

Transport and Accessibility Impact Assessment

WSU - Indigenous Centre of Excellence

State Significant Development No. 64916225

Prepared for Western Sydney University c/o JCB Architects

11 December 2025

234338

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Executive Summary

This Transport and Accessibility Impact Assessment (TAIA) accompanies an Environmental Impact Statement (EIS) pursuant to Part 8 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), in support of a State Significant Development Application (SSDA) for the construction and operation of a new Indigenous Centre of Excellence (ICoE) at Western Sydney University (WSU). The application number is SSD-64916225. This report addresses the Secretary's Environmental Assessment Requirements (SEARs) issued for the project, notably SEAR 10 with respect to traffic, transport and accessibility. The project team has undertaken pre-lodgement consultation with City of Parramatta Council ('Council') and Transport for New South Wales (TfNSW) for discussion of the transport strategy across all elements of the project, and the detailed design will be progressed post-approval following any relevant commentary from the agencies.

The proposed ICoE is located at the Parramatta South campus of WSU and involves the construction of a new state-of-the-art Indigenous Centre of Excellence as a new tertiary education facility. This SSDA specifically seeks detailed approval for site preparation, construction of a four-storey building comprising of educational facilities, exhibition and theatre spaces, a multi-functional recreational sports court, staff and student spaces, as well as a new parking area. The centre is expected to operate with typical daily numbers of 633 users, including 40 staff members. Of these, WSU has advised that about 110 users at the ICoE will be new users to the campus, whereas the remainder will be students and staff that are already part of the existing campus population. That is, the development is proposed to generate an additional 110 users to the Parramatta South campus of WSU.

The holistic transport strategy for the project is consistent with NSW state government state policy regarding the hierarchy of travel modes which prioritises active transport (i.e. walking and cycling) and public transport over private vehicle usage. The strategy is to focus on campus-wide reductions in private vehicle usage, by enabling and encouraging sustainable travel to and from the Parramatta North and South campuses of WSU, including the proposed ICoE.

Importantly, the project strategy considers the existing and future external infrastructure and services that will be readily available to students, staff and visitors attending the WSU Parramatta campuses and the ICoE. The project seeks to take advantage of the highly accessible and broad network of active and public transport options including the Active Transport Link (ATL) providing walking and cycling connections, Parramatta Light Rail (PLR) Stage 1, the existing Victoria Road bus corridor and shuttle buses provided by WSU. A Green Travel Plan (GTP) will be developed and implemented to inform, manage, and encourage users towards more sustainable travel practices.

In order to encourage and prioritise sustainable transport, the proposal includes a set of on-site facilities to support these mode shares. On-site provisions for active transport include a proposed bicycle storage area with capacity for 28 bikes. This provision is sufficient to support the expected bicycle demand at the ICoE, as the mode split for cycling is low. The centre will also provide end-of-trip facilities in the form of 4 shower and 5 locker facilities. The showers, change and locker provisions are in line with the Development Control Plan (DCP) requirements for tertiary institutions and can support the expected active travel mode share. The proposed pedestrian entry points of the building tie into the existing zebra crossings on Fifth Street, providing safe connection into the network of footpaths on-campus.

An uptake in public transport will be a key component in reaching the sustainable travel strategy for the project due to the widely available bus and light rail services within close proximity to the campus. With the recent opening of the PLR Stage 1 (and future Stage 2), a significant increase in public transport usage is expected. Given the availability and frequency servicing of the existing and future public transport services, it is expected that the mode share for public transport will be adequately supported.

The ICoE will be serviced by a loading dock with capacity for vehicles up to and including 12.5m Heavy Rigid Vehicles (HRV), which will be sufficient for all potential deliveries and service vehicles coming to the site. The loading dock is located in the northwest corner of the site and is accessible via an internal road and shared vehicle access point with the proposed car park. The loading dock is designed to AS2890.2:2018 and achieves a height clearance of minimum 4.5 metres.

In terms of car parking, the proposed ICoE will be located on the site of the existing P1 car park. The full capacity of the existing P1 car park will be reinstated across two new car parks within the Parramatta South campus. The replacement car parks will provide a total of 287 parking spaces, which results in 3 additional parking spaces compared to the existing P1 car park, so there will be no reduction to the overall parking capacity following the proposed development. The replacement car parks will be completed prior to the commencement of demolition of the existing P1 car park. Therefore, there will be no required interim parking, as the replacement car parks will be fully available prior to the demolition of the existing P1 car park. Additionally, the proposed ICoE development includes a new on-site car park located in the southwest corner of the site and has capacity for 13 spaces, including 1 accessible parking space. This car park is reserved for use by Elders visiting the centre.

The additional parking demand associated with the ICoE will be absorbed into the on-campus parking. However, so that the impact to on-campus parking and the performance of the surrounding road network is minimised, the project is seeking a campus-wide shift away from private vehicle usage (resulting in net zero parking demand) so that any future traffic generated by the ICoE would be offset by overall reductions in private vehicle use at the WSU Parramatta campuses. In the medium to longer term, even further reductions in private vehicle usage are expected as the PLR enters operation and sees further uptake of non-vehicle travel modes.

The transport provisions of this project across all travel modes have been selected and developed in order to provide a sustainable, safe and efficient site. These provisions include physical on-site facilities, along with management measures to be implemented in the form of a GTP during operation of the centre. The project also takes into consideration the high quality active and public transport infrastructure and services available to university students, staff and visitors external to the campus. Overall, the transport strategy is considered appropriate, with adequate infrastructure and management measures to support the traffic and transport needs of the site.

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Section 1 Introduction

1.1 Scope of Study

TTW has been engaged by Jackson Clement Burrows Architects (JCB) to provide traffic and transport consultancy services for the proposed development of the Indigenous Centre of Excellence at WSU.

This Transport and Accessibility Impact Assessment (TAIA) has been developed to assess and address the traffic and transport impacts of the proposed development and define the key traffic-related design elements of the proposal.

The TAIA has been prepared in support of a State Significant Development Application (SSDA), and in response to the Secretary's Environmental Assessment Requirements (SEARs) for the project, which have been detailed in Section 1.7 of this report.

A Green Travel Plan (GTP) and a Construction Traffic Management Plan (CTMP) have been prepared by TTW separately to this TAIA and included as part of this SSD application. These plans satisfy item 10 of the SEARs requirements for the SSDA however are considered preliminary in nature and would be finalised post-approval as a condition of consent.

1.2 Project Description

The Applicant seeks development consent for the construction of a new state-of-the-art Indigenous Centre of Excellence as a new tertiary education facility on campus. The Indigenous Centre of Excellence project is funded by the NSW Government's Western Sydney Infrastructure Grants Program in association with Western Sydney University. The new Indigenous Centre of Excellence will be an important asset for both the University and local community alike, providing a space for the commitment to advancing Indigenous education, leadership, and reconciliation. The Indigenous Centre of Excellence will stand as a symbol of recognition of Indigenous land and the University's relationship with Indigenous communities. The Indigenous Centre of Excellence will represent a celebration of tens of thousands of years of Indigenous knowledges and histories, a legacy that the University is honoured to nurture and promote through further education opportunities for students and communities.

Through the Indigenous Centre of Excellence, the University will aim to drive positive change, increase Indigenous participation in higher education, and contribute to the preservation and sharing of Indigenous cultures.

This SSDA specifically seeks detailed approval for the following works:

- Site preparation including demolition of the existing car park, tree removal and installation of inground utility infrastructure services.
- Construction of a three-storey Indigenous Centre of Excellence encompassing:
 - Ground level facilities, including but not limited to; a dedicated arrival area, outdoor amphitheatre, multipurpose court and theatre, and gallery. Associated workspaces, teaching spaces, meeting areas, lounge areas and other amenities are to be provided throughout the ground floor.
 - First floor level comprising meeting space and dedicated educational facilities including learning areas and teaching spaces.
 - Second floor level comprising offices, and collaboration spaces.
 - Roof level plant and services.
- Construction of internal driveway and car parking spaces areas, including:
 - 13 with hardstand area spaces adjacent to the new dedicated arrival zone for the proposed ICoE development

- 106 temporary replacement P1 spaces proposed in new western car park to the west of Bridge Street, adjacent to the existing oval
- 181 temporary replacement P1 spaces proposed in new eastern car park on the southern side of Fifth Street
- Landscaping works to provide outdoor educational and recreational spaces.

