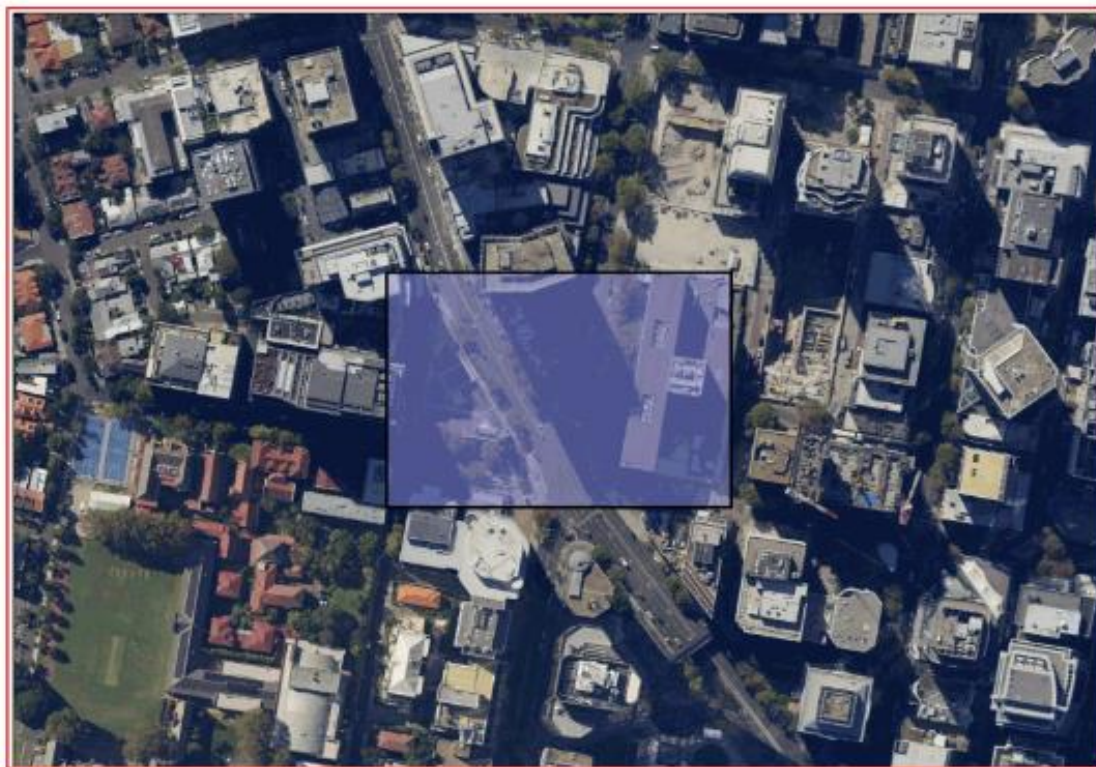
Sabria Afrin
211 Bay St
Rockdale New South Wales 2216
Attention: Sabria Afrin
Email: sabria.afrin@connectsydney.com.au

Date: 21 March 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat. Long From : -33.839, 151.2059 - Lat. Long To : -33.8379, 151.2078, conducted by Sabria Afrin on 21 March 2023.

