

Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta

Addendum minor works review of
environmental factors

December 2023

Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.



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1. Introduction

1.1 Proposed modification overview

Transport for NSW (TfNSW) has proposed to undertake safety improvements at Victoria Road between Pennant and Pemberton Streets, Parramatta. A Minor Works Review of Environmental Factors (MWREF) was prepared on 17 February 2023 (referred to as the determined MWREF). Key features of the proposal included:

- Creation of a safe pedestrian link to Collett village shops
- Two new signalised pedestrian crossings to allow safer crossing of Victoria Road and Pennant Street
- Removal of an existing median island crossing on Pennant Street, to provide new signalised crossing facility and the zebra crossing to allow pedestrian access to Collett Village shops
- Removal of one car parking spaces near the zebra crossing to facilitate safety improvements and egress from the carpark
- Extension of median strip on Victoria Road to beyond the intersection of Pemberton Street, to include a pedestrian fence to restrict jaywalking
- New right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
- Upgrade of stormwater pits and drainage at Pennant Street to facilitate new median island
- Relocation of stormwater pits and drainage at Victoria Road to facilitate a new traffic light post footing
- Removal of the right turn and through movements in and out of Pemberton Street as a result of the extended median and pedestrian fence on Victoria Road
- Removal of bus lane on approach to Pennant Street to allow for new right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
- Road resurfacing and line marking
- Trees removal and minor landscaping.

The proposal is shown in Figure 1-1 below.

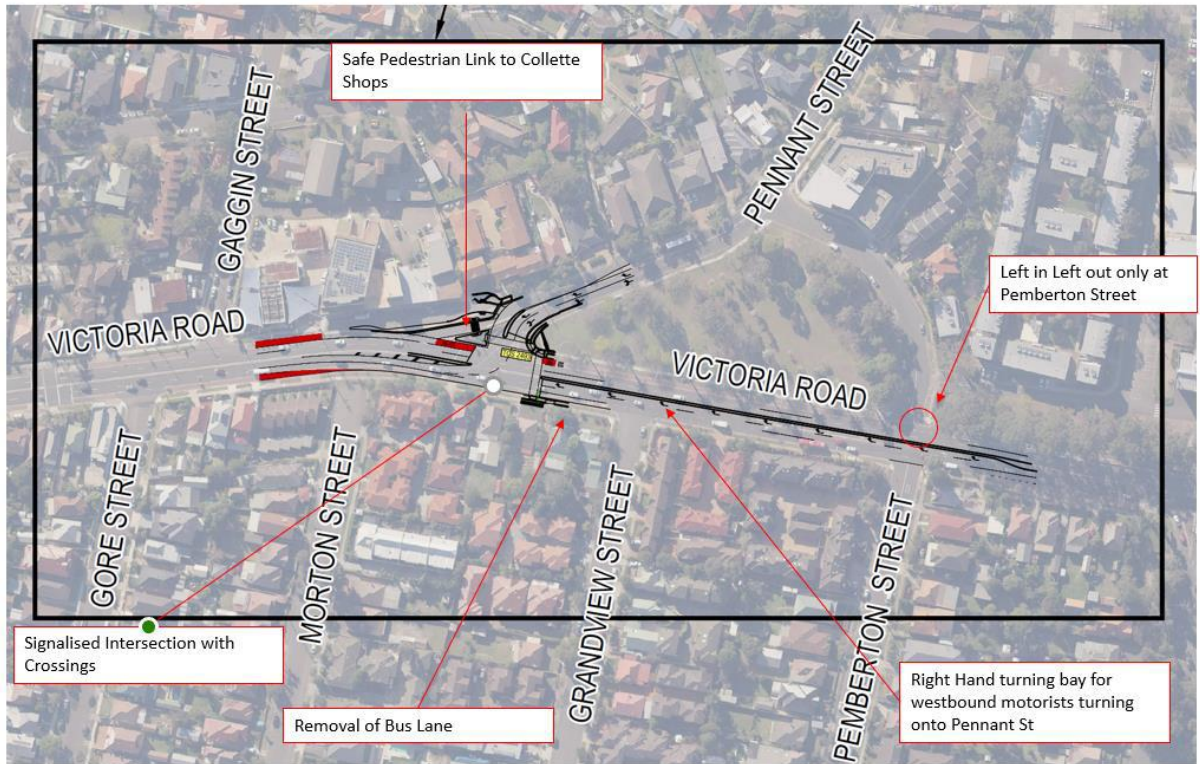


Figure 1-1 - Location and key features of the proposal

Transport for NSW (TfNSW) proposes to modify the determined MWREF by altering the proposed design to align with future bus lane improvement works (proposed modification).

Key features of the proposed modification would include:

- The removal of the following scope of works of the determined MWREF as they are not compatible with a future project on Victoria Road (bus lane improvement):
 - New right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
 - Removal of bus lane on approach to Pennant Street to allow for new right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
 - Removal of an existing median island crossing on Pennant Street, to provide new signalised crossing facility.
- Additionally, the proposed modification on Victoria Road comprises the addition of the following scope of works during construction:
 - Implementation of a continuous bus lane between James Ruse Drive and Gaggin Street
 - Adjusting the width of the median between Pemberton and James Ruse Drive to allow a continuous bus lane between James Ruse Drive and Gaggin Street
 - Extension of the original project boundary by approximately 1000m² on the eastern end of the site.

The location of the proposed modification is shown in Figure 1-2 and the proposed modifications are shown in Figure 1-3 and Figure 1-4. Section 3 describes the proposed modification in more detail.

A MWREF was prepared for the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta on 17 February 2023 (referred to in this Addendum MWREF as the MWREF).



Figure 1-2: Location of the proposed modification

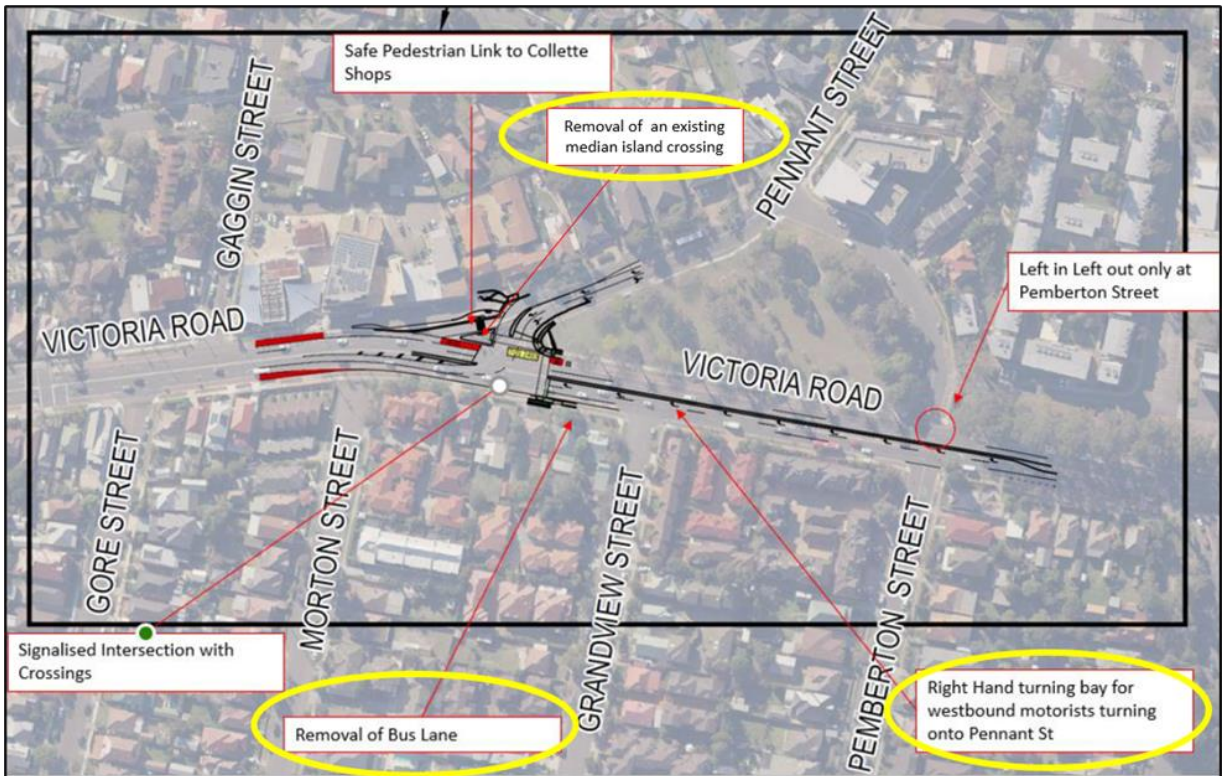


Figure 1-3 Key features of the proposed modification – Items of the scope to be removed in yellow

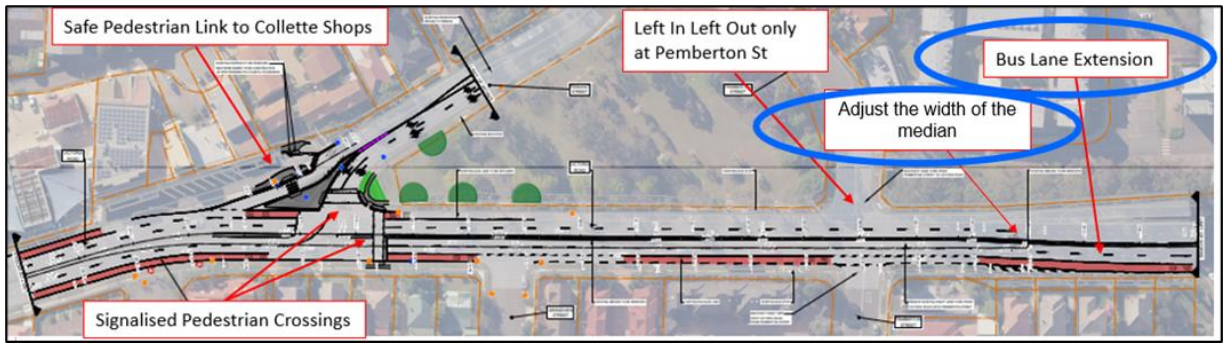


Figure 1-4 Key features of the proposed modification – Items to be added to the scope in blue

1.2 Purpose of the report

This addendum MWREF has been prepared by Fulton Hogan on behalf of Transport for NSW. For the purposes of these works, Transport for NSW is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This addendum MWREF is to be read in conjunction with the MWREF. The purpose of this addendum MWREF is to describe the proposed modification, to document and assess the likely impacts of the proposed modification on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposed work and assessment of associated environmental impacts has been undertaken in context of section 171 of the *Environmental Planning and Assessment Regulation 2021*, *Is an EIS Required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979* (Is an EIS Required? guidelines) (DUAP, 1995/1996), *Roads and Road Related Facilities EIS Guideline* (DUAP, 1996), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act), and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In doing so, the addendum MWREF helps to fulfil the requirements of:

- Section 5.5 of the EP&A Act including that Transport for NSW examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

The findings of the addendum MWREF would be considered when assessing:

- Whether the proposed modification is likely to result in a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The significance of any impact on nationally listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and whether offsets are required and able to be secured
- The potential for the proposed modification to significantly impact any other matters of national environmental significance or Commonwealth land and therefore the need to make a referral to the Australian Department of Climate Change, Energy, the Environment and Water for a decision by the Australian Government Minister for the Environment on whether assessment and approval is required under the EPBC Act.

2. Need and options considered

2.1 Strategic need for the proposed modification

Section 2 of the MWREF addresses the strategic need for the project, the project objectives and the options that were considered. The proposed modification described and assessed in this addendum MWREF is consistent with the strategic need for the project.

The proposed modification is needed to accommodate the Victoria Road corridor for future planned works associated with the improvement of the bus lanes (including a continuous bus lane) between James Ruse Drive and Wandsworth Street. As the bus lane on the westbound cannot be removed, the new right turn bay on Victoria Road at the intersection of Pennant Street is no longer feasible. This is the main reason for altering the scope of works stated in the determined MWREF.

2.2 Proposal objectives and development criteria

Section 2.2 of the MWREF identifies the proposal objectives and development criteria that apply to the proposed modification. The proposed modification has an additional objective as follows:

- Accommodates for a future proposed project (bus lane improvement) between James Ruse Drive and Wandsworth Street.

2.3 Alternatives and options considered

2.3.1 Methodology for selection of preferred option

An assessment process was undertaken to compare the proposed modification option considered and a 'do nothing' option. The preferred option was selected based on the ability of the option to meet the additional objective of the proposal outlined in section 2.2.

2.3.2 Identified options

The following options that were considered for the proposed modifications include:

- Option 1

Do Nothing, leave the determined Project as it was described in the determined MWREF.

- Option 2

This option considers implementing a continuous bus lane between James Ruse Drive and Gaggin Street and adjusting the median width between Pemberton and James Ruse Drive. This option will no longer incorporate the new right turn bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street nor the removal of the bus lane on approach to Pennant Street. In addition, this option considers maintaining the existing median island crossing on Pennant Street due to the Parramatta Council request.

2.3.3 Analysis of options

An assessment was carried out against the proposed objective to inform the options assessment and identify a preferred option.

Table 2-1 Evaluation of Proposed Options

Analysis of Options Considered		
Objective	Option 1	Option 2
Accommodates for a future proposed project (bus lane improvement) between James Ruse Drive and Wandsworth Street.	The option would not be in accordance with the improvement of the bus lanes because the determined Project included removing the bus lane on approach to Pennant Street. x	The option would facilitate a future bus lane improvement on Victoria Road by implementing a continuous bus lane between James Ruse Drive and Gaggin Street. ✓

2.4 Preferred option

When assessed against the proposed objective, it was determined that the preferred option is Option 2 (Table 2-1) as it best satisfies the objective of the proposed modification.

3. Description of the proposed modification

3.1 The proposed modification

Transport for NSW proposes to modify the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta Minor Works Review of Environmental Factors by altering the proposed design to conform with future bus lane improvement works. The proposed modification is shown in Figure 3-1 and Figure 3-2.

Key features of the proposed modification would include:

- The removal of the following scope of works of the determined MWREF as they are not compatible with a future project on Victoria Road (bus lane improvement):
 - New right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
 - Removal of bus lane on approach to Pennant Street to allow for new right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street
 - Removal of an existing median island crossing on Pennant Street, to provide new signalised crossing facility
- Additionally, the proposed modification on Victoria Road comprises the addition of the following scope of works during construction:
 - Implementation of a continuous bus lane between James Ruse Drive and Gaggin Street
 - Adjusting the width of the median between Pemberton and James Ruse Drive to allow a continuous bus lane between James Ruse Drive and Gaggin Street
 - Extension of the original project boundary by approximately 1000m² on the eastern end of the site.

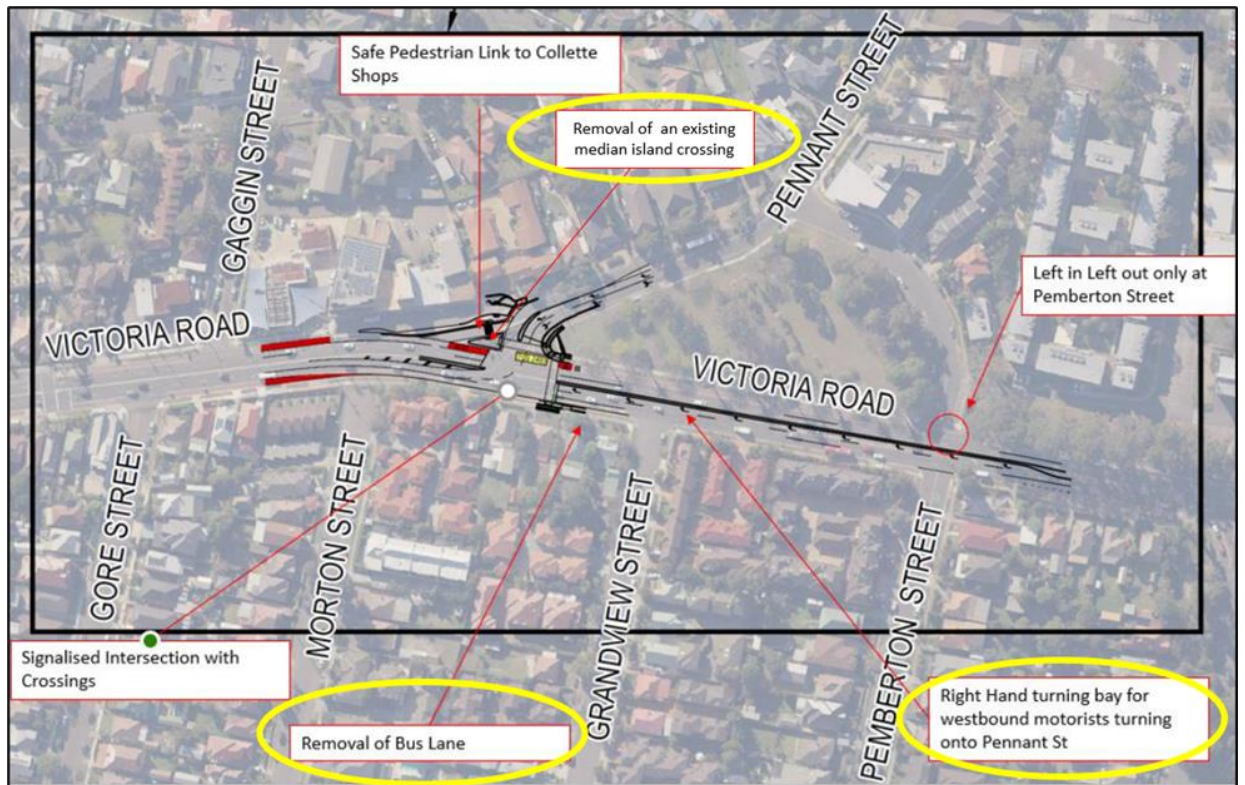


Figure 3-1: Key features of the proposed modification - Items of the scope to be removed in yellow

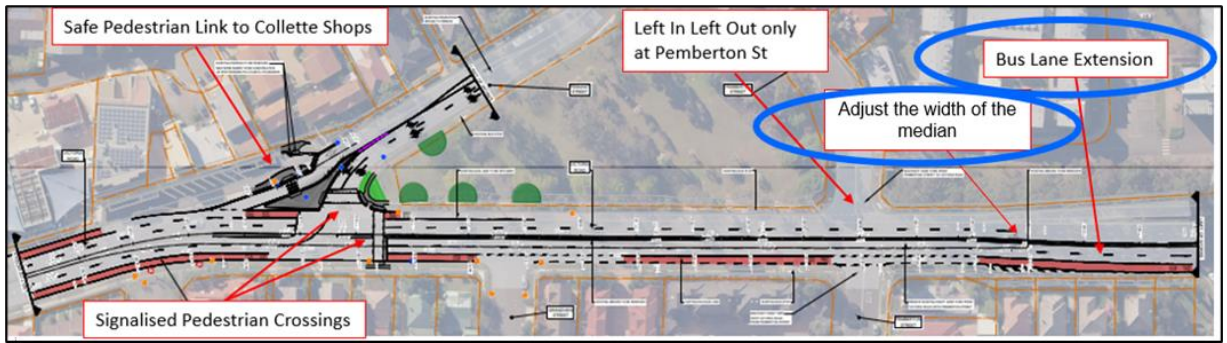


Figure 3-2: Key features of the proposed modification – Items to be added to the scope in blue

3.2 Construction activities

3.2.1 Work methodology

Work methodology remains unchanged from Section 2.1.2 of the determined MWREF.

3.2.2 Construction hours and duration

Construction hours and duration remains unchanged from Section 2.1.2 of the determined MWREF with the exception of approximately 9 shifts between 7:00am Monday 8/01/2024 and 7:00am Wednesday 17/01/2024. During this time period, construction hours would be as follows:

- Monday to Friday: 7:00 am to 7:00 am the following day
- Saturday: 8:00 am to 1:00 pm
- Sundays and Public Holidays: No works.

Noise intrusive activities such as road saws and jackhammers would not take place between the hours of 10:00pm and 7:00am.

After the above 9 shifts are completed, works would resume with working hours consistent with the determined MWREF.

See Section 6.1.3 of this Addendum MWREF for further information.

3.2.3 Plant and equipment

Plant and equipment remain unchanged from Section 2.1.2 of the MWREF.

3.2.4 Earthworks

Details of earthworks remain unchanged from Section 3.1 of the MWREF.

3.2.5 Traffic management and access

Traffic management and access during construction remain unchanged from Section 3.8 of the MWREF.

3.3 Ancillary facilities

No ancillary facilities are proposed in relation to these works.

3.4 Public utility adjustment

Utility adjustments remain unchanged from Section 2.4.1 of the MWREF.

3.5 Property acquisition

No property acquisition is proposed in relation to these works.

4. Statutory and planning framework

4.1 Environmental Planning and Assessment Act 1979

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

Chapter 2 (Infrastructure) of SEPP (Transport and Infrastructure) aims to facilitate the effective delivery of infrastructure across the State.

Section 2.108 of SEPP (Transport and Infrastructure) permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposed modification is for a road and/or road infrastructure facilities and is to be carried out by or on behalf of Transport for NSW, it can be assessed under Division 5.1 of the EP&A Act. Development consent from council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under:

- State Environmental Planning Policy (Resilience and Hazards) 2021
- State Environmental Planning Policy (Planning Systems) 2021
- State Environmental Planning Policy (Precincts – Central River City).

Section 2.10 to 2.15 of SEPP (Transport and Infrastructure) contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development.

Consultation, including consultation as required by TISEPP (where applicable), is discussed in section 5 of this addendum MWREF.

4.1.2 Local Environmental Plans

The Proposal is located in the suburbs of North Parramatta and Parramatta, and the City of Parramatta Council is the local governing authority. The Parramatta Local Environment Plan 2023 (Parramatta LEP) would apply to the Proposal area and would be used to evaluate the impacts on land adjacent to the Proposal. Under the Parramatta LEP the proposal would be entirely within the SP2 Infrastructure Zone. Land uses adjacent to the intersection are E1 Local Centre, R2 Low Density Residential, R3 Medium Density Residential, R4 High Density Residential and RE1 Public Recreation (refer to Figure 4-1).



Figure 4-1 - Land Use Zoning within and nearby to proposed works

The objectives of the SP2 zone are:

- To provide for infrastructure and related uses
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

4.2 Commonwealth legislation

4.2.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act a referral is required to the Australian Government for *proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land'*. These are considered in Appendix H and section 3 of the MWREF.

A referral is not required for proposed road actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. This is because requirements for considering impacts to these biodiversity matters are the subject of a strategic assessment approval granted under the EPBC Act by the Australian Government in September 2015.

Potential impacts to these biodiversity matters are also considered as part of section 3 of the MWREF and Appendix H.

Findings – matters of national environmental significance (other than biodiversity matters)

The assessment of the proposed modification's impact on matters of national environmental significance and the environment of Commonwealth land found that there would be no change to the findings of the determined activity and would be unlikely to cause a significant impact on matters of national environmental significance or the environment of Commonwealth land. A referral to the Australian Department of Climate Change, Energy, the Environment and Water is not required.

4.3 Confirmation of statutory position

The proposed modification is categorised as development for the purpose of a road and/or road infrastructure facilities and is being carried out by or on behalf of a public authority. Under section 2.108 of SEPP (Transport and

Infrastructure) the proposed modification is permissible without consent. The proposed modification is not State significant infrastructure or State significant development. The proposed modification can be assessed under Division 5.1 of the EP&A Act. Consent from Council is not required.

5. Consultation

5.1 Consultation strategy

Early work notification would be distributed to the potentially affected community a minimum of three weeks prior to commencing the proposal. Also, key stakeholders such as Western Sydney University, Sydney Water, bus companies, Parramatta Council and nearby businesses would be notified. This notification would include changes in the scope of works, traffic impacts and work dates. Additionally, this addendum would be published on the project website. The community can provide feedback at any time to Transport for NSW.

A start of work notification would be distributed to the potentially affected community and key stakeholders a minimum of five business days prior to commencing the proposal.

5.2 Consultation outcomes

City of Parramatta Council has been consulted with under the SEPP (Transport and Infrastructure).

Issues that have been raised as a result of this consultation are outlined below in Table 5-1.

Table 5-1: Issues raised through SEPP (Transport and Infrastructure) consultation

Agency	Issue raised	Response / where addressed in addendum MWREF
City of Parramatta Council	TfNSW has not provided any information on what time saving benefit will be achieved by having the proposed bus lane. Based on site observation, the section of Victoria Road between James Ruse Drive and Wandsworth Street does not generally have any significant traffic queues in the peak hours. Accordingly, in the absence of any data to suggest otherwise, it is considered that the time saving for buses by having this lane will be negligible, whereas the detour times indicated within the Review of Environmental Factors are 3-8 minutes.	Retaining the bus lane on the southern side of Victoria Road, between Grandview Street and Pennant Street aligns with Transport’s long-term vision to revitalise Victoria Road. The Victoria Road Vision will better connect vibrant town centres through providing more frequent and reliable bus journeys that improve customer experience and encourage mode shift from private vehicles to public transport. In the interim, prioritising public transport within the existing road space is the vital first step towards encouraging people onto public transport and easing congestion on our roads.
	TfNSW has not adequately considered the impact the detoured traffic will have on Council’s local street network and the residential amenity of the areas. It is to be noted that Council has received representation from the State Member for Parramatta with members of the community raising concerns with the early closure of the right turn bays in Victoria Road at Pemberton Street. Furthermore, it is being reported that motorists are using Mason Street in order to turn back onto Victoria Road to access Pennant Street. Mason Street is narrow and with parking on both sides, the usable width of the road is less than 6m which affects two-way continuous traffic flow.	The right turn movement into Pemberton Street was found to have a relatively low demand movement, with reasonable alternatives. Traffic modelling undertaken before (February – March 2023) and after (May 2023) the introduction of the right turn bans at the Victoria Road and Pemberton Street intersection to understand the impact of the proposed detours during construction found that the loss of the right turn movement resulted in: <ul style="list-style-type: none"> a moderate volume increase in the total number of right turning vehicles at the signalised intersection of Victoria Road and Macarthur Street (northbound) of

		<p>up to 80 vehicle/hour peak period (or +710 daily)</p> <ul style="list-style-type: none"> • a minor volume increase at Collett Parade (westbound) of +20 vehicle/hour peak period (or +215 daily) • a negligible volume of vehicles diverted via James Ruse Drive (northbound) or Pennant Street (southbound).
	<p>The existing right turn bay in Victoria Road at Macarthur Street is small and does not have the capacity to accommodate the additional traffic being detoured as a consequence of the closure of the right turn bay. As a result, it has been observed that vehicles are now overflowing from the right turn bay and effectively reducing the through lanes in Victoria Road to one as evidenced from the below aerial image taken on Saturday, 12 August 2023 following TfNSW early closure of the right turn bays in Pemberton Street.</p>	<p>Transport acknowledges Council's concern regarding capacity at the existing Victoria Road right turn bay into Macarthur Street. In response, Transport has added additional time to the right turn into Macarthur Street to allow for the slight increase in traffic using this right turn. Furthermore, Transport will continue to monitor and take any appropriate action needed to improve the intersection following completion of the project.</p>
	<p>There is an existing Planning Proposal for the Western Sydney University site located at 17 Pemberton Street and 260 Victoria Road. The proposal seeks an increased density with over 1,000 dwellings. In order to support future developments within the area, the road network must be made permeable so to not concentrate traffic to particular intersections.</p>	<p>Victoria Road is a strategic bus corridor, with high frequency and high patronage bus routes. Retaining the bus lane will support future developments in the area by future proofing public bus service reliability and travel times along Victoria Road. The bus lanes along Victoria Road at Pemberton Street provide direct access to the Parramatta CBD and as previously discussed are part of Transport's long-term vision to provide more frequent and reliable bus journeys that improve customer experience and encourage mode shift from private vehicles to public and active transport.</p>
	<p>Council has concerns that the proposed modification to the left turn from Victoria Road into Pennant Street will result in higher vehicle speeds when crossing the proposed pedestrian crossing. This is because within the previous designs, vehicles were required to give way to traffic turning right from Victoria Road into Pennant Street, however, as per the modifications, vehicles are travelling onto Pennant Street at a straight trajectory with no physical device to reduce vehicle speeds.</p>	<p>The geometry of the proposed change will require vehicles to reduce their speed further than the existing situation, which is expected to improve safety. Transport will also install advance warning signs indicating to drivers that there is a marked pedestrian crossing, which is expected to see travel speed decrease.</p>

See TfNSW complete response in Appendix F of this Addendum Memo.

5.3 Ongoing or future consultation

The community would be updated on the progress of the proposal via notification letters and project website updates.

6. Environmental assessment

This section of the addendum MWREF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposed modification of the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta Minor Works Review of Environmental Factors. All aspects of the environment potentially impacted upon by the proposed modification are considered. This includes consideration of the guidelines Roads and Related Facilities EIS Guideline (DUAP, 1996) and Is an EIS required? (DUAP, 1999) the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

Site-specific safeguards and management measures are provided to ameliorate the identified potential impacts.

6.1 Noise and Vibration

6.1.1 Methodology

The Construction Noise and Vibration Assessment as part of the determined MWREF completed a review of the noise and vibration impacts associated with the proposal and has been conducted in accordance with the Roads and Maritime Construction Noise and Vibration Guideline (CNVG). The Estimator (Individual Plant) assessment was used to simulate multiple shift arrangements to determine the plant types that contribute the most to noise outputs for each activity. These items of plant were then selected for the Distanced Based (Noisiest Plant) assessment which was used to determine the predicted noise levels for the project.

6.1.2 Existing environment

The existing environment is an urban, built up area surrounded by mainly by low to high density residential dwellings with some allocation to business, infrastructure and recreational zones. The nearest school is Parramatta East Public School approximately 240m north of the proposed works, with no churches or hospitals in the vicinity of the proposed works.

6.1.3 Potential Impacts

Construction

Duration of works and timing of works

The modified proposed works would take approximately 6 months to complete. Due to the high traffic volumes in the area and to ensure the safety of the workers, the revised approach to works would be conducted during working hours that are consistent with the determined MWREF with the exception of approximately 9 shifts between 7:00am Monday 8/01/2024 and 7:00am Wednesday 17/01/2024. During this time period, a Road Occupancy License (ROL) has been granted to allow for extended construction periods allowing for an increase rate of production and overall shortening of the construction program. The working hours during this period are as follows:

- Monday to Friday: 7:00 am to 7:00 am the following day
- Saturday: 8:00 am to 1:00 pm
- Sundays and Public Holidays: No works.

Construction activities during the period have been scheduled to minimise noise impacts during OOHW. Noisiest activities (such as concrete sawing and jackhammering) would not take place between the hours of 10:00pm and 7:00am to minimise noise impacts and potential for sleep disturbance to nearby residents during construction. Portable noise blankets are to be utilised during OOHW for noise intrusive activities such as jackhammering and concrete sawing to further mitigate noise emissions. The works would be scheduled for up to 5 consecutive nights.

After the above 9 shifts are completed, works would resume with working hours consistent with the determined MWREF.

Noisiest activities

During construction, the use of equipment would cause construction noise and noise impacts may affect nearby residences that are located on the northern and southern sides of Victoria Road. Equipment proposed to be used includes but is not limited to:

- Concrete saw
- Jackhammer
- Asphalt pavers/road profiler
- Excavator
- Generator
- Soil compactor such as plate compactor
- Rollers
- Bobcats
- Concrete trucks
- Asphalt trucks.

In accordance with Roads and Maritime Construction Noise and Vibration Guideline (CNVG), as part of the proposed works are planned to be carried out outside of standard working hours, nearby residents would be impacted by temporary sleep disturbance due to noisy activities. The EPA Road Noise Policy advises that noise events above the background noise level, rather than the peak background noise levels are likely to cause sleep disturbance. Noise characteristics that influence sleep disturbance are considered to be the number of noisy events heard distinctly above background level, and the peak level and emergence of these events. The work would have intermittent noise impacts.

Noise area category

The Transport for NSW construction noise estimator tool was used to assess the noise impacts during construction. The noise area category has been selected as R3 for this proposal. James Ruse Drive is located approximately 250 m east of the proposal area and there is a posted speed limit of 60km/h on both Victoria Road and Pennant Street. Therefore, the background noise environment is influenced by road traffic noise. The intersection is surrounded by low to medium density residential receivers mixed with commercial properties. Given the selected noise area category the criteria for construction noise are presented in Table 6-1 below:

Table 6-1 Noise area criteria for nominated construction noise as a result of the proposed works.

Noise area category		R3
RBL or LA90 Background level (dB(A))	Day	50
	Evening	45
	Night	40
LAeq(15minute) Noise Management Level (dB(A))	Day	60
	Day (OOHW)	55
	Evening	50
	Night	45

Predicted noise levels

Noisiest Plant 1: Concrete Saw

The distance-based assessment (concrete saw noisiest plant) has been selected for the Site. Further, night works behind substantial solid barrier has been selected. The results of the construction noise assessment are summarised below in Table 6-2. To visualise the affected receivers, noise catchment areas are shown in Figure 6-1 below.

Table 6-2 Predicted noise impacts from construction activities.

Catchment Distances	NML, dB(A)	Predicted noise levels, dB(A)	Recommended additional mitigation measures
NCA1 (25 m)	45	70	AA, N, PC, SN, R2, DR
NCA2 (60 m)	45	60	N, PC, SN, R2, DR
NCA3 (155 m)	45	50	N, R2, DR
NCA4 (240 m)	45	45	N



Figure 6-1 Noise catchment areas and construction impacts – Concrete Saw

During night-time works, residential receivers located within a 25 m radius (NCA1) of the proposed works would experience noise levels up to 25 dB (A) above the night-time NML, and residential receivers located within a 60 m radius (NCA2) of the proposed works would experience noise level up to 15 dB (A) above the night-time NML. Bearing in mind that noise assessment is based on the noisiest plant during works (concrete saw) and its impacts will be intermittent and prior to 10pm. Likewise, the mitigation measures identified in this addendum MWREF aim to minimise the risk of sleep disturbance to nearby residents.

Noisiest Plant 2: 13.5T Excavator with hammer

The distance-based assessment (13.5T Excavator with Hammer noisiest plant) has been selected for the Site. Further, night works behind substantial solid barrier has been selected. The results of the construction noise assessment are summarised below in Table 6-3. To visualise the affected receivers, noise catchment areas are shown in Figure 6-2 below.

Table 6-3 Predicted noise impacts from construction activities

Catchment Distances	NML, dB(A)	Predicted noise levels, dB(A)	Recommended additional mitigation measures
NCA1 (40 m)	45	70	AA, N, PC, SN, R2, DR
NCA2 (110 m)	45	60	N, PC, SN, R2, DR
NCA3 (260 m)	45	50	N, R2, DR
NCA4 (390 m)	45	45	N



22/11/2023, 7:25:18 pm

Areas
█ Site
█ NCA4 (390m)
█ NCA3 (260m)
█ NCA3 (110m)
█ NCA1 (40m)

1:9,028
 0 0.05 0.1 0.2 mi
 0 0.1 0.2 0.4 km
 © Department of Customer Service 2020

Figure 6-2 Noise catchment areas and construction impacts 13.5T Excavator with Hammer

During night-time works, residential receivers located within a 40 m radius (NCA1) of the proposed works would experience noise levels up to 25 dB (A) above the night-time NML, and residential receivers located within a 110 m radius (NCA2) of the proposed works would experience noise level up to 15 dB (A) above the night-time NML. Bearing in mind that noise assessment is based on the noisiest plant during works (13.5T Excavator with Hammer) and its impacts would be intermittent. Likewise, the mitigation measures identified in this REF are considered to mitigate construction noise impacts as far as is reasonable and feasible and aim to minimise the risk of sleep disturbance to nearby residents.

Transport for NSW's Construction Noise Calculator Tool for the Site has been completed and is attached as Appendix C.

Operation

During operation, there would be no change to impact by noise associated with the proposed modification.

6.1.4 Safeguards and management measures

N7. This includes implementing the following measures to minimise noise impacts:

- Noisy equipment will be substituted in favour of alternative low noise process (e.g., hand tooling instead of excavator for service investigation)
- Plant and equipment will be correctly operated and maintained, with engine access covers closed

- Noise curtains will be used for noise intrusive works conducted outside of standard working hours
- Use manually adjustable or ambient noise sensitive reversing alarms on plant (i.e., Quakers)
- Avoid shouting, slamming doors and use of loud radios
- Operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods
- Plant will not be allowed to warm up outside working hours
- Lighting towers will be directed away from residential dwellings
- The induction will identify all OOHW requirements and restrictions
- An Out of Hours Work (OOHW) application will be prepared prior to the start of work. The OOHW application will identify any sensitive receivers that would be 25 dB(A) above the Noise Management Level (NML). The OOHW Application will also determine which activities would trigger the 25dB(A) above NML.

6.2 Biodiversity

6.2.1 Methodology

A desktop search for the Critically Endangered Ecological Communities, Native Vegetation Protection Areas and Vulnerable or threatened species within the GIS Portal was undertaken on 01 September 2023.

6.2.2 Existing environment

Results from the desktop search indicate that there are no threatened ecological communities within 200 m of the location of the proposed modification. The closest ecological community is Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion, located 540 m from the proposed modification. No vulnerable or threatened species have been recorded within 200 m of the proposed modification, which have not been described in the determined Project. No native vegetation has been identified near the proposed modification.

The EPBC protected matters report noted the potential presence of 7 threatened ecological communities, 54 threatened species and 18 migratory species. PMST Report is provided in Appendix H of the MWREF.

6.2.3 Potential impacts

Construction

Two additional trees would be removed to improve line of sight distance and safety/operational issues with the bus operation and for road users using Victoria Road. The determined MWREF indicated the removal of 2 trees (highlighted in yellow in Figure 6-3). However, after a review of the project design, an additional 2 trees are required to be removed. These trees are identified as non-native Ornamental Pear (*Pyrus calleryana*). Figure 6-3 below shows a street view of the two additional trees proposed to be removed as part of this Addendum.



Removal of two trees
stated in the determined
MWREF

Removal of two trees
as part of this
Addendum

Figure 6-3 Trees proposed to be removed for the modification.