This report responds to the relevant SSD-64916225 SEARs which was issued by the Department of Planning, Housing and Infrastructure on 21 November 2023.

Further detail in relation to the SEARs requirements is provided in Section 1.7.

1.3 Project History

The SSDA was lodged with the NSW Department of Planning, Housing, and Infrastructure (DPHI) in August 2024. The SSDA sought development consent for the construction of a new four (4) storey tertiary educational facility comprising 5,543.3m² of Gross Floor Area (GFA) to accommodate the new Indigenous Centre of Excellence. The SSDA was publicly exhibited by the DPHI from 20 August 2024 until 26 September 2024, with the subsequent request for response to submissions issued on 1 October 2024. Additional matters were raised by DPHI on 16 July 2025 and by Heritage NSW on 28 July 2025.

An Amendment Report and supporting documentation in response to the matters raised by DPHI, Heritage NSW and other agencies, was submitted on 27 August 2025 in accordance with the *Environmental Planning and Assessment Regulation 2021* for WSU Indigenous Centre of Excellence (SSD-64916225).

On 13 October 2025, DPHI provided written correspondence outlining that all agency responses had been received apart from Crown Lands and the Conservation Programs, Heritage and Regulation branch of the NSW Department of Climate Change, Energy, Environment and Water. Notwithstanding, it was requested that a formal submissions report be prepared in response.

Following, the formal written correspondence from DPHI, ongoing liaison has occurred with DPHI and the relevant agencies to respond to the site constraints and matters relayed within the submissions received. The current proposal has been amended accordingly and results in a three (3) storey building, accommodating a site area of approximately 20,035m². The particulars of the project have been expanded upon throughout this report.

1.4 Strategic Planning Context

Table 1 outlines the relevant strategic plans and strategies related to the traffic and transport assessment of this project.

Table 1: Relevant Strategic Context

Legislation	Comment
Future Transport	This document outlines the vision for transport in NSW for future years, that is centred around utilising technological advancements to create and maintain a world-class, safe, efficient, and reliable transport system.
Greater Sydney Region Plan	This document has been prepared concurrently with Future Transport 2056 to align land use, transport, and infrastructure outcomes for Greater Sydney.
Parramatta Local Environmental Plan	This document contains local environmental planning provisions for land in the City of Parramatta.
Parramatta Development Control Plan 2023	This document contains general controls for all developments within the Parramatta LGA and is referred to within this report as 'Parramatta DCP'.
Parramatta Bike Plan	This document contains information about existing and proposed bicycle infrastructure within Parramatta and is designed to promote cycling and increase the number of bike users.
Parramatta Ways	This document presents plans to improve walkability across Parramatta.
Parramatta Integrated Transport Plan	This document is being utilised to respond to the planning proposal to amend the planning controls for the Parramatta CBD. It contains a recommendation of a strategic plan to manage the existing and future sustainable transportation needs of the CBD.
State Environmental Planning Policy (Transport and Infrastructure) 2021	The T&I SEPP sets out the planning rules and controls for infrastructure including roads and other infrastructure.
Roads Act 1993	The Roads Act sets out procedures for opening and closing public roads and establishes the authorities responsible for roads.

1.5 Codes, Standards & References

The traffic and transport strategy for the project has been prepared in the context of a variety of relevant codes, standards, and references listed below.

- Australian Standards, including:
 - AS2890 – Parking facilities
 - AS1742 – Manual of uniform traffic control devices
 - AS1428 – Design for access and mobility
- Austroads Guidelines, including:
 - Guide to Traffic Management
 - Guide to Road Design
 - Guide to Road Safety
- NSW Guide to Transport Impact Assessment
- NSW Planning Guidelines for Walking and Cycling

Additionally, the following reference documents relevant to the subject site have been reviewed to inform this assessment:

- Strategic Travel Demand Assessment, 20 July 2023, Pentelic Advisory

1.6 Consultation

This report has been prepared following consultation between the design team and relevant stakeholders, including Council and TfNSW. Consultation events and outcomes are identified in Table 2.

Table 2: Consultation Summary

Authority	Discussions and Outcomes
Transport for NSW	An email was sent to development.sydney@transport.nsw.gov.au on 5th April 2024 to initiate consultation with TfNSW, including a request for a meeting to discuss and seek input on the traffic and transport elements of the proposal. On 3rd May 2024, a response was received from TfNSW requesting information on impacts relating to bus operations, impacts relating to road network operations, and details of pedestrian access. These details are provided throughout this TAIA. A comment was raised in TfNSW's response regarding the removal of the Victoria Road bridge. This SSDA does not seek any modification or removal of the Victoria Road bridge. It is anticipated that TfNSW will provide standard conditions of consent (such as for a Construction Traffic Management Plan) through the SSDA approval process.
City of Parramatta Council	A Pre-DA meeting was held with representatives from Council on 1st May 2024. Council was generally supportive of the proposed development and its design. Discussion relating to transport focused on whether a connection would be available to the Parramatta Light Rail (which will be provided through a separate project under an existing approved DA), and whether the existing P1 car park would be replaced (which will occur under a separate project on the university site).

1.7 Response to SEARs

The Secretary's Environmental Assessment Requirements (SEARs) issued in respect of SSD-64916225 were issued 21/11/2023 by the Department of Planning and Environment (DPE), now the Department of Planning, Housing and Infrastructure (DPHI). The requirements for this TAIA are shown in Table 3 and have been addressed in various sections of this report as referenced.

Table 3: Response to SEARs

Issue and assessment requirements	Section reference
<i>10. Provide a transport and accessibility impact assessment, which includes:</i>	
An analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	Road hierarchy – Section 2.2 Pedestrian infrastructure – Section 2.3 Bicycle infrastructure – Section 2.4 Public transport – Section 2.5 Parking facilities – Section 2.6 Traffic conditions – Section 2.7

Issue and assessment requirements	Section reference
Details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.	Overall proposed works – Section 3 Pedestrians – Section 5 Cyclists – Section 6 Car parking – Section 9 Public transport – Section 7 Service vehicles – Section 8 Swept path analysis – Appendix A
Analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	Modal split – Section 4.2 Multi-modal trip gen. – Section 4.2 Public transport – Section 7 Car parking – Section 9 Traffic impact – Section 10 Cumulative impact – Section 11
Measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.	Mitigation measures – Section 12
Measures to promote sustainable travel choices for employees, residents, students and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high-quality end-of-trip facilities, and implementing a Green Travel Plan.	Refer to Green Travel Plan (lodged separately with this SSDA)
Provide a Construction Traffic Management Plan detailing predicted construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	Refer to Construction Traffic Management Plan (lodged separately with this SSDA)

1.8 Response to Submissions

As mentioned, this SSDA was publicly exhibited from 20 August 2024 until 26 September 2024. During the exhibition period, a variety of submissions were lodged by government agencies, issued on 1 October 2024. In light of these submissions, TTW has prepared a set of responses providing further information to clarify the queries and address any comments and concerns raised by Council and TfNSW. Additionally, DPHI has provided a Key Issues letter requiring response. A full schedule of responses addressing each traffic-related comment received in the SSDA submissions is in Table 4.

Table 4: Response to Submissions

Submission Comment	Response
Department of Planning, Housing and Infrastructure – dated 1 October 2024	
P1 Replacement Car Park - The intended car parking reinstatement in proximity within the WSU Parramatta South Campus is considered a likely consequence of the proposed development, and its impact must be considered under Section 4.15 of the EP&A Act, even though it results from an activity that is not itself the subject of the relevant development application. - Identify and address the cumulative impacts (including incremental and combined effect) of the consequential development with the proposed development on each relevant matter and provide a detailed assessment of cumulative impacts on any key issues identified. For example, the development footprint of the indicative location of the reinstatement encompasses a landscaped area and several existing trees, which would result in the loss of open space, tree canopy coverage, and potential impacts on biodiversity value. - Clarify the status and timing of the reinstatement of car parking and any interim parking provisions and/or other mitigation required.	The SSDA has been amended to now include the reinstated car park development. Therefore, the impacts will be considered under the requirements of the EP&A Act and EP&A Regulation. The full capacity of the existing P1 car park will be reinstated across two new car parks within the Parramatta South campus. The replacement car parks will be completed prior to the commencement of demolition of the existing P1 car park. Therefore, there will be no required interim parking, as the replacement car parks will be fully available prior to the demolition of the existing P1 car park.
Travel Mode Share Amend and confirm the travel mode share. The Transport and Accessibility Assessment (TAIA) states a 42% mode split for cars only while the Strategic Travel Demand and Parking Provision Analysis (STDPPA) states a 54% mode split for private car usage for the project.	The mode splits utilised from the STDPPA report are for the '8 - 9am' arrival time scenario which is the most conservative with the highest private vehicle mode split. However, other data sets (such as TTW's historical car park usage study and the shuttle bus survey in the STDPPA report) do not align to the travel mode splits in the STDPPA report. Therefore, since the different data sets are contradictory, a new set of refined travel modes are applied in the TAIA. Refer to Section 2.8 which outlines the methodology for how these refined travel mode splits have been derived. Nonetheless, TTW has considered the implications of a higher 54% car mode split, outlined in Section 9.3.4.