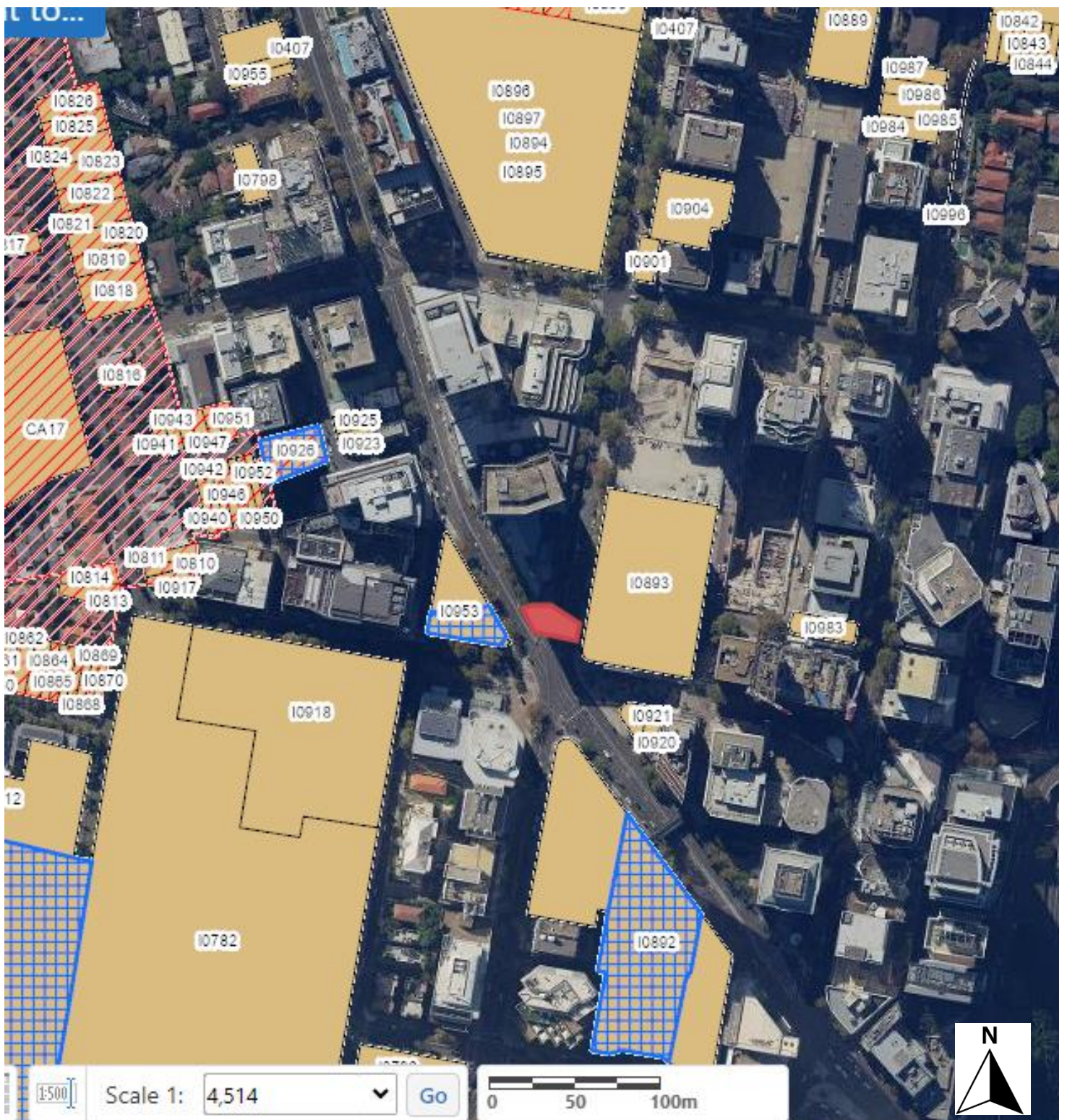
The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