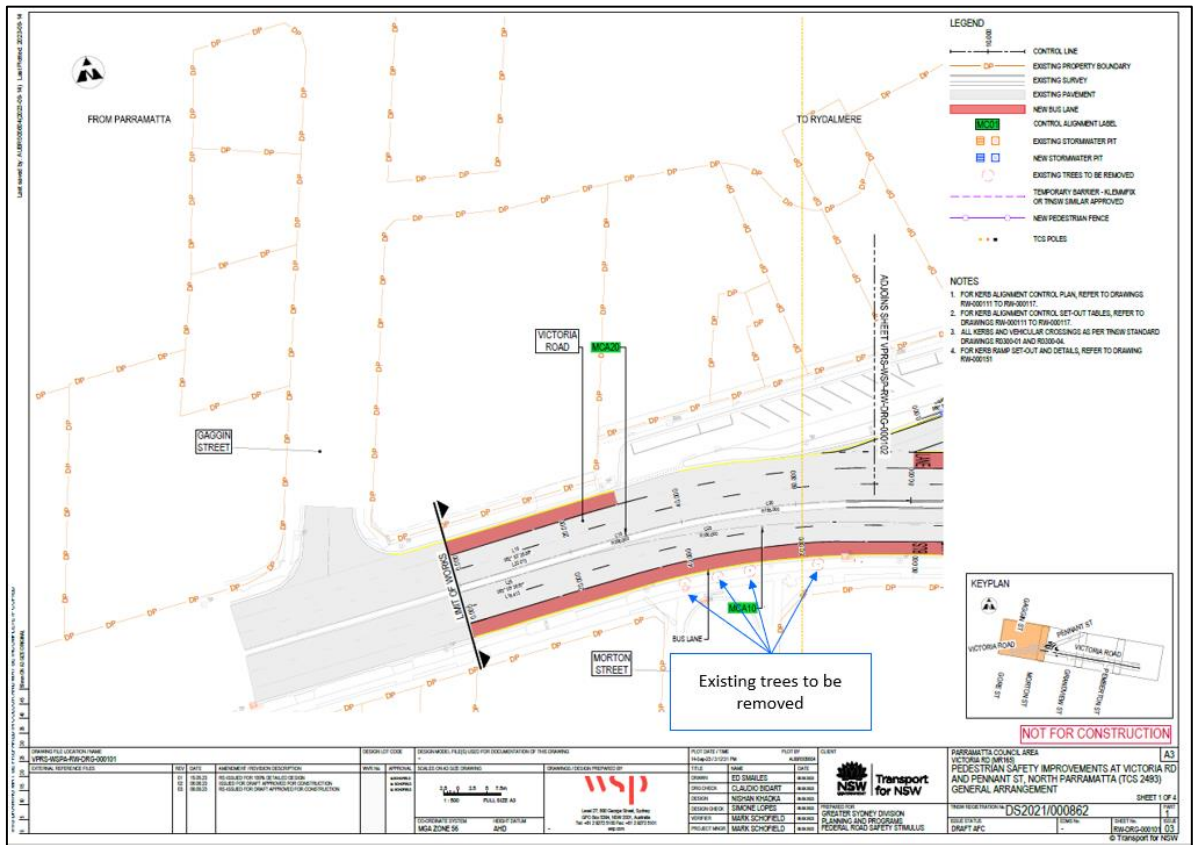


Figure 6-4 Location of the existing trees to be removed.

No additional biodiversity impacts associated with the proposed modification have been identified in comparison with those already characterised in the determined MWREF. The implementation of safeguards outlined in the determined MWREF would help mitigate any potential impacts on biodiversity.

Operation

During operation, there would be no change to impact on biodiversity associated with the proposed modification.

Conclusion on significance of impacts

Addendum review of environmental factors

The modification is not likely to significantly impact threatened species, populations or ecological communities or their habitats, within the meaning of the BC Act or FM Act and therefore a Species Impact Statement is not required.

The modification is not likely to significantly impact threatened species, populations, ecological communities or migratory species, within the meaning of the EPBC Act.

6.2.4 Safeguards and management measures

No additional safeguards have been nominated.

6.3 Traffic and Transport

6.3.1 Methodology

A desktop analysis was carried out to take into account the potential consequences of the proposal on traffic and transportation.

6.3.2 Existing environment

Victoria Road is multilane at the proposal site, while Pennant Street is dual lane westbound and single lane eastbound. The current configuration of the Victoria Road / Pemberton Street intersection allows for through movements across Victoria Road from both the north and south sides of Pemberton Street as well as left and right turns into both sides of Pemberton Street from Victoria Road. Given the nature of Victoria Road as an arterial road with three lanes in each direction, the current configuration promotes unsafe driving behaviours, such as drivers getting impatient and attempting to turn into unsafe gaps in traffic.

6.3.3 Potential impacts

Construction

During construction, impacts associated with the proposed modification would generally be similar to those already characterized in the determined MWREF. It is not expected that the number of heavy and light vehicles movements would increase by the proposed modification. Lane closures on Victoria Road and Pennant Street would be required as they were stated in the determined MWREF, a full closure of Victoria Road would not be necessary. The implementation of safeguards outlined in the determined MWREF would help mitigate these potential impacts.

Operation

During operation, as the proposed modification does not require removing the existing bus lane on approach to Pennant Street, there would be no reduction of the bus speed on the westbound of Victoria Road. As a result, there would be no negative impact on the existing bus operation.

An initial closure of the right turn movements from Victoria Road into Pemberton Street on 8 May 2023 provided an opportunity to observe current traffic impacts surrounding the project area and alternative routes identified. According to the human movement and traffic data assessment, the findings were:

- Victoria Road right turn into Macarthur Street (north) experienced an increase of 888 vehicles per day (+100 vehicles/h peak increase). This indicates that motorists may prefer to turn right after Pennant Street to reach their destination, instead of the James Ruse Drive on ramp alternative
- Minor volume increase on Collett Parade (Westbound)
- There has been an increase of up to 10% in southbound movements along Macarthur Street, before and after the change
- Pemberton Street, along with Thomas Street, are likely being used as an alternate route for users wanting to avoid intersections along Victoria Road and James Ruse Drive to decrease their journey times

- While there is a high proportion of local users, Pemberton Street is used by people not residing in the area, suggesting that people are using Pemberton Street as a connection for travel
- There are people making unsafe movements to cross or turn onto Victoria Road from Pemberton Street North or Pemberton Street South.

The potential impact of the removal of the right turn and through movements in and out of Pemberton Street was expected to impact approximately 120 vehicles/h during weekdays (traffic peak periods) or 1100 daily total right turning vehicles. The potential traffic impacts would be minor, as there are alternative routes such as:

1. James Ruse Drive and Pennant Street (freight suitable) (3 min)
2. Victoria Road and Macarthur Street (North) via Pennant Street (4-8 min)
3. James Ruse Drive & Collett Parade via Pennant Street (3 min)
4. Pemberton Street, Thomas Street, Macarthur Street (4 min)

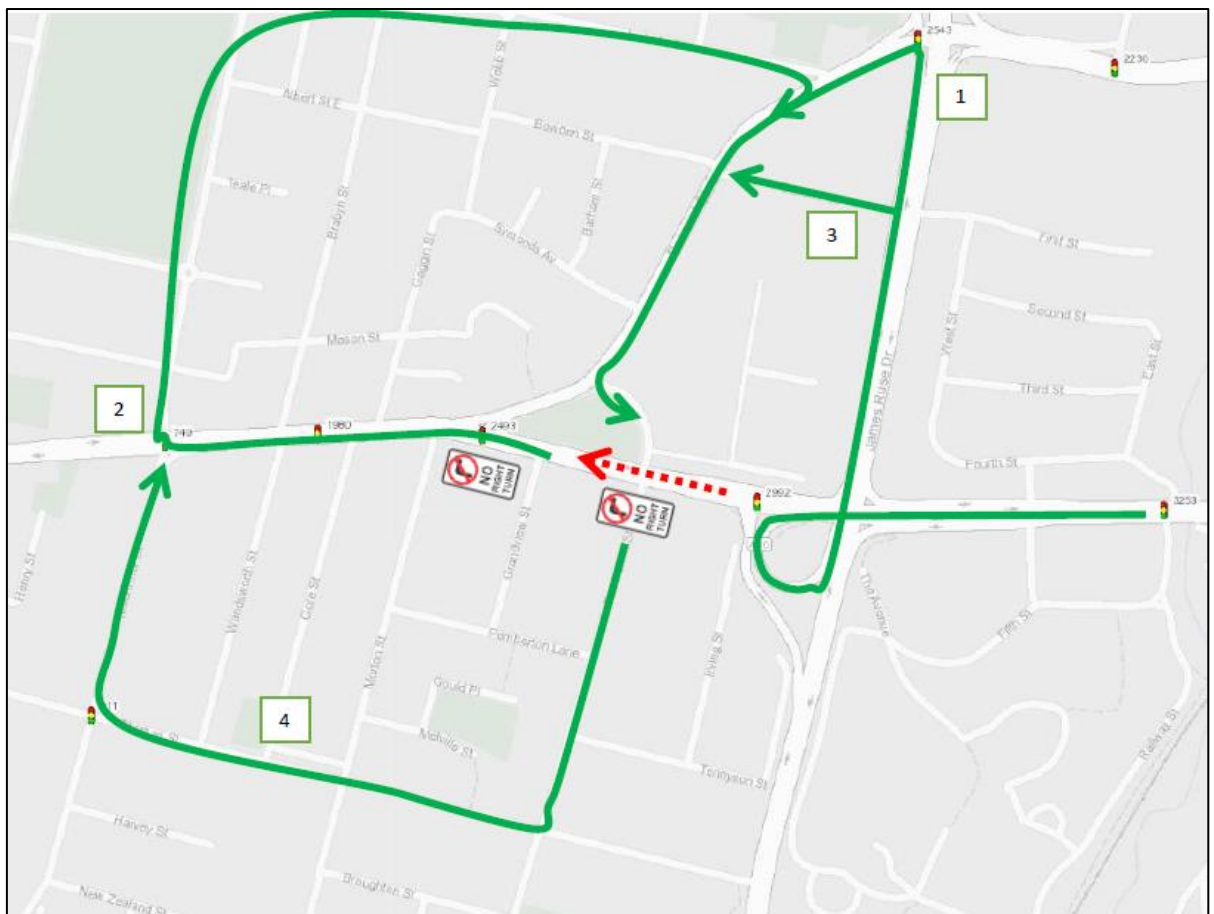


Figure 6-5 Alternative routes identified.

As the proposed modification does not comprise a new right turn bay at the intersection of Victoria Road and Pennant Street (See the proposed traffic arrangement in Figure 6-6), the alternative route turning right from Victoria Road into Pennant Street (North) is no longer available. However, other alternative routes can be used by motorists as described in Figure 6-5.

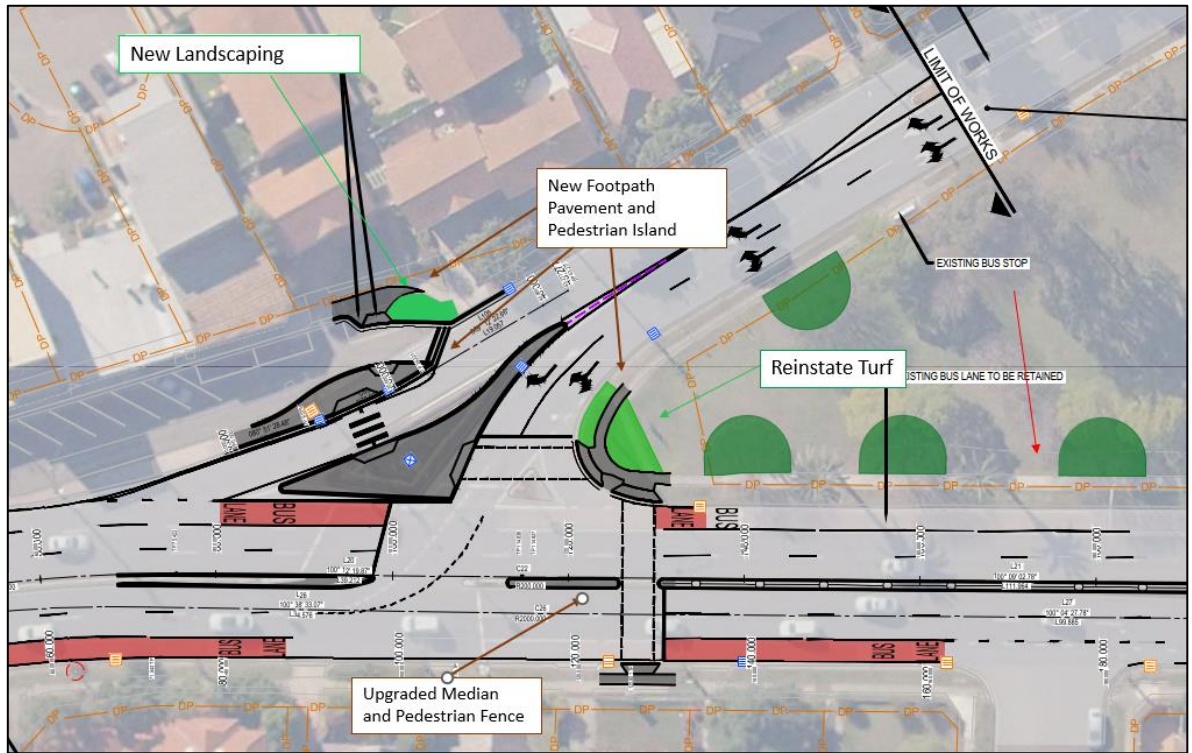


Figure 6-6 Proposed traffic arrangement at the intersection of Victoria Road and Pennant Street

The human movement and traffic data assessment report is provided in Appendix A.

6.3.4 Safeguards and management measures

No additional safeguards have been nominated.

7. Environmental management

7.1 Environmental management plans

A number of safeguards and management measures have been identified to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposed modification. Should the proposed modification proceed, these management measures would be addressed if required and incorporated into the Contractors Environmental Management Plan (CEMP) and applied during the construction and operation of the proposed modification.

7.2 Summary of environmental safeguards and management measures

Environmental safeguards and management measures for the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta are summarised in Table 7-1. Additional safeguards and management measures identified in this addendum MWREF are included in bold and italicised font. The safeguards and management measures will be incorporated into the CEMP and implemented during construction and operation of the proposed modification, should it proceed. These safeguards and management measures will minimise any potential adverse impacts arising from the proposed works on the surrounding environment.

Table 7-1: Summary of safeguards and management measures

No.	Environmental safeguards and management measures
E1	Erosion and sediment control measures are to be implemented and maintained to: <ul style="list-style-type: none"> • Prevent 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.
E2	Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised.
E3	Work areas are to be stabilised progressively during the works. Any material transported onto pavements would be swept and removed at the end of each working shift and prior to rainfall
E4	Potential or actual acid sulphate soils are to be managed in accordance with the Roads and Maritime Services Guidelines for the Management of Acid Sulphate Materials 2005.
W1	Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment etc) entering drain inlets or waterways.
W2	Excess debris from cleaning and washing is removed using hand tools.
W3	Any fuel, oils or other liquids stored on site would be stored in an appropriately sized impervious bunded at least 120% larger than the greatest container and in an area least 50 metres away from water bodies.
W4	Emergency wet and dry spill kits would be kept on site at all times and all staff would be made aware of the location of the spill kit and trained in its use.
W5	All refuelling and storage of fuels, chemicals and liquids are to be within an impervious bunded area within the construction compound, located a minimum of five metres away from: <ul style="list-style-type: none"> • rivers, creeks or any areas of concentrated water flow • flooded areas • slopes above 10%.
W6	No vehicle or vessel wash-down would occur on-site.

N1	Noise impacts are to be minimised in accordance with Transport for NSW Construction Noise Estimator.
N2	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.
N3	Where feasible, works would be undertaken within standard working hours. Night works would be undertaken in accordance with Transport for NSW Construction Noise and Vibration Guideline (for road and maritime works) June 2022.
N4	Noisiest activities such as jackhammering and saw cutting (mechanical impact devices) will be completed before midnight (12:00am).
N5	The selection of machinery used for the proposal would include consideration to minimise noise impacts when operating in close proximity to sensitive receivers and for outside of standard construction hours.
N6	Residents would be notified of the proposed works at least five working days prior to the commencement of work. The notification will include details of the proposed work, location, type of work, days and dates of work and hours involved. A contact phone number would be provided to manage any complaints.
N7	<p><i>This includes implementing the following measures to minimise noise impacts:</i></p> <ul style="list-style-type: none"> • <i>Noisy equipment will be substituted in favour of alternative low noise process (e.g., hand tooling instead of excavator for service investigation)</i> • <i>Plant and equipment will be correctly operated and maintained, with engine access covers closed</i> • <i>Noise curtains will be used for noise intrusive works conducted outside of standard working hours</i> • <i>Use manually adjustable or ambient noise sensitive reversing alarms on plant (i.e., Quakers)</i> • <i>Avoid shouting, slamming doors and use of loud radios</i> • <i>Operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods</i> • <i>Plant will not be allowed to warm up outside working hours</i> • <i>Lighting towers will be directed away from residential dwellings</i> • <i>The induction will identify all OOHW requirements and restrictions</i> • <i>An Out of Hours Work (OOHW) application will be prepared prior to the start of work. The OOHW application will identify any sensitive receivers that would be 25 dB(A) above the Noise Management Level (NML). The OOHW Application will also determine which activities would trigger the 25dB(A) above NML.</i>
A1	Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust.
A2	Works (including the spraying of paint and other materials) are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely.
A3	Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation.
A4	Stockpiles or areas that may generate dust are to be managed to suppress dust emissions in accordance with the Roads and Maritime Services Stockpile Site Management Guideline (EMS-TG-10).

V1	If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Roads and Maritime Services Aboriginal Cultural Heritage Officer and Regional Environment Manager contacted immediately. Steps in the Roads and Maritime Standard Management Procedure: Unexpected Heritage Items must be followed.
V2	Collett park will be declared as a No-Go zone, no personnel, equipment/machinery access will be permitted in to the Collett Park.
V3	The construction staff will be inducted on the Aboriginal Cultural Heritage sensitivity of the area during daily tool box meetings and environmental induction prior to works commencing.
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 Roads and Maritime Services Standard Management Procedure: Unexpected Heritage Items must be followed. Roads and Maritime Services Senior Environment Specialist - Heritage must be contacted immediately.
F1	If unexpected threatened fauna or flora species are discovered, works will be stopped immediately and follow the Roads and Maritime Services Unexpected Threatened Species Find Procedure in the Roads and Maritime Services Biodiversity Guidelines 2011 – Guide 1 (Pre-clearing process).
F2	All construction work will be undertaken in accordance with RMS Biodiversity Guidelines, Protecting and Managing Biodiversity on RMS Projects, 2011.
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.
T2	Where works would affect the free flow of traffic, a ROL would be obtained from the Transport Management Centre and a Traffic Control Plan would be prepared in accordance with the requirements of the Roads and Maritime's Traffic Control at Worksites Manual (2003).
T3	Appropriate signage (such as variable message signs) and supervision would be provided at all times to ensure that all work areas are controlled and that unauthorised personnel (e.g. pedestrians) are excluded from work areas.
T4	Vehicle movement arrangements would be developed to limit impacts on other road users (including pedestrians, vehicles and cyclists) and the environment, with specific regard to other road works in the area, local traffic movement requirements and peak traffic volumes.
T5	Designated work areas within any road reserve would be delineated prior to the work commencing. This area would be the minimum required for safely undertaking the activity.
T6	Construction of temporary pedestrian footpaths to enable movement around the site works will be in place prior to construction works occurring.
C1	Notification is to be given to affected community members at least five days prior to the works taking place. The notification is to include: <ul style="list-style-type: none"> • Details of the proposal • The duration of works and working hours • Any changed traffic or access arrangements • How to lodge a complaint or obtain more information • Contact name and details.
C2	All complaints are to be recorded on the complaints register and attended to promptly.
C3	Existing access for nearby and adjoining properties will be maintained at all times during the works unless otherwise agreed to by the affected property owner.
V1	The work site will be left in a tidy manner at the end of each workday.
V2	Construction plants and equipment will not remain onsite any longer than necessary after work is completed.

V3	Ensure all lights are directed away from residential properties during night works. The use of construction lighting during out of hours works is to be managed in accordance with Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting.
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 Waste Avoidance & Resource Recovery Act 2001).
M2	If coal tar asphalt is identified and is to be removed, it is to be disposed of to landfill in accordance with TfNSW Services Environmental Direction No.21 – Coal Tar Asphalt Handling and Disposal.
M3	There is to be no disposal or re-use of construction waste on to other land.
M4	Waste is not to be burnt on site.
M5	Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.

7.3 Licensing and approvals

All relevant licenses, permits, notifications and approvals needed for the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta and when they need to be obtained are listed in Table 7-2. Additional or changed licenses and approval requirements identified in this addendum MWREF are indicated by underlined and/or struck out font.

Table 7-2: Summary of licensing and approval required

Instrument	Requirement	Timing
Division 5.1 of the EP&A Act	The completion and approval of this addendum MWREF for the proposal. This would demonstrate the consideration of all relevant matters of national environmental significance, including the requirements of the EPBC Act strategic assessment approval with respect to the nationally listed threatened species, endangered ecological communities and migratory species.	Prior to commencement of works that are in addition to what is in the determined MWREF
Roads Act 1993 s138	A road occupancy licence (ROL) would be required prior to the start of works which require lane closures.	Prior to start of the activity.

8. Conclusion

8.1 Justification

The justification for this project remains unchanged from Section 2.2.2 of the determined MWREF with the exception of the new right hand turn bay construction. The proposed modification is needed to accommodate the Victoria Road corridor for future planned works associated with the improvement of the bus lanes (including a continuous bus lane) between James Ruse Drive and Wandsworth Street. As the bus lane on the westbound cannot be removed, the new right turn bay on Victoria Road at the intersection of Pennant Street is no longer feasible.

8.2 Conclusion

This addendum MWREF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

This has included consideration where relevant, of conservation agreements and plans of management under the NPW Act, biodiversity stewardship sites under the BC Act, wilderness areas, areas of outstanding value, impacts on threatened species, populations and ecological communities and their habitats and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Federal EPBC Act.

A number of potential environmental impacts from the proposed modification have been avoided or reduced during the design development and options assessment. The proposed modification as described in the addendum MWREF best meets the project objectives but would still result in some impacts on noise and vibration, biodiversity and traffic and transport. Safeguards and management measures as detailed in this addendum MWREF would ameliorate or minimise these expected impacts. The proposed modification would also accommodate for a future proposed project (bus lane improvement) between James Ruse Drive and Wandsworth Street. On balance the proposed modification is considered justified, and the following conclusions are made.

8.2.1 Significance of impact under NSW legislation

The proposed modification would not result in a change to the findings of the determined MWREF and would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required. The proposed modification is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required.

8.2.2 Significance of impact under Australian legislation

The proposed modification would not likely cause a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of the EPBC Act. A referral to the Australian Government Department of Climate Change, Energy, the Environment and Water is not required.

9. Certification

This addendum minor works review of environmental factors provides a true and fair review of the proposed modification in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposed modification.

Prepared by:



Name: Brandon Johnston
Position: Environment Lead
Company name: Fulton Hogan
Date: 07/12/2023

Minor Works REF reviewed by:



Name: Kelsey Dwyer
Position: Senior Environment and Sustainability Officer
Asset and Operations
Environment and Sustainability Branch
Company name: Transport for NSW
Date: 07/12/2023

9.1 Environment staff review

The addendum minor works review of environmental factors has been reviewed and considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposal this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in the addendum MWREF and associated information. This assessment is considered to be in accordance with the factors required to be considered under section 171 of the Environmental Planning and Assessment Regulation 2021.

The proposal described in the addendum MWREF will have some environmental impacts which can be ameliorated satisfactorily. Having regard to the safeguard and management measures proposed, this assessment has considered that these impacts are unlikely to be significant and therefore an approval for the proposal does not need to be sought under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on areas of outstanding value and on threatened species, ecological communities or their habitats for both terrestrial and aquatic species as defined by the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*.

The proposal described in the addendum MWREF will not affect areas of outstanding value. The activity described in the addendum MWREF will not significantly affect threatened species ecological communities or their habitats. Therefore, a species impact statement is not required.

The assessment has also addressed the potential impacts on the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there will be no significant impacts. Therefore, there is no need for a referral to be made to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999*.

The addendum MWREF is considered to meet all relevant requirements.

9.2 Environment staff recommendation

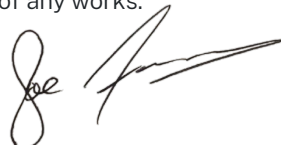
It is recommended that the modifications to the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta as described in this addendum MWREF proceed subject to the implementation of all safeguards identified in the Minor Works REF and compliance with all other relevant statutory approvals, licences, permits and authorisations.

The addendum MWREF has examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment or threatened species, ecological communities or their habitats.

The addendum MWREF has concluded that there will be no significant impacts on matters of national environmental significance or any impacts on the environment of Commonwealth land.

The addendum MWREF determination will remain current for five years until April 2028 at which time it shall lapse if works have not been physically commenced. The pre-construction checklist must be completed prior to the commencement of any works.

Recommended by:



Name: Joseph Fanous
Position: Senior Environment and Sustainability Manager
Asset and Operations
Environment and Sustainability Branch
Company: Transport for NSW
Date: 7-12-2023

Noted by:



Name: Sam Hack
Position: Project Manager
Program Delivery
Company: Transport for NSW
Date: 8/12/2023

9.3 Determination

In accordance with the above recommendation, I certify that I have reviewed and endorsed the contents of this addendum MWREF, and to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under Section 170 of the EP&A Regulation, and the information is neither false nor misleading.

I determine that Transport for NSW may:

- proceed with the activity



Name: Kym Warner
Position: Director, Program Delivery Network Solutions
Planning and Programs Greater Sydney
Company: Transport for NSW
Date: 08/12/2023

10. EP&A Regulation publication requirement

Respondent	Yes/No
Does this addendum MWREF need to be published under section 171(4) of the EP&A Regulation?	Yes

11. Terms and acronyms used in this addendum MWREF

Term /acronym	Description
AusLink	Mechanism to facilitate cooperative transport planning and funding by Commonwealth and state and territory jurisdictions
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
CEMP	Construction / Contractor’s environmental management plan
EIA	Environmental impact assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i> . Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i> . Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act
LoS	Level of Service. A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers
NES	Matters of national environmental significance under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
NPW Act	National Parks and Wildlife Act 1974 (NSW)
Roads and Maritime	NSW Roads and Maritime was dissolved by the Transport Administration Amendment Bill in August 2019, all function are now managed by Transport for NSW
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act
SEPP (Biodiversity and Conservation)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SEPP (Planning Systems)	State Environmental Planning Policy (Planning Systems) 2021
SEPP (Precincts – Central River City)	State Environmental Planning Policy (Precincts – Central River City) 2021
SEPP (Precincts – Eastern Harbour City)	State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021
SEPP (Precincts – Regional)	State Environmental Planning Policy (Precincts – Regional) 2021

Addendum review of environmental factors

SEPP (Precincts – Western Parkland City)	State Environmental Planning Policy (Precincts – Western Parkland City) 2021
SEPP (Resilience and Hazards)	State Environmental Planning Policy (Resilience and Hazards) 2021
SEPP (Transport and Infrastructure)	State Environmental Planning Policy (Transport and Infrastructure) 2021
TSC Act	<i>Threatened Species Conservation Act 1995</i> (NSW)
QA Specifications	Specifications developed by Roads and Maritime Services for use with road work and bridge work contracts let by Transport for NSW

Appendix A Human movement and traffic data assessment



VICTORIA ROAD / PEMBERTON STREET - ORIGIN DESTINATION STUDY

Human Movement and Traffic Data
Assessment

Prepared for Transport for NSW
June 2023

COVID-19 AND THE POTENTIAL IMPACT ON DATA INFORMATION

The data and information that informs and supports our opinions, estimates, surveys, forecasts, projections, conclusion, judgments, assumptions and recommendations contained in this report (Report Content) are predominantly generated over long periods, and is reflective of the circumstances applying in the past. Significant economic, health and other local and world events can, however, take a period of time for the market to absorb and to be reflected in such data and information. In many instances a change in market thinking and actual market conditions as at the date of this report may not be reflected in the data and information used to support the Report Content.

The recent international outbreak of the Novel Coronavirus (COVID-19), which the World Health Organisation declared a global health emergency in January 2020 and pandemic on 11 March 2020, has and continues to cause considerable business uncertainty which in turn materially impacts market conditions and the Australian and world economies more broadly.

The uncertainty has and is continuing to impact the Australian real estate market and business operations. The full extent of the impact on the real estate market and more broadly on the Australian economy and how long that impact will last is not known and it is not possible to accurately and definitively predict. Some business sectors, such as the retail, hotel and tourism sectors, have reported material impacts on trading performance. For example, Shopping Centre operators are reporting material reductions in foot traffic numbers, particularly in centres that ordinarily experience a high proportion of international visitors.

The data and information that informs and supports the Report Content is current as at the date of this report and (unless otherwise specifically stated in the Report) does not necessarily reflect the full impact of the COVID-19 Outbreak on the Australian economy,

the asset(s) and any associated business operations to which the report relates. It is not possible to ascertain with certainty at this time how the market and the Australian economy more broadly will respond to this unprecedented event and the various programs and initiatives governments have adopted in attempting to address its impact. It is possible that the market conditions applying to the asset(s) and any associated business operations to which the report relates and the business sector to which they belong has been, and may be further, materially impacted by the COVID-19 Outbreak within a short space of time and that it will have a longer lasting impact than we have assumed. Clearly, the COVID-19 Outbreak is an important risk factor you must carefully consider when relying on the report and the Report Content.

Where we have sought to address the impact of the COVID-19 Outbreak in the Report, we have had to make estimates, assumptions, conclusions and judgements that (unless otherwise specifically stated in the Report) are not directly supported by available and reliable data and information. Any Report Content addressing the impact of the COVID-19 Outbreak on the asset(s) and any associated business operations to which the report relates or the Australian economy more broadly is (unless otherwise specifically stated in the Report) unsupported by specific and reliable data and information and must not be relied on.

To the maximum extent permitted by law, Urbis (its officers, employees and agents) expressly disclaim all liability and responsibility, whether direct or indirect, to any person (including the Instructing Party) in respect of any loss suffered or incurred as a result of the COVID-19 Outbreak materially impacting the Report Content, but only to the extent that such impact is not reflected in the data and information used to support the Report Content.

This report is dated **June 2023** and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (Urbis) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of **Transport for NSW** (Instructing Party) for the purpose of a **Human Movement Data Study** (Purpose) and not for any other purpose or use. Urbis expressly disclaims any liability to the Instructing Party who relies or purports to rely on this report for any purpose other than the Purpose and to any party other than the Instructing Party who relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or made in relation to or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

Urbis has made all reasonable inquiries that it believes is necessary in preparing this report but it cannot be certain that all information material to the preparation of this report has been provided to it as there may be information that is not publicly available at the time of its inquiry.

In preparing this report, Urbis may rely on or refer to documents in a language other than English which Urbis will procure the translation of into English. Urbis is not responsible for the accuracy or completeness of such translations and to the extent that the inaccurate or incomplete translation of any document results in any statement or opinion made in this report being inaccurate or incomplete, Urbis expressly disclaims any liability for that inaccuracy or incompleteness.

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01

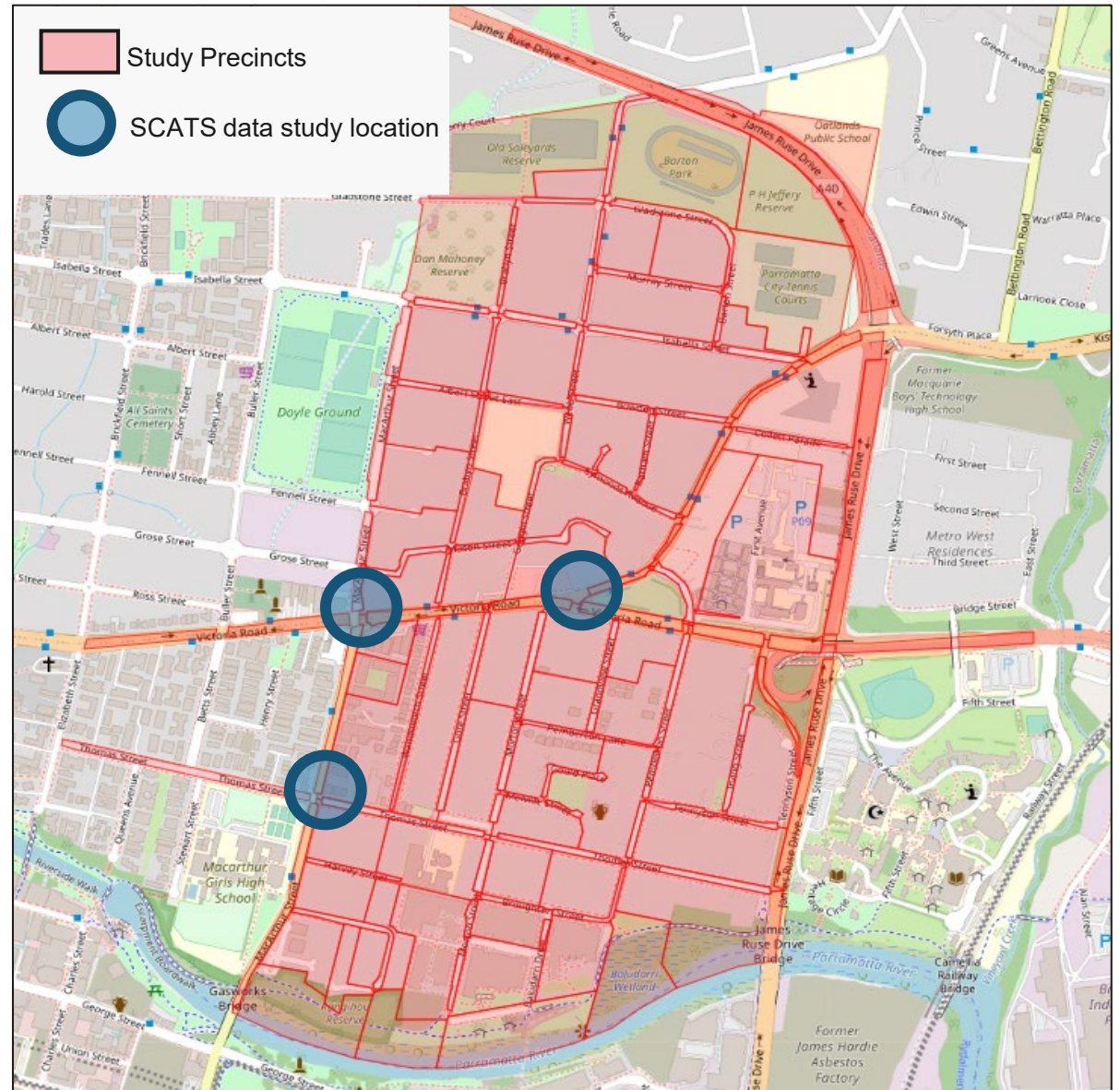
BACKGROUND & METHODOLOGY



INTRODUCTION

Transport for NSW (TfNSW) is planning for a median closure on Victoria Road at its intersection with Pemberton Street in Parramatta. As a part of this proposal, TfNSW wishes to understand the origins and destinations of the vehicles currently passing through Pemberton Street North, Pemberton Street South and the Victoria Road intersection. Ultimately, this study seeks to identify the changes to the travel route choices of the drivers turning into and out of Pemberton Street at its intersection with Victoria Road.

Figure 1: Study Area Map



BACKGROUND CONTEXT

The current configuration of the Victoria Road / Pemberton Street intersection allows for through movements across Victoria Road from both the north and south sides of Pemberton Street as well as left and right turns into both sides of Pemberton Street from Victoria Road.

Figure 2 shows the current configuration of the Victoria Road / Pemberton Street intersection from aerial view.

Given the nature of Victoria Road as an arterial road with three lanes in each direction, the current configuration promotes unsafe driving behaviours, such as drivers getting impatient and attempting to turn into unsafe gaps in traffic.

TfNSW's proposal to close off the right turn from Victoria Road and add a central median will improve the safety of this intersection. However, this may change driver behaviour across the broader network, resulting in impacts at other intersections.

Figure 2: Victoria Road / Pemberton Street Intersection



02

TRAFFIC & HUMAN MOVEMENT DATA ANALYSIS



SCATS TRAFFIC DATA

SCATS data (recorded at hourly increments for the month of February 2023), TCS plans and phase data (for each day in the months of November 2022 and February 2023) were obtained from TfNSW for the following intersections

1. Thomas Street / Macarthur Street
2. Victoria Road / Macarthur Street
3. Victoria Road / Pennant Street

The following analysis was undertaken for the above intersections

1. The average number of vehicles turning into and out of Thomas Street at the Thomas Street / Macarthur Street intersection.
2. The average number of vehicles at each movement for the Victoria Road / Macarthur Street and Victoria Road / Pennant Street intersections.

The following is to be noted in relation to the analysis

- The averages for weekdays, Saturdays and Sundays were considered separately.
- Where lanes include shared movements (e.g., shared left and through lane), the volumes were equally allocated to each movement.
- Some movements could not be captured due to the position of the detector relative to the intersection configuration.

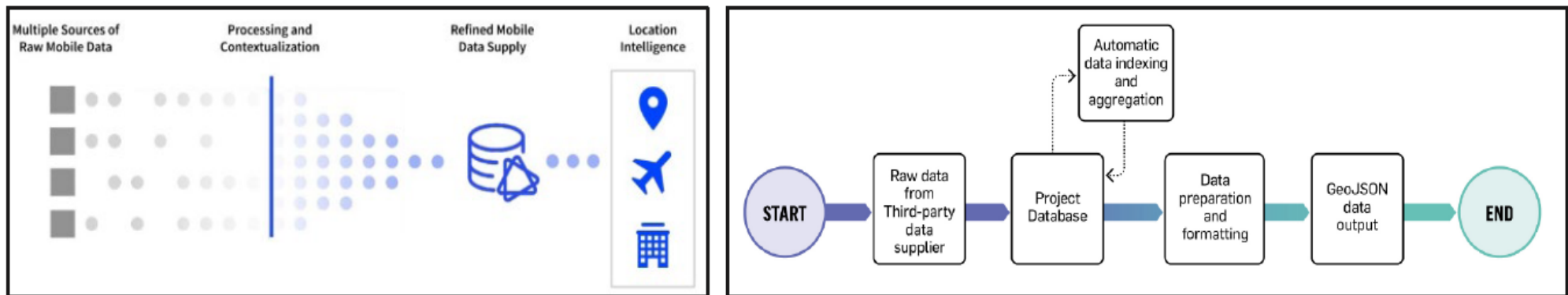
Figure 3: Intersections for which SCATS data were obtained for analysis



HUMAN MOVEMENT DATA (HMD)

- HMD is acquired from the locations of mobile devices and provides empirical evidence of people's recent movement within any environment.
- This rich data source provides visibility of use within 48 hours of activity while maintaining privacy in accordance with NSW and Australian Government privacy acts.
- The figure below shows the process of obtaining location information through raw mobile phone GPS data sources and the steps involved in processing this data.