Submission Comment	Response
Traffic Generation during Events - Provide a Preliminary Event Traffic and Transport Management Plan (PETTMP) for events held at the site. The PETTMP must detail, but not limited to: - Measures to ensure public transport capacity is sufficient for each event type and time period, taking into consideration assumed mode shift. The PETTMP should consider that each event will have a specific modal share, i.e. some events will generate more car traffic than daily campus activities and other events. - Mitigation measures to manage the impacts of events on the classified and local road networks. (e.g. public communications, road closures, or car parking strategies, including access management measures). - Management of pedestrian flows to mitigate potential vehicle and pedestrian conflicts.	The project team requests that the Preliminary Event Traffic and Transport Management Plan (PETTMP) be included as a Condition of Consent and prepared prior to occupation. This type of management plan should not fundamentally impact the outcome of the SSDA assessment. As discussed in Section 4.4, WSU currently holds large scale events at the Parramatta South campus, which will be similar in nature to the proposed events at the ICoE and will be subject to the same protocols currently in place. This event planning process includes transport planning and risk assessment for operation of all events on campus. WSU will continue to implement the same event planning process for future events at the ICoE. In terms of impacts to local road networks (road closures, access management etc), there will be no impact to the external road network as all events will be held within the WSU campus. If any impacts to the external network were proposed, these would be subject to separate application to Council. Furthermore, in terms of impacts to car parking, as outlined in Section 9.3.3, across both day and night / weekend events, the increases in parking demands can be comfortably accommodated within the existing vacancy of the on-site car parks at the university. For day events, the average car parking vacancy is 379 spaces, and the proposed increase to parking demand is 110 vehicles. For night / weekend events, the average vacancy is 857 spaces and the proposed increase to parking demand is 150 vehicles. Therefore, there is sufficient spare capacity within the on-site car parks.
Transport for New South Wales – dated 25 September 2024	
Victoria Road transport improvements <u>Comment:</u> TfNSW is currently undertaking investigation for long term transport improvements along Victoria Road. Further information regarding the vision for Victoria Road can be obtained by visiting the project website at https://www.transport.nsw.gov.au/projects/current-projects/victoria-road-vision	Consideration of the TfNSW Victoria Road Vision is included in the TAIA report. Refer to Section 2.9.2 and Section 11.2. The improvements to the Victoria Road bus corridor will assist in promoting public transport travel to and from the proposed ICoE, as discussed in Section 7.

Submission Comment	Response
Car parking provisions and traffic generation potential <u>Comment:</u> The planned replacement car park will be completed prior to the ICoE. <u>Recommendation</u> Due to the high parking demand at WSU it is very important that the replacement be delivered to alleviate any potential impacts on surrounding residents.	The replacement car parks will be completed prior to the commencement of demolition of the existing P1 car park. Therefore, there will be no required interim parking, as the replacement car park will be fully available prior to the demolition of the existing P1 car park.
Development wholly within the property boundary <u>Comment:</u> The service road appears that this may cross the property boundary close to the loading bay entry. <u>Recommendation</u> The Consent Authority should ensure the development is wholly within the property boundary and does not encroach into the road boundary.	The service road will be located wholly within the property boundary. This will be ensured during the detailed design phase of the project.
Traffic generation during Special Events <u>Comment:</u> Particular event days will generate a traffic generation potential of approximately 284 extra vehicles accessing the university, which represents a very significant parking demand and event management. <u>Recommended condition of consent</u> DPHI should be satisfied that the development's Plan of Management (PoM) minimises the impact of traffic generation impact to the classified and local road networks on special event days during peak periods, with coordination with Rosehill Gardens for weekend events.	Refer to response to comment #3 from DPHI.

Submission Comment	Response
City of Parramatta – dated 20 September 2024	
Given the apparent spare capacity within the current car park, and the fact that the peak times of the Indigenous Centre of Excellence do not generally align with the peak times for the rest of the campus, it is believed that the existing number of parking spaces will be suitable to cater for the proposal subject to the following measures/conditions being included with any approval.	Noted.
The Traffic Impact Assessment states that there is a separate proposal to reinstate all parking that will be lost as part of the proposed development. This report states that the reinstatement will be prior to commencement of construction of the proposed development. A condition should be imposed on any consent to ensure this occurs. It is noted that should the parking not be reinstated, staff and students may overflow onto nearby on-street locations and therefore affect the amenity of the area.	The replacement car parks will be completed prior to the commencement of demolition of the existing P1 car park. Therefore, there will be no required interim parking, as the replacement car park will be fully available prior to the demolition of the existing P1 car park
Further to this, it is noted that there is an existing approved DA (DA/346/2022) that will provide footpath access from the active transport link to the proposed building. Given that the proposal will increase the GFA within the campus, and thereby staff and student capacity, measures to promote sustainable transport options are considered important in order to reduce private vehicle use. As such, a condition should be included that would require the construction of the pedestrian link prior to issue of an Occupation Certificate for this application.	It is noted that a pedestrian link providing access from the ATL to the proposed ICoE has been recently constructed, separately to DA/346/2022, and is currently functional. Furthermore, it has been advised by WSU that the remaining works associated with DA/346/2022 are not intended to be undertaken, and therefore discussion of this DA has been removed from the TAIA. The TAIA has been updated to reflect the details of the footpath works that have already been completed. Reference is made to the importance of promoting sustainable transport options, which will be outlined by the Green Travel Plan (GTP) associated with the SSDA. The GTP will include reference to various sustainable transport options, including the approved footpath connection that will be available in the future.
Recommended Traffic conditions of consent that are considered to address these matters are provided in Attachment 2 to this letter for the applicant and the Department to review.	-

Submission Comment	Response
Before the Issue of a Construction Certificate Prior to issue of the relevant Construction Certificate, the P1 Replacement Car Park is to be operational and provide a minimum of 284 parking spaces as detailed in the Traffic Impact Assessment by Taylor Thomson and Whitting dated 26 July 2024. <u>Reason:</u> To comply with Council's parking requirements and to protect the amenity of the surrounding residential and business areas.	The full capacity of the existing P1 car park will be reinstated across two new car parks within the Parramatta South campus. The replacement car parks will provide a total of 287 parking spaces, which results in 3 additional parking spaces compared to the existing P1 car park, so there will be no reduction to the overall parking capacity following the proposed development. The replacement car parks will be completed prior to the commencement of demolition of the existing P1 car park. Therefore, there will be no required interim parking, as the replacement car park will be fully available prior to the demolition of the existing P1 car park
Before the Issue of a Construction Certificate The PCA shall ascertain that any new element in the carpark not illustrated on the approved plans such as columns, garage doors, fire safety measures and the like do not compromise appropriate manoeuvring and that compliance is maintained with AS 2890.1, AS2890.2 and AS 2890.6. Details are to be illustrated on plans submitted with the construction certificate application. <u>Reason:</u> To ensure appropriate vehicular manoeuvring is provided	The ICoE project is satisfied to accept this condition.
Before the Issue of a Construction Certificate 28 bicycle spaces/racks are to be provided on-site and used accordingly for the Indigenous Centre of Excellence. The bicycle storage/racks are to comply with AS2890.3-2015. Details are to be illustrated on plans submitted with the construction certificate. <u>Reason:</u> To comply with Council's parking requirements	The ICoE project is satisfied to accept this condition.