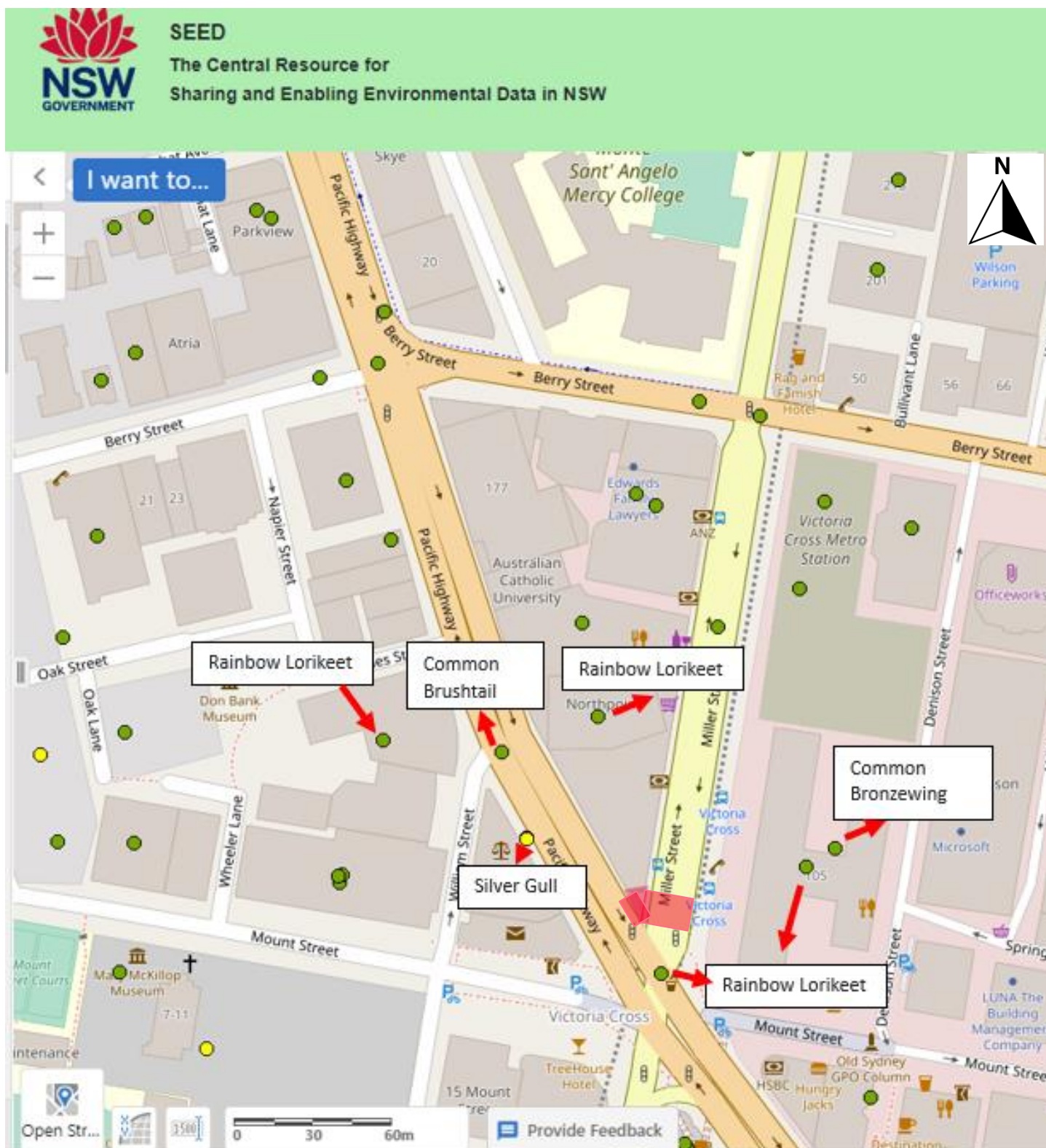
0 Aboriginal sites are recorded in or near the above location.
0 Aboriginal places have been declared in or near the above location. *

Attachment E – Non-Aboriginal Heritage Items Location.



Proposed works are shaded in Red

Attachment F – BioNet Search Result



BioNet search results shown near the proposed works (shaded in red)

Attachment G – Location of the closest residential receiver.



Proposed works is shaded in Blue 1

Attachment H – Noise Assessment Figures



Please pick from drop-down list in orange cells

Noise area category		R4
RBL or LA90 Background level (dB(A))	Day	55
	Evening	50
	Night	45
LAeq(15minute) Noise Mangement Level (dB(A))	Day	65
	Day (OOHW)	60
	Evening	55
	Night	50
Noisiest plant		13.5T Excavator With Hammer
Is there line of sight to receiver?		Yes

Distanced Based Assessment (Noisiest Plant)

Steps for Assessment:

- Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
 - Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
 - Select the noisiest plant. If not found in drop-down list, refer to 'Source List' and select a representative plant with equivalent sound power level.
 - Is there line of sight to receiver? Select the appropriate scenario from the drop down list .
Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list. Solid barriers can be in the form of road cutting, timber lapped and capped fence, shipping container, site office, etc. Substantial solid barriers are barriers greater than 5 metres in height or multiple rows of houses or a sound barrier specifically designed to mitigate construction noise. Please note that vegetation and trees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the solid barrier.
 - Determine if there are any receivers (both residential and non-residential receivers) within the affected distance for each relevant time period . Consider background LA90 noise measurements to check assumption in Step #2 if:
 - there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or
 - there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks.
 Note that consideration need to be given to the construction staging plan when determining impact duration.
 - Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver.
 - Where night works are involved, identify sleep disturbance affected distance.
 - Document the outcomes of these steps.
- (Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction Noise Estimator should be investigated on a project-by-project basis. Please contact a Roads and Maritime noise specialist for more information)

Abbreviation	
N	
SN	Speci
PC	
IB	Indh
RO	R
R1	Re
R2	Re
DR	Du
AA	Alternati
V	

Note that spot check verification of n briefings are not required for project impact duration