Figure 4: Process of obtaining and processing location intelligence through raw mobile phone GPS data sources



- The HMD used was collected for people passing through the study area.
- Using this data, we have evaluated
 - Travel patterns of motorists immediately before and after using Pemberton Street North and South of Victoria Road (referred to as Pemberton Street North and Pemberton Street South).
 - Where people were 15, 30 and 60 minutes before and after passing through Pemberton Street North and Pemberton Street South.
 - Where people who passed through Pemberton Street North and Pemberton Street South live and work (at a suburb level).

HMD METHODOLOGY

Methodology

The Human Movement Data has been sourced from the third-party provider Near. Near's mobile location data is aggregated from a variety of high-quality sources, including data from proprietary apps and locational data derived from mobile advertising. Across Australia, the dataset has approximately 6.1 million active unique devices per month. Consequently, the dataset is seen as accurate for this report.

These apps are predominantly English-speaking apps and will have varying levels of penetration across different user groups. Some user groups, for example, Chinese residents, could potentially have lower penetration rates. There are limitations with specific countries when assessing international visitors, for example, penetration across China is limited due to strict privacy laws.

The mobile phone data assessment includes the following constraints. Data has been analysed over the following periods

- Period 1 (November 2022 and February 2023) – pre closure
- Period 2 (*Date to be determined*) – post closure
- The resident and worker locations of each mobile phone are derived from the device's Common Evening Location (CEL) and Common Daytime Location (CDL), respectively.
- The CEL for a device is estimated by determining where a device most frequently appears during the “non-work” hours (evening through morning and weekends). The overnight hours are defined as after 6 pm and before 8 am.
- The CDL for a device is estimated by determining where a device most frequently appears during the “work hours (daytime on weekdays. The hours are defined as after 8 am and before 6 pm from Monday through Friday.

Assumptions

- The directional patterns of travel from the HMD were identified by observing the ‘intensity’ of the heat in maps and knowledge of the existing traffic conditions.

02

TRAFFIC & HUMAN MOVEMENT DATA ANALYSIS



VEHICLE VOLUMES AT THOMAS STREET / MACARTHUR STREET – WEEKDAYS

Key Findings

Movements of vehicles into and out of Thomas Street were investigated to review the behaviours of drivers using this street.

Figure 5 suggests a high portion of vehicles turning left into Thomas Street from the northern and southern approaches to the intersection. These are likely residents accessing residential areas or accessing the Parramatta CBD from the south.

Movements out of Thomas Street are significantly lower than the movements into Thomas Street, suggesting people already following the Thomas Street route to access Victoria Road or Parramatta do not deviate from that route.

Figure 5: Traffic Into Thomas Street – Weekdays

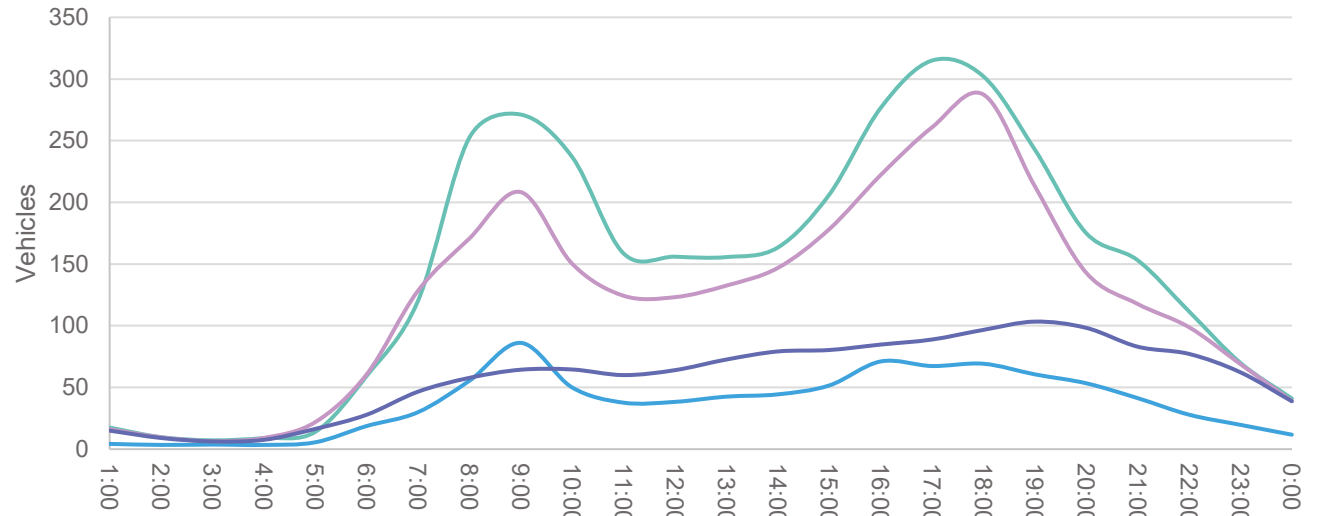
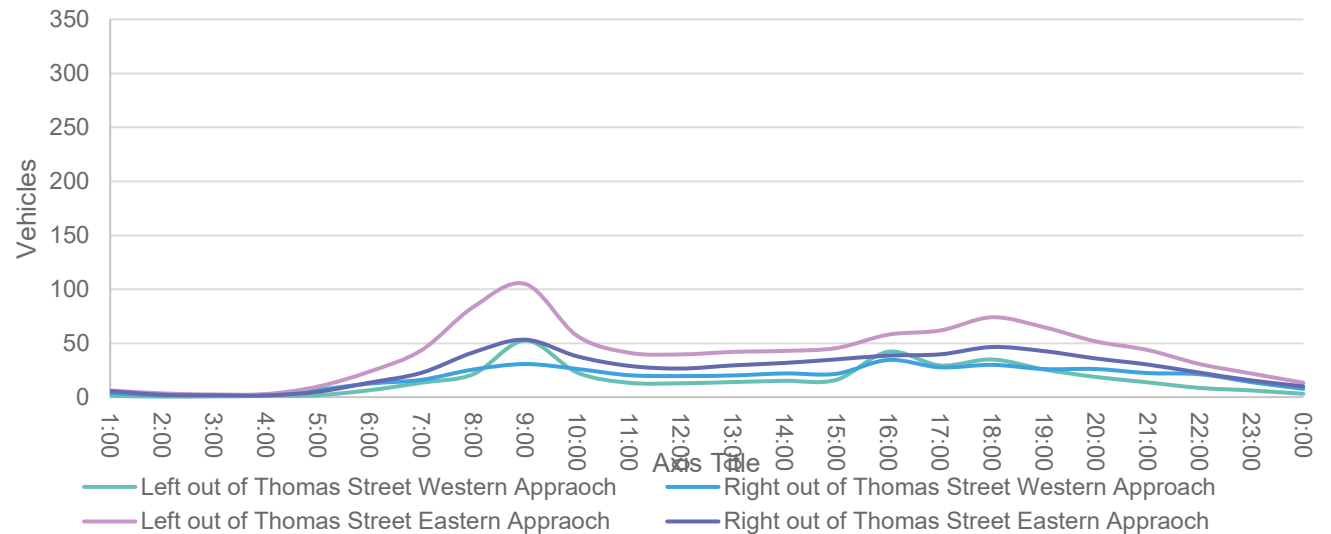


Figure 6: Traffic Out of Thomas Street – Weekdays



VEHICLE VOLUMES AT THOMAS STREET / MACARTHUR STREET – WEEKENDS

Key Findings

On weekends, the difference between the movements into Thomas Street is less pronounced, reflective of weekend travel behaviour and trips not being as consistent as weekday travel behaviour.

Movements out of Thomas Street are very similar to those on the weekdays - suggesting that once vehicles are travelling along Thomas Street, they tend to follow that route.

Figure 7: Traffic Into Thomas Street – Weekends

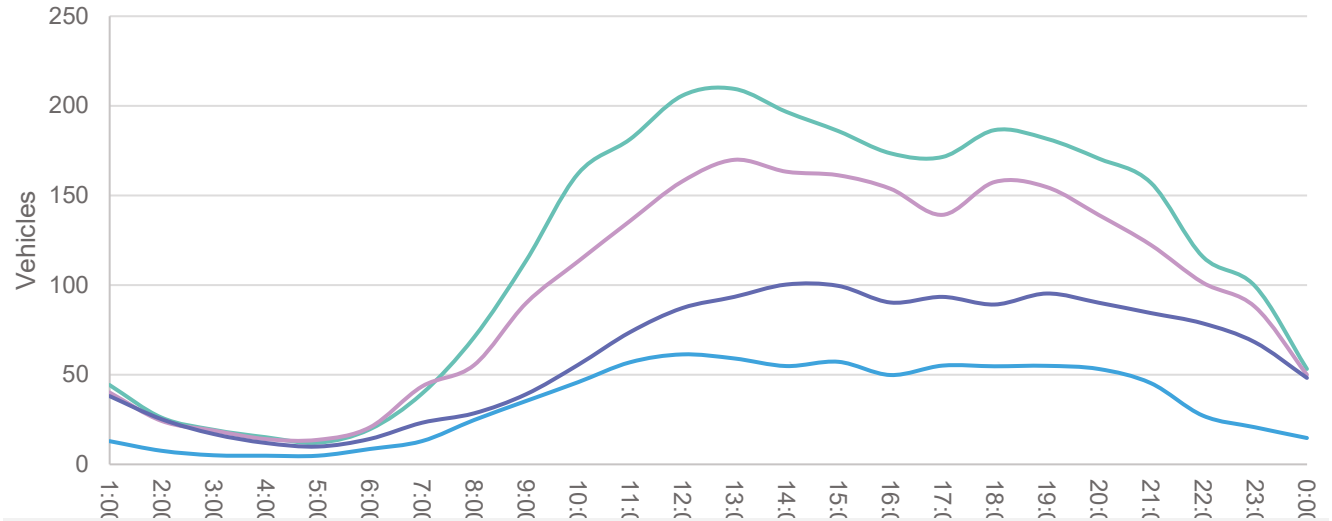
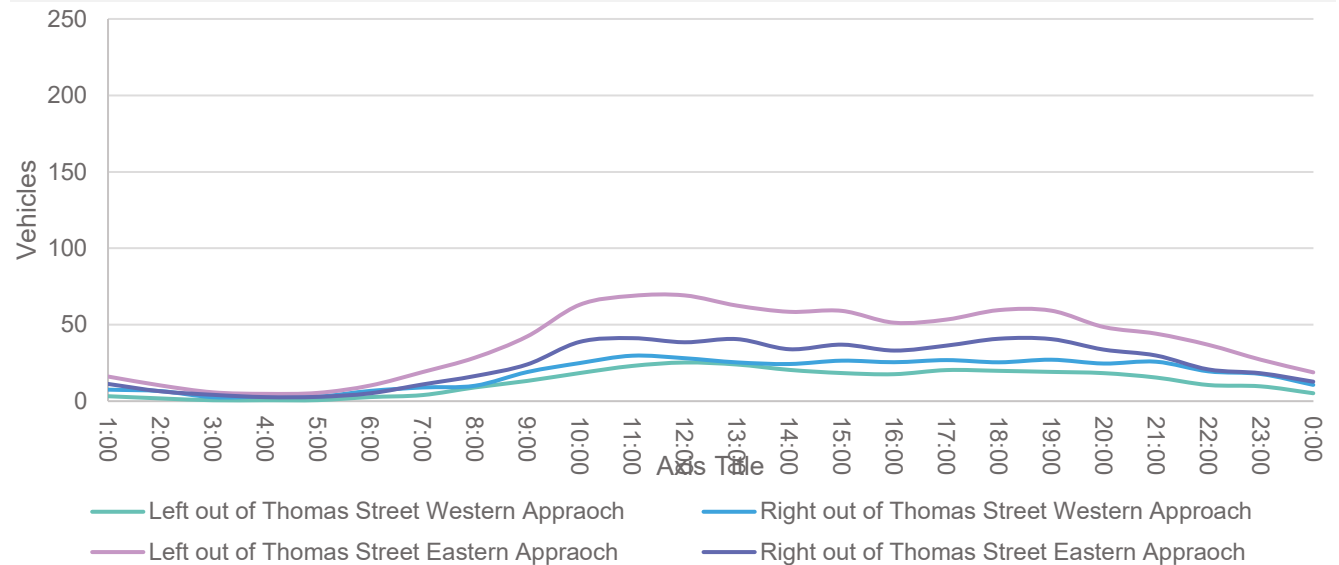


Figure 8: Out of Thomas Street – Weekends



VEHICLE VOLUMES AT VICTORIA ROAD / MACARTHUR STREET

Key Findings

At the Victoria Road / Macarthur Street intersection on a weekday, the movements from the southern approach to the intersection account for the highest turning movements at this intersection. This suggests that people are travelling up Macarthur Street to access Victoria Road.

Interestingly, turning left from the westbound approach account for the lowest number of vehicles using the intersection across a weekday. This likely suggests that people travelling to Parramatta to get to work are not using Macarthur Street to rat run into the Parramatta CBD.

On weekends, the observed patterns of vehicle movements at the Victoria Road / Macarthur Street intersection were very similar to that of weekdays, albeit with lesser volumes and smaller differences between the through movements and turning movements. This is reflective of more unique travel patterns and trip choices on weekends.

Figure 9: All Movements at Victoria Road / Macarthur Street Intersection – Weekdays

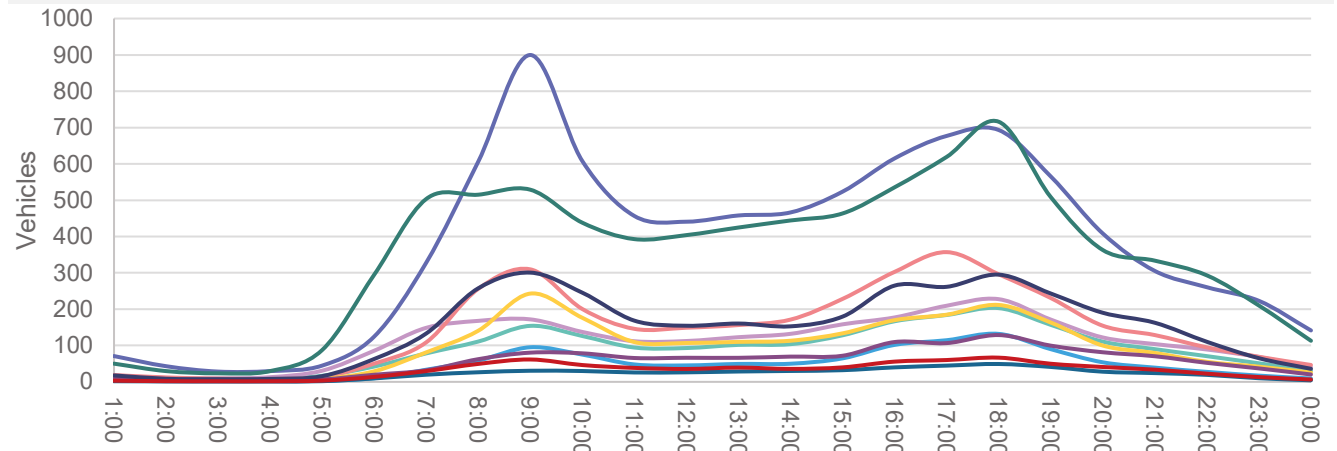
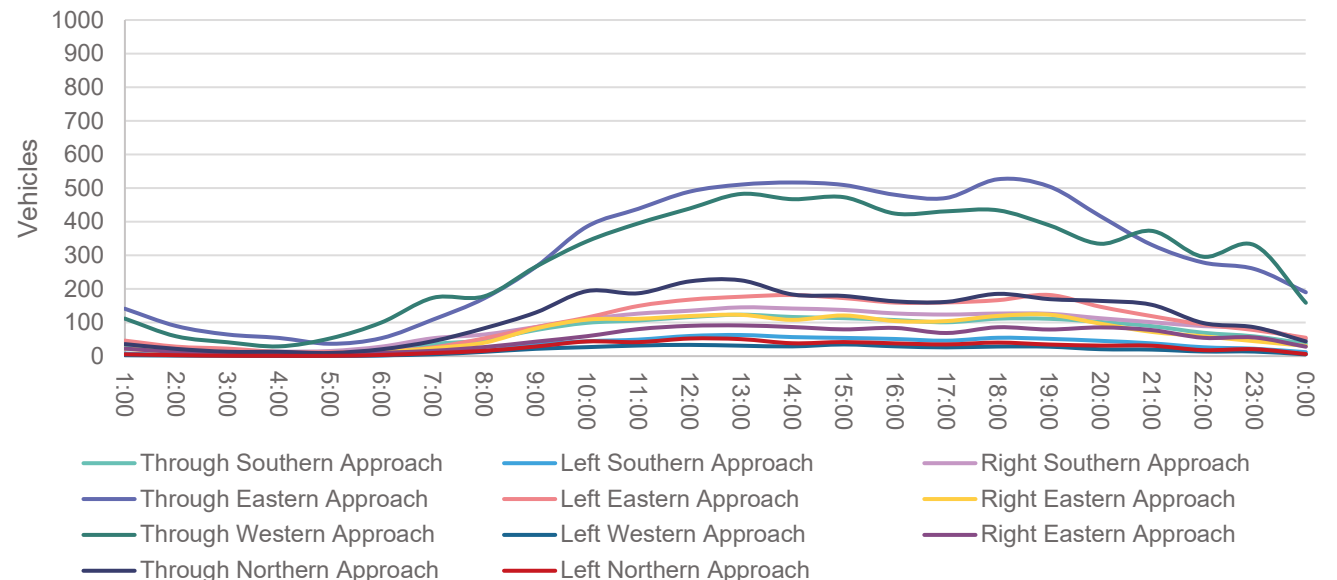


Figure 10: All Movements at Victoria Road / Macarthur Street Intersection – Weekend



- Through Southern Approach
- Left Southern Approach
- Right Southern Approach
- Through Eastern Approach
- Left Eastern Approach
- Right Eastern Approach
- Through Western Approach
- Left Western Approach
- Right Western Approach
- Through Northern Approach
- Left Northern Approach
- Right Northern Approach

VEHICLE VOLUMES AT VICTORIA ROAD / PENNANT STREET

Key Findings

Only three movements at the Victoria Road / Pennant Street intersection were analysed due to the position of the SCATS detectors relative to the movements. The available data suggests that many people turn right from the northern approach relative to turning movements at other intersections analysed. This is likely due to traffic coming from James Ruse Drive or Kissing Point Road accessing Victoria Road.

Unlike the other weekend movements at the other analysed intersections, the right turn from the northern approach has a greater difference compared to the Victoria Road through movements compared to the weekday. This could suggest that people are less likely to travel westbound on Pennant Street towards Parramatta.

Figure 11: All Movements at Victoria Road / Pennant Street Intersection – Weekdays

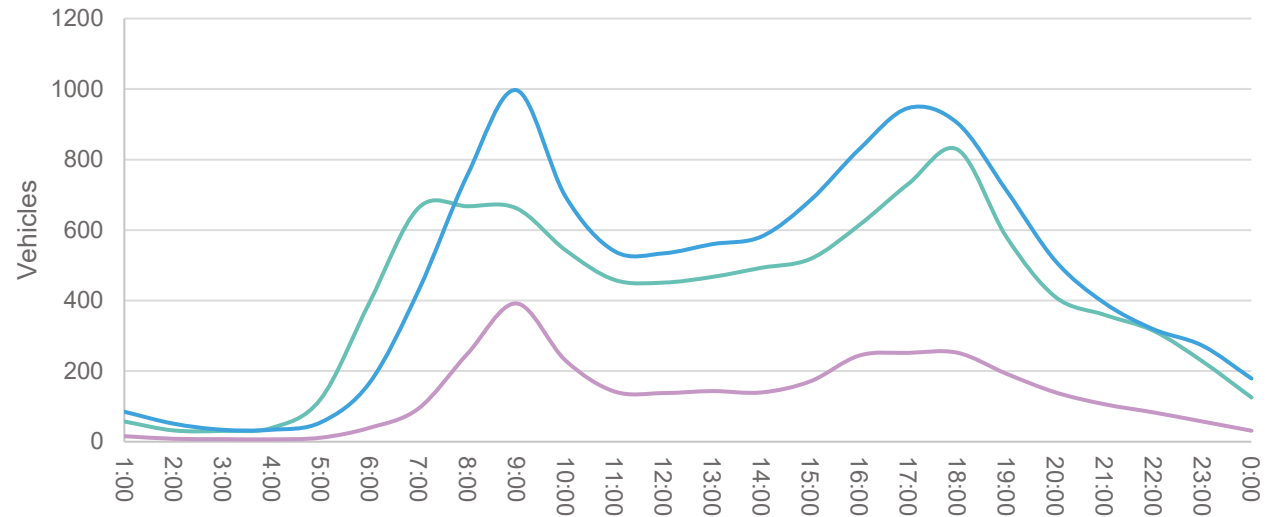
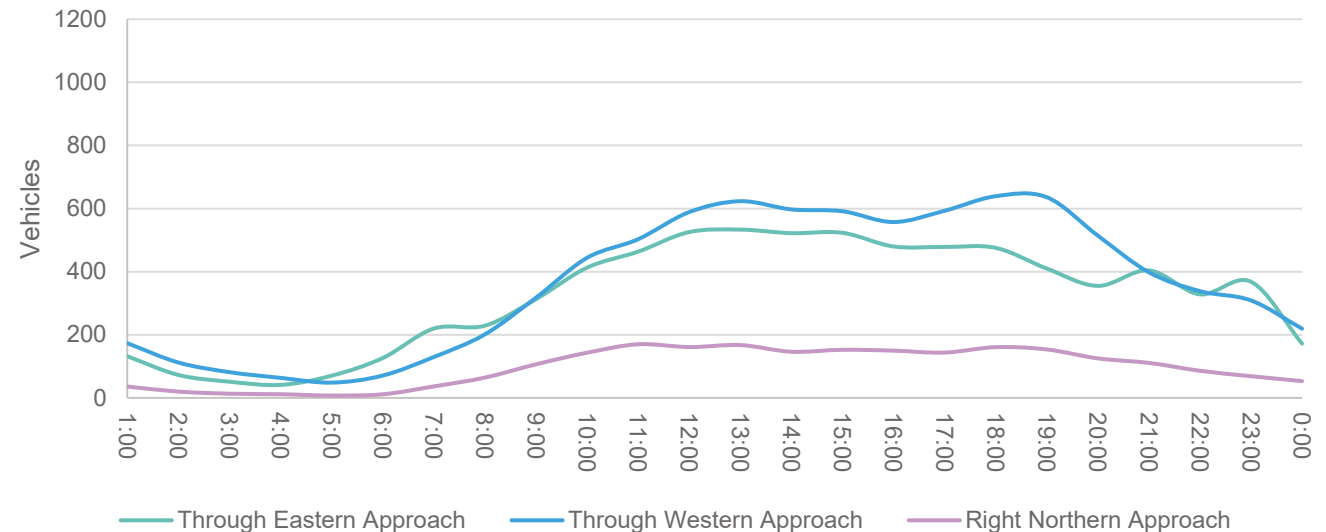


Figure 12: All Movements at Victoria Road / Pennant Street Intersection – Weekend



LOCATIONS IMMEDIATELY BEFORE AND AFTER USING PEMBERTON STREET SOUTH – SOUTHERN OR VICTORIA ROAD DESTINATION

Key Findings

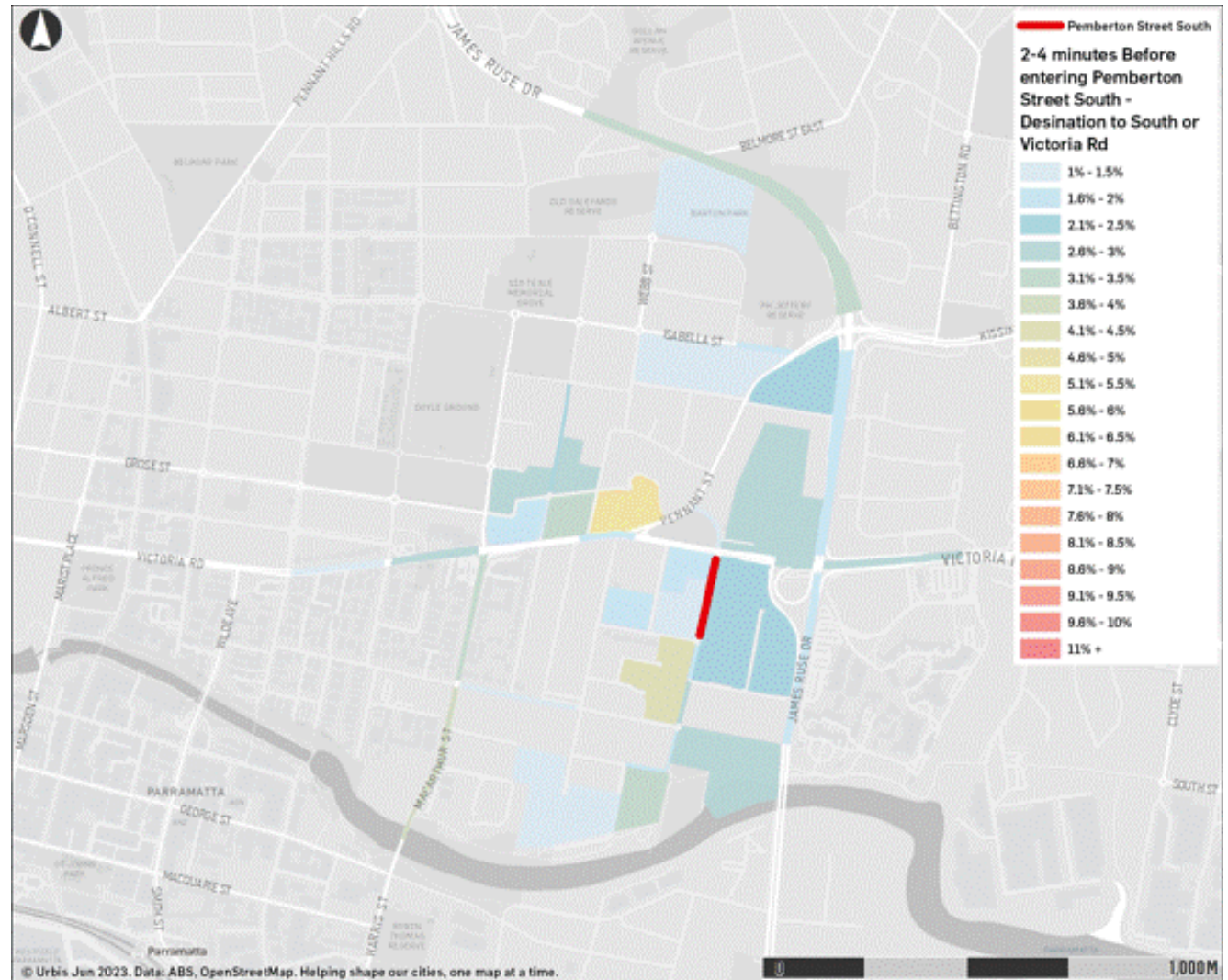
Figure 13 highlights the activity in precincts immediately before (0-2 minutes and 2-4 minutes before) and immediately after (0-2 after and 2-4 minutes after) entering Pemberton Street South when the final appearance of a device was south of Victoria Road (note Victoria Road is considered in both the north and south destination analysis).

The findings suggests that devices were seen on Victoria Road and James Ruse Drive before using Pemberton Street South. This suggests that many of these trips may be arriving from destinations that are not local, such as employment-based trips.

After these devices enter Pemberton Street South, they are seen using Thomas Street and Macarthur Street, suggesting the use of Thomas Street as a rat run. There is also observed activity within the residential Mesh Blocks, suggesting that local residents use this route, potentially returning home.

People using Pemberton Street South travelling southbound are arriving from Victoria Road and James Ruse Drive and subsequently use Thomas Street and Macarthur Street.

Figure 13: Pemberton Street South - Movements Before and After Destination South of Victoria Road



Source: Near; Urbis

20/06/2023

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LOCATIONS IMMEDIATELY BEFORE AND AFTER USING PEMBERTON STREET SOUTH – NORTHERN OR VICTORIA ROAD DESTINATION

Key Findings

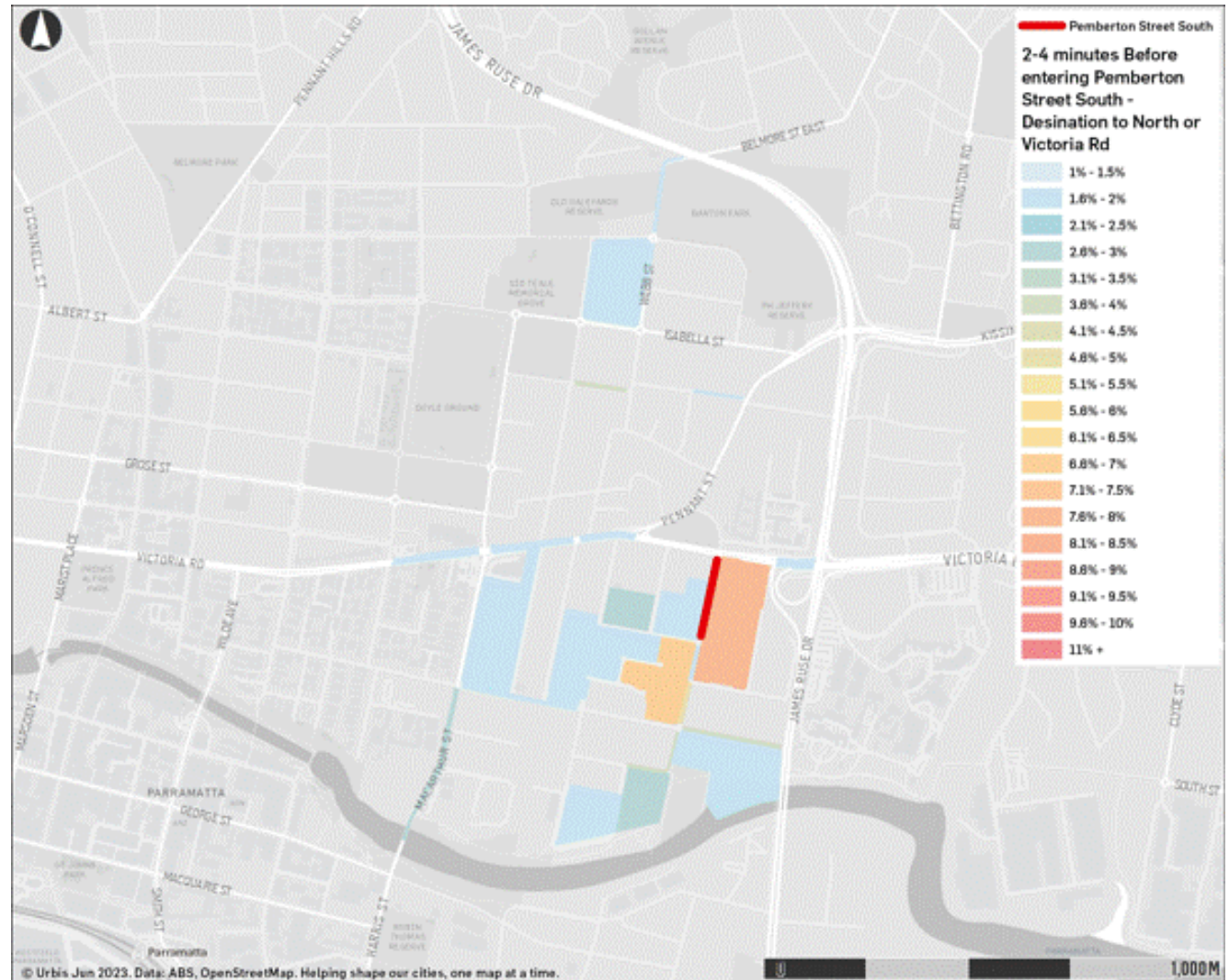
Figure 14 highlights the activity in precincts immediately before (0-2 minutes and 2-4 minute before) and immediately after (0-2 after and 2-4 minutes after) entering Pemberton Street South when the final appearance of a device in the precinct was north of Victoria Road (note Victoria Road is considered in both the north and south destination analysis).

The findings suggests that devices are appearing along Thomas Street and Macarthur Street before using Pemberton Street South, suggesting the use of the rat run. There is also activity in the residential Mesh Blocks, particularly fronting Pemberton Street, suggesting some local trips.

After devices leave Pemberton Street South, devices are observed on Victoria Road, with some devices seen on James Rude Drive and Pennant Street. This suggests that few people are crossing Victoria Road from Pemberton Street.

Devices using Pemberton Street South are using the rat run to access Victoria Road.

Figure 14: Pemberton Street South - Movements Before and After Destination North of Victoria Road



Source: Near; Urbis

20/06/2023

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LOCATIONS IMMEDIATELY BEFORE AND AFTER USING PEMBERTON STREET NORTH – SOUTHERN OR VICTORIA ROAD DESTINATION

Key Findings

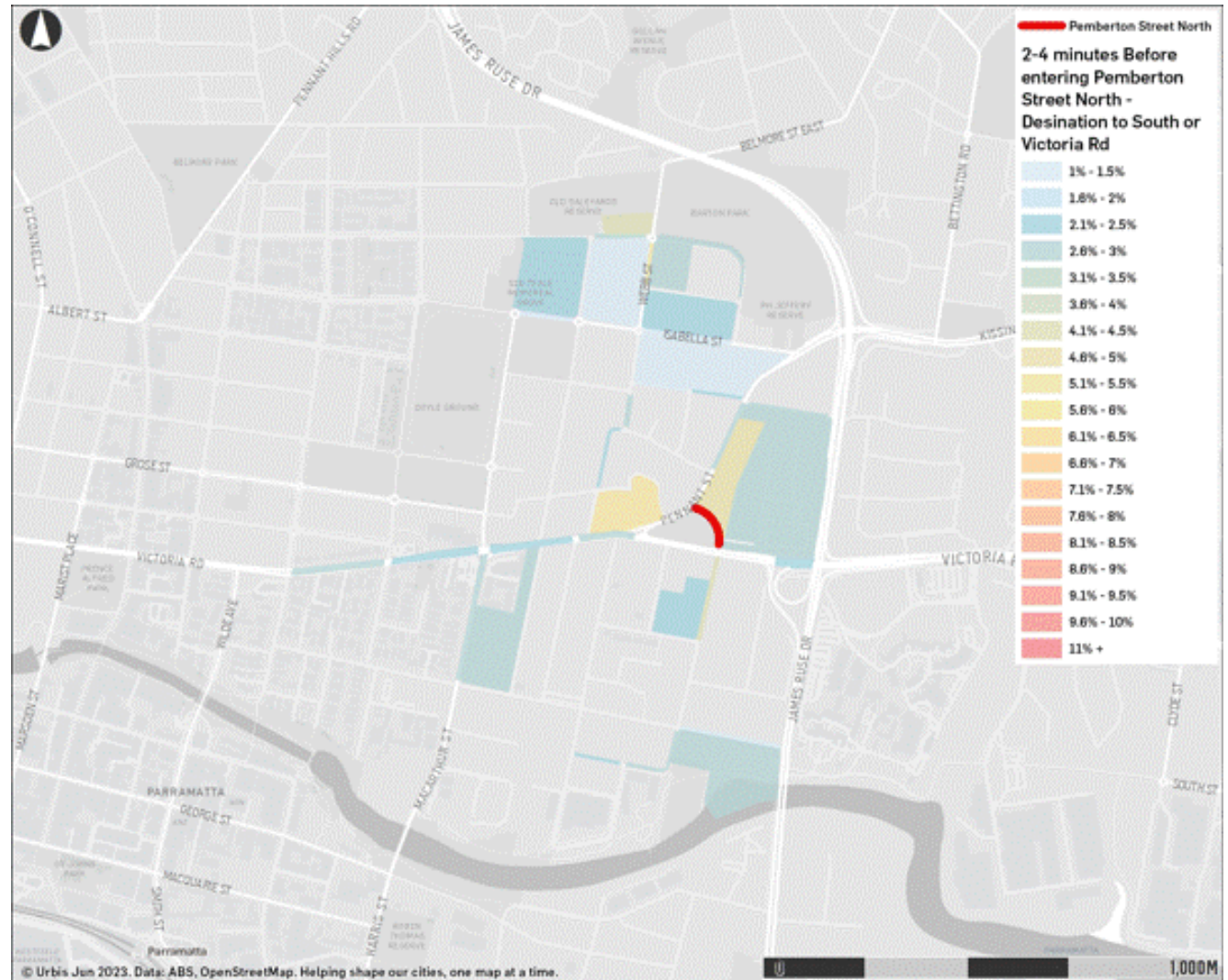
Figure 15 highlights the activity in precincts immediately before (0-2 minutes and 2-4 minutes before) and immediately after (0-2 after and 2-4 minutes after) entering Pemberton Street North when the final appearance of a device in the precinct was south of Victoria Road (note Victoria Road is considered in both the north and south destination analysis).

The data suggests that devices using Pemberton Street North to travel south or along Victoria Road are predominantly coming from residential areas surrounding Pemberton Street North.

After passing through Pemberton Street North, devices are predominantly observed on a segment of Victoria Road or Macarthur Street. This suggests that not many devices are crossing Victoria Road from Pemberton Street North to Pemberton Street South to travel south.

Devices using Pemberton Street North to travel south or to Victoria Road are travelling from residential areas to the north of Victoria Road.