Submission Comment	Response
While Building Work is being carried out Occupation of any part of the footpath or road at or above (carrying out work, storage of building materials and the like) during construction of the development shall require a Road Occupancy Permit from Council. The applicant is to be required to submit an application for a Road Occupancy Permit through Council's Traffic and Transport Services, prior to carrying out the construction/restoration works. <u>Reason:</u> To ensure proper management of Council assets	The ICoE project is satisfied to accept this condition.
While Building Work is being carried out Oversize vehicles using local roads require approval from the National Heavy Vehicle Regulator (NHVR). The applicant is to be required to submit an application for an Oversize Vehicle Access Permit through NHVR's portal (www.nhvr.gov.au/about-us/nhvr-portal), prior to driving through local roads within the City of Parramatta LGA. <u>Reason:</u> To ensure maintenance of Council's assets.	The ICoE project is satisfied to accept this condition.
Prior to Occupation Prior to the issue of the relevant occupation certificate, the pedestrian link as required by DA/346/2022 is to be completed and made operational. <u>Reason:</u> To promote sustainable transport practices.	Refer to response to comment #3 from City of Parramatta.

Submission Comment	Response
Department of Planning, Housing and Infrastructure – dated 25 March 2025	
Appendix F to the RtS Architectural Response to Submissions letter states that the new pedestrian link approved under DA/346/2022 has already been constructed. The RtS report states that works were undertaken in lieu of the Development Application. Appendix W of the RtS report contains photos of constructed pathways. Please clarify whether it is intended to carry out the works approved DA/346/2022 or provide details of the works that have been completed instead. Additionally, please update the relevant supporting documents, including the previous traffic impact assessment, to ensure consistency.	It is noted that a pedestrian link providing access from the ATL to the proposed ICoE has been recently constructed, separately to DA/346/2022, and is currently functional. Furthermore, it has been advised by WSU that the remaining works associated with DA/346/2022 are not intended to be undertaken, and therefore discussion of this DA has been removed from the TAIA. The TAIA has been updated to reflect the details of the footpath works that have already been completed.
The revised Civil Site Plan includes two new parallel parking bays along Fifth Street. Please clarify if this is part of the SSD application. If it is, update the architectural and landscape drawings to ensure consistency. If it is not part of the application, remove the works from the drawings and application	Parallel parking bays along Fifth Street are not part of this SSD application. Refer to the Civil Site Plan which has been updated to reflect this.
The Swept Path Analysis in the construction traffic management plan for the 20m semi-trailer does not show an available access point to enter the site. Please provide a revised Swept Path Analysis to ensure sufficient manoeuvring space for a 20m semi-trailer.	It is noted that there is no specific construction methodology known at this stage, and therefore no confirmation of the intended site access points or vehicle sizes. It will be the responsibility of the Contractor to develop a detailed CTMP prior to construction, to specify the methodology, including vehicle sizes and access points. Nonetheless, TTW has prepared a high-level swept path analysis for the 20m semi-trailer, showing indicative access points and on-site turning movements. Refer to Appendix A in the preliminary CTMP for the revised swept path plan.

Section 2 Existing Conditions

2.1 Site Description and Location

The Western Sydney University South Parramatta Campus is located within the City of Parramatta Local Government Area (LGA).

The site comprises two (2) allotments, which is legally described as Lot 100 in DP 816829 and part Lot 101 in DP 816829. The project site comprises the P1 Car Park in the northern portion of the wider site campus and consists of the grassed area to the south and southwest of the P1 Car Park. The project site is approximately 20,035m² in area and is irregular in shape. It currently comprises of a hardstand area that accommodates approximately 284 car parking spaces and a grassed open space adjoining the Oval to the south. There is an existing single storey Central Energy Plant to the west of the development area which serves the wider campus; it remains outside of the scope of this SSDA.

The site is strategically positioned to the northern boundary of the Western Sydney University (University) South Parramatta Campus, fronting Victoria Road (the A40). The wider campus comprises a significant landholding size of approximately 20ha containing a series of buildings of differing heights and massing forms which are used for educational purposes. The buildings contained within the wider campus site are dissected by a series of open, at grade car parks, internal roads, pathways, and landscaped areas. The Campus sits to the north of the Parramatta River.

The site is located approximately 3km east of the Parramatta CBD, which is an area undergoing a process of significant transformation. It is also located approximately 500m to the Parramatta Light Rail Corridor, with the construction of new Yallamundi Light Rail now completed and awaiting operation by TfNSW.

The site location is identified in Figure 1.



Figure 1: Western Sydney University Parramatta South Campus Locational Context
Source: Nearmap / Ethos Urban

2.2 Road Hierarchy

The key roads in the local network are described in Table 5, and illustrated in Figure 2.

Table 5: Local Road Network

Road Name	Classification	Speed Limit	Road Geometry	Parking Restrictions
Victoria Road	State Road	60km/hr	3 lanes in each direction within a 22m carriageway	No Stopping
James Ruse Drive	State Road	60km/hr - 70km/hr	2-3 lanes in each direction within a 20m carriageway	No Stopping
Bridge Street	Private Road	40km/hr	1 lane in each direction within a 6m carriageway	No Stopping
Fifth Street	Private Road	40km/hr	1 lane in each direction within a 6.5m carriageway	No Stopping
Railway Street	Private Road	40km/hr	1-3 lanes in each direction within a 13m carriageway	No Stopping

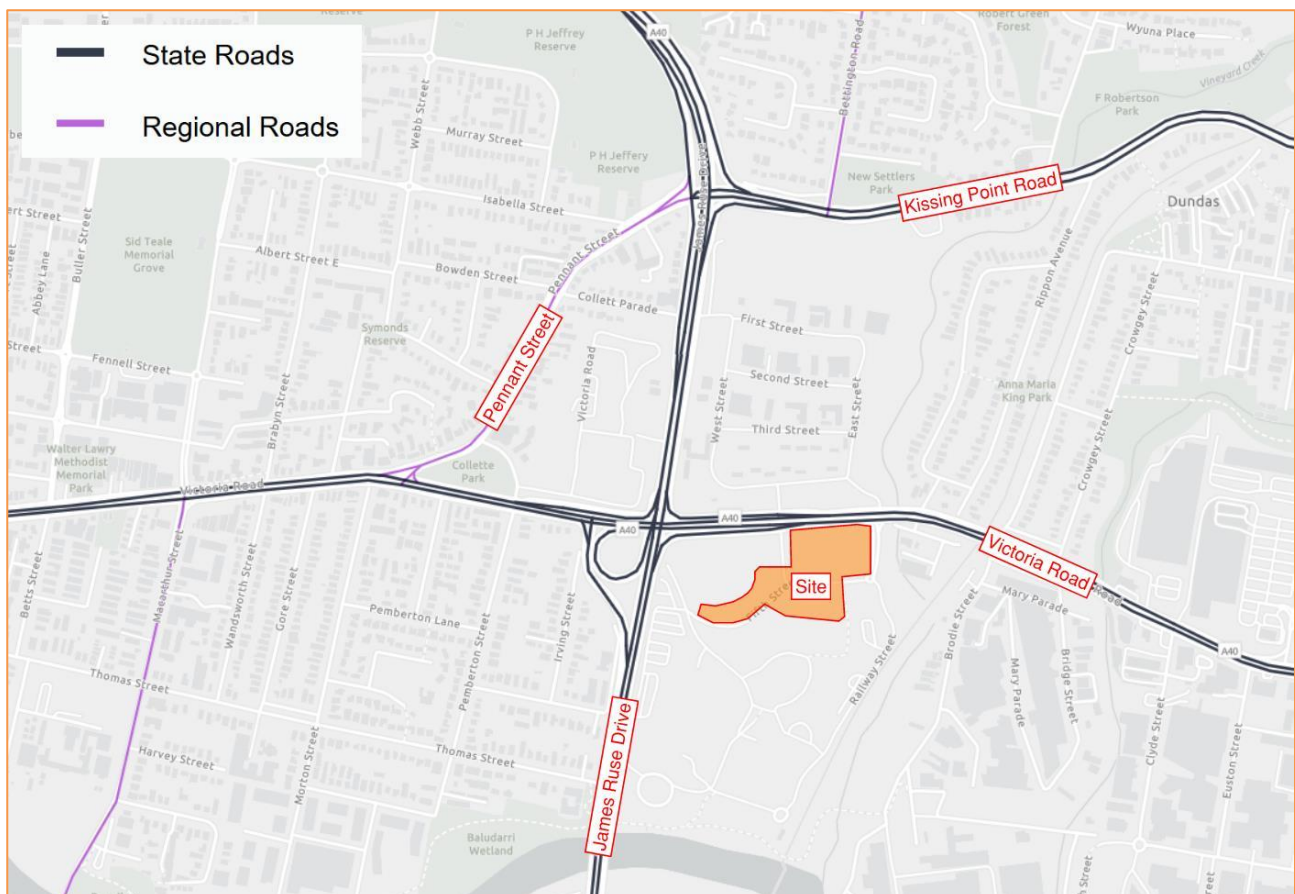


Figure 2: Existing Road Classification Network

Source: TfNSW Road Network Classification

2.3 Pedestrian Infrastructure

Figure 3 illustrates the existing pedestrian infrastructure available around the site. A 400m radius (approximately 5 minute-walk) is shown to provide context and scale of these facilities. Footpaths are currently provided along most streets in the surrounding area. There are two zebra crossings located on Fifth Street, one to the southeast and one to the southwest of the site. The signalised intersection of Railway Street and Victoria Road, allows pedestrians to safely access the carpark from the busy Victoria Road corridor, including to and from bus stops. A direct footpath connection is available between the site and the ATL that runs adjacent to the light rail corridor from Parramatta to Carlingford.