Residential receiver			LAeq(15minute) noise level above background (LA90)											
Affected distance (m)			5 to 10 dB(A)			10 to 20 dB(A)			20 to 30 dB(A)			> 30 dB(A)		
			Noticeable			Clearly audible			Moderately intrusive			Highly intrusive		
			Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))
Undeveloped green fields, rural areas with isolated dwellings	Day	150							N, PC, RO	60	75	N, PC, RO	60	75
	Day (OOHW)	215				N, R1, DR	150	65	N, R1, DR	60	75	N, R1, DR, PC, SN	25	85
	Evening	315				N, R1, DR	215	60	N, R1, DR	105	70	N, R1, DR, PC, SN	35	80
	Night	455	N	455	50	N, R2, DR	315	55	N, PC, SN, R2, DR	150	65	AA, N, PC, SN, R2, DR	60	75
	Highly Affected	60												
Developed settlements (urban and suburban)	Day	170							N, PC, RO	70	75	N, PC, RO	70	75
	Day (OOHW)	260				N, R1, DR	170	65	N, R1, DR	70	75	N, R1, DR, PC, SN	25	85
	Evening	390				N, R1, DR	260	60	N, R1, DR	110	70	N, R1, DR, PC, SN	40	80
	Night	590	N	590	50	N, R2, DR	390	55	N, PC, SN, R2, DR	170	65	AA, N, PC, SN, R2, DR	70	75
	Highly Affected	70												

LoS estimated noise figures for Pacific Highway and Miller Street proposed works

Distanced Based Assessment (Noisiest Plant)

Please pick from drop-down list in orange cells

Noise area category		R4
RBL or LA90 Background level (dB(A))	Day	55
	Evening	50
	Night	45
LAeq(15minute) Noise Mangement Level (dB(A))	Day	65
	Day (OOHW)	60
	Evening	55
	Night	50
Noisiest plant		13.5T Excavator With Hammer
Is there line of sight to receiver?		No (behind substantial solid barrier)

Steps for Assessment:

- Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
 - Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
 - Select the noisiest plant. If not found in drop-down list, refer to 'Source List' and select a representative plant with equivalent sound power level.
 - Is there line of sight to receiver? Select the appropriate scenario from the drop down list. Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list. Solid barriers can be in the form of road cutting, timber lapped and capped fence, shipping container, site office, etc. Substantial solid barriers are barriers greater than 5 metres in height or multiple rows of houses or a sound barrier specifically designed to mitigate construction noise. Please note that vegetation and trees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the solid barrier.
 - Determine if there are any receivers (both residential and non-residential receivers) within the affected distance for each relevant time period. Consider background LA90 noise measurements to check assumption in Step #2 if:
 - there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or
 - there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks.
 Note that consideration need to be given to the construction staging plan when determining impact duration.
 - Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver.
 - Where night works are involved, identify sleep disturbance affected distance.
 - Document the outcomes of these steps.
- (Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction Noise Estimator should be investigated on a project-by-project basis. Please contact a Roads and Maritime noise specialist for more information)

Abbreviation	Measure
N	Notification
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

Residential receiver			LAeq(15minute) noise level above background (LA90)										LAeq(15minute) 75 dB(A)		
			5 to 10 dB(A)			10 to 20 dB(A)			20 to 30 dB(A)			> 30 dB(A)			
			Noticeable			Clearly audible			Moderately intrusive			Highly intrusive			
Affected distance (m)	Measures		Within distance (m)		Mitigation level (dB(A))		Measures		Within distance (m)		Mitigation level (dB(A))		Measures		
	Undeveloped green fields, rural areas with isolated dwellings	Day	60					N, PC, RO	25	75	N, PC, RO	25	75	N, PC, RO	
Day (OOHW)		105					N, R1, DR	60	65	N, R1, DR	25	75	N, R1, DR, PC, SN	10	85
Evening		150					N, R1, DR	105	60	N, R1, DR	35	70	N, R1, DR, PC, SN	15	80
Night		215	N	215	50	N, R2, DR	150	55	N, PC, SN, R2, DR	60	65	AA, N, PC, SN, R2, DR	25	75	N, PC, RO
Highly Affected		25												N, PC, RO	
Developed settlements (urban and suburban)	Day	70					N, PC, RO	25	75	N, PC, RO	25	75	N, PC, RO		
	Day (OOHW)	110					N, R1, DR	70	65	N, R1, DR	25	75	N, R1, DR, PC, SN	10	85
	Evening	170					N, R1, DR	110	60	N, R1, DR	40	70	N, R1, DR, PC, SN	15	80
	Night	260	N	260	50	N, R2, DR	170	55	N, PC, SN, R2, DR	70	65	AA, N, PC, SN, R2, DR	25	75	N, PC, RO
	Highly Affected	25												N, PC, RO	
	Day	80					N, PC, RO	30	75	N, PC, RO	30	75	N, PC, RO		

NLoS Noise estimated figures for the proposed works on Pacific Highway and Miller Street.