Figure 15: Pemberton Street North - Movements Before and After Destination South of Victoria Road



Source: Near; Urbis

20/06/2023

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LOCATIONS IMMEDIATELY BEFORE AND AFTER USING PEMBERTON STREET NORTH – NORTHERN OR VICTORIA ROAD DESTINATION

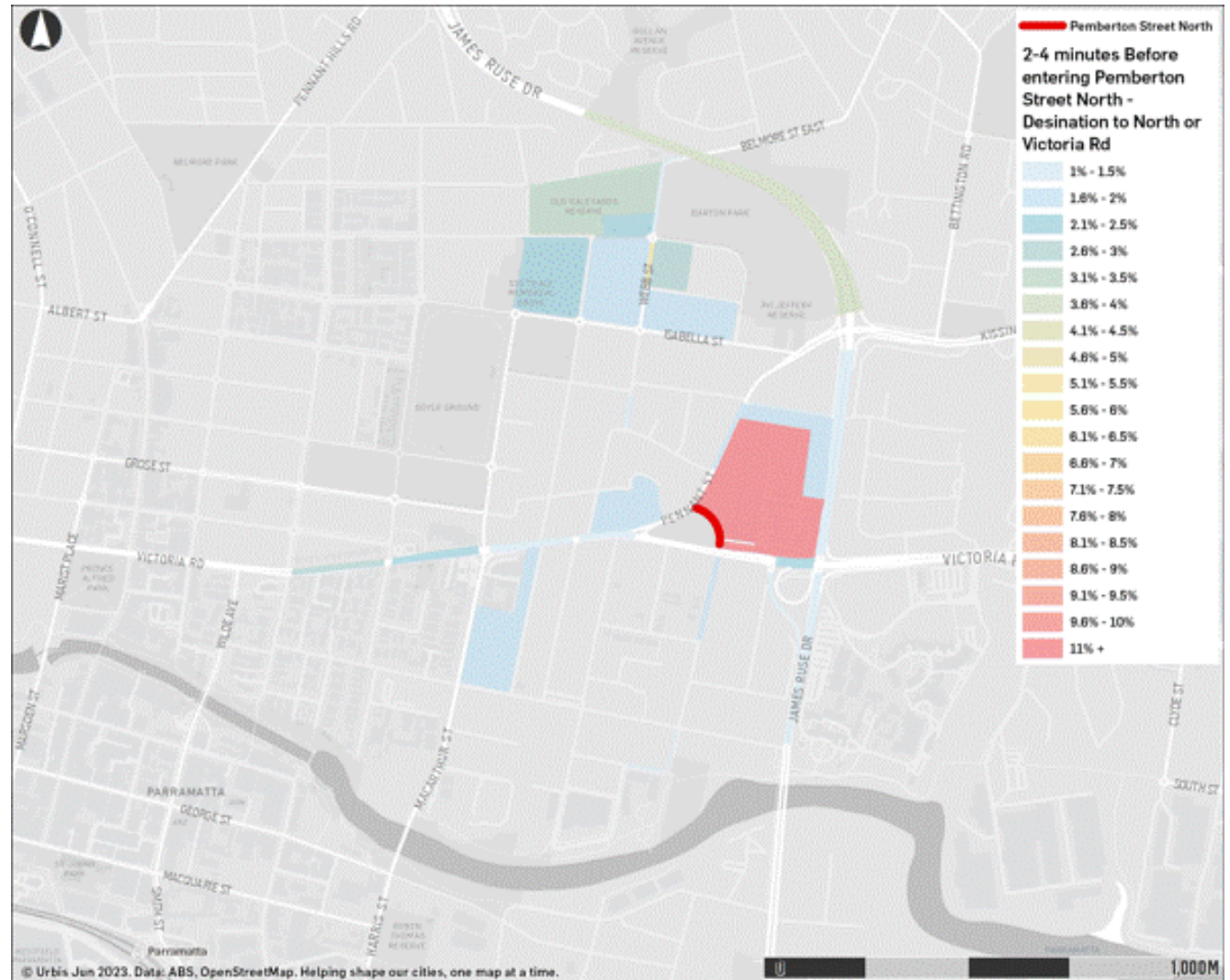
Key Findings

Figure 16 highlights the activity in precincts immediately before (0-2 minutes and 2-4 minute before) and immediately after (0-2 after and 2-4 minute after) entering Pemberton Street North when the final appearance of a device in the precinct was north of Victoria Road (note Victoria Road is considered in both the north and south destination analysis)

The findings suggests that a high proportion of devices are observed on Victoria Road before turning onto Pemberton Street, suggesting the use of Pemberton Street North as a rat run for people on Victoria Road to access the residential areas to the north of Victoria Road. After devices were observed passing through Pemberton Street North, a high level of activity is seen in the residential area north of Victoria Road, suggesting devices using this segment of road to travel home. Some devices are also observed on Kissing Point Road.

Devices turning into Pemberton Street North are accessing local residential areas.

Figure 16: Pemberton Street North - Movements Before and After Destination North of Victoria Road



Source: Near; Urbis

PRE VISIT ANALYSIS – PEMBERTON STREET SOUTH

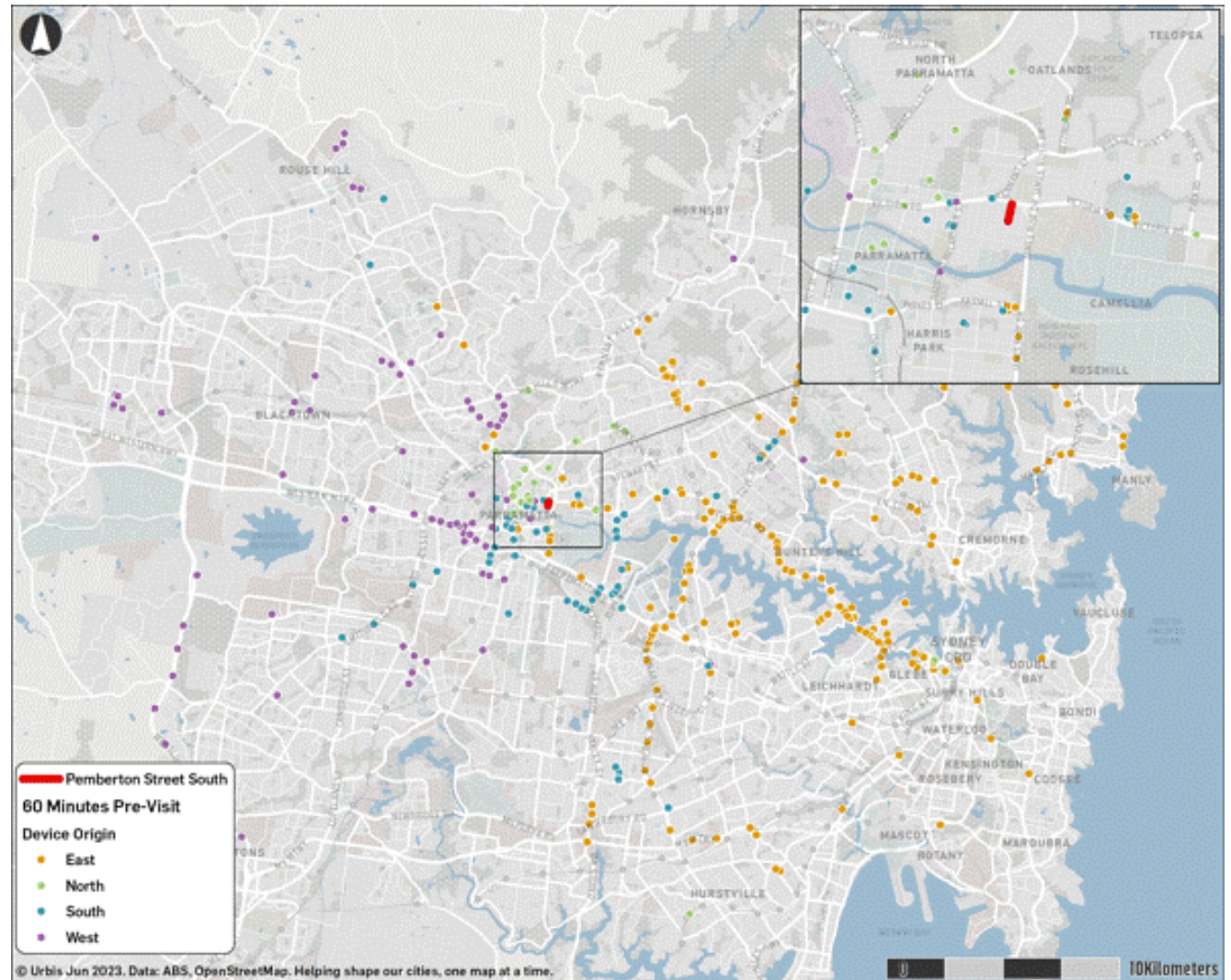
Key Findings

Figure 17 highlights the movement of devices before arriving at Pemberton Street South. The colours of the device pings represent the origin of devices north, south, east or west of Pemberton Street.

60 minutes before arriving at Pemberton Street South, there were concentrations of users in the Sydney CBD, Parramatta CBD, Ryde, and Lidcombe, as well as smatterings throughout greater Sydney. As the time to Pemberton Street reduces to between 30 and 15 minutes, users from the east become concentrated along Victoria Road while those from the south approach along Rookwood Road and Parramatta Road. People around Parramatta are not following a particular route, indicative of the close location to Pemberton Street South. In the 15 minutes before Pemberton Street South, most observed users from the east are travelling along Victoria Road, while those coming from the north and south are arriving from James Ruse Drive. Travellers from Parramatta are seen using either Victoria Road or Thomas Street.

Users of Pemberton Street South are using Thomas Street as a rat run to access Victoria Road.

Figure 17: Pemberton Street South - Pre-Visit Locations



Source: Near; Urbis

POST VISIT ANALYSIS – PEMBERTON STREET SOUTH

Key Findings

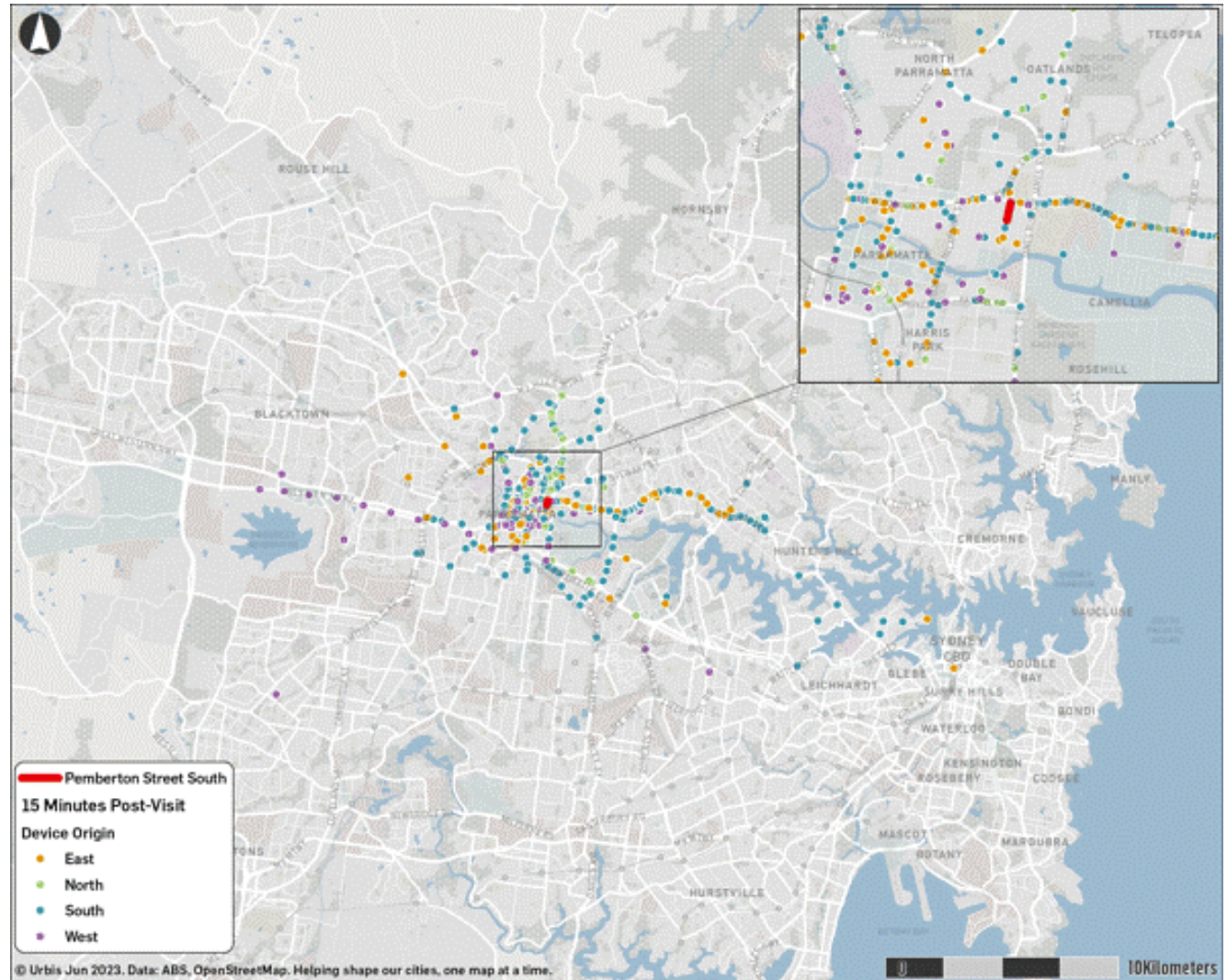
Figure 18 highlights the movement of devices after arriving at Pemberton Street South. The colours of the device pings represent the origin of devices north, south, east or west of Pemberton Street.

Immediately after passing through Pemberton Street South to 15 minutes after, users are seen travelling along Victoria Road, travelling in an eastbound direction, while those travelling west are using both Victoria Road and Thomas Street. Those travelling north and south appear to be using James Ruse Drive. People travelling west from Pemberton Street south appear to be using Thomas Street to access the Parramatta or Harris Park.

Beyond the initial 15 minutes, Victoria Road and King Georges Road still have strong usage as people travel towards their destination, suggesting that people are using Pemberton Street to shorten their journey times.

People are using Pemberton Street South to turn right onto Victoria Road from the south.

Figure 18: Pemberton Street South – Post-Visit Locations



PRE-VISIT ANALYSIS – PEMBERTON STREET NORTH

Key Findings

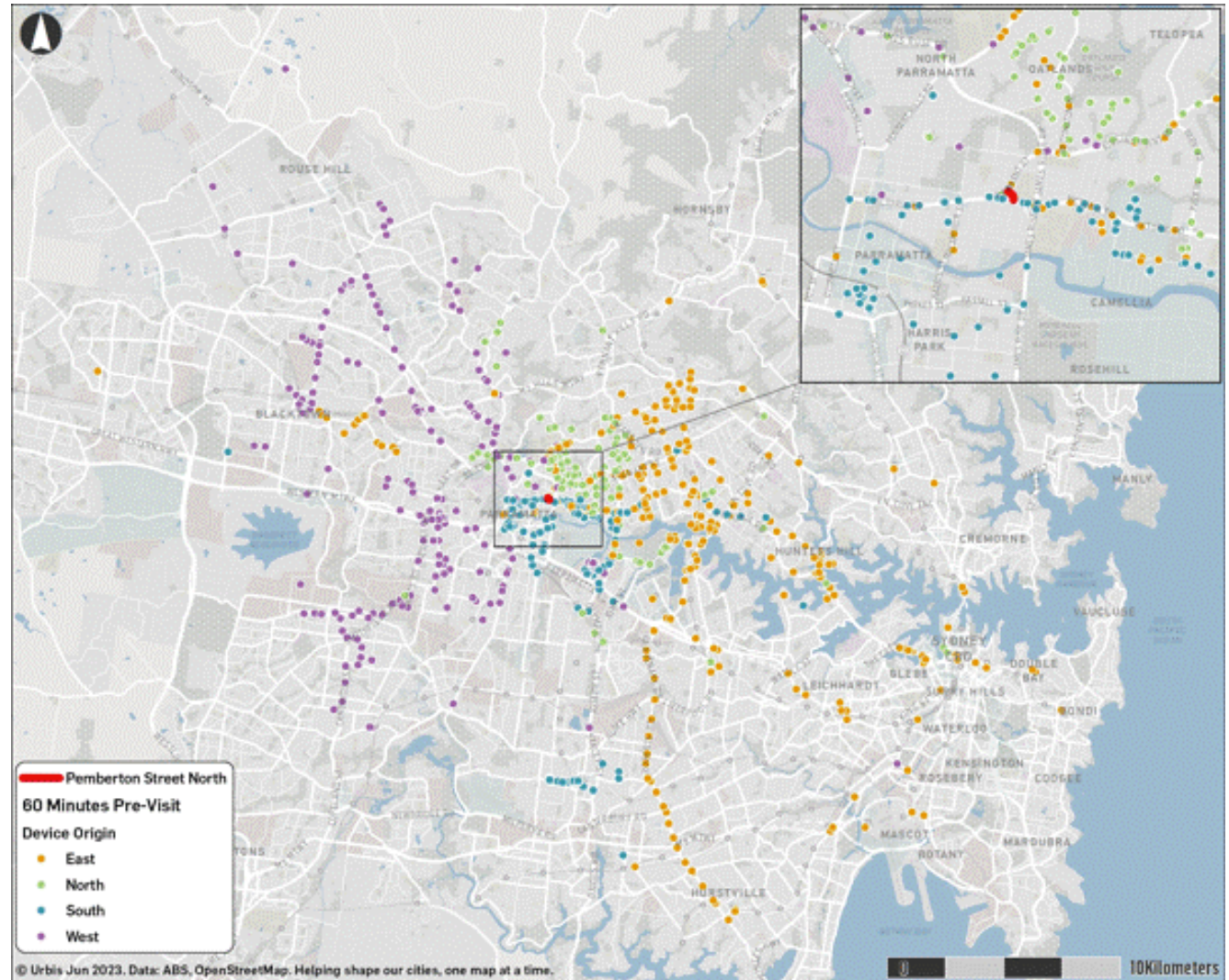
Figure 19 highlights the movement of devices before arriving at Pemberton Street North. The colours of the device pings represent the origin of devices north, south, east or west of Pemberton Street.

Similar to Pemberton Street South, users are approaching from key arterial roads such as Victoria Road, King Georges Road, James Ruse Drive and Kissing Point Road. This further suggests the use of Pemberton Street as a rat run.

At its greatest extent, people are coming from key employment and residential areas before becoming concentrated on these arterial roads. The use of arterial roads suggests that users may not necessarily be locals, but commuters using Pemberton and Thomas Streets to reduce their journey times.

Users are approaching Pemberton Street North from key arterial roads, suggesting it has a function as a rat run.

Figure 19: Pemberton Street North – Pre-Visit Locations



POST VISIT ANALYSIS – PEMBERTON STREET NORTH

Key Findings

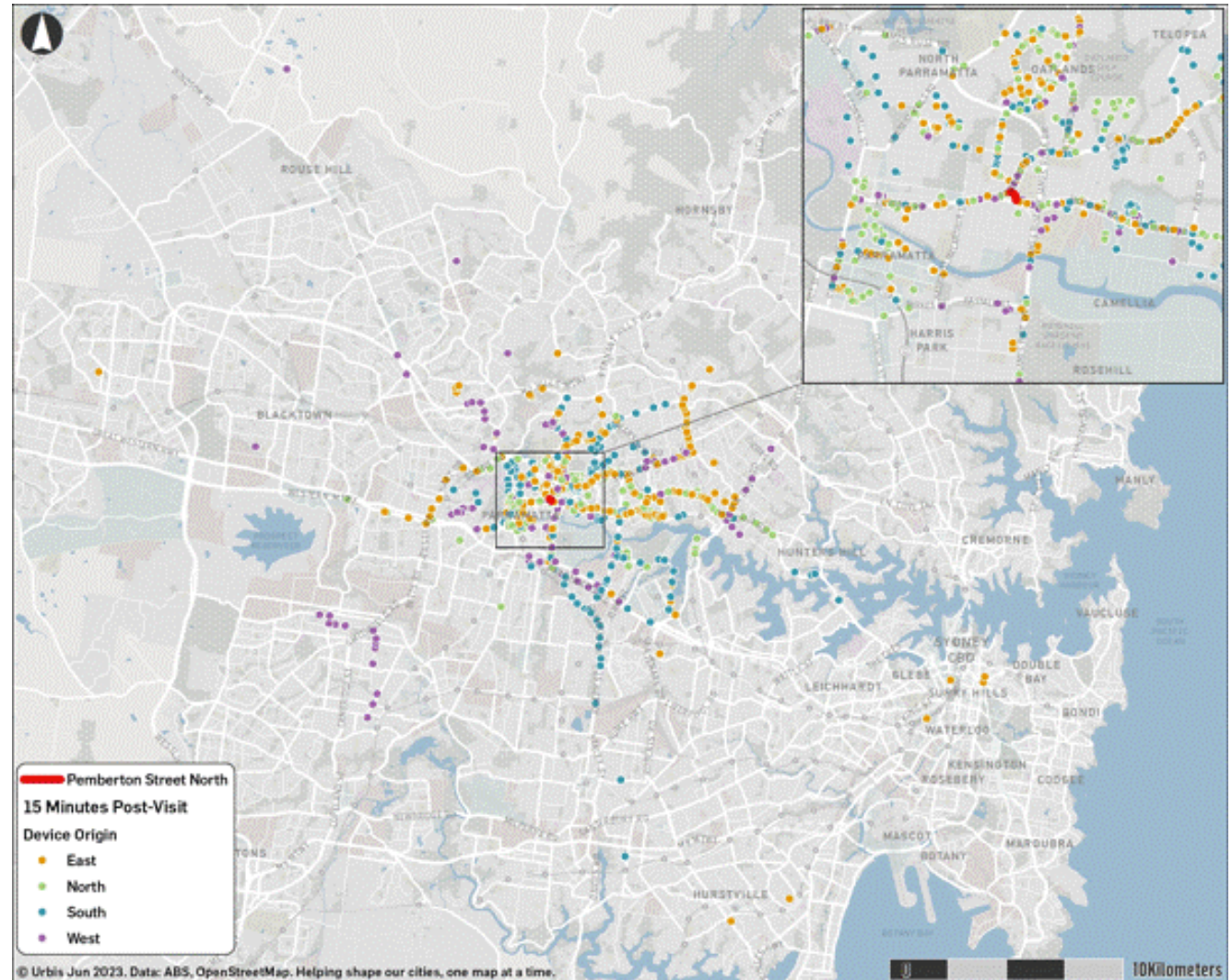
Figure 20 highlights the movement of devices after arriving at Pemberton Street North. The colours of the device pings represent the origin of devices north, south, east or west of Pemberton Street.

Figure 20 suggests that after users visit Pemberton Street North, they tend to travel along arterial roads such as Victoria Road and James Ruse Drive before dissipating throughout the local road network. Users from the east also appear to be turning right into Pemberton Street North from Victoria Road to access Pennant Street and Kissing Point Road, suggesting the use of Pemberton Street as a rat run.

At the extent of their journey, people are travelling as far east as the northern beaches but typically are concentrated around Ryde in the east and Parramatta and surrounds to the west. This suggests that a high portion of users from these areas are using Pemberton Street North as a rat run.

Users travelling to Ryde may be using Pemberton Street North to access Kissing Point Road, possibly avoiding the James Ruse Drive and Kissing Point Road intersection.

Figure 20: Pemberton Street North – Post Visit Locations



COMMON EVENING AND COMMON DAYTIME LOCATION OF PEMBERTON NORTH USERS

Key Findings

Figure 21 shows the Common Evening and Common Daytime Location (CDL) and Common Evening Location (CEL) of Pemberton Street North Users. CDL represents the place of work while CEL represents the place of residents.

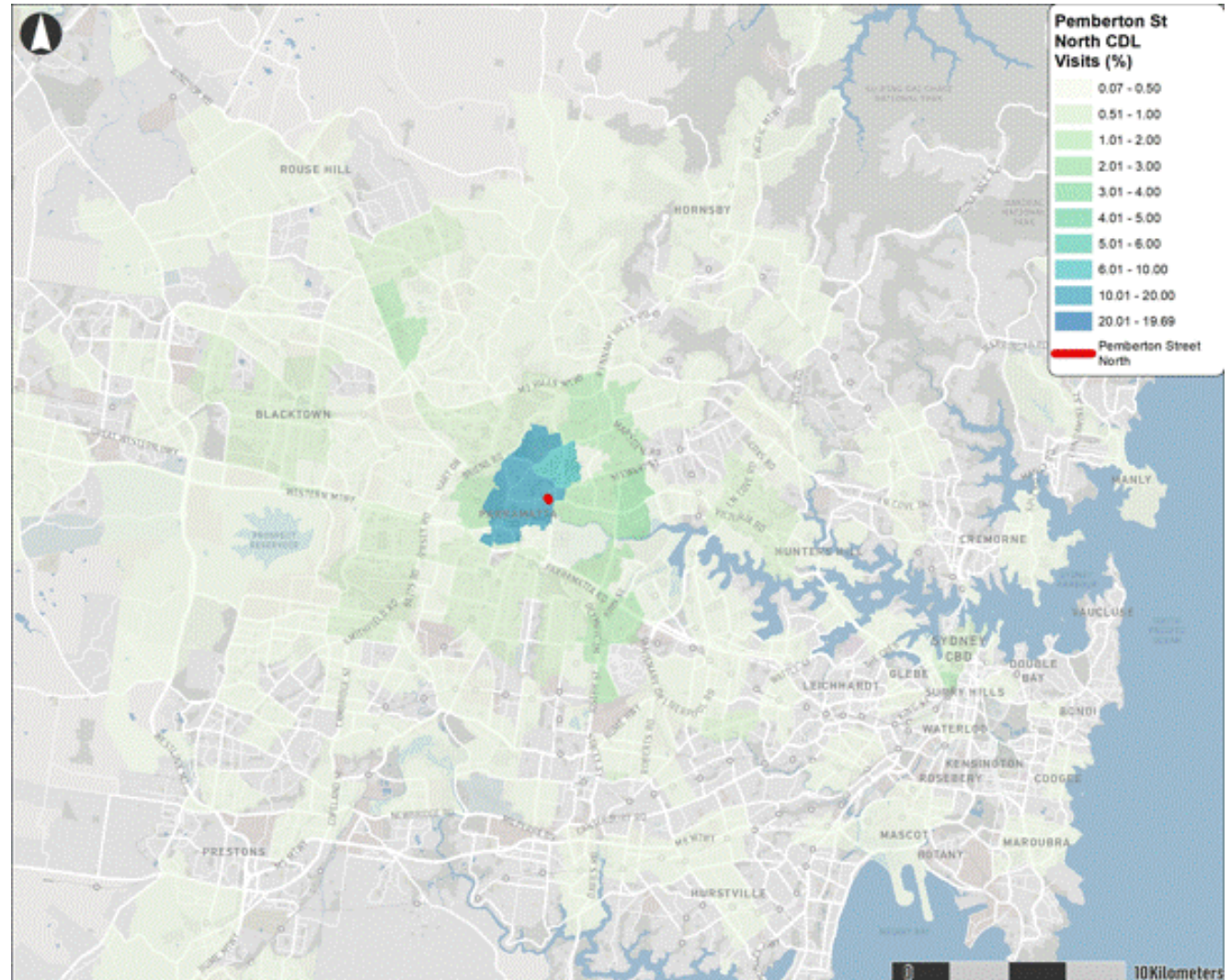
Table 1 shows most users live and work locally, with over 20 per cent living and working in either Parramatta or North Parramatta. The remainder of the top 10 home locations are suburbs that are close to the study area. Similarly, most work locations are close by.

In terms of the direction of travel to work, most Pemberton Street North users are travelling westbound to work, likely indicating a right turn onto Victoria Road. Trips travelling east account for roughly 10 per cent of the trips based on the top 10 destinations alone. There are some trips northbound, indicating people turning into Pemberton Street from Victoria Road or crossing it.

Table 1: Top 10 Home and Work Suburbs

Work Suburb	Visitors	Home Suburb	Visitors
Parramatta	11.2%	Parramatta	12.5%
North		North	
Parramatta	10.7%	Parramatta	12.4%
Oatlands	6.2%	Oatlands	9.6%
Ermington	3.5%	Ermington	3.0%
Rydalmere	2.6%	Carlingford	2.7%
Carlingford	2.1%	Rydalmere	2.2%
Silverwater	1.7%	Dundas	2.1%
Dundas Valley	1.6%	Ryde	1.7%
Lidcombe	1.6%	Dundas Valley	1.6%
Westmead	1.6%	North Rocks	1.3%

Figure 21: Common Evening and Common Daytime Locations of Pemberton North Users



COMMON EVENING AND COMMON DAYTIME LOCATION OF PEMBERTON SOUTH USERS

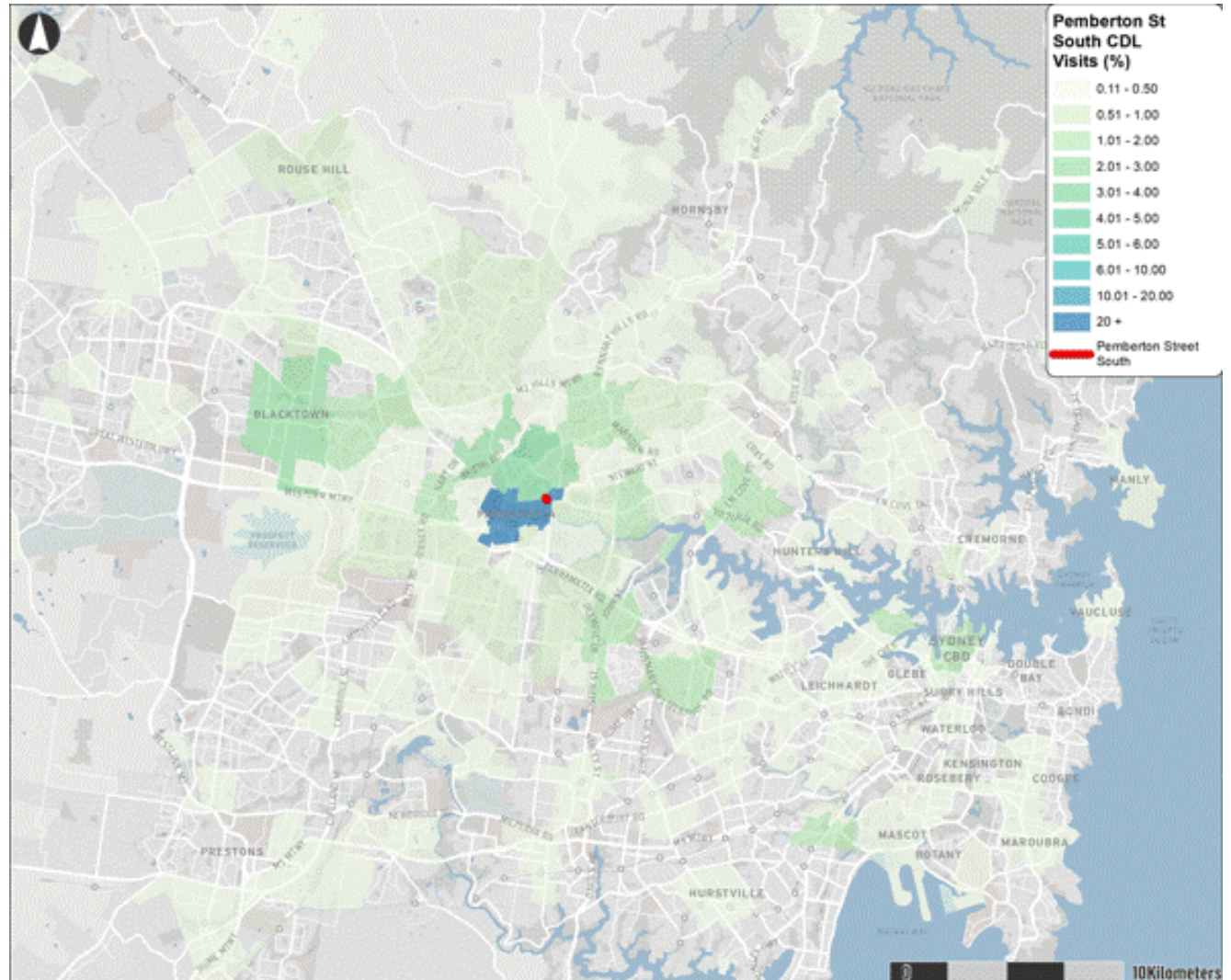
Key Findings

The CDL and CEL of Pemberton Street South shown in **Figure 20** indicates there is a higher concentration of people who work and reside in Parramatta. This would suggest a high portion of Pemberton Street South users are using it as a connection into Parramatta via Thomas Street. Beyond workers in Parramatta, the remainder of the top 10 work locations are associated with trips in the northbound direction on Pemberton Street. For example, all work locations except Parramatta in the top 10 worker locations would result in northbound travel, with eight of those nine destinations requiring either a right turn or through movement to access that particular suburb of work. During peak hours, these movements from Pemberton Street South are dangerous.

Table 2: Top 10 Home and Work Suburbs

Work Suburb	Visitors	Home Suburb	Visitors
Parramatta	11.2%	Parramatta	12.5%
North		North	
Parramatta	10.7%	Parramatta	12.4%
Oatlands	6.2%	Oatlands	9.6%
Ermington	3.5%	Ermington	3.0%
Rydalmere	2.6%	Carlingford	2.7%
Carlingford	2.1%	Rydalmere	2.2%
Silverwater	1.7%	Dundas	2.1%
Dundas Valley	1.6%	Ryde	1.7%
Lidcombe	1.6%	Dundas Valley	1.6%
Westmead	1.6%	North Rocks	1.3%

Figure 20: Common Evening and Common Daytime Locations of Pemberton South Users



03

KEY FINDINGS & CONCLUSIONS



KEY FINDINGS ABOUT THE CURRENT BEHAVIOUR

Key Findings and Conclusion

Using both HMD and traffic data, the initial findings suggested the following conclusions.

- Pemberton Street, along with Thomas Street, are likely being used as rat runs by users wanting to avoid intersections along Victoria Road and James Ruse Drive to decrease their journey times.
- While there are a high proportion of local users, Pemberton Street is used by people not residing in the area, suggesting that people are using Pemberton Street as a connection for travel.
- Based on the above and the findings in this report, it is suggested that there are people making unsafe movements to cross or turn onto Victoria Road from Pemberton Street North or Pemberton Street South.



**PEOPLE ARE USING
PEMBERTON STREET
AS A RAT RUN**



**PEOPLE USING
PEMBERTON STREET ARE
NOT NECESSARILY
LOCALS**



**PEOPLE USING
PEMBERTON STREET
HAVE A DIVERSE SET OF
ROUTES**

A photograph of a severe traffic jam on a multi-lane highway. The view is from the back of a car, looking forward into a long line of vehicles. The cars are packed closely together, and the scene is hazy, suggesting either fog or a bright, overexposed day. The text 'APPENDIX A - CROSS USAGE' is overlaid on the left side of the image, with a decorative horizontal bar above it that transitions from light blue to light purple.

APPENDIX A - CROSS USAGE

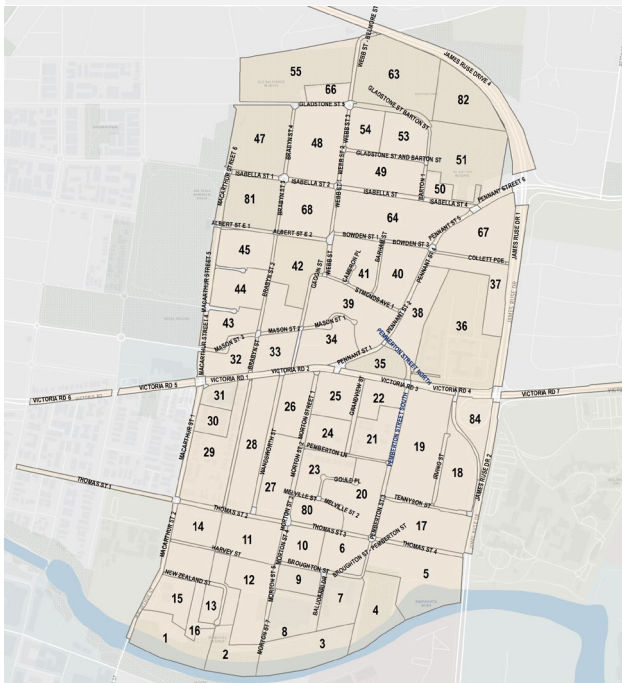
APPENDIX A – TOP 30 LOCATIONS OF CROSS USAGE WITH PEMBERTON STREET

Key Findings

The table on the right shows the top 30 cross-usage locations for Pemberton Street, broken up by Pemberton Street North and Pemberton Street South. Cross usage is a metric used to measure the common locations where devices were observed. For example, 27 per cent of devices observed at Victoria Road 7 were also observed at Pemberton Street South and Pemberton Street North.

A map detailing the precinct names is found on the following page.