Pedestrian access from the site to Parramatta North is shown in Figure 4, whereby pedestrian bridges and walkways are utilised to reach the university.

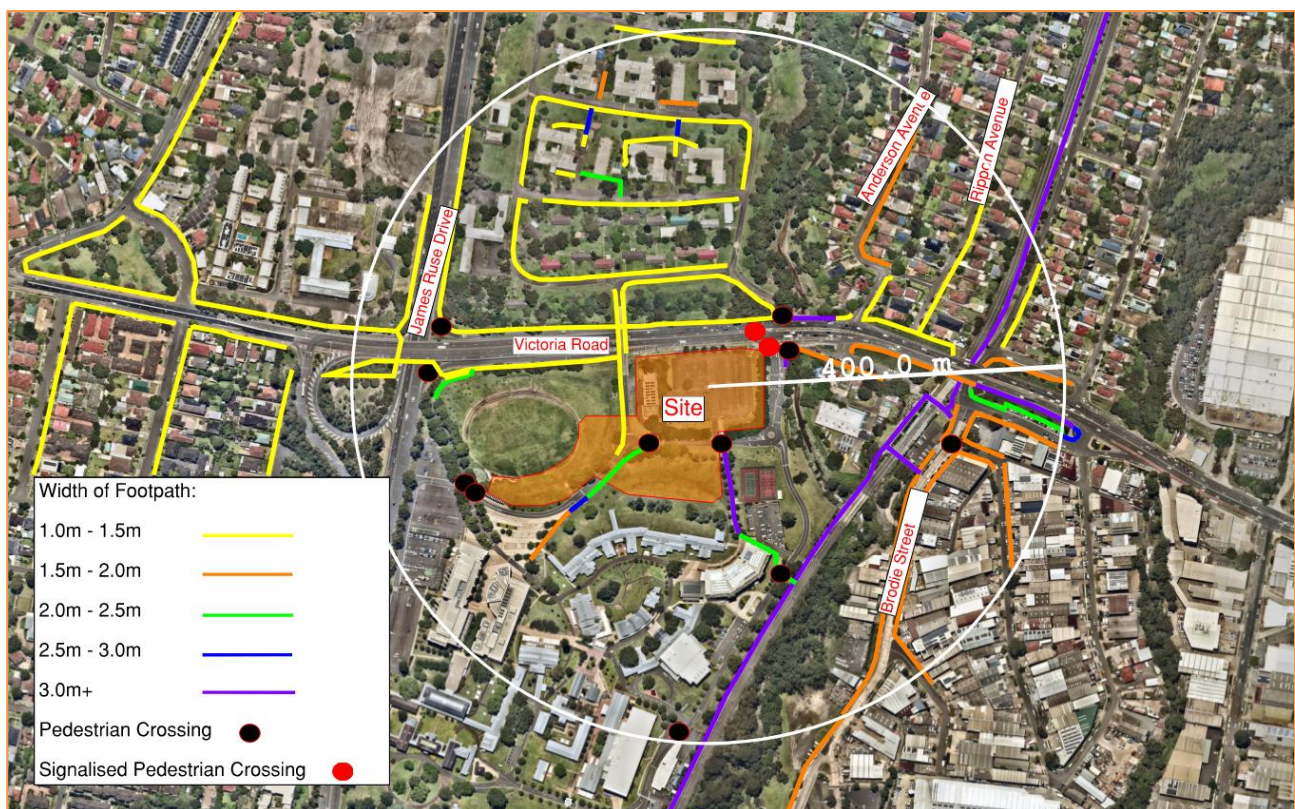


Figure 3: Local Pedestrian Infrastructure

Source: Nearmap

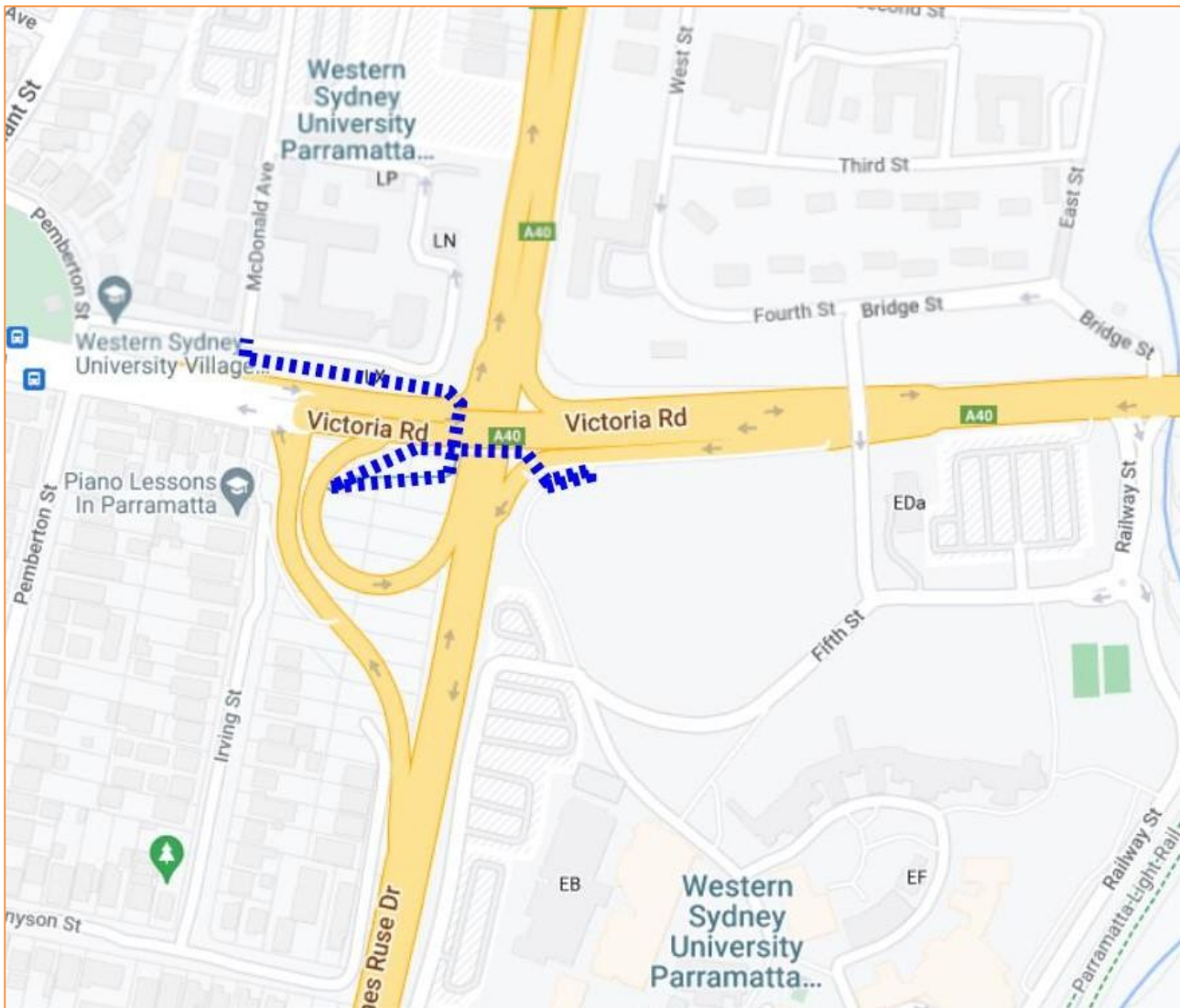


Figure 4: Walking Route to Parramatta North
Source: Google Maps

2.4 Cyclist Infrastructure

Currently there are a few dedicated bicycle lanes surrounding the site. Figure 5 shows existing cycleways and pathways around the site, with the site being accessible via Fifth Street. The site falls within the vicinity of the Parramatta Bike Plan that promotes accessibility for active travellers. Figure 6 shows the proposed cycling infrastructure around the site.