Precinct Map



Cross Usage Table

PRECINCT	PEMBERTON STREET SOUTH	PEMBERTON STREET NORTH
Victoria Rd 7	27%	27%
Victoria Rd 5	20%	22%
Victoria Rd 1	17%	17%
Victoria Rd 4	13%	20%
Victoria Rd 2	11%	14%
38	4%	26%
MacArthur St 2	16%	10%
19	16%	9%
James Ruse Drive 4	9%	15%
MacArthur St 1	12%	11%
36	6%	17%
35	6%	17%
Pennant St 4	5%	17%
Thomas St 2	17%	5%
Thomas St 3	19%	3%
James Ruse Dr 1	7%	13%
James Ruse Dr 2	8%	12%
67	6%	14%
34	7%	13%
Pennant St 2	4%	15%
Victoria Rd 3	10%	7%
MacArthur Street	8%	10%
39	2%	15%
Pennant St 5	4%	13%
23	15%	2%
22	12%	5%
20	15%	2%
8	14%	2%
21	13%	2%
Pemberton St 3	11%	2%

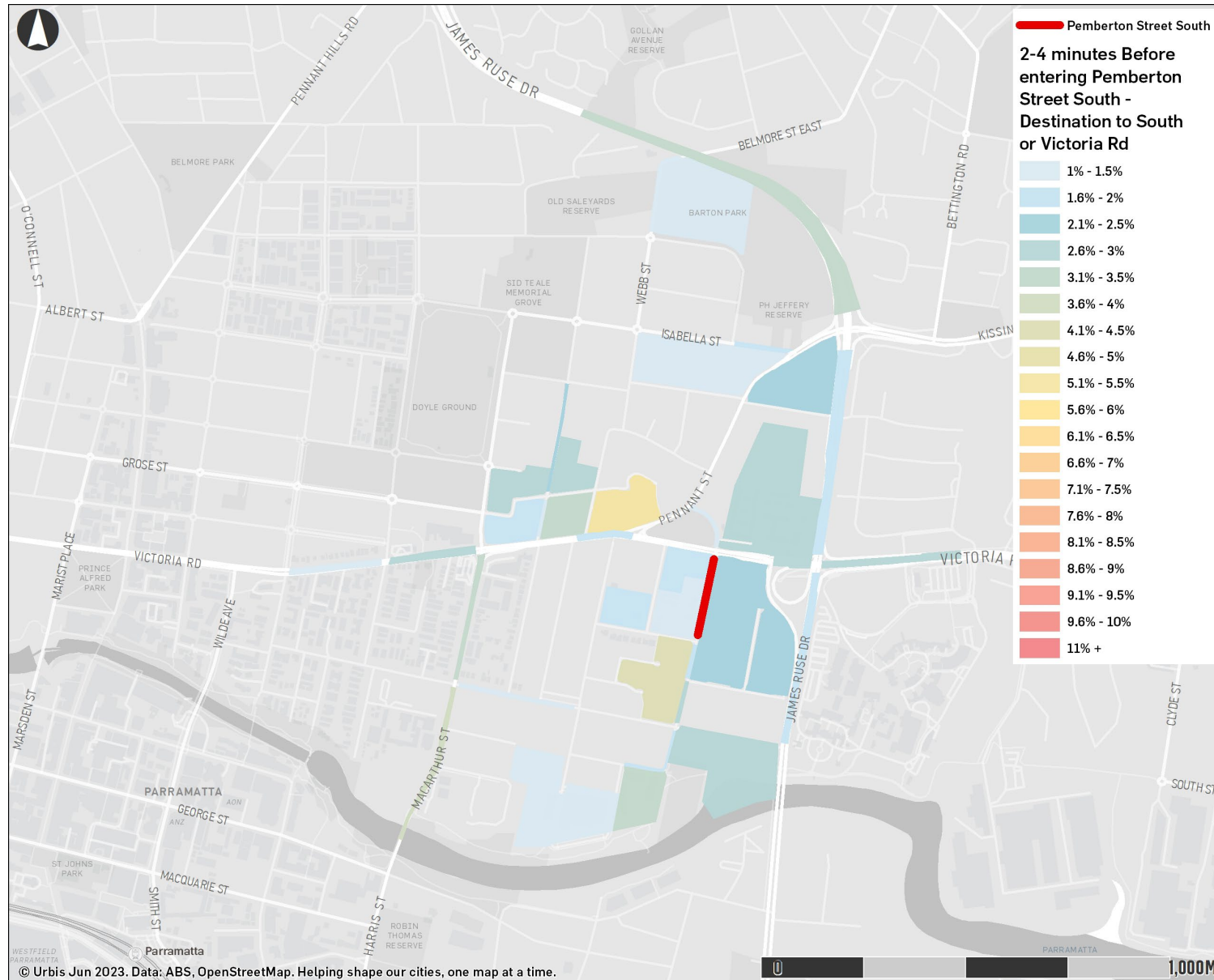
APPENDIX A – PRECINCT NAME MAP



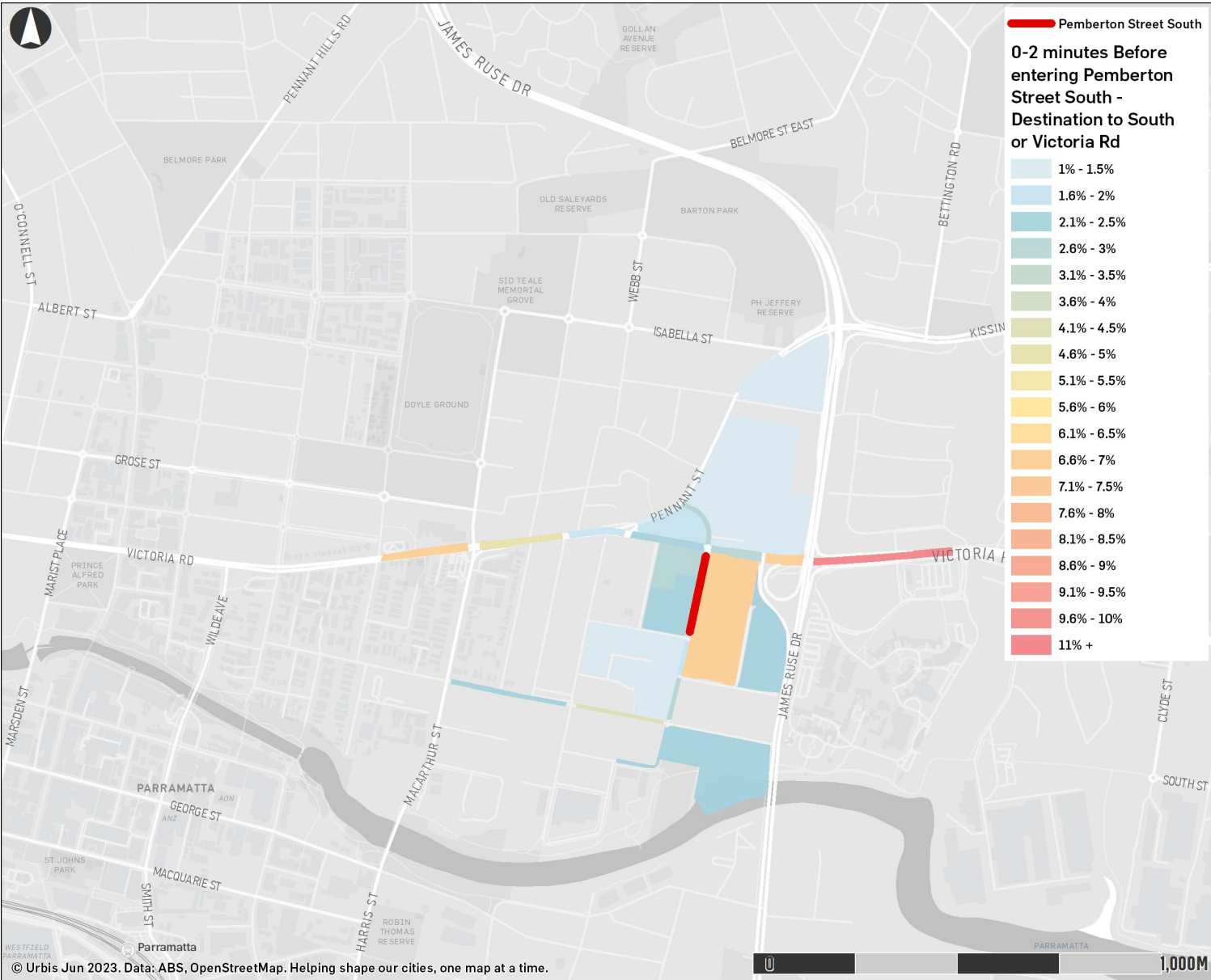


APPENDIX B – GIF MAPS

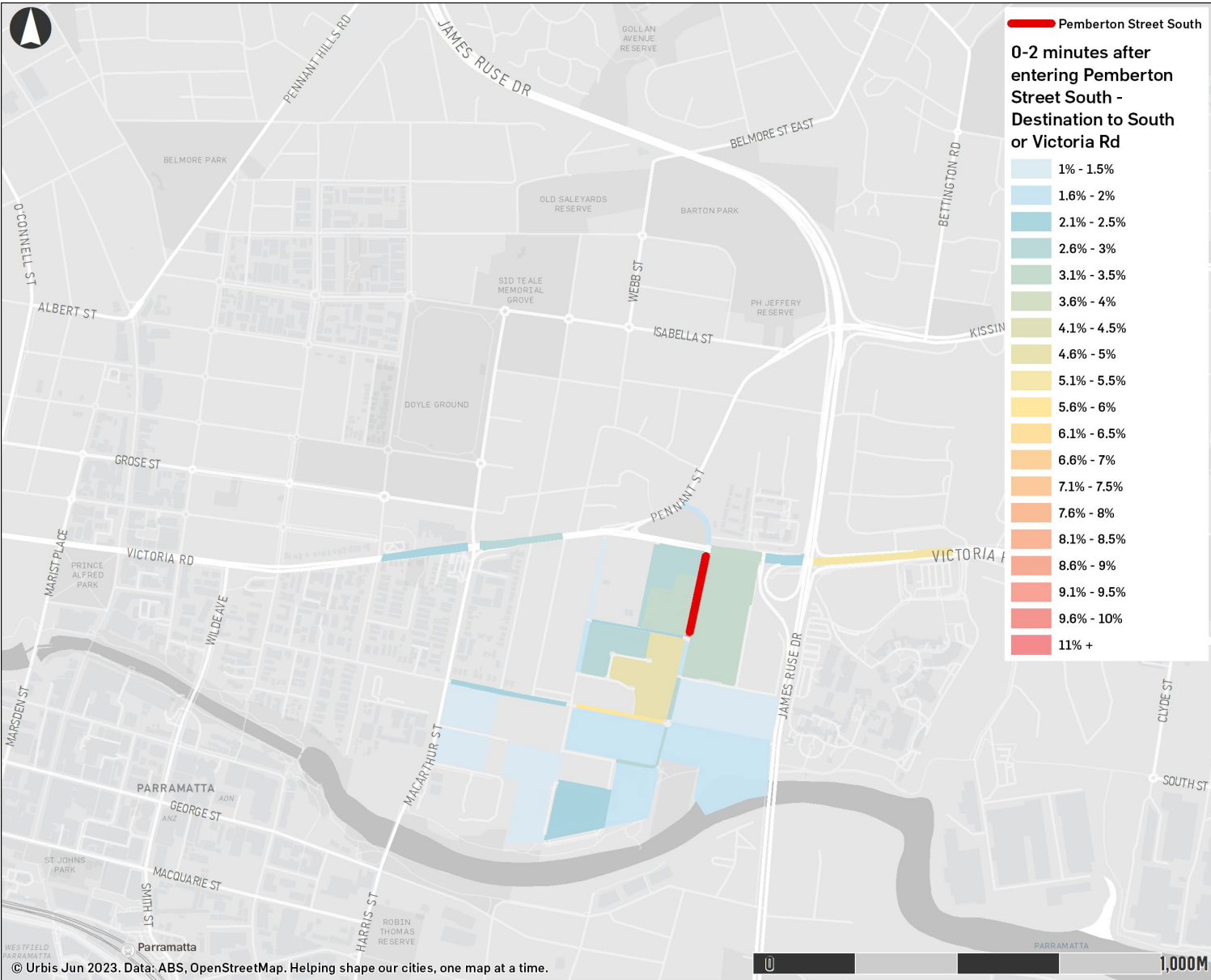
2-4 MINUTES BEFORE ENTERING PEMBERTON STREET SOUTH – DESTINATION TO SOUTH OR VICTORIA ROAD



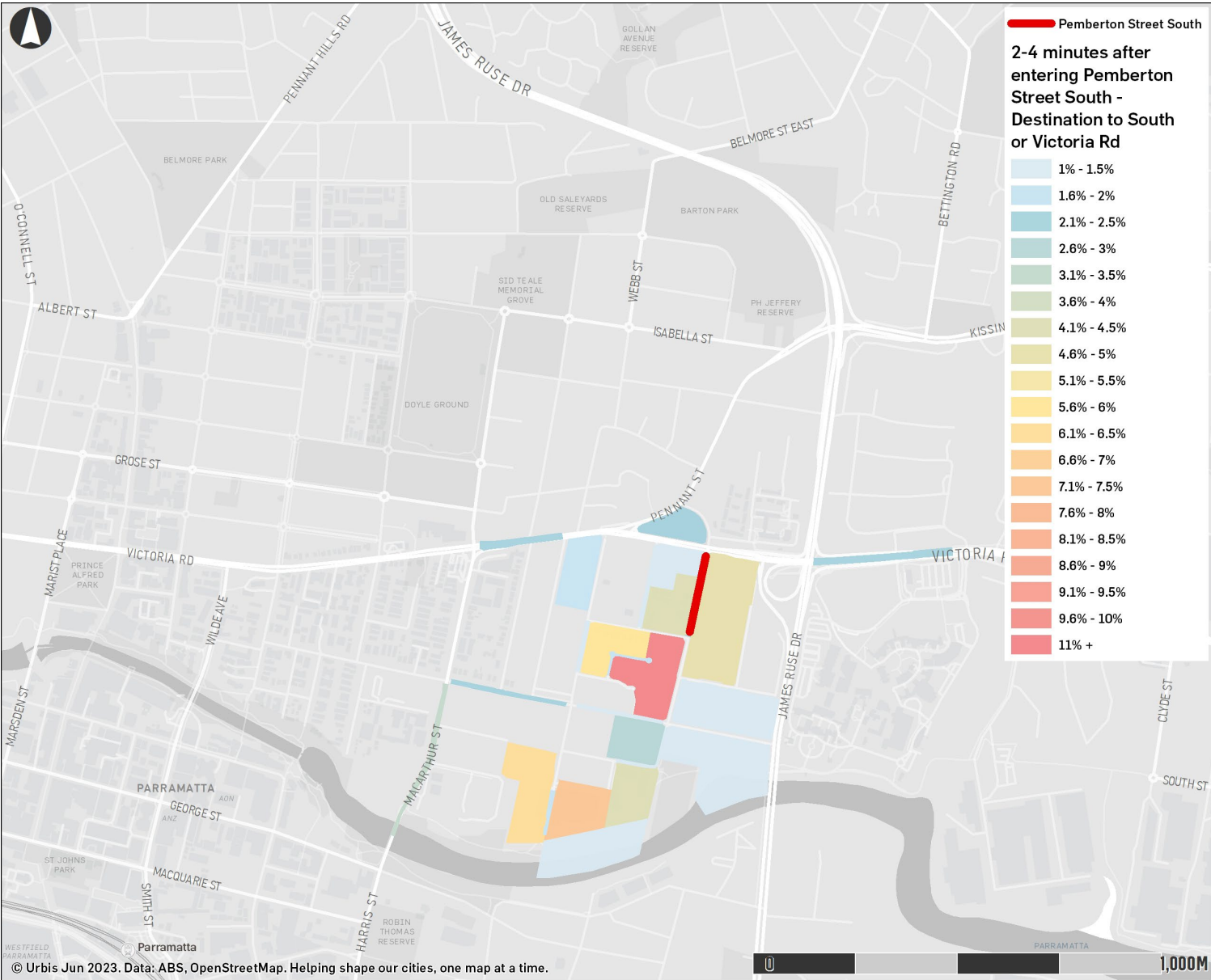
0-2 MINUTES BEFORE ENTERING PEMBERTON STREET SOUTH – DESTINATION TO SOUTH OR VICTORIA ROAD



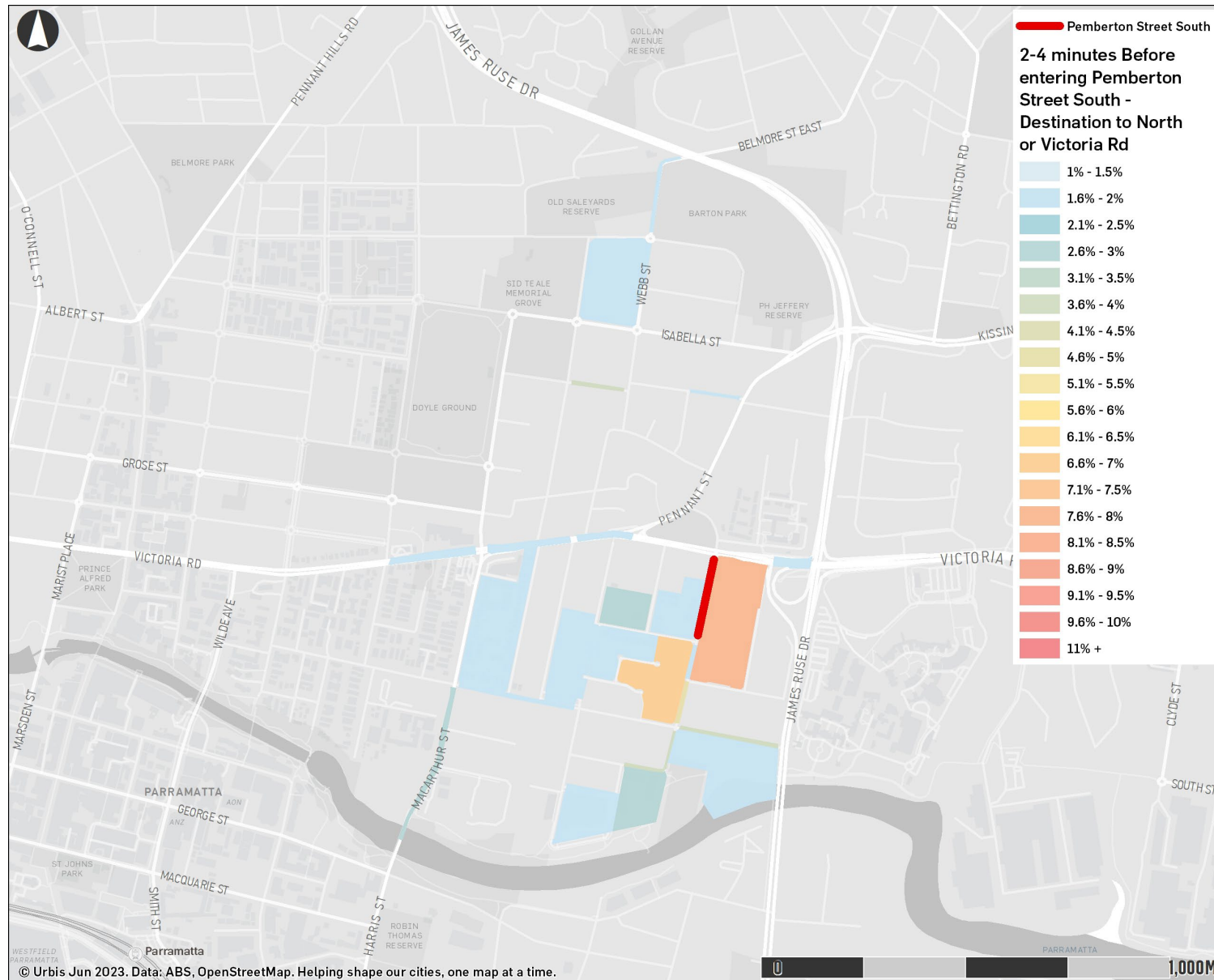
0-2 MINUTES AFTER ENTERING PEMBERTON STREET SOUTH – DESTINATION TO SOUTH OR VICTORIA ROAD



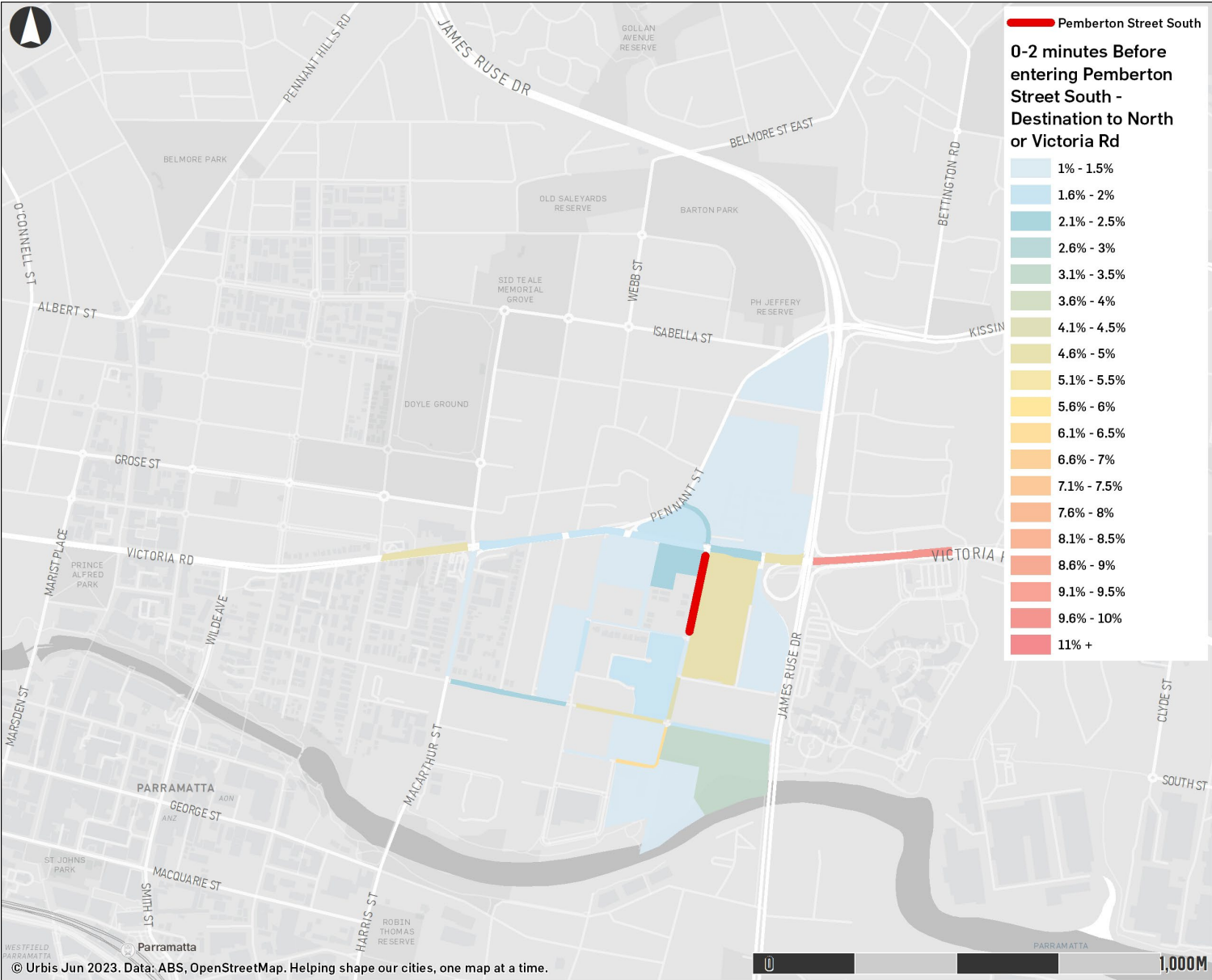
2-4 MINUTES AFTER ENTERING PEMBERTON STREET SOUTH – DESTINATION TO SOUTH OR VICTORIA ROAD



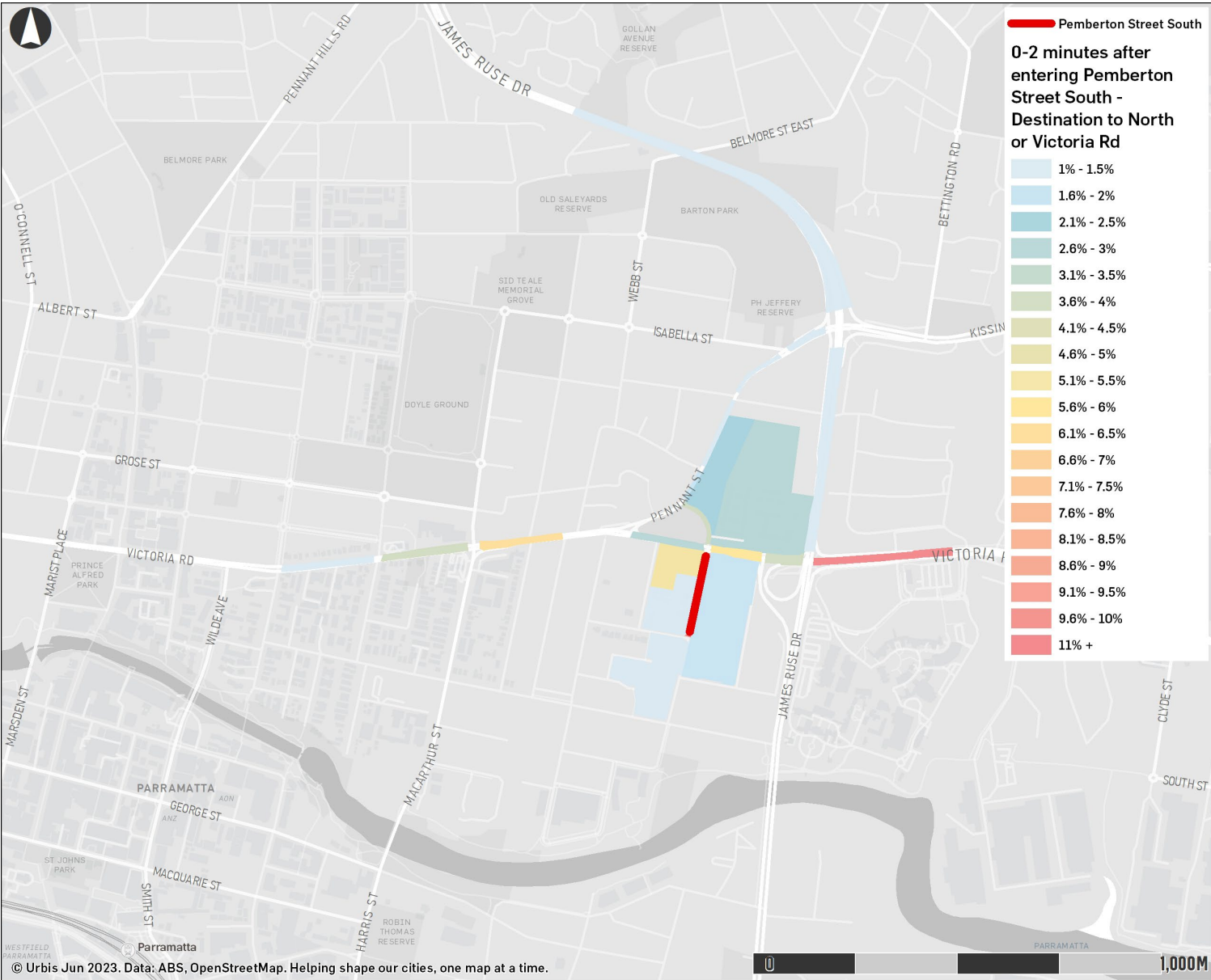
2-4 MINUTES BEFORE ENTERING PEMBERTON STREET SOUTH – DESTINATION TO NORTH OR VICTORIA ROAD



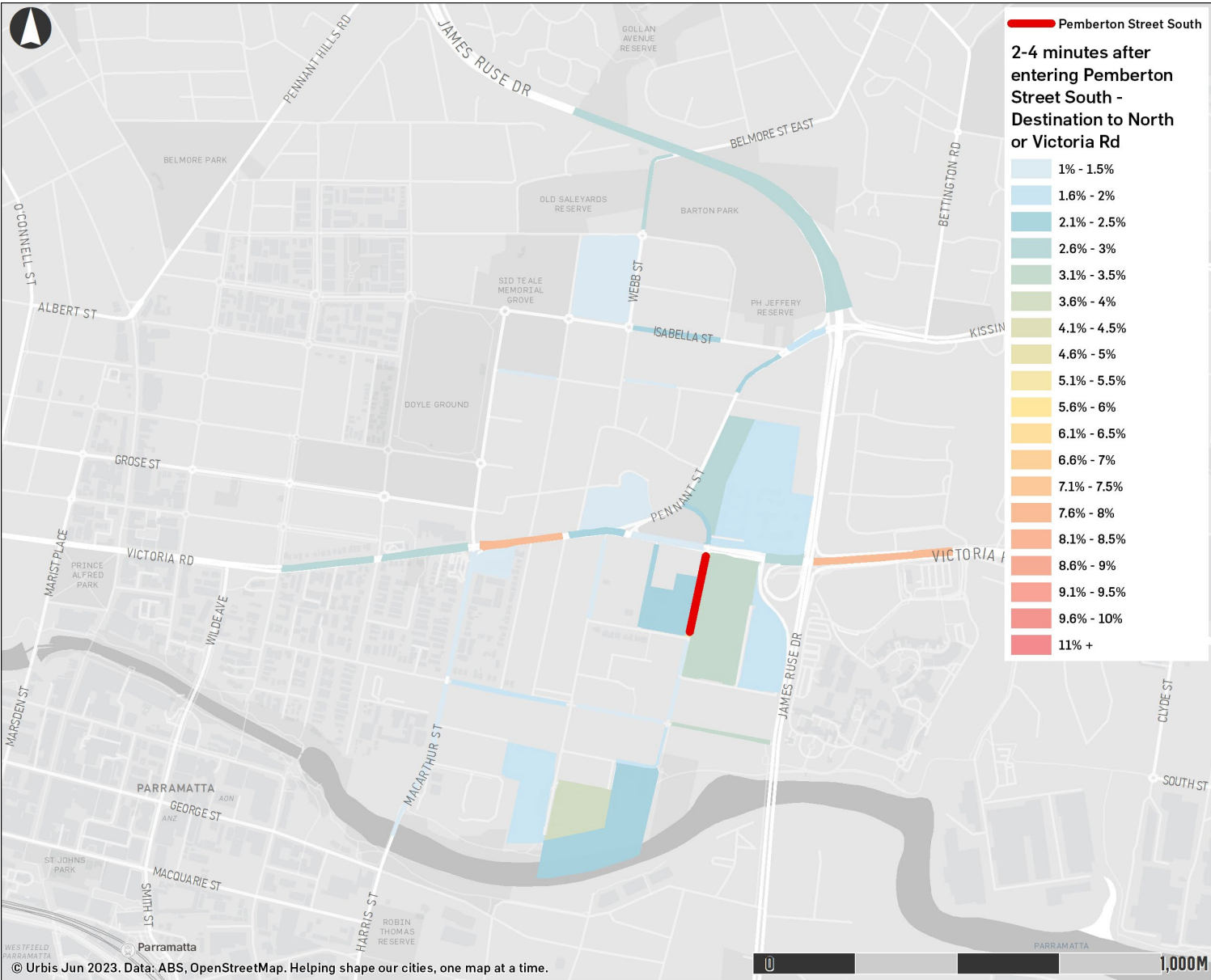
0-2 MINUTES BEFORE ENTERING PEMBERTON STREET SOUTH – DESTINATION TO NORTH OR VICTORIA ROAD



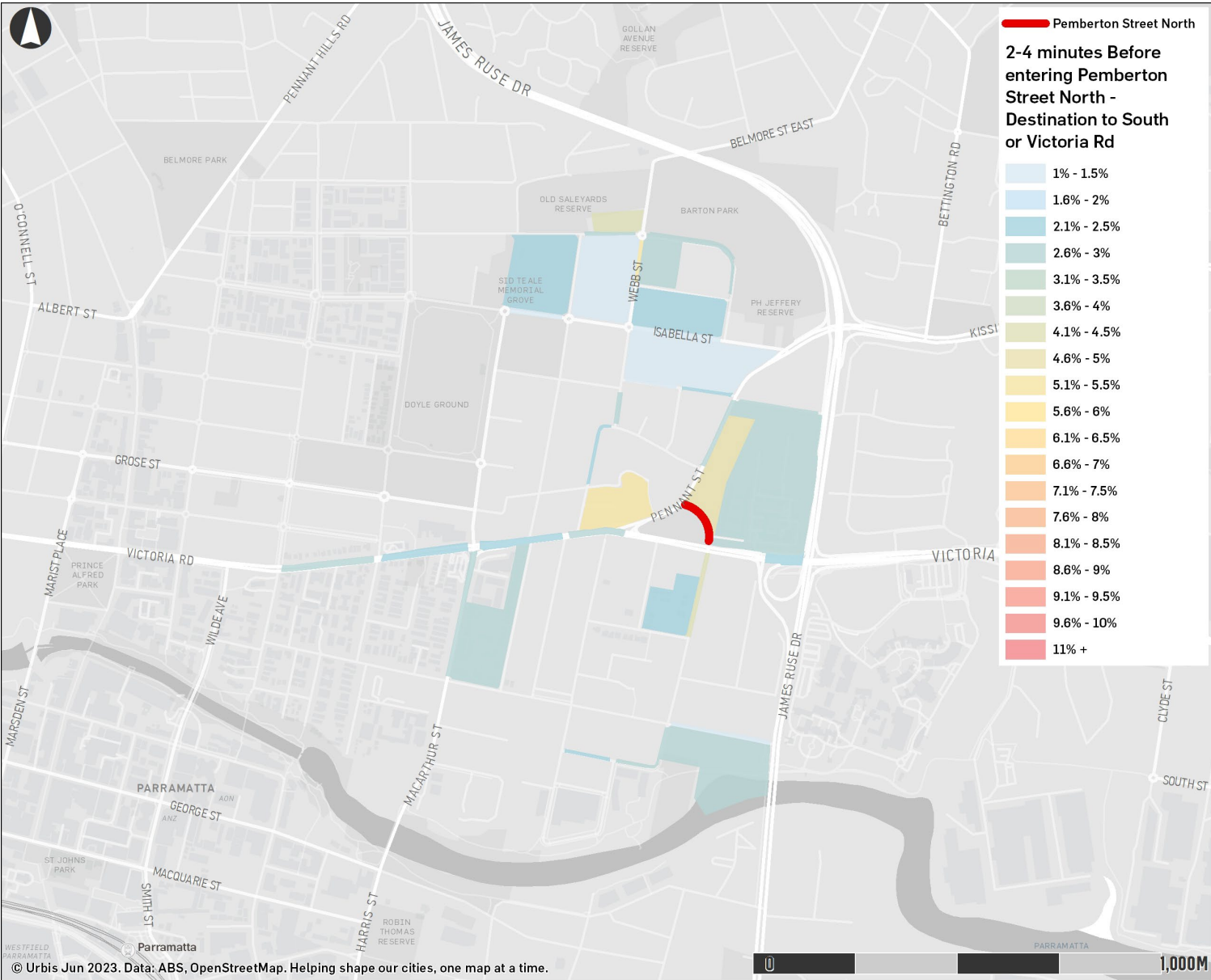
0-2 MINUTES AFTER ENTERING PEMBERTON STREET SOUTH – DESTINATION TO NORTH OR VICTORIA ROAD



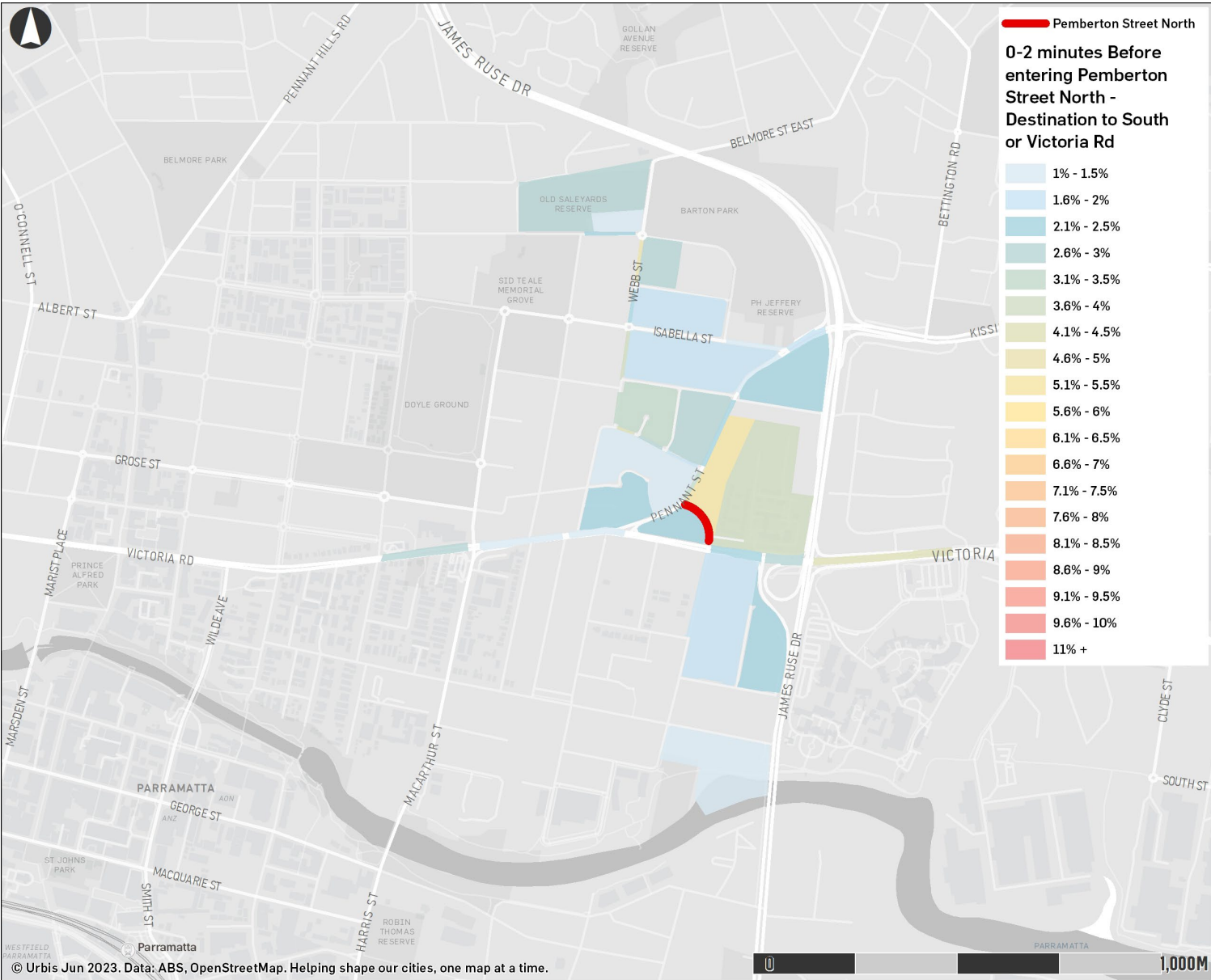
2-4 MINUTES AFTER ENTERING PEMBERTON STREET SOUTH – DESTINATION TO NORTH OR VICTORIA ROAD



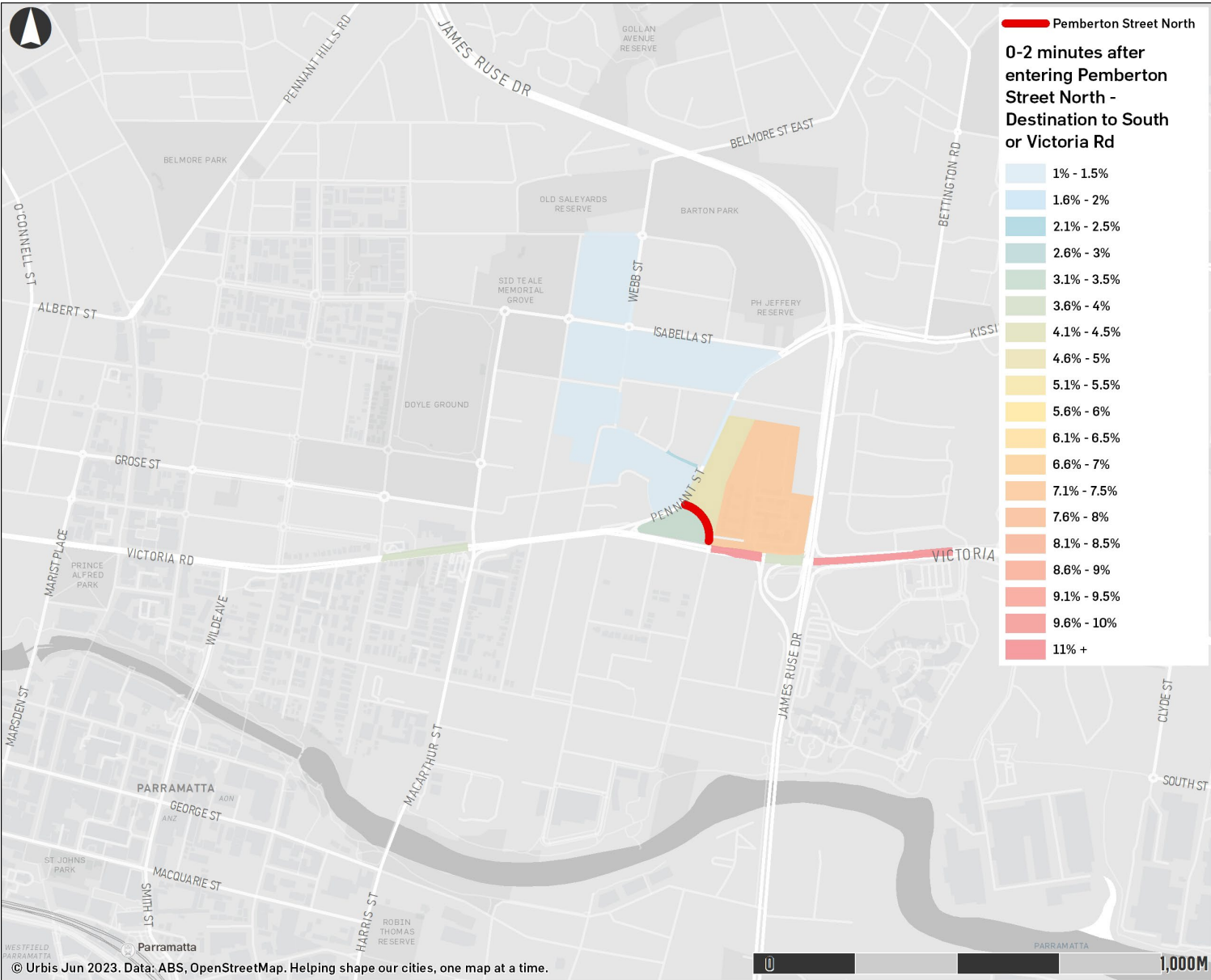
2-4 MINUTES BEFORE ENTERING PEMBERTON STREET NORTH – DESTINATION TO SOUTH OR VICTORIA ROAD



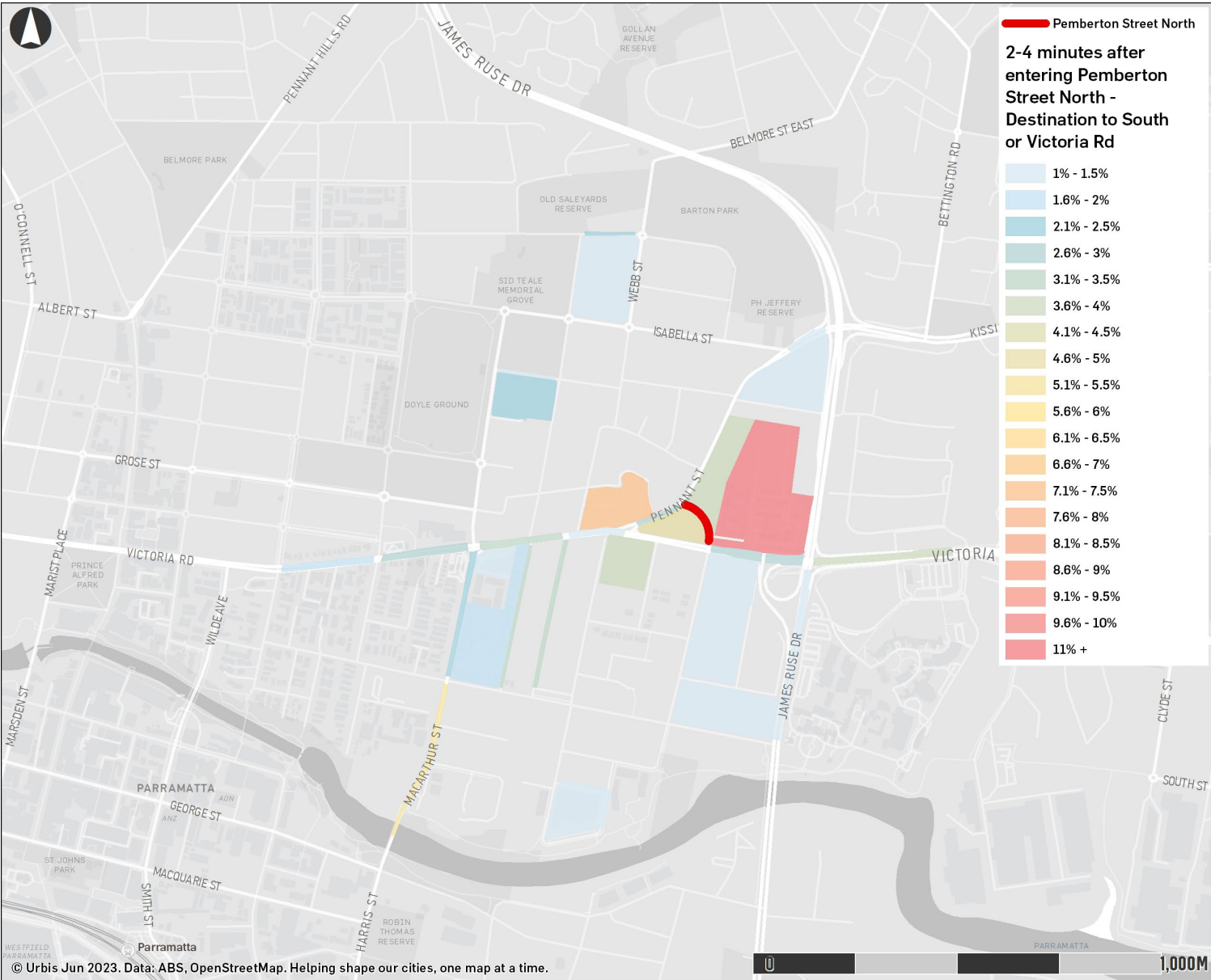
0-2 MINUTES BEFORE ENTERING PEMBERTON STREET NORTH – DESTINATION TO SOUTH OR VICTORIA ROAD



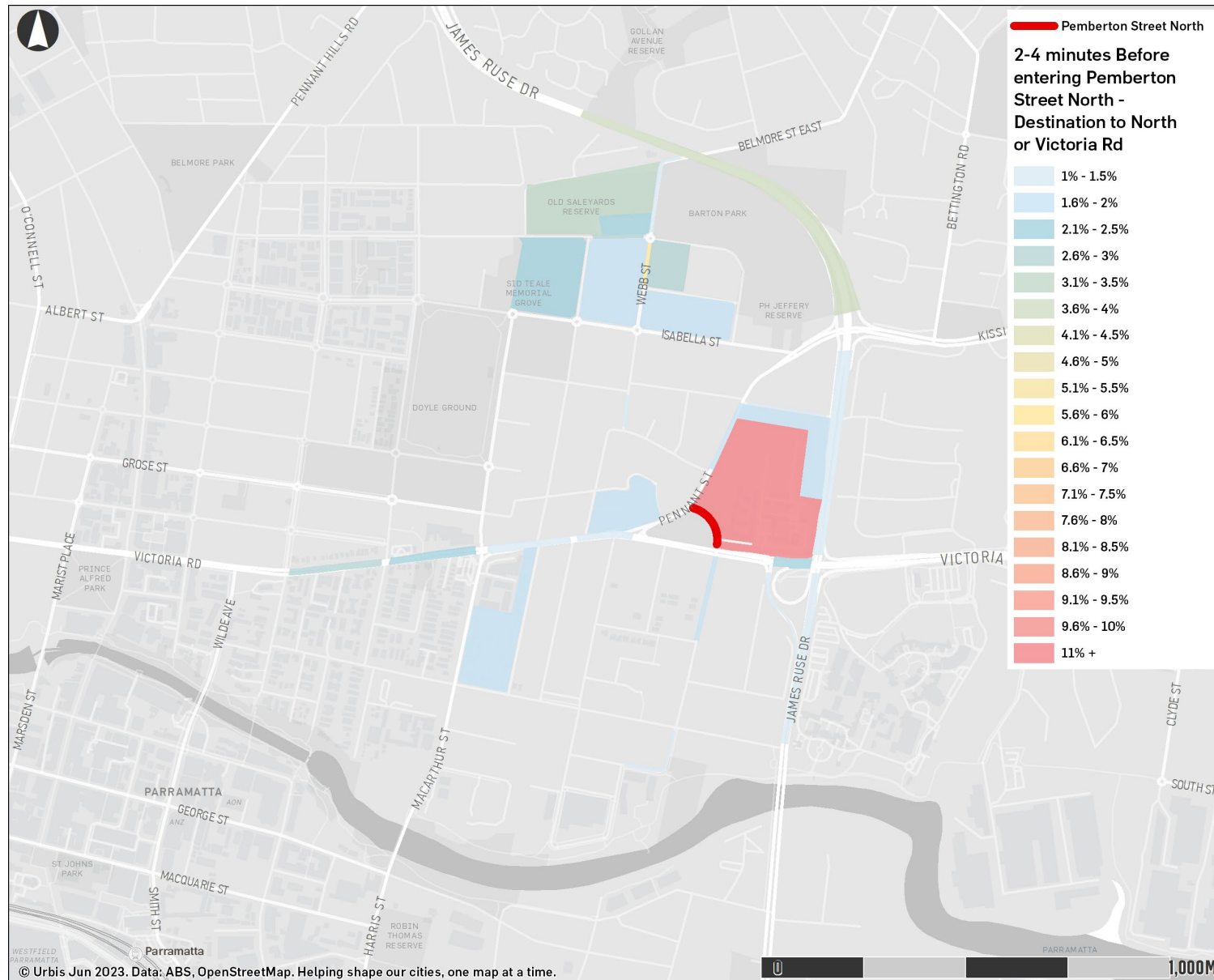
0-2 MINUTES AFTER ENTERING PEMBERTON STREET NORTH – DESTINATION TO SOUTH OR VICTORIA ROAD



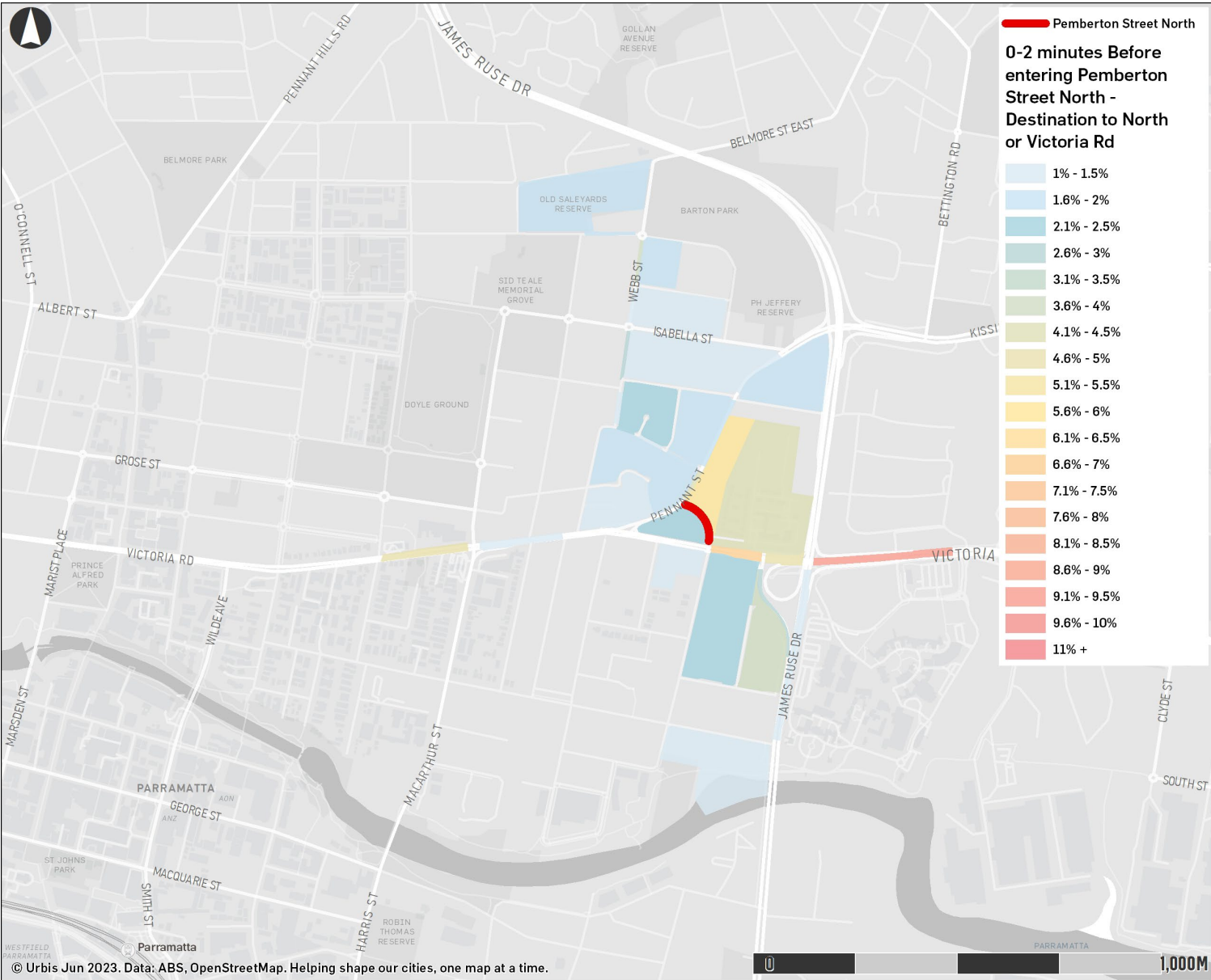
2-4 MINUTES AFTER ENTERING PEMBERTON STREET NORTH – DESTINATION TO SOUTH OR VICTORIA ROAD



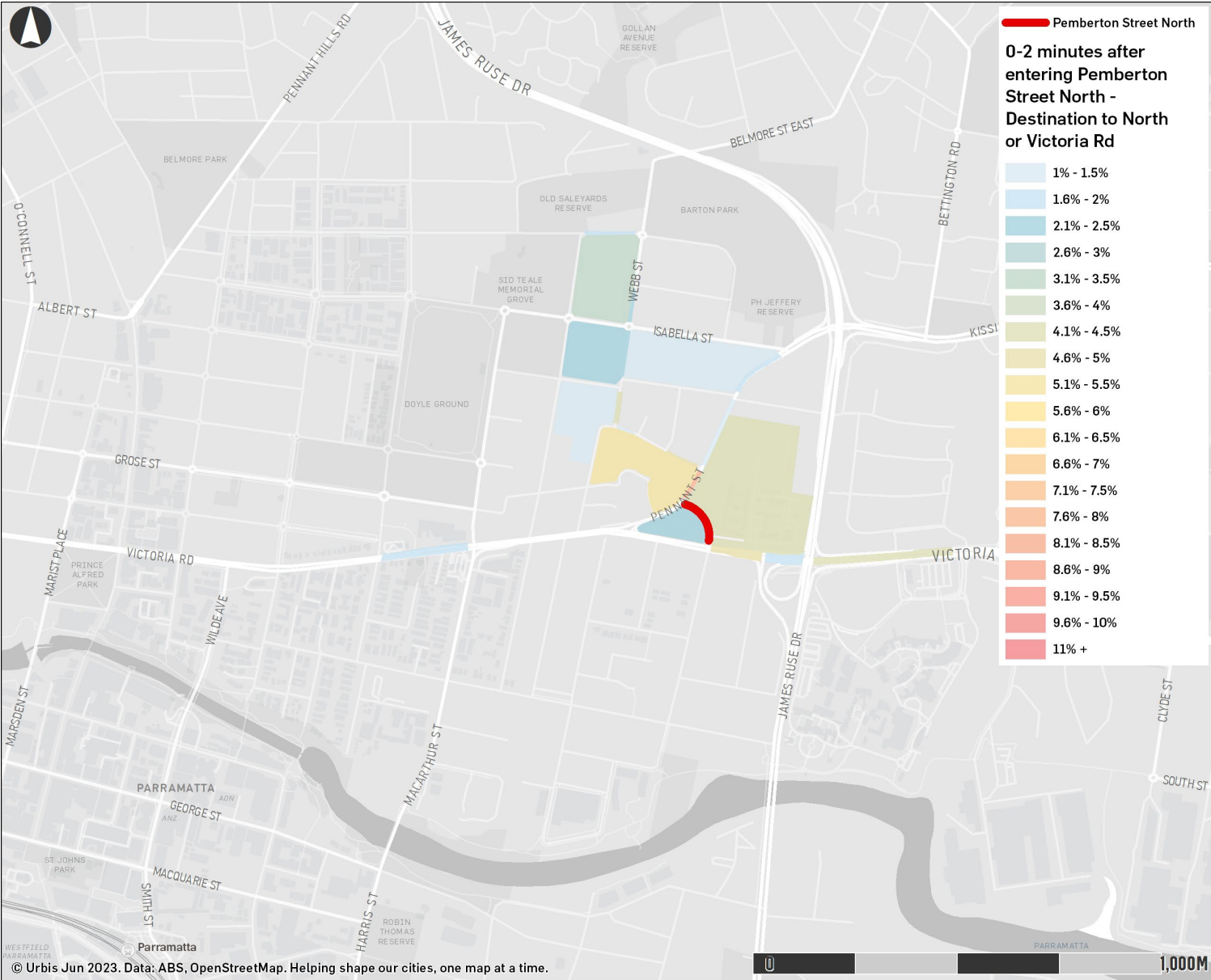
2-4 MINUTES BEFORE ENTERING PEMBERTON STREET NORTH – DESTINATION TO NORTH OR VICTORIA ROAD



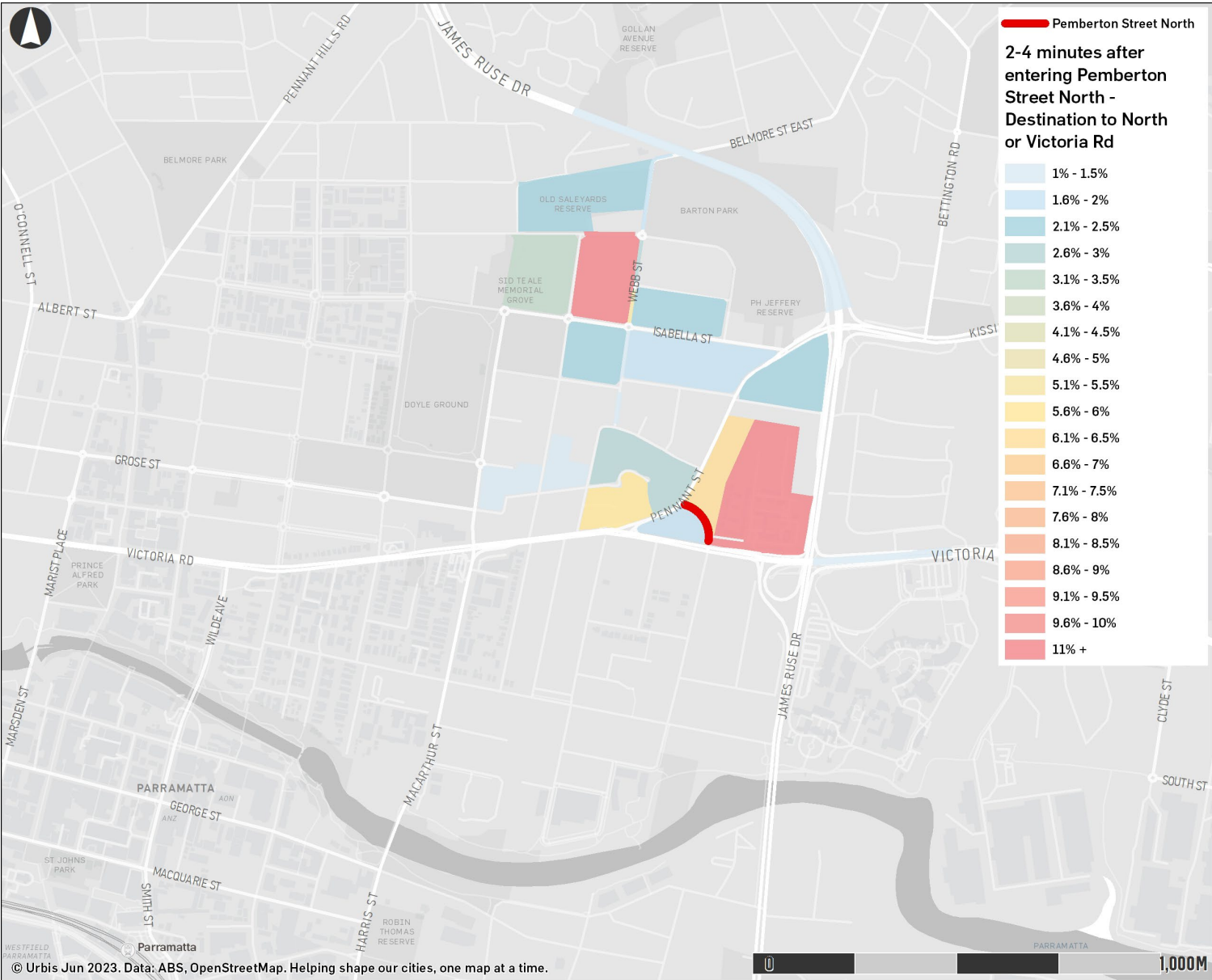
0-2 MINUTES BEFORE ENTERING PEMBERTON STREET NORTH – DESTINATION TO NORTH OR VICTORIA ROAD



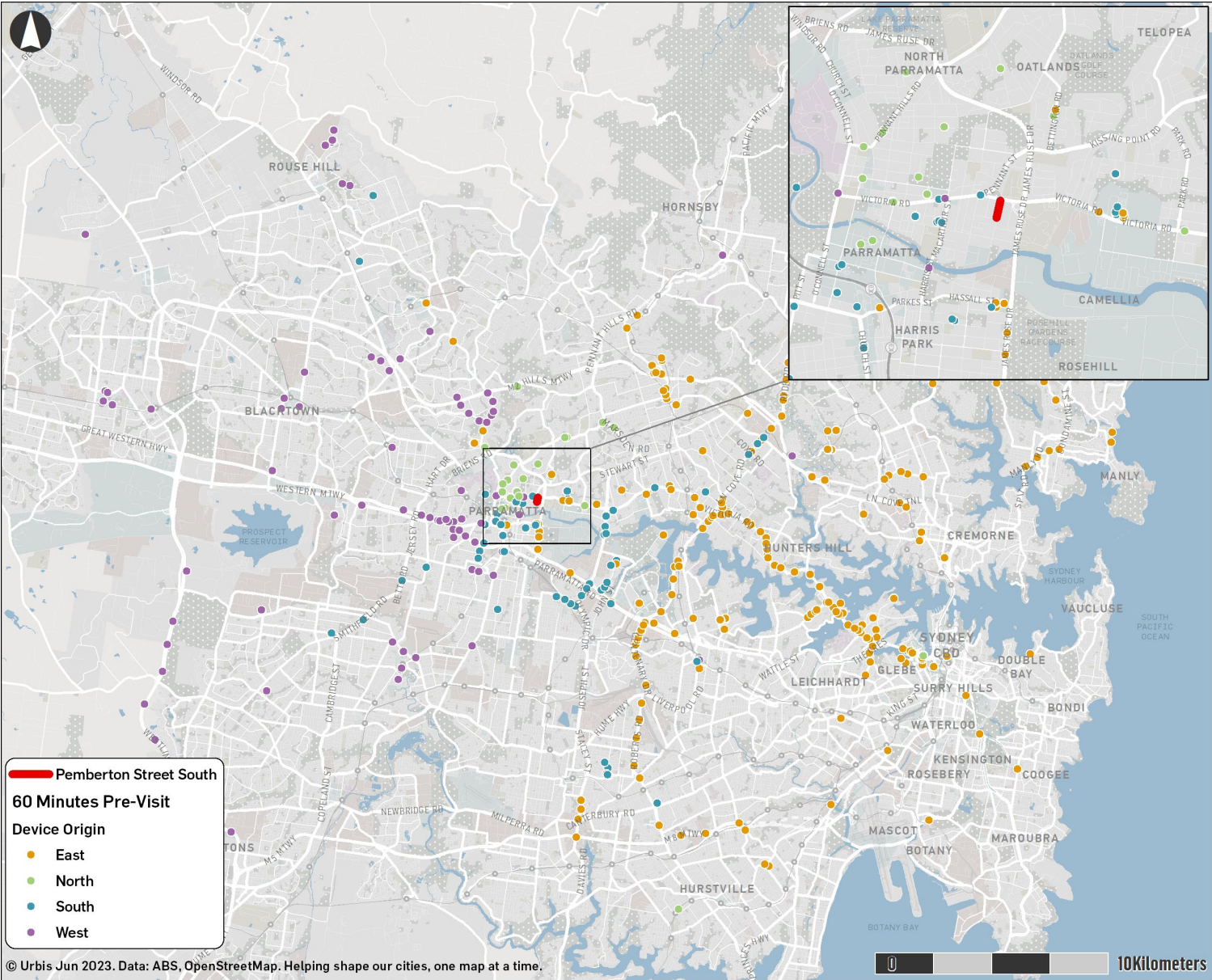
0-2 MINUTES AFTER ENTERING PEMBERTON STREET NORTH – DESTINATION TO NORTH OR VICTORIA ROAD



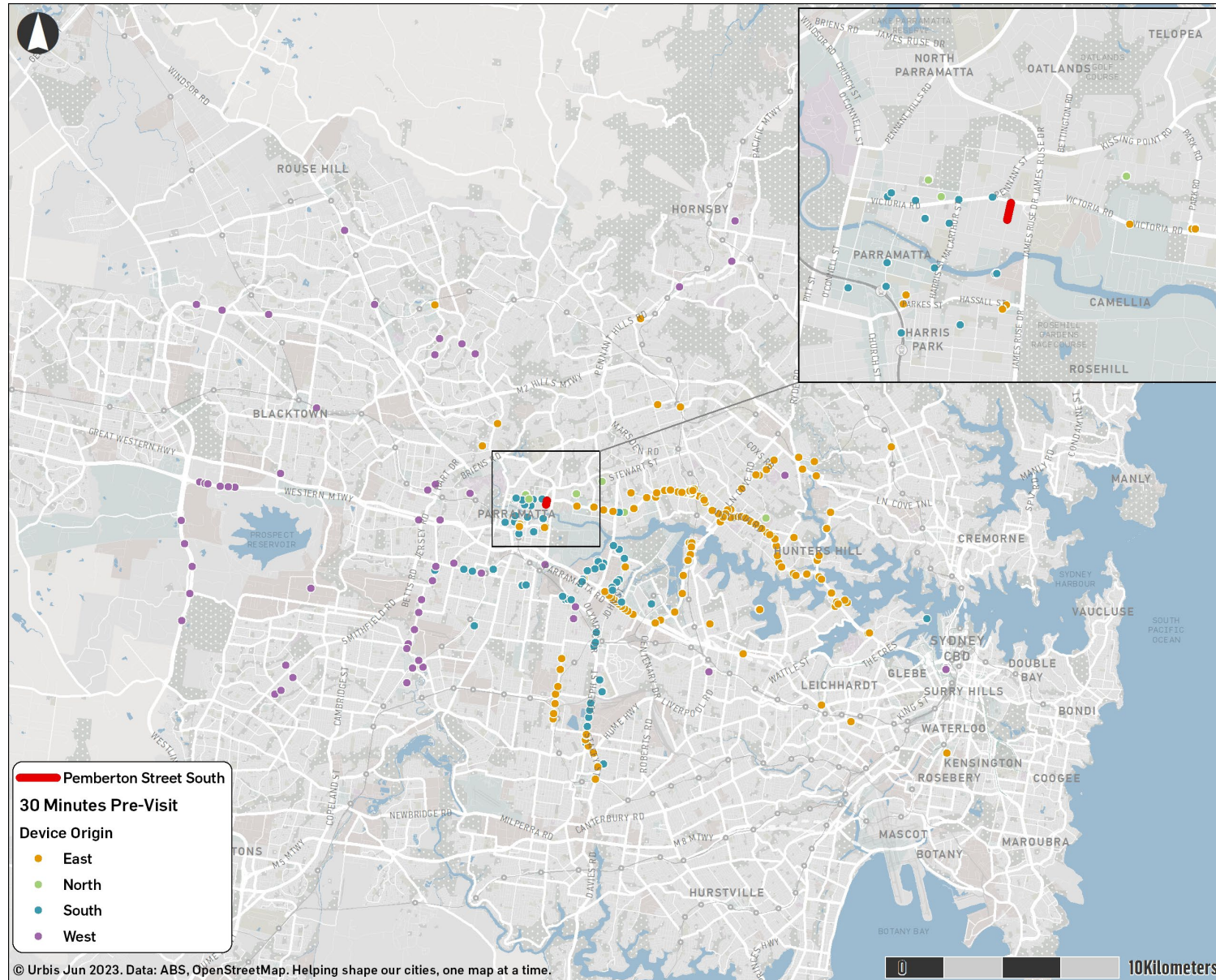
2-4 MINUTES AFTER ENTERING PEMBERTON STREET NORTH – DESTINATION TO NORTH OR VICTORIA ROAD