Figure 5: Existing Cycling Infrastructure
Source: Parramatta Bike Plan, City of Parramatta



Figure 6: Proposed Cycling Infrastructure
Source: Exhibition Draft Parramatta Bike Plan, City of Parramatta

The light rail corridor includes a shared cycleway, which will expand the active transport amenity offered by the Parramatta Escarpment Boardwalk and 20km long river foreshore cycleway. The shared cycleway is shown in Figure 7.



Figure 7: Light Rail and Shared Path Network
Source: NSW Government

2.5 Public Transport

2.5.1 Public Bus

The nearest bus stops are located along Victoria Road with stops going in both directions. All bus stops are approximately a 3–8-minute walk from the site. Table 6 shows the routes available at each stop.

Table 6: Nearby Bus Routes

Bus number	Bus route	Frequency
Victoria Road at Anderson Avenue and Victoria Road before Railway Street		
500N	Parramatta to City Hyde Park via Victoria Rd (Night Service)	Every 30 minutes
501	Parramatta to Central Pitt St via Victoria Rd	Every 10mins during peak hours Every 15mins during off-peak hours
521	Parramatta to Eastwood	Every 30mins during peak hours Every 60mins during off-peak hours
523	West Ryde to Parramatta	Every 30mins during peak hours Every 60mins during off-peak hours
524	Ryde to Parramatta via West Ryde	Every 30mins during peak hours Every 60mins during off-peak hours
525	Parramatta to Strathfield via Sydney Olympic Park	Every 20mins during peak hours Every 30mins during off-peak hours
Victoria Road after Brodie Street and Dudley Street before Crowgey Street		
535	Carlingford to Parramatta	Every 15mins during peak hours Every 20mins during off-peak hours

Figure 8 illustrates the location of the nearest bus stops and their walking routes to and from the site. Figure 9 conveys the relevant bus routes in the vicinity of the site.



Figure 8: Nearby Bus Stops

Source: Nearmap



Figure 9: Local Bus Services

Source: Northwest Sydney Bus Network Map, Transport for NSW

2.5.2 WSU Shuttle Bus

WSU provides a free shuttle bus service between each of the campuses in Parramatta including Parramatta City Campus Precinct, South Parramatta and North Parramatta. The bus stops and shuttle bus routes are shown in Figure 10. Note that the Parramatta City Campus bus stop is adjacent to Parramatta station, providing good connection to the broader train and future metro network.

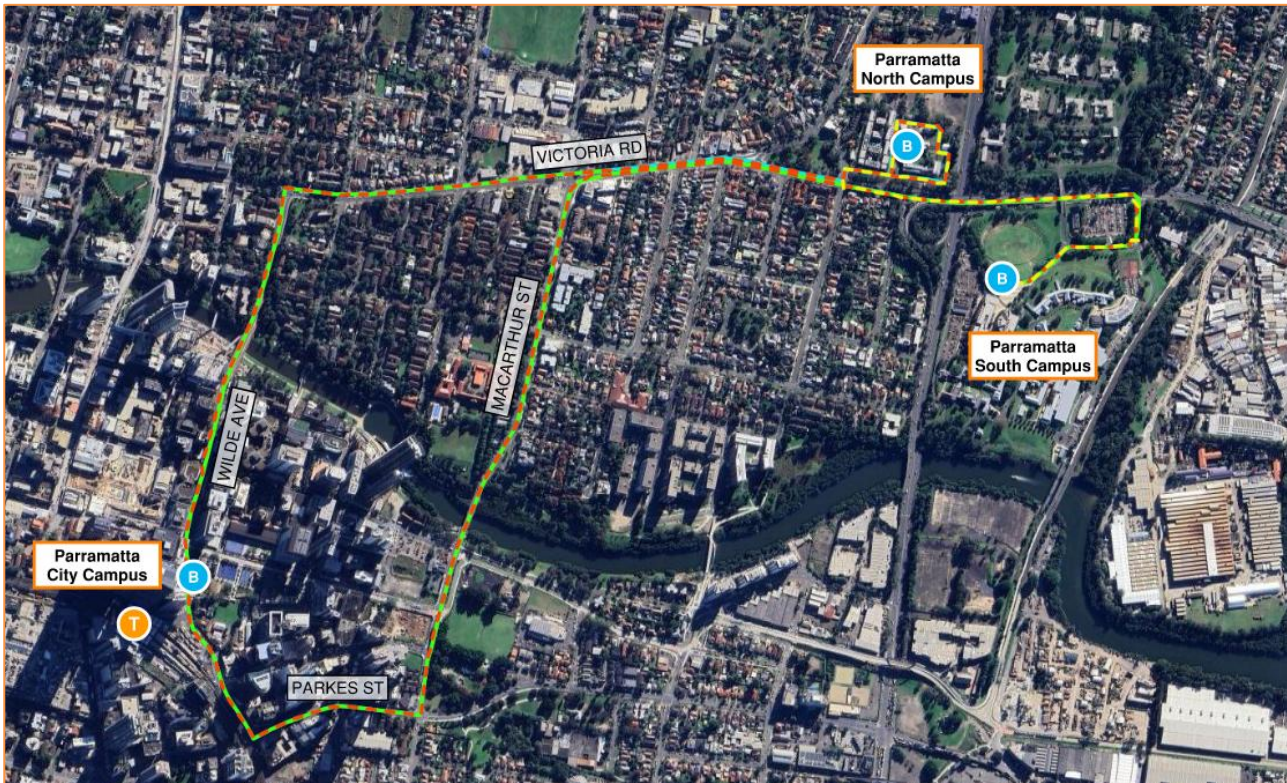


Figure 10: WSU Parramatta Shuttle Bus Service
Source: TTW

Table 7: WSU Shuttle Bus Service Information

Route Colour	Bus Route	Frequency	Operating Times
Green	Parramatta City to Parramatta South express	25 minutes	8:00am – 9:00pm (Monday to Friday)
Blue	Parramatta City, Parramatta North, Parramatta South	25 minutes	6:50am – 10:50pm (Monday to Friday) 7:30am – 5:30pm (Saturday)
Red	Parramatta City, Parramatta South, Parramatta North	25 minutes weekdays 30 minutes weekends	6:50am – 10:50pm (Monday to Friday) 8:00am – 6:00pm (Saturday)
Yellow	Parramatta North to Parramatta South express	15 minutes	7:30am – 10:30pm (Monday to Friday)

As outlined in Table 7, the estimated frequency of the shuttle bus services is every 25 minutes on weekdays, as well as an express bus between the Parramatta North and South campuses available every 15 minutes.

The shuttle bus service utilises both standard sized buses with capacity for up to approximately 50 passengers, as well as smaller sized minibuses with capacity for approximately 20 passengers.

2.5.3 Train

The nearest train station to the site is Parramatta station, which includes the T1 line to Emu Plains, T5 line to Richmond, and T2 line to Parramatta. The station is approximately a 38-minute walk from the site. The station can be accessed via bus route 501, 521, 525, 535, as well as the WSU shuttle bus services. Figure 11 illustrates Sydney Trains network map with the nearest train station highlighted.

Table 8 summarises the frequency of trains from Parramatta station.



Figure 11: Sydney Trains Network Map
Source: Sydney Trains

Table 8: Frequency of Train Services
Peak times: Approximately 6:30am – 10am, 3pm - 7pm

Train line	Train route	Frequency from Parramatta station
T1	North Shore	Every 7 minutes during peak hours Every 15 minutes during off-peak hour
	Western Line	Every 5 minutes during peak hours Every 15 minutes during off-peak hour
T2	Inner West & Leppington Line	Every 15 minutes during peak hours Every 30 minutes during off-peak hour
T5	Cumberland Line	Every 30 minutes during peak hours Every 30 minutes during off-peak hour

2.5.4 Light Rail

The nearest light rail station to the site is the Yallamundi station. The station is approximately a 5-minute walk from the site. Figure 12 illustrates the location of the site in relation to the light rail line. Figure 13 illustrates the PLR network map with the nearest station highlighted. The approved Stage 2 of the PLR will connect north and south of the Parramatta River directly to the Parramatta CBD, and then to Sydney Olympic Park.

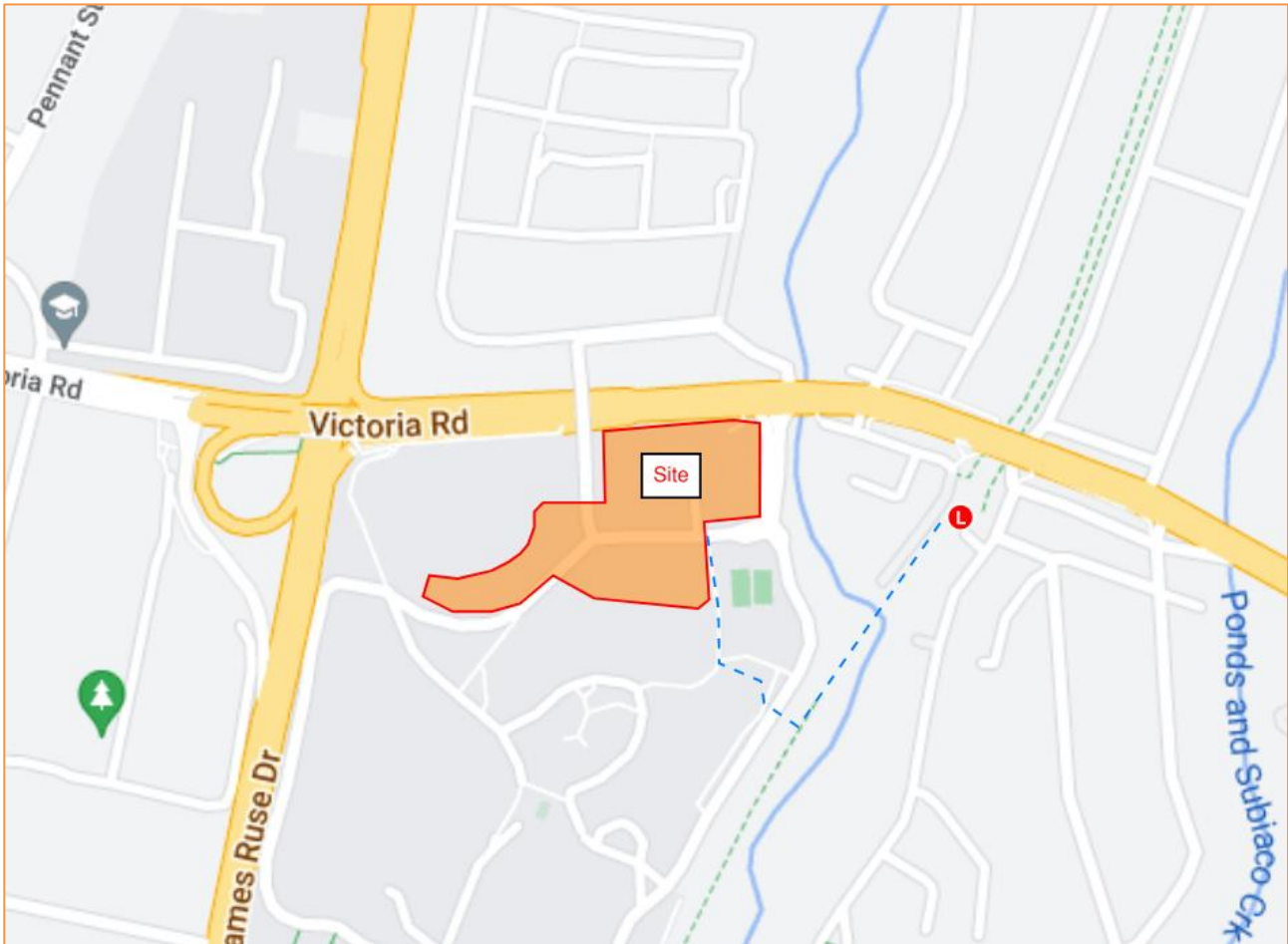


Figure 12: Walking Route from Light Rail Station to Site
Source: Google Maps

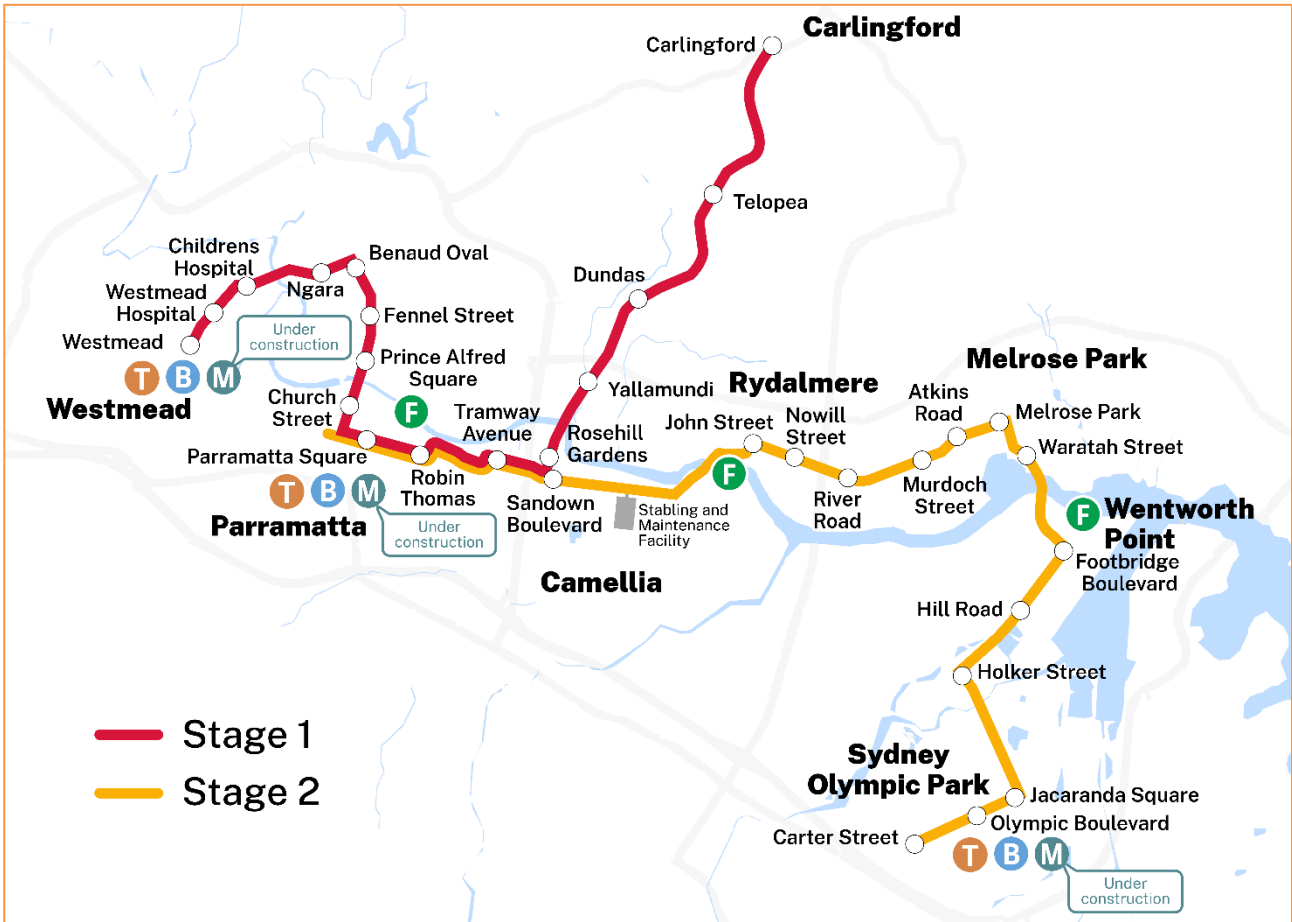


Figure 13: PLR Network Map
Source: Parramatta Light Rail

2.5.5 Ferry

The nearest wharf to the site is the Parramatta Wharf, on the Parramatta River route. The wharf is approximately a 31-minute walk from the site. The wharf can be accessed via bus route 501, 521, 523, 524, 525. These bus routes take approximately 6-8 minutes between the wharf and the university.