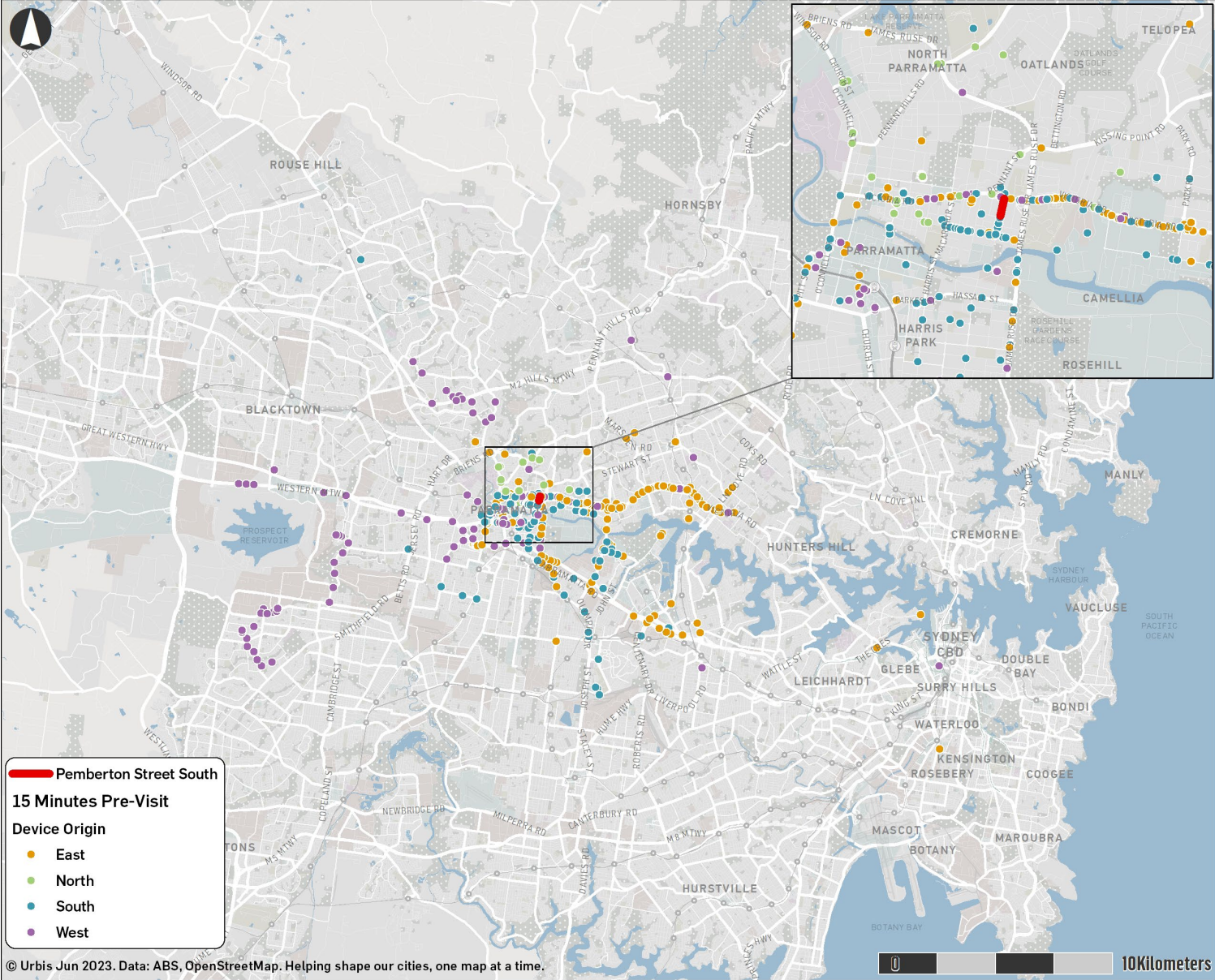
PEMBERTON STREET SOUTH – 60 MINUTES PRE-VISIT LOCATIONS



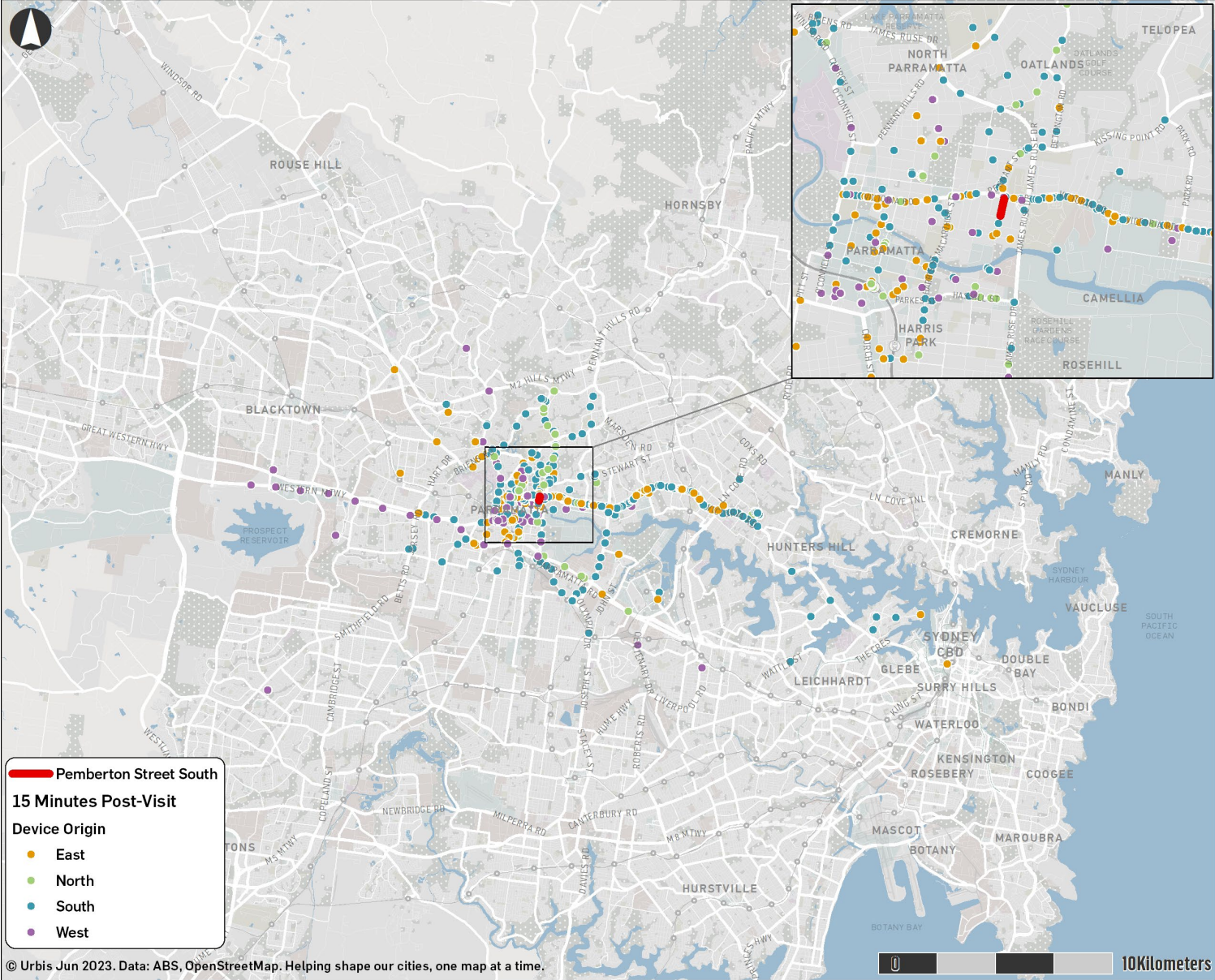
PEMBERTON STREET SOUTH – 30 MINUTES PRE-VISIT LOCATIONS



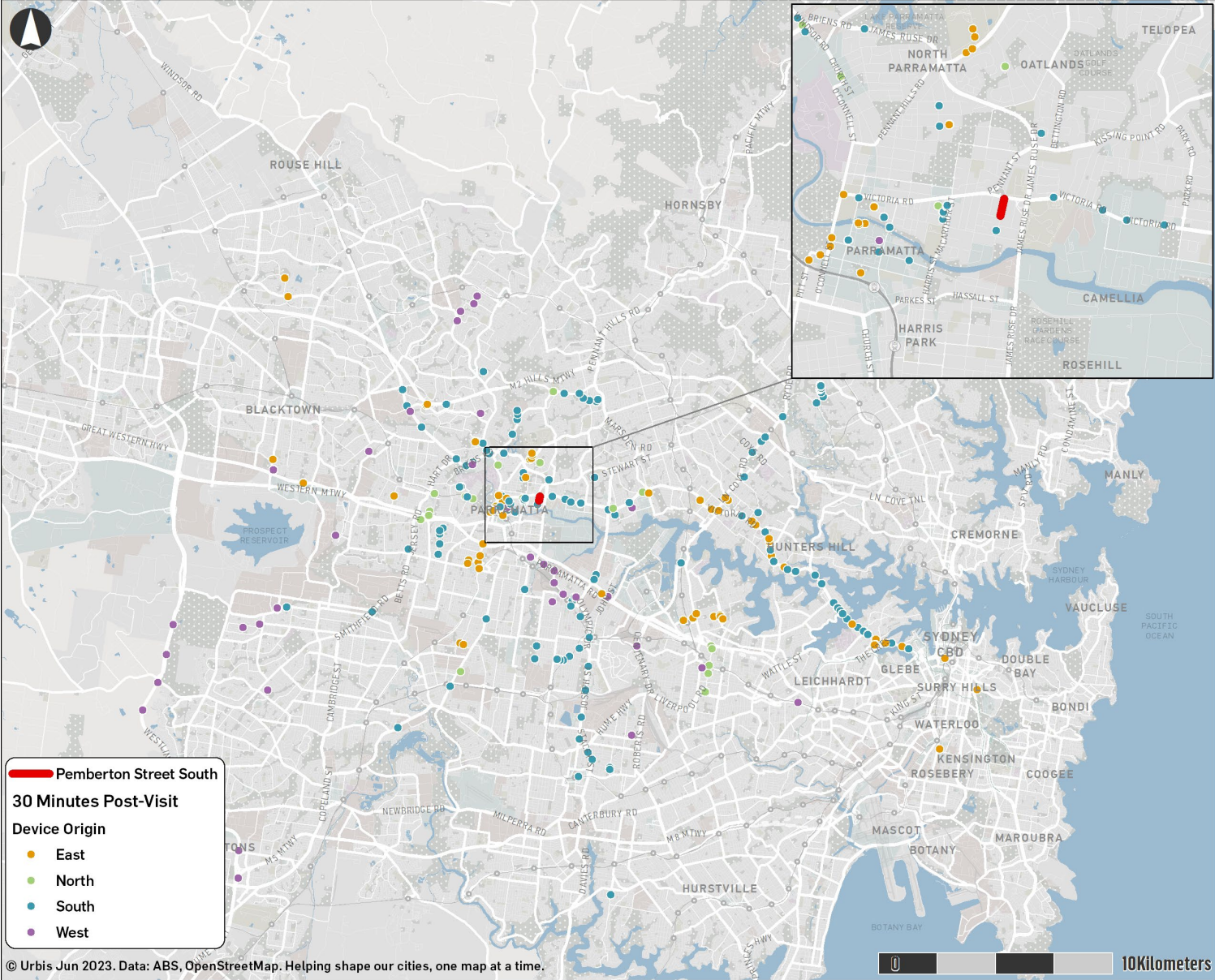
PEMBERTON STREET SOUTH – 15 MINUTES PRE-VISIT LOCATIONS



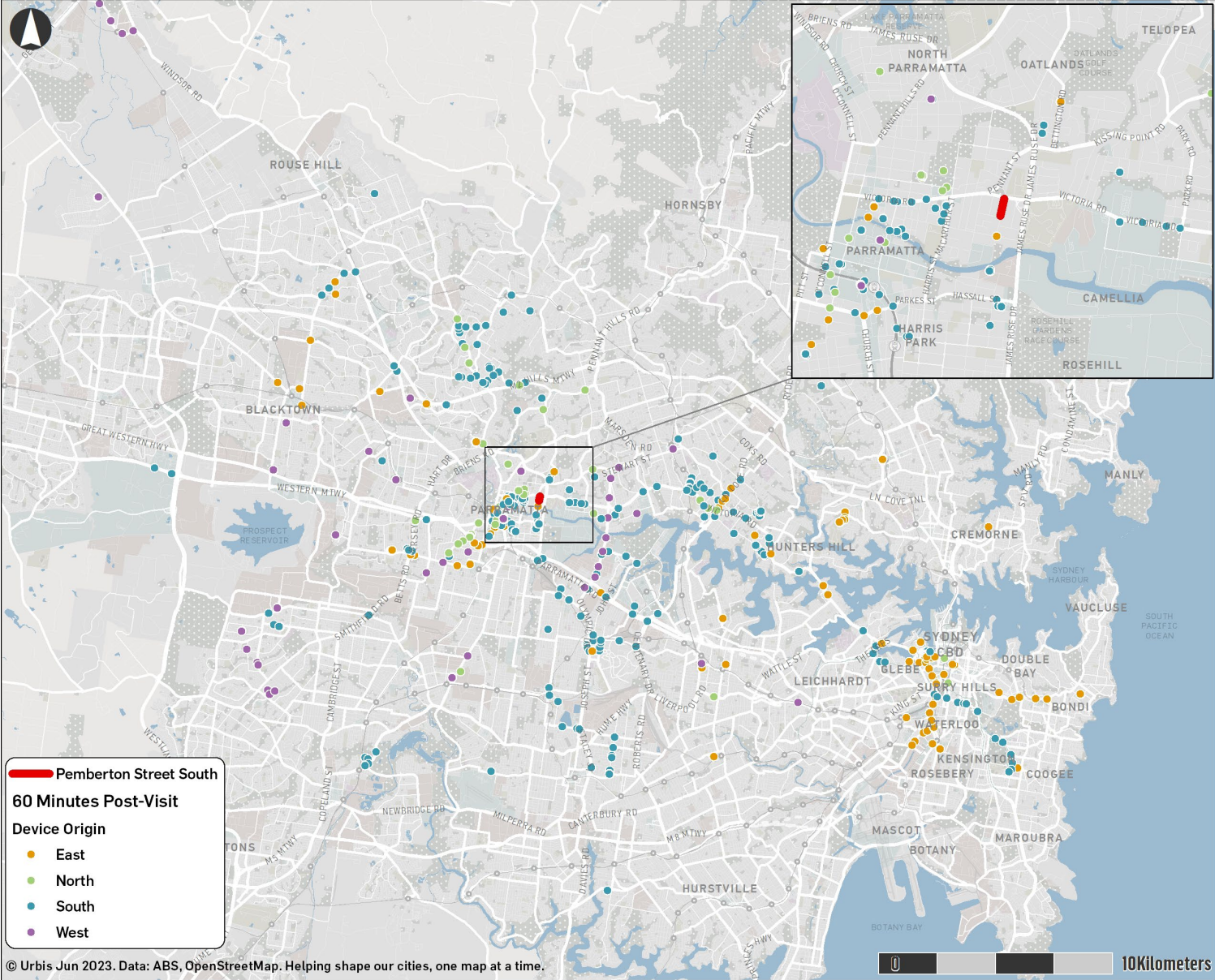
PEMBERTON STREET SOUTH – 15 MINUTES POST-VISIT LOCATIONS



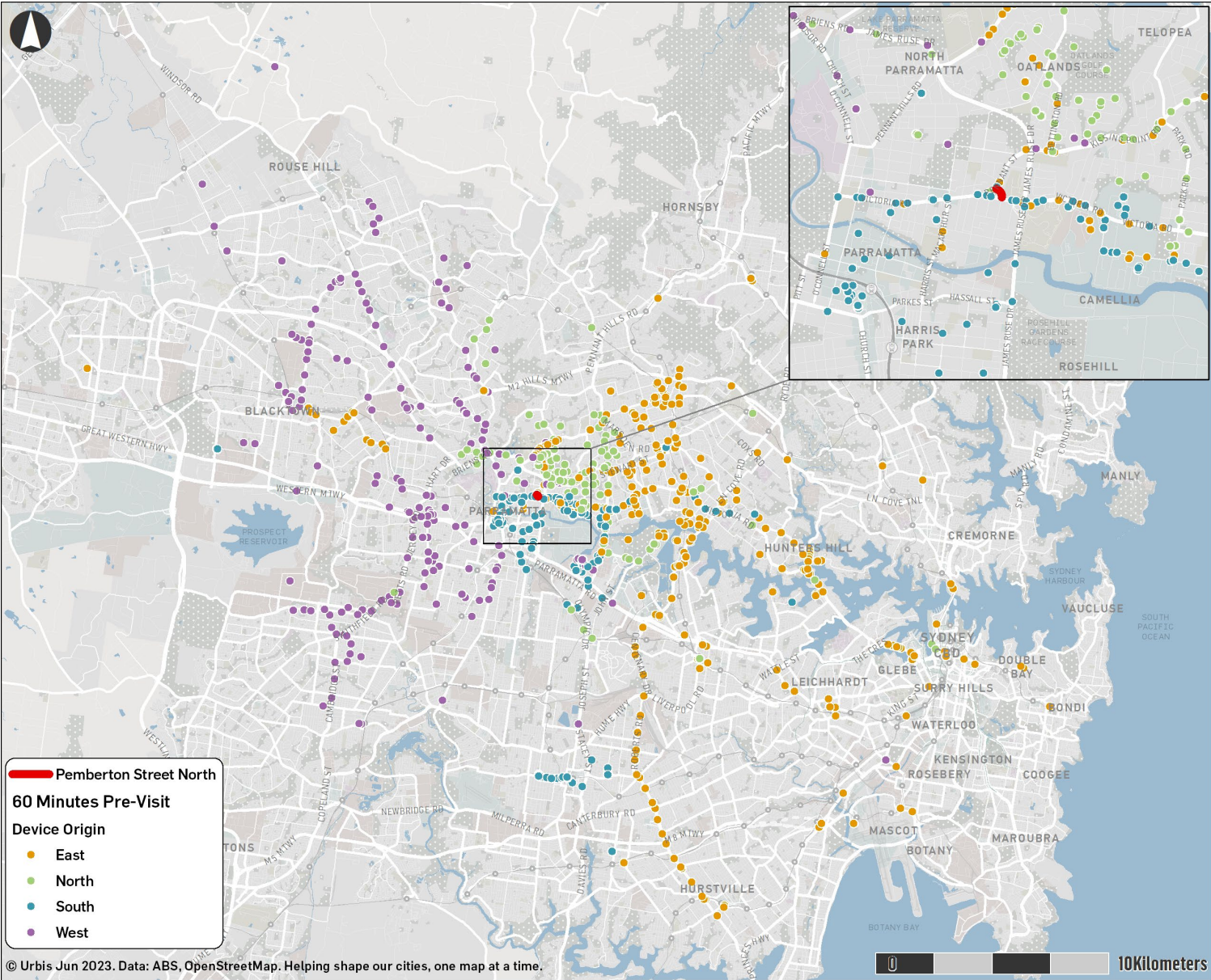
PEMBERTON STREET SOUTH – 30 MINUTES POST-VISIT LOCATIONS



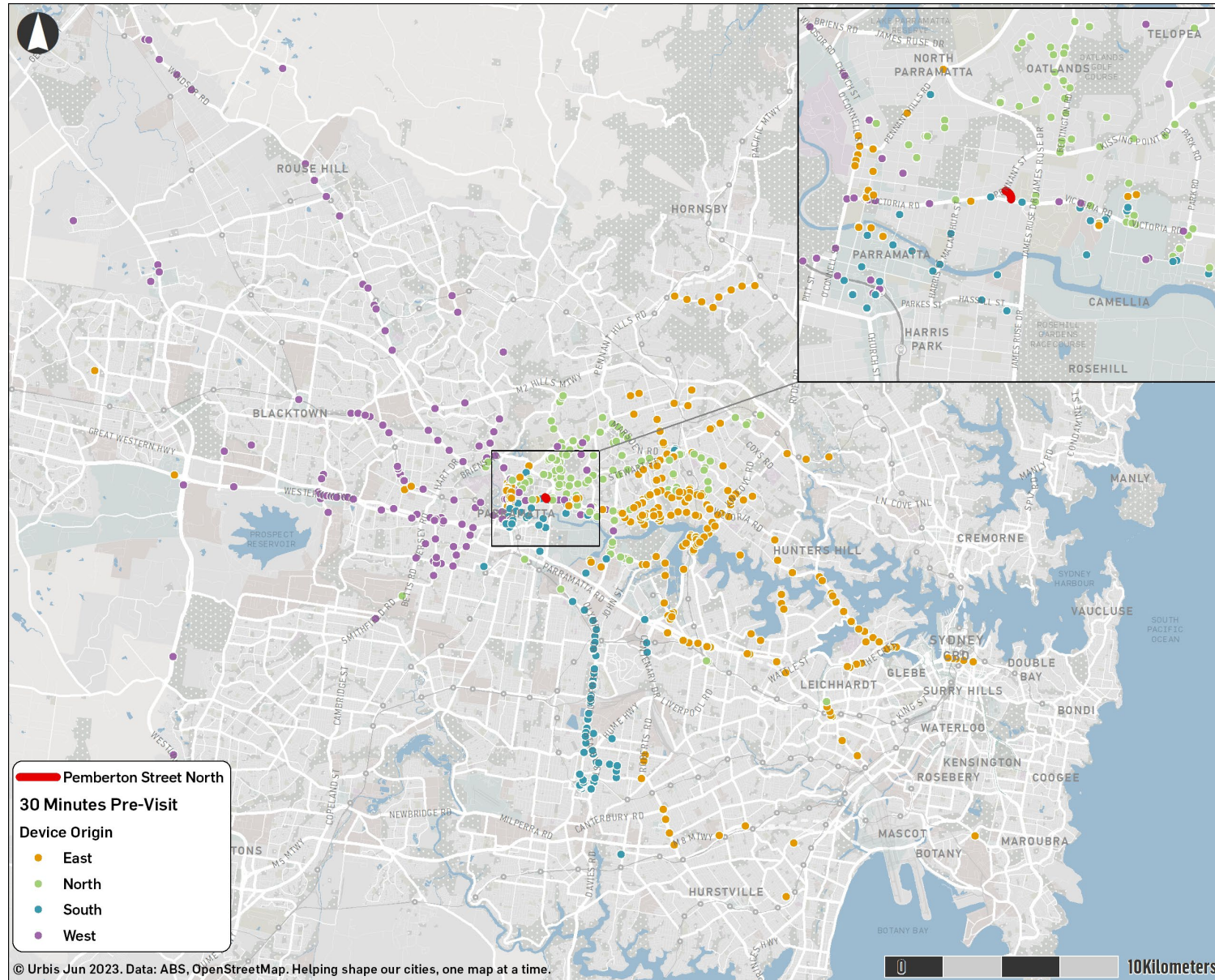
PEMBERTON STREET SOUTH – 60 MINUTES POST-VISIT LOCATIONS



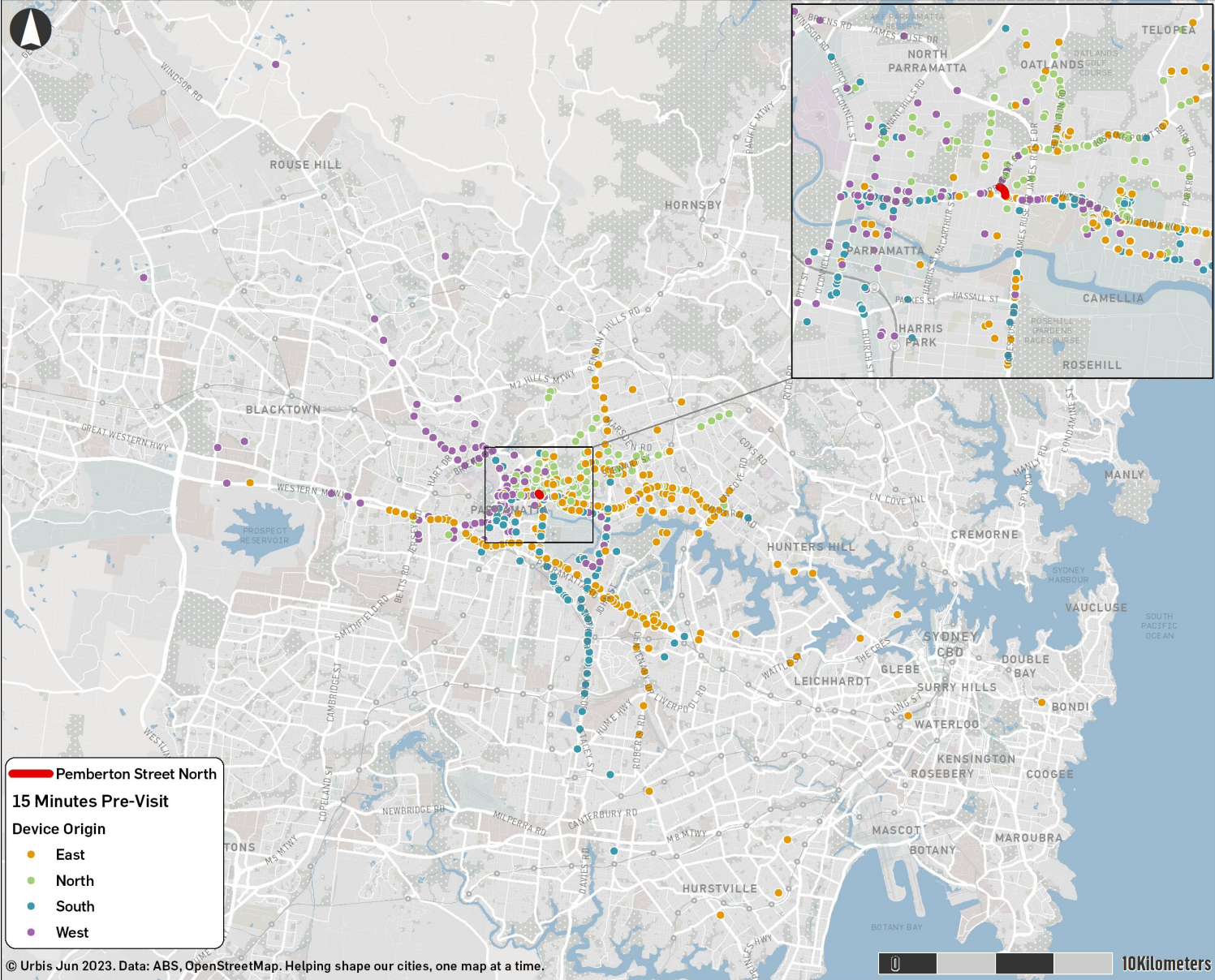
PEMBERTON STREET NORTH – 60 MINUTES PRE-VISIT LOCATIONS



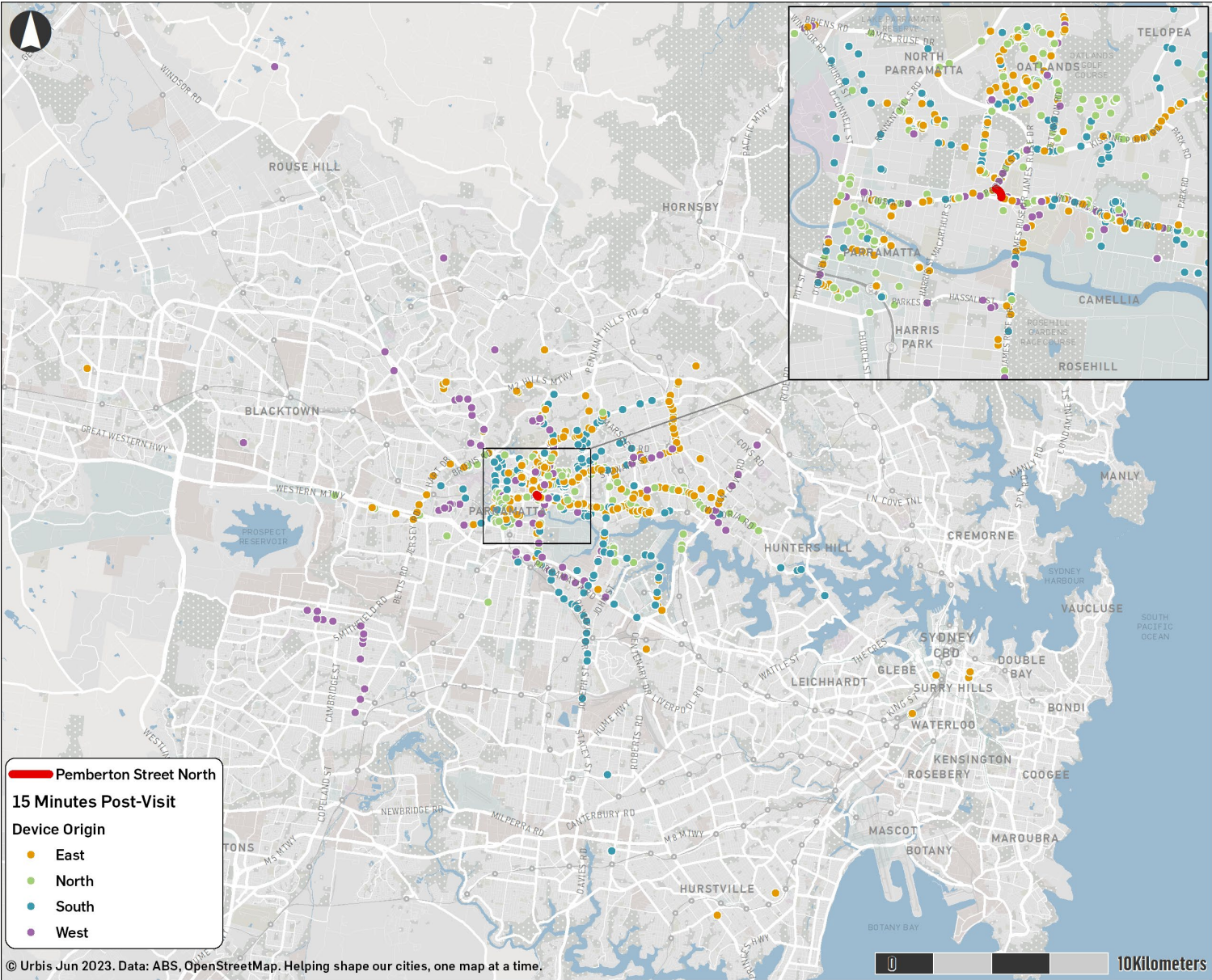
PEMBERTON STREET NORTH – 30 MINUTES PRE-VISIT LOCATIONS



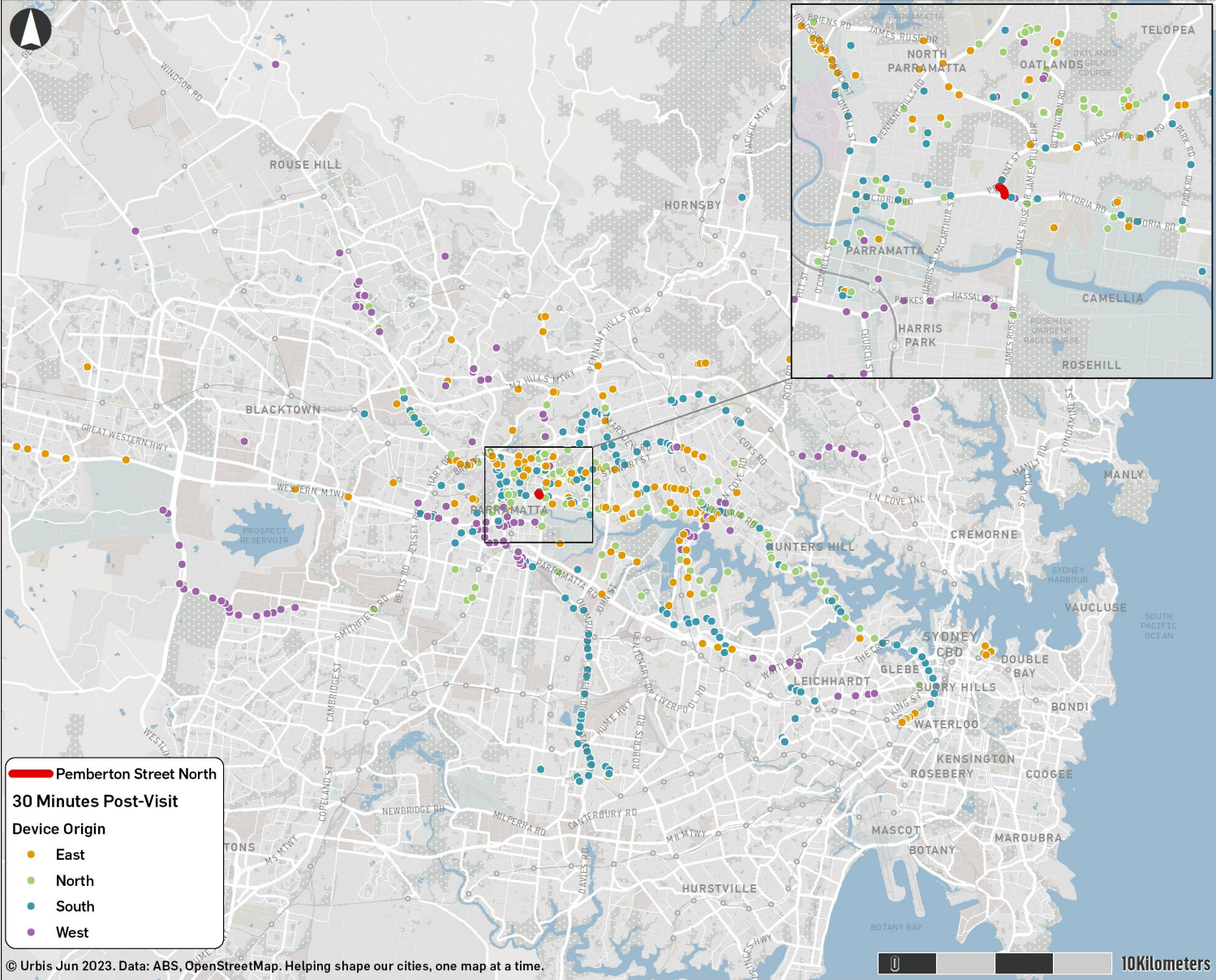
PEMBERTON STREET NORTH – 15 MINUTES PRE-VISIT LOCATIONS



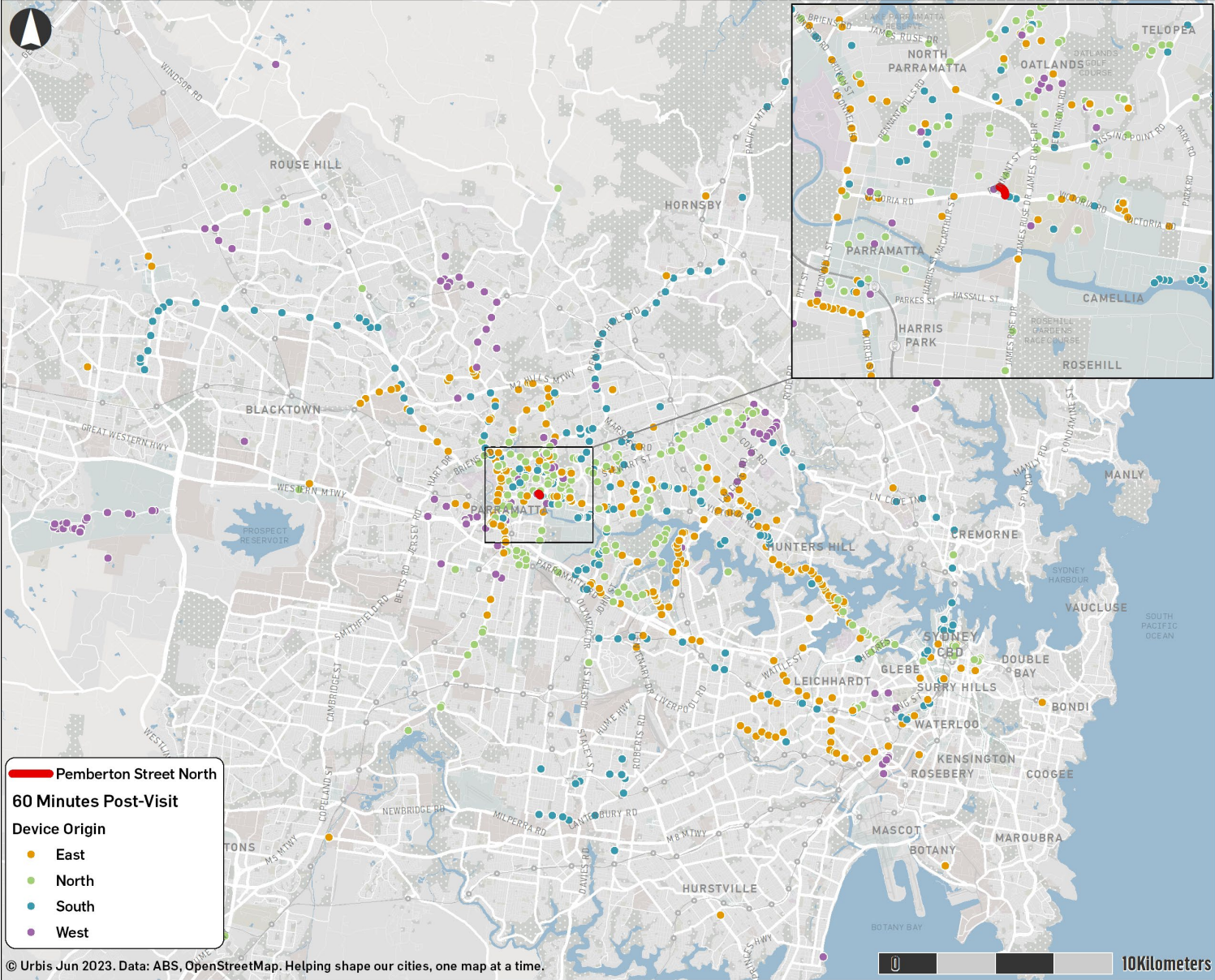
PEMBERTON STREET NORTH – 15 MINUTES POST-VISIT LOCATIONS



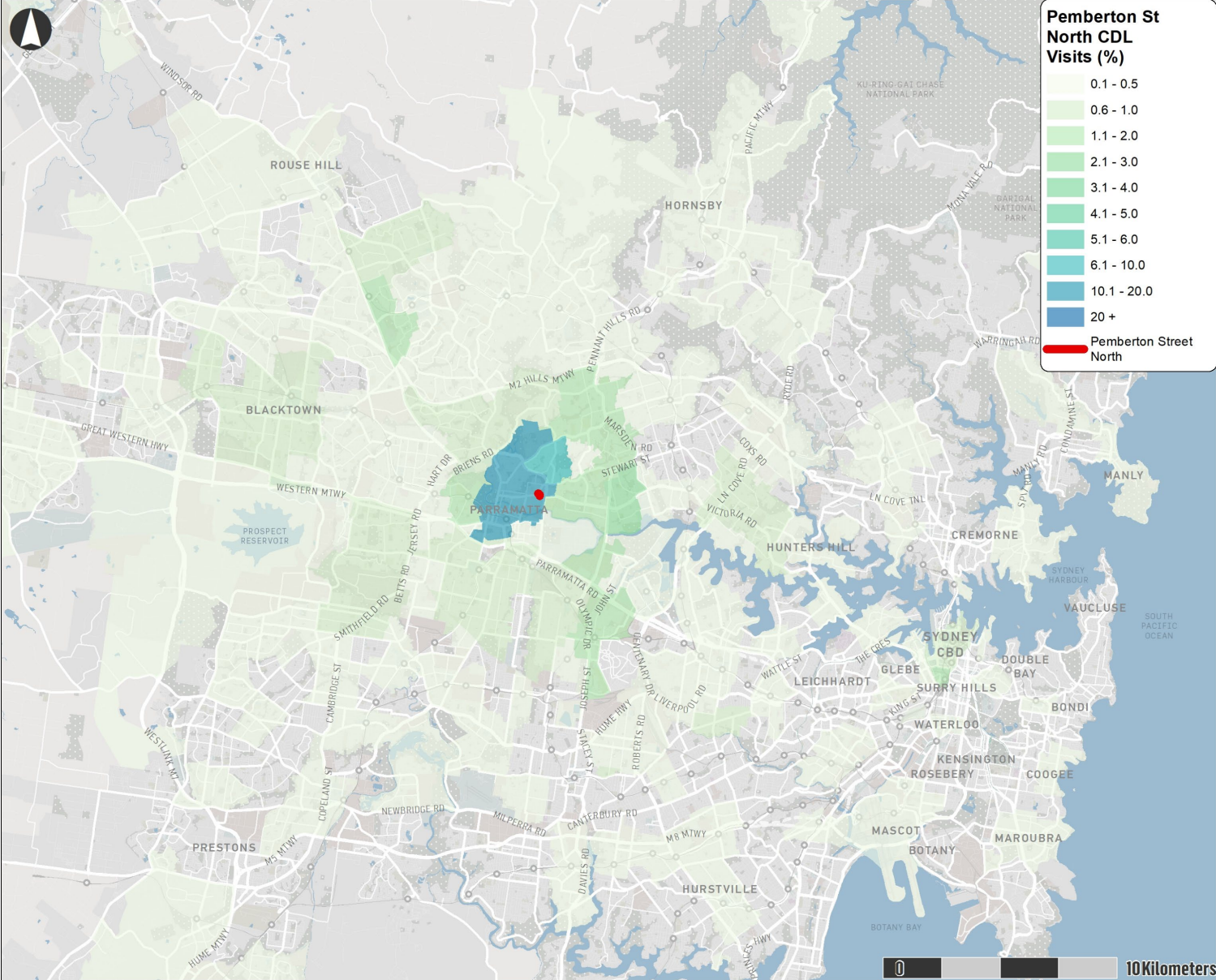
PEMBERTON STREET NORTH – 30 MINUTES POST-VISIT LOCATIONS



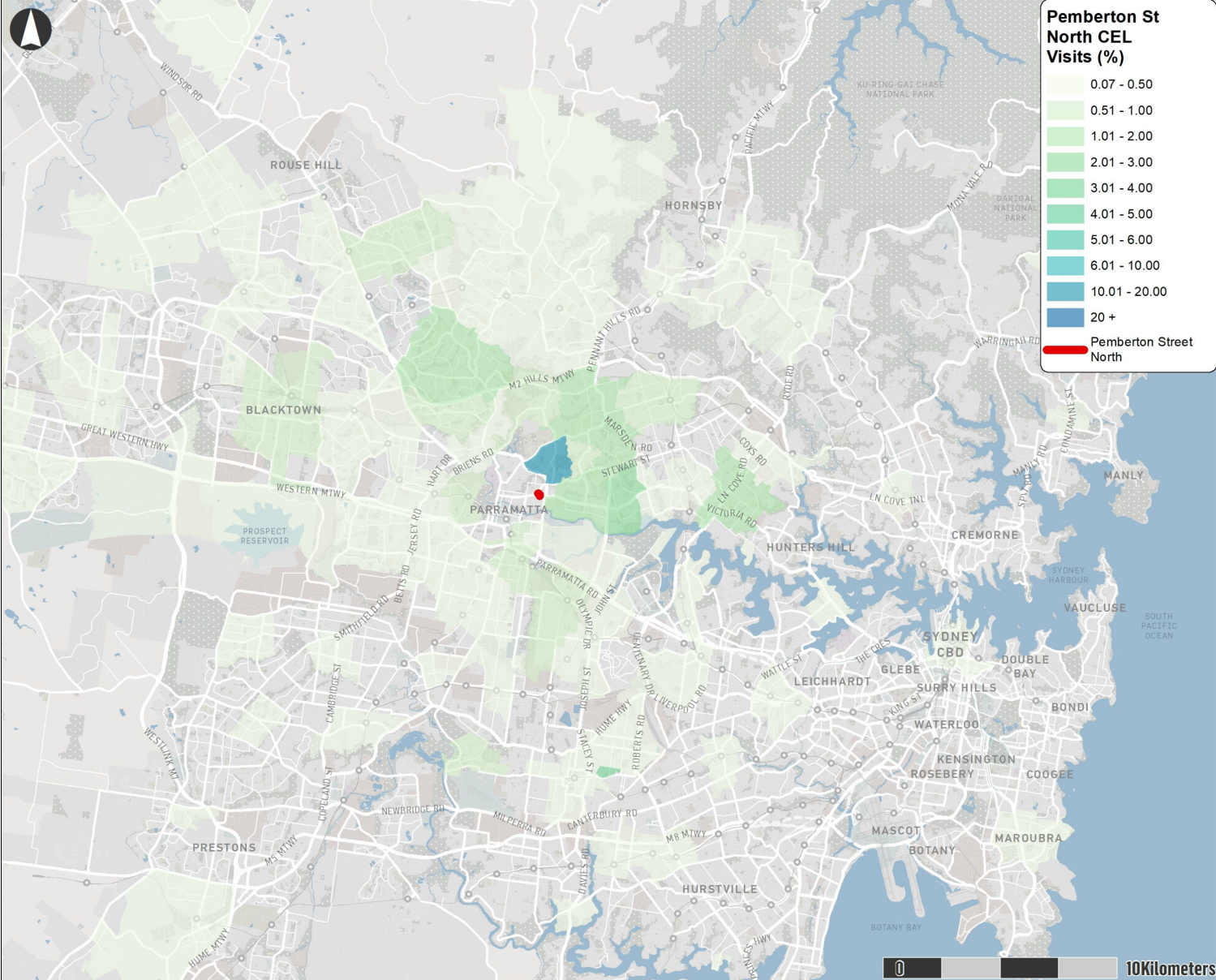
PEMBERTON STREET NORTH – 60 MINUTES POST-VISIT LOCATIONS



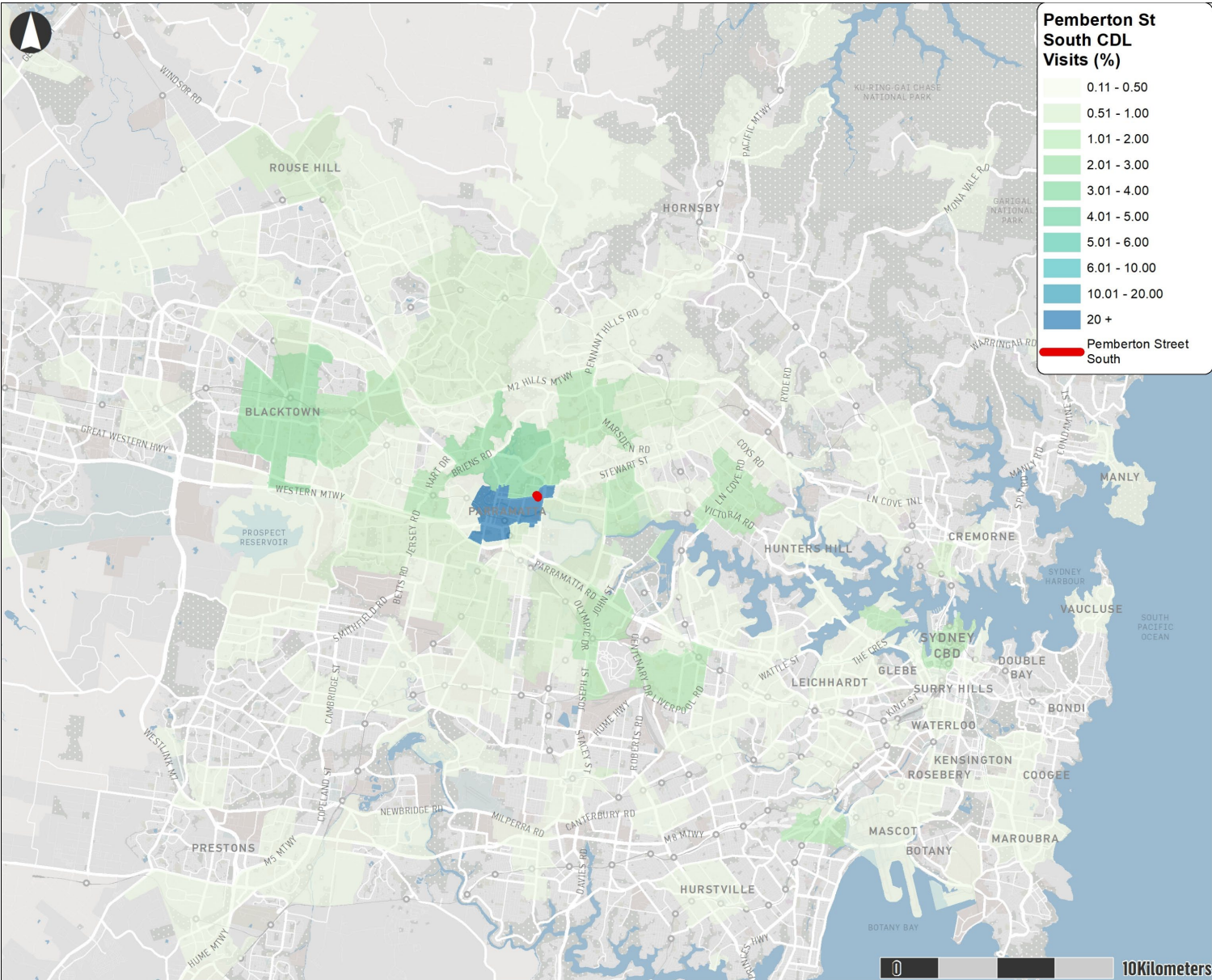
PEMBERTON STREET NORTH COMMON DAYTIME LOCATION VISITS



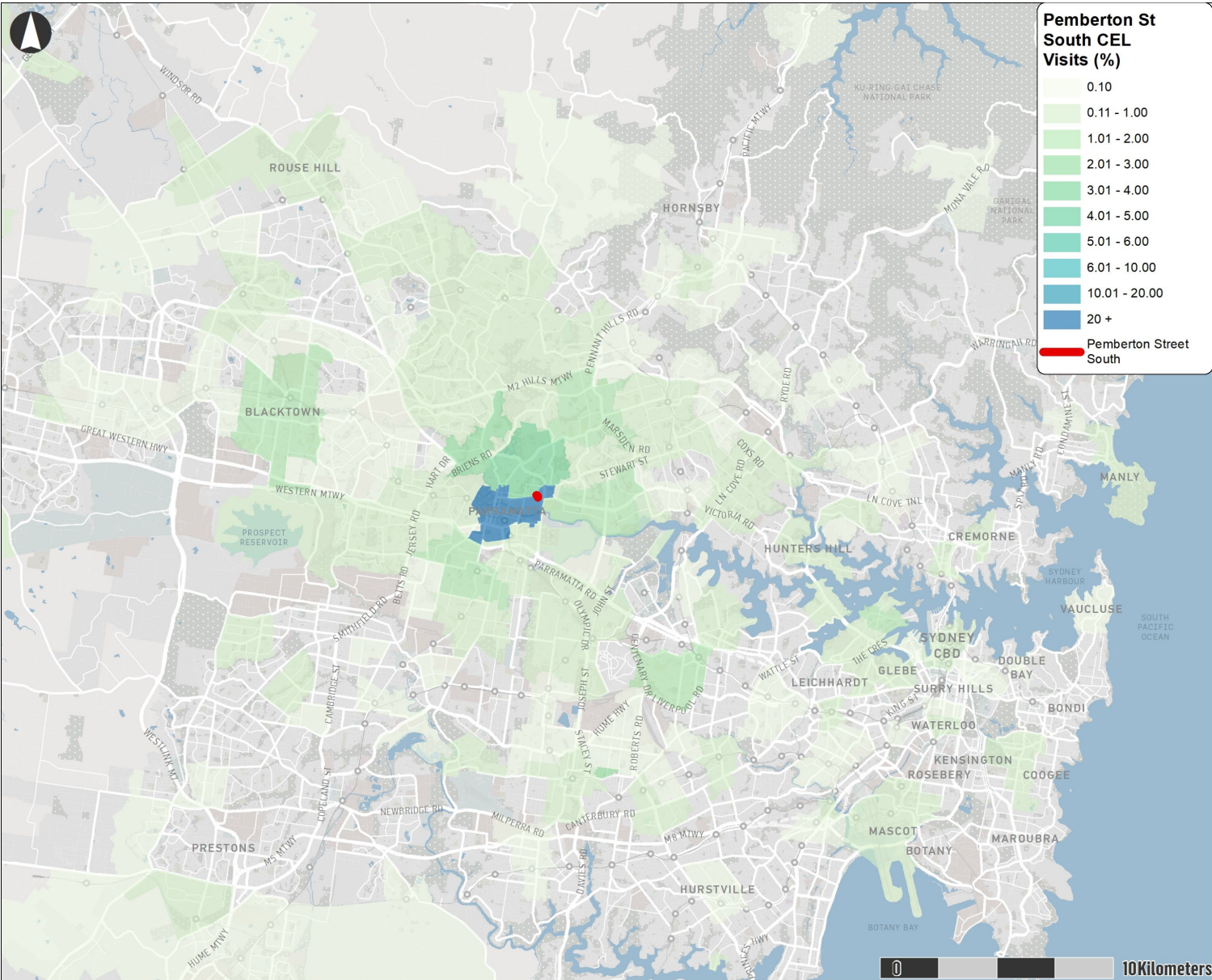
PEMBERTON STREET NORTH COMMON EVENING LOCATION VISITS

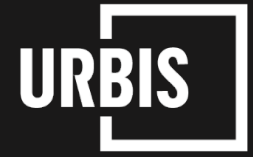


PEMBERTON STREET SOUTH COMMON DAYTIME LOCATION VISITS



PEMBERTON STREET SOUTH COMMON EVENING LOCATION VISITS





Appendix B Heritage Map

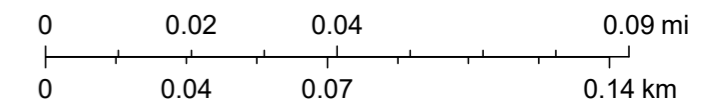
Heritage Map



4/09/2023, 10:57:56 am

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- | | | |
|-------------------------------|-----------------------|-----------------------------|
| Site | Item - Aboriginal | Interim Heritage Order |
| AHIMS_Sites_Y2_SRAP | Item - Archaeological | State Heritage Register |
| Local Environmental Plan | Item - General | Interim Heritage Order |
| State Heritage Register | Item - Landscape | Aboriginal Place Restricted |
| Local Environmental Plan | Aboriginal Place | Aboriginal Place |
| Conservation Area - General | | |
| Conservation Area - Landscape | | |
| Heritage Conservation Area | | |



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Appendix C Construction and maintenance noise estimator

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

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

Please pick from drop-down list in orange cells

Noise area category		R3
RBL or LA90 Background level (dB(A))	Day	50
	Evening	45
	Night	40
LAeq(15minute) Noise Management Level (dB(A))	Day	60
	Day (OOHW)	55
	Evening	50
	Night	45
Noisiest plant		Concrete Saw
Is there line of sight to receiver?		No (behind substantial solid barrier)

Residential receiver		LAeq(15minute) noise level above background (LA90)											LAeq(15minute) 75 dB(A) or greater (Highly affected)			Sleep disturbance L _{max} 65 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							
		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))	Measures	Within distance (m)	Mitigation level (dB(A))	Affected distance (m)	
Undeveloped green fields, rural areas with isolated dwellings	Day	55																
	Day (OOHW)	95																
	Evening	140																
	Night	200																
	Highly Affected	N	200	45	N, R2, DR	140	50	N, PC, SN, R2, DR	55	60	AA, N, PC, SN, R2, DR	25	70	N, PC, RO	15	75	70	
Developed settlements (urban and suburban)	Day	60																
	Day (OOHW)	105																
	Evening	155																
	Night	240																
	Highly Affected	N	240	45	N, R2, DR	155	50	N, PC, SN, R2, DR	60	60	AA, N, PC, SN, R2, DR	25	70	N, PC, RO	15	75	75	
Propagation across a valley / over water	Day	70																
	Day (OOHW)	115																
	Evening	190																
	Night	310																
	Highly Affected	N	310	45	N, R2, DR	190	50	N, PC, SN, R2, DR	70	60	AA, N, PC, SN, R2, DR	25	70	N, PC, RO	15	75	85	

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Undeveloped green fields, rural areas with isolated dwellings		Standard hours			<10 dB(A)			10 to 20 dB(A)								
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions		Day	55	95												
Hospital wards and operating theatres		Day	65	30												
Place of worship		Day	55	95												
Active recreation		Day	65	30												
Passive recreation		Day	60	55												
Industrial premise		Day	75	15												
Offices, retail outlets		Day	70	25												

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Developed settlements (urban and suburban)		OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres		Evening	65	30												
		Night	65	30	N	30	65	N, R2, NR	25	70	N, PC, SN, R2, DR	8	80	AA, N, PC, SN, R2, DR	3	90
Place of worship		Evening	55	95												
		Night	55	95	N	95	55	N, R1, DR	55	60	N, R1, DR	25	70	N, R1, DR, PC, SN	8	80
Active recreation		Evening	65	30												
Passive recreation		Evening	60	55												
								N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
Industrial premise		Evening	75	15												
		Night	75	15	N	15	75	N, R1, DR	8	80	N, R1, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets		Evening	70	25												
		Night	70	25	N	25	70	N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95
								N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Developed settlements (urban and suburban)		Standard hours			<10 dB(A)			10 to 20 dB(A)								
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions		Day	55	105												
Hospital wards and operating theatres		Day	65	35												
Place of worship		Day	55	105												
Active recreation		Day	65	35												
Passive recreation		Day	60	60												
Industrial premise		Day	75	15												
Offices, retail outlets		Day	70	25												

		L _{Aeq(15minute)} noise level above NML													
		OOHW		< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	
Hospital wards and operating theatres	Evening	65	35			N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90	
	Night	65	35	N	35	65	N, R2, NR	25	70	N, PC, SN, R2, DR	8	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	105			N, R1, DR	60	60	N, R1, DR	25	70	N, R1, DR, PC, SN	8	80	
	Night	55	105	N	105	55	N, R2, NR	60	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	8	80
Active recreation	Evening	65	35			N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90	
Passive recreation	Evening	60	60			N, R1, DR	35	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85	
Industrial premise	Evening	75	15			N, R1, DR	8	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100	
	Night	75	15	N	15	75	N, R2, NR	8	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25			N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95	
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

Non-residential receiver Propagation across a valley / over water		L _{Aeq(15minute)} noise level above NML											
Standard hours		<10 dB(A)						10 to 20 dB(A)			L _{Aeq(15minute)} 75 dB(A) or greater (Highly affected)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))		
Classroom at schools and other educational institutions	Day	55	115			N	45	65	N, PC, RO	15	75		
Hospital wards and operating theatres	Day	65	45						N, PC, RO	15	75		
Place of worship	Day	55	115			N	45	65	N, PC, RO	15	75		
Active recreation	Day	65	45						N, PC, RO	15	75		
Passive recreation	Day	60	70			N	25	70	N, PC, RO	15	75		
Industrial premise	Day	75	15						N, PC, RO	15	75		
Offices, retail outlets	Day	70	25						N, PC, RO	15	75		

		L _{Aeq(15minute)} noise level above NML													
		OOHW		< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	
Hospital wards and operating theatres	Evening	65	45			N, R1, DR	25	70	N, R1, DR	10	80	N, R1, DR, PC, SN	3	90	
	Night	65	45	N	45	65	N, R2, NR	25	70	N, PC, SN, R2, DR	10	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	115			N, R1, DR	70	60	N, R1, DR	25	70	N, R1, DR, PC, SN	10	80	
	Night	55	115	N	115	55	N, R2, NR	70	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	10	80
Active recreation	Evening	65	45			N, R1, DR	25	70	N, R1, DR	10	80	N, R1, DR, PC, SN	3	90	
Passive recreation	Evening	60	70			N, R1, DR	45	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85	
Industrial premise	Evening	75	15			N, R1, DR	10	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100	
	Night	75	15	N	15	75	N, R2, NR	10	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25			N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95	
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

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

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

Please pick from drop-down list in orange cells

Noise area category		R3
RBL or LA90 Background level (dB(A))	Day	50
	Evening	45
	Night	40
LAeq(15minute) Noise Management Level (dB(A))	Day	60
	Day (OOHW)	55
	Evening	50
Noisiest plant		13.5T Excavator With Hammer
Is there line of sight to receiver?		No (behind substantial solid barrier)

Residential receiver		LAeq(15minute) noise level above background (LA90)											LAeq(15minute) 75 dB(A) or greater (Highly affected)			Sleep disturbance L _{max} 65 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						
		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))	Measures	Within distance (m)	Mitigation level (dB(A))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	105															
	Day (OOHW)	150															
	Evening	215															
	Night	315															
	Highly Affected	25															
Developed settlements (urban and suburban)	Day	110															
	Day (OOHW)	170															
	Evening	260															
	Night	390															
	Highly Affected	25															
Propagation across a valley / over water	Day	130															
	Day (OOHW)	210															
	Evening	340															
	Night	530															
	Highly Affected	30															

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Undeveloped green fields, rural areas with isolated dwellings		Standard hours			<10 dB(A)			10 to 20 dB(A)								
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions		Day	55	150												
Hospital wards and operating theatres		Day	65	60												
Place of worship		Day	55	150												
Active recreation		Day	65	60												
Passive recreation		Day	60	105												
Industrial premise		Day	75	25												
Offices, retail outlets		Day	70	35												

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Developed settlements (urban and suburban)		OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres		Evening	65	60												
		Night	65	60	N	60	65									
Place of worship		Evening	55	150												
		Night	55	150	N	150	55									
Active recreation		Evening	65	60												
Passive recreation		Evening	60	105												
Industrial premise		Evening	75	25												
		Night	75	25	N	25	75									
Offices, retail outlets		Evening	70	35												
		Night	70	35	N	35	70									

Non-residential receiver		LAeq(15minute) noise level above NML											LAeq(15minute) 75 dB(A) or greater (Highly affected)			
Developed settlements (urban and suburban)		Standard hours			<10 dB(A)			10 to 20 dB(A)								
		Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions		Day	55	170												
Hospital wards and operating theatres		Day	65	70												
Place of worship		Day	55	170												
Active recreation		Day	65	70												
Passive recreation		Day	60	110												
Industrial premise		Day	75	25												
Offices, retail outlets		Day	70	40												

		L _{Aeq(15minute)} noise level above NML														
		OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))		
Hospital wards and operating theatres	Evening	65	70			N, R1, DR	40	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90		
	Night	65	70	N	70	65	N, R2, NR	40	70	N, PC, SN, R2, DR	14	80	AA, N, PC, SN, R2, DR	4	90	
Place of worship	Evening	55	170			N, R1, DR	110	60	N, R1, DR	40	70	N, R1, DR, PC, SN	14	80		
	Night	55	170	N	170	55	N, R2, NR	110	60	N, PC, SN, R2, DR	40	70	AA, N, PC, SN, R2, DR	14	80	
Active recreation	Evening	65	70			N, R1, DR	40	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90		
Passive recreation	Evening	60	110			N, R1, DR	70	65	N, R1, DR	25	75	N, R1, DR, PC, SN	8	85		
Industrial premise	Evening	75	25			N, R1, DR	14	80	N, R1, DR	4	90	N, R1, DR, PC, SN	1	100		
	Night	75	25	N	25	75	N, R2, NR	14	80	N, PC, SN, R2, DR	4	90	AA, N, PC, SN, R2, DR	1	100	
Offices, retail outlets	Evening	70	40			N, R1, DR	25	75	N, R1, DR	8	85	N, R1, DR, PC, SN	3	95		
	Night	70	40	N	40	70	N, R2, NR	25	75	N, PC, SN, R2, DR	8	85	AA, N, PC, SN, R2, DR	3	95	

Non-residential receiver Propagation across a valley / over water		L _{Aeq(15minute)} noise level above NML											
Standard hours		<10 dB(A)						10 to 20 dB(A)			L _{Aeq(15minute)} 75 dB(A) or greater (Highly affected)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))		
Classroom at schools and other educational institutions	Day	55	210			N	80	65	N, PC, RO	30	75		
Hospital wards and operating theatres	Day	65	80						N, PC, RO	30	75		
Place of worship	Day	55	210			N	80	65	N, PC, RO	30	75		
Active recreation	Day	65	80						N, PC, RO	30	75		
Passive recreation	Day	60	130			N	45	70	N, PC, RO	30	75		
Industrial premise	Day	75	30						N, PC, RO	30	75		
Offices, retail outlets	Day	70	45						N, PC, RO	30	75		

		L _{Aeq(15minute)} noise level above NML														
		OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))		
Hospital wards and operating theatres	Evening	65	80			N, R1, DR	45	70	N, R1, DR	15	80	N, R1, DR, PC, SN	4	90		
	Night	65	80	N	80	65	N, R2, NR	45	70	N, PC, SN, R2, DR	15	80	AA, N, PC, SN, R2, DR	4	90	
Place of worship	Evening	55	210			N, R1, DR	130	60	N, R1, DR	45	70	N, R1, DR, PC, SN	15	80		
	Night	55	210	N	210	55	N, R2, NR	130	60	N, PC, SN, R2, DR	45	70	AA, N, PC, SN, R2, DR	15	80	
Active recreation	Evening	65	80			N, R1, DR	45	70	N, R1, DR	15	80	N, R1, DR, PC, SN	4	90		
Passive recreation	Evening	60	130			N, R1, DR	80	65	N, R1, DR	30	75	N, R1, DR, PC, SN	10	85		
Industrial premise	Evening	75	30			N, R1, DR	15	80	N, R1, DR	4	90	N, R1, DR, PC, SN	1	100		
	Night	75	30	N	30	75	N, R2, NR	15	80	N, PC, SN, R2, DR	4	90	AA, N, PC, SN, R2, DR	1	100	
Offices, retail outlets	Evening	70	45			N, R1, DR	30	75	N, R1, DR	10	85	N, R1, DR, PC, SN	3	95		
	Night	70	45	N	45	70	N, R2, NR	30	75	N, PC, SN, R2, DR	10	85	AA, N, PC, SN, R2, DR	3	95	

Appendix D TISEPP Consultation RVZ-2023- SP0031 Victoria Road - Parramatta Council



20 September 2023

council@cityofparramatta.nsw.gov.au
City of Parramatta
126 Church Street
Parramatta NSW 2150

Dear Sir/Madam

Consultation regarding proposed modification to the Safety Improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta Minor Works Review of Environmental Factors

Transport for NSW (TfNSW) proposed to undertake safety improvements at Victoria Road between Pennant Street and Pemberton Street, Parramatta (determined Project). A Minor Works Review of Environmental Factors (MWREF) for this proposal was assessed and approved by TfNSW on 17 February 2023 (determined MWREF). The Project comprised of new pedestrian crossing facilities at the Victoria Street/Pennant Street intersection and a new right turn bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street. Additionally, the removal of two existing unsignalised right turn bays on Pemberton Street by installing a new median with pedestrian fencing to improve safety for pedestrians and drivers.

It has since been identified that a future project (bus lane improvement) will comprise of a continuous bus lane on Victoria Road from James Ruse Drive to Wandsworth Street. As a result, the proposed new right turn bay on Victoria Road at Pennant Street and the bus lane removal would clash with these future works and is no longer feasible for this section of the corridor. This is the main reason for the modifications in the scope of works.

The proposed modification on Victoria Road between Pennant Street and Pemberton Street involves the removal of the following scope of works of the determined MWREF as they are not compatible with a future project on Victoria Road (bus lane improvement):

- New right turning bay for motorists travelling westbound on Victoria Road to turn right into Pennant Street.
- Removal of bus lane on approach to Pennant Street to allow for new signalised crossing on Victoria Road.
- Removal of an existing median island crossing on Pennant Street, to provide new signalised crossing facility.

Additionally, the proposed modification on Victoria Road comprises the addition of the following scope of works during construction:

- Implementation of a continuous bus lane between James Ruse Drive and Gaggin Street.

- Adjusting the width of the median between Pemberton and James Ruse Drive to allow a continuous bus lane between James Ruse Drive and Gaggin Street.
- Extension of the original project boundary by approximately 1000m² on the eastern end of the site.

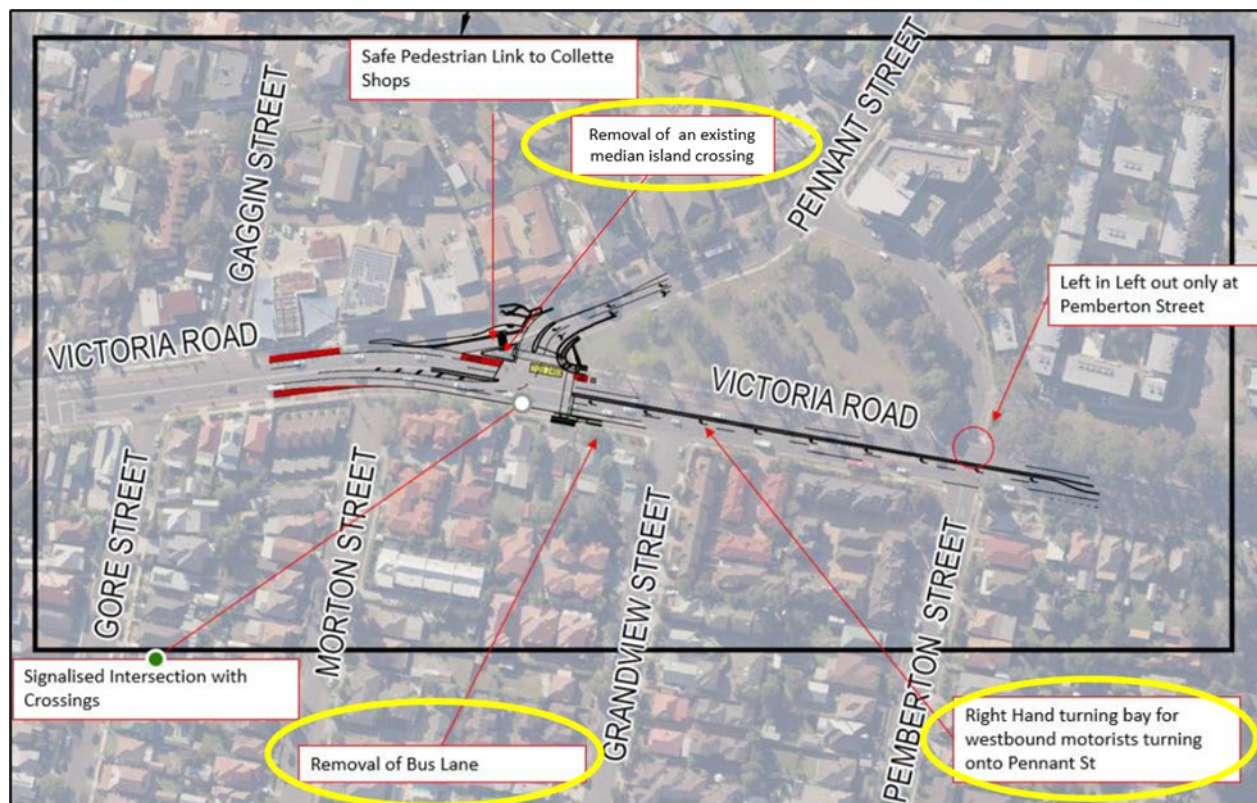


Figure 1 - Key features to be removed in yellow

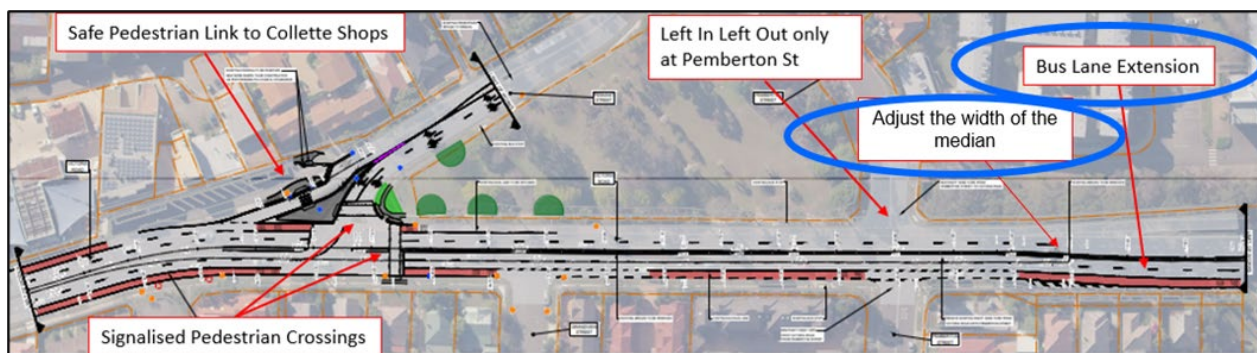


Figure 2 - Key features to be included in blue

An Addendum to the MWREF has been prepared and is currently under review to assess the likely impacts of the proposal under Division 5.1 of the Environmental Planning and Assessment Act 1979.

Consultation under State Environmental Planning Policy (Transport and Infrastructure) 2021

Under Section 2.10 of SEPP (Transport and Infrastructure) outlines that development must not be carried out on behalf of a public authority unless the authority or the person has given written notice of the intention to carry out the development (together with a scope of

works) to the council for the area in which the land is located, and taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.

An outline of the changes to the proposal is included in the draft Addendum to the MWREF which has been prepared to determine the possible impacts.

It would be appreciated if you could provide any comments on this proposal by **11 September 2023**.

Transport for NSW would be pleased to provide further information if required. In this regard Fulton Hogan (on behalf of Transport for NSW) may be contacted on [REDACTED] or by email [REDACTED]

Yours faithfully

A handwritten signature in black ink, appearing to be 'Ellese O'Sullivan', with a long horizontal line extending to the right.

Ellese O'Sullivan
Safety, Environment, Quality, Sustainability Manager (Fulton Hogan on behalf of
Transport for NSW)

Appendix E City of Parramatta Letter Regarding Victoria Road Safety Improvement Project

Ellese O'Sullivan
Fulton Hogan on behalf of Transport for NSW
[REDACTED]

Your Reference	D09144840
Our Reference	F2023/00035
Contact	Behzad Saleh
Telephone	9806 8410
Email	traffic@cityofparramatta.nsw.gov.au

10 October 2023

Dear Ellese O'Sullivan,

RE: Transport for NSW TISEPP letter regarding proposed modifications to design of Victoria Road between Pennant Street and Pemberton Street, Parramatta.

I refer to the consultation letter submitted to City of Parramatta Council on 20 September 2023 regarding modifications to the design of safety improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta. It is noted that Transport for NSW (TfNSW) is required to formally consult with City of Parramatta Council under section 2.10 of the State Environmental Planning Policy (Transport and Infrastructure) due to the below reasons:

1. The proposed activities may impact on public places under the ownership of Council, have an impact to pedestrian/vehicle movements or have an impact to stormwater management services.
2. The Proposal involves more than a minor or inconsequential excavation of a road or adjacent footpath for which the City of Parramatta is the roads authority and responsible for maintenance.

Please be advised that City of Parramatta Council formally objects to the proposed removal of the new right turn bay in Victoria Road at Pennant Street from the scope of the project.

It is understood that the main reason for this change to the scope being proposed by TfNSW is to retain a continuous bus lane on the south side of Victoria Road from James Ruse Drive to Wandsworth Street. However, Council believes that the consequences of removing the right turn from the scope outweigh the benefits of having the bus lane for the following reasons:

1. TfNSW has not provided any information on what time saving benefit will be achieved by having the proposed bus lane. Based on site observation, the section of Victoria Road between James Ruse Drive and Wandsworth Street does not generally have any significant traffic queues in the peak hours. Accordingly, in the absence of any data to suggest otherwise, it is considered that the time saving for buses by having this lane will be negligible, whereas the detour times indicated within the Review of Environmental Factors are 3-8 minutes.

Contact us:

council@cityofparramatta.nsw.gov.au | 02 9806 5050
@cityofparramatta | PO Box 32, Parramatta, NSW 2124
ABN 49 907 174 773 | cityofparramatta.nsw.gov.au

2. TfNSW has not adequately considered the impact the detoured traffic will have on Council's local street network and the residential amenity of the areas. It is to be noted that Council has received representation from the State Member for Parramatta with members of the community raising concerns with the early closure of the right turn bays in Victoria Road at Pemberton Street. Furthermore, it is being reported that motorists are using Mason Street in order to turn back onto Victoria Road to access Pennant Street. Mason Street is narrow and with parking on both sides, the usable width of the road is less than 6m which affects two-way continuous traffic flow.
3. The existing right turn bay in Victoria Road at Macarthur Street is small and does not have the capacity to accommodate the additional traffic being detoured as a consequence of the closure of the right turn bay. As a result, it has been observed that vehicles are now overflowing from the right turn bay and effectively reducing the through lanes in Victoria Road to one as evidenced from the below aerial image taken on Saturday, 12 August 2023 following TfNSW early closure of the right turn bays in Pemberton Street:



4. There is an existing Planning Proposal for the Western Sydney University site located at 17 Pemberton Street and 260 Victoria Road. The proposal seeks an increased density with over 1,000 dwellings. In order to support future developments within the area, the road network must be made permeable so to not concentrate traffic to particular intersections.
5. Council has concerns that the proposed modification to the left turn from Victoria Road into Pennant Street will result in higher vehicle speeds when crossing the proposed pedestrian crossing. This is because within the previous designs, vehicles were required to give way to traffic turning right from Victoria Road into Pennant Street, however, as per the modifications, vehicles are travelling onto Pennant Street at a straight trajectory with no physical device to reduce vehicle speeds.

Accordingly, Council requests that TfNSW reconsider the proposed changes and revert back to the previous design to which Council did not raise an objection to. Furthermore, the community should be consulted on the matter and be provided with an opportunity prior to this matter being determined.

Should you wish to discuss this matter further, please contact Council's Traffic and Transport Investigations Engineer, Mr Behzad Saleh on 9806 8410.

Regards,



Richard Searle

Traffic and Transport Manager

Cc: Jamon Pool – AECOM jamon.pool@transport.nsw.gov.au

Jo Kaya – TfNSW Joanna.Jarraldkaya@transport.nsw.gov.au

Steph Hager – TfNSW Steph.Hager@transport.nsw.gov.au

Donna Davis – Member for Parramatta parramatta@parliament.nsw.gov.au

Appendix F Response to City of Parramatta Letter Regarding Victoria Road Safety Improvement Project

17 November 2023

Richard Searle
Traffic and Transport Manager
City of Parramatta Council

Correspondence via email: rsearle@cityofparramatta.nsw.gov.au

Dear Richard,

Re: Revised project scope for Victoria Road between Pennant Street and Pemberton Street, Parramatta safety improvement project.

Thank you for City of Parramatta Council's formal feedback on 10 October 2023 in response to Transport for NSW's TISEPP letter regarding proposed modifications to the design of safety improvements on Victoria Road between Pennant Street and Pemberton Street, Parramatta. In response to Council's formal objection to the proposed removal of the new right turn bay in Victoria Road at Pennant Street from the revised change of scope, and concerns raised regarding the consequences of the removal of this movement from the project scope, please note our response as below:

1. The revised project scope aligns with the NSW Government's Victoria Road Vision

Retaining the bus lane on the southern side of Victoria Road, between Grandview Street and Pennant Street aligns with Transport's long-term vision to revitalise Victoria Road. The Victoria Road Vision will better connect vibrant town centres through providing more frequent and reliable bus journeys that improve customer experience and encourage mode shift from private vehicles to public transport. In the interim, prioritising public transport within the existing road space is the vital first step towards encouraging people onto public transport and easing congestion on our roads.

Transport is already taking key steps to enhance bus services along the Victoria Road corridor with new westbound bus lanes to commence construction in Melrose Park and Ermington in late November 2023. These new westbound lanes will connect with existing westbound bus lanes along Victoria Road to improve bus reliability and efficiency in the afternoon weekday peak periods. These improvements will help make westbound weekday afternoon bus services more reliable and efficient, to encourage more people to use public transport and to support the frequent bus services that run along Victoria Road.

It is noted that Council was briefed on Transport's intention to extend Victoria Road bus lanes at Melrose Park and Ermington on 25 May and 7 November respectively.

Transport for NSW

Retaining the bus lane, and aligning with the Victoria Road Vision, will avoid introducing public transport reliability and performance issues and will:

- better support and future proof the reliability and travel times of Public Bus Services - Routes 501, 521, 523, 524, 525 and 500N along Victoria Road at Pemberton Street which currently service up to 4,700 passenger trips¹ and with currently:
 - 51% of westbound buses behind schedule with up to 2,493 passenger trips
 - 87% of eastbound buses behind schedule with up to 2,396 passenger trips.
- better support Private Bus Services, notably the Western Sydney University which operates a private charter along Victoria Road, connecting its campuses with:
 - 3-4 circulating bus services per hour
 - 6,000 students serviced per peak day
 - 2,000 students serviced on Saturdays; and
 - 26,000 students serviced for weekly total journeys.

As part of the revised project scope, Transport will also additionally investigate the relocation of bus stops on Victoria Road towards the new pedestrian crossing facilities at Pennant Street, subject to Council consideration.

2. Redistribution of right turn movements from loss of right turn and through movements into and out of Pemberton Street have been adequately accommodated at alternative locations.

The right turn movement into Pemberton Street was found to have a relatively low demand movement, with reasonable alternatives. Traffic modelling undertaken before (February – March 2023) and after (May 2023) the introduction of the right turn bans at the Victoria Road and Pemberton Street intersection to understand the impact of the proposed detours during construction found that the loss of the right turn movement resulted in:

- a moderate volume increase in the total number of right turning vehicles at the signalised intersection of Victoria Road and Macarthur Street (northbound) of up to 80 vehicle/hour peak period (or +710 daily)
- a minor volume increase at Collett Parade (westbound) of +20 vehicle/hour peak period (or +215 daily)
- a negligible volume of vehicles diverted via James Ruse Drive (northbound) or Pennant Street (southbound).

3. Rat running on local roads

Transport acknowledges Council's concern regarding the impact that detoured Pemberton Street traffic may have on the local road network and the residual amenity of the area. An origin-destination study, undertaken by an external provider in June 2023, confirmed that the previous right turning traffic into Pemberton Street included regional traffic.

From this study it was identified that:

- Pemberton Street and Thomas Street are likely being used as rat runs to avoid congestion on Victoria Road and James Ruse Drive and decrease travel time for motorists
- while Pemberton Street is used by a high proportion of local users, it is also used by people not residing in the area, suggesting that people are using Pemberton Street as a connection for travel.

Transport would be happy to work with Council on any proposal to reduce traffic on this existing local route.

Transport also notes that Council has received representation from the State Member for Parramatta with members of the community raising concerns with the closure of the right turns at Pemberton Street.

¹ based on Oct 2023 back-end data (BOAM)

Transport for NSW

Transport can advise that a meeting was held with the State Member for Parramatta, Donna Davis on Friday 20 October to further discuss. Ms Davis raised no objection to the loss of the right turn movements into Pemberton Street or the removal from the project scope of the right turn movement into Pennant Street from Victoria Road. The State Member was advised that further engagement with City of Parramatta Council would follow.

4. Victoria Road right turn bay into Macarthur Street

Transport acknowledges Council's concern regarding capacity at the existing Victoria Road right turn bay into Macarthur Street. In response, Transport has added additional time to the right turn into Macarthur Street to allow for the slight increase in traffic using this right turn. Furthermore, Transport will continue to monitor and take any appropriate action needed to improve the intersection following completion of the project.

5. Planning proposal for Western University site, 17 Pemberton Street and 260 Victoria Road, Parramatta

Victoria Road is a strategic bus corridor, with high frequency and high patronage bus routes. Retaining the bus lane will support future developments in the area by future proofing public bus service reliability and travel times along Victoria Road.

The bus lanes along Victoria Road at Pemberton Street provide direct access to the Parramatta CBD and as previously discussed are part of Transport's long-term vision to provide more frequent and reliable bus journeys that improve customer experience and encourage mode shift from private vehicles to public and active transport.

6. Safety concerns at the Victoria Road and Pennant Street pedestrian crossing from higher vehicle speeds

The geometry of the proposed change will require vehicles to reduce their speed further than the existing situation, which is expected to improve safety. Transport will also install advance warning signs indicating to drivers that there is a marked pedestrian crossing, which is expected to see travel speed decrease.

We hope that this provides a satisfactory response to Council's concerns. If you have any further questions or concerns, please do not hesitate to contact Peter Carruthers, Senior Project Manager via phone 0448 468 884 or email peter.carruthers@transport.nsw.gov.au.

As advised to the State Member for Parramatta it is our intention to re-engage with the community regarding the proposed change of scope and provide them with a two-week opportunity to provide feedback.

Kind regards,



Kym Warner
Director Program Delivery
Transport for NSW



Australian Government

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