Table 9 summarises the frequency of ferries at Parramatta Wharf. Figure 14 illustrates the Sydney ferry wharf network map with the nearest wharf highlighted.

Table 9: Ferry Line at Parramatta Wharf

Ferry line	Ferry route	Frequency from Parramatta station
F3	Parramatta River	Every 30 minutes during peak hours Every 60 minutes during off-peak hour

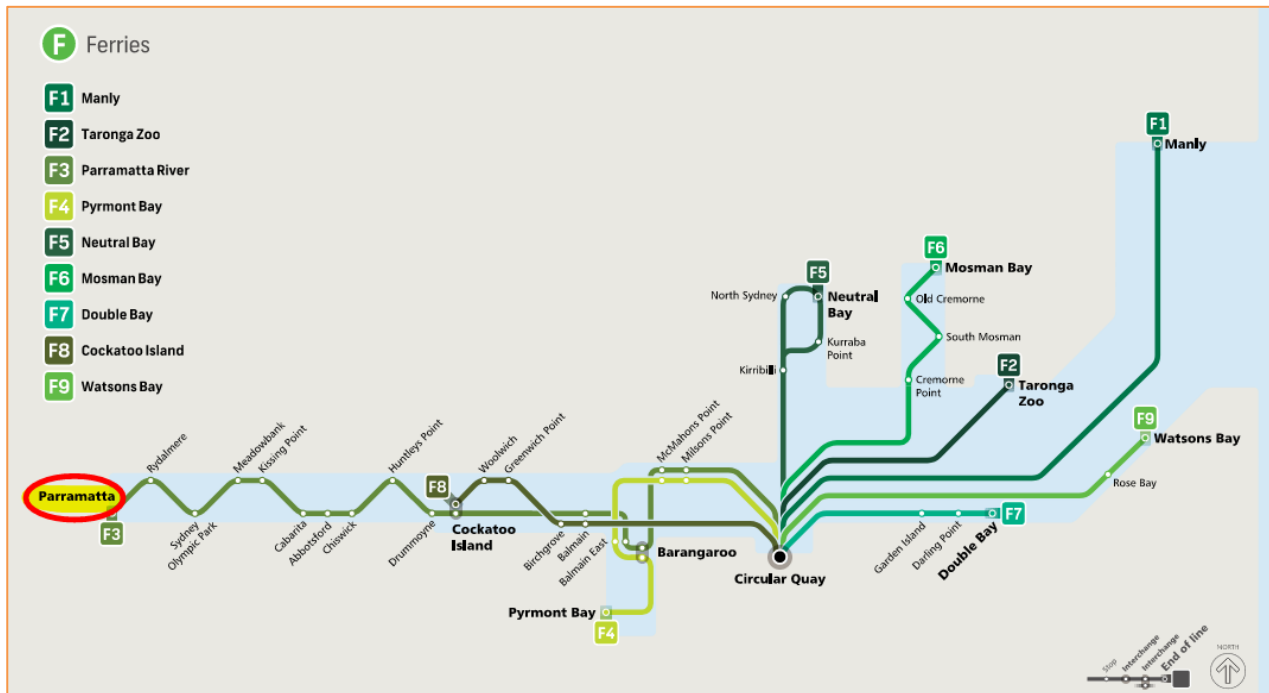


Figure 14: Ferry Network Map

Source: Transport for NSW

2.5.6 Metro

With the ongoing Sydney Metro West project, the nearest metro station to the site will soon be Parramatta station on the Westmead line. The station is approximately a 40-minute walk from the site. The station can be accessed via bus route 501, 523, 524, 525, as well as the WSU shuttle bus services. These bus routes will take approximately 6-10 minutes between the station and the university.

Figure 15 illustrates the upcoming Sydney Metro West network map with the nearest station highlighted.



Figure 15: Metro Network Map

Source: Transport for NSW

2.6 **Parking Facilities**

2.6.1 **On-Street Parking**

A variety of restricted and unrestricted on-street car parking is generally available in the northern and eastern sides of the site. Figure 16 shows the current on-street parking restrictions within a 400m radius in the surrounding streets.

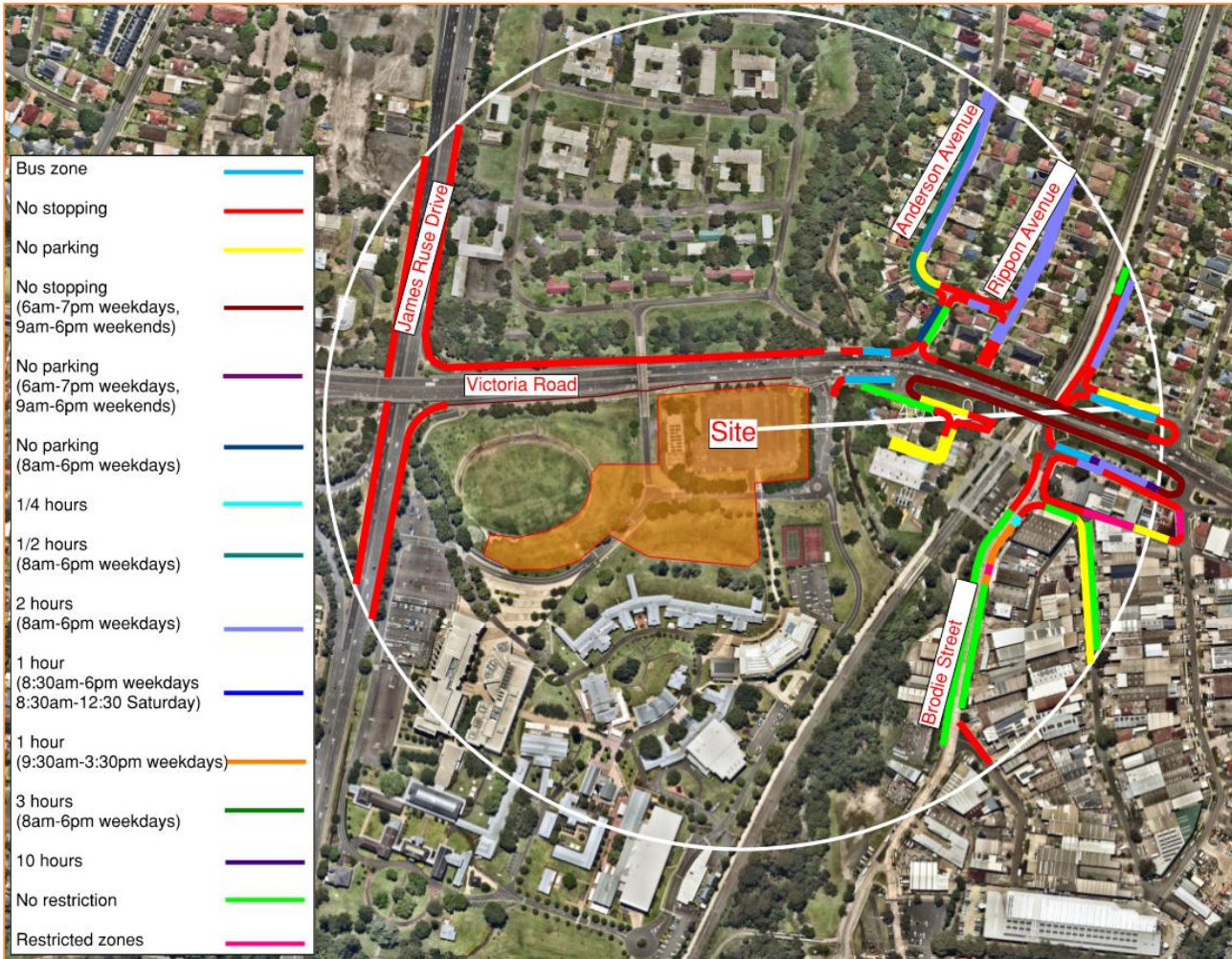


Figure 16: On-Street Parking Restrictions
Source: Nearmap

2.6.2 **Off-Street Parking**

Both the Parramatta North and South campuses contain paid car parks for students and staff and are displayed in Figure 17. Table 10 shows the total number of current parking spaces in the WSU Parramatta campuses, totalling **1,109** parking spaces, including 30 accessible spaces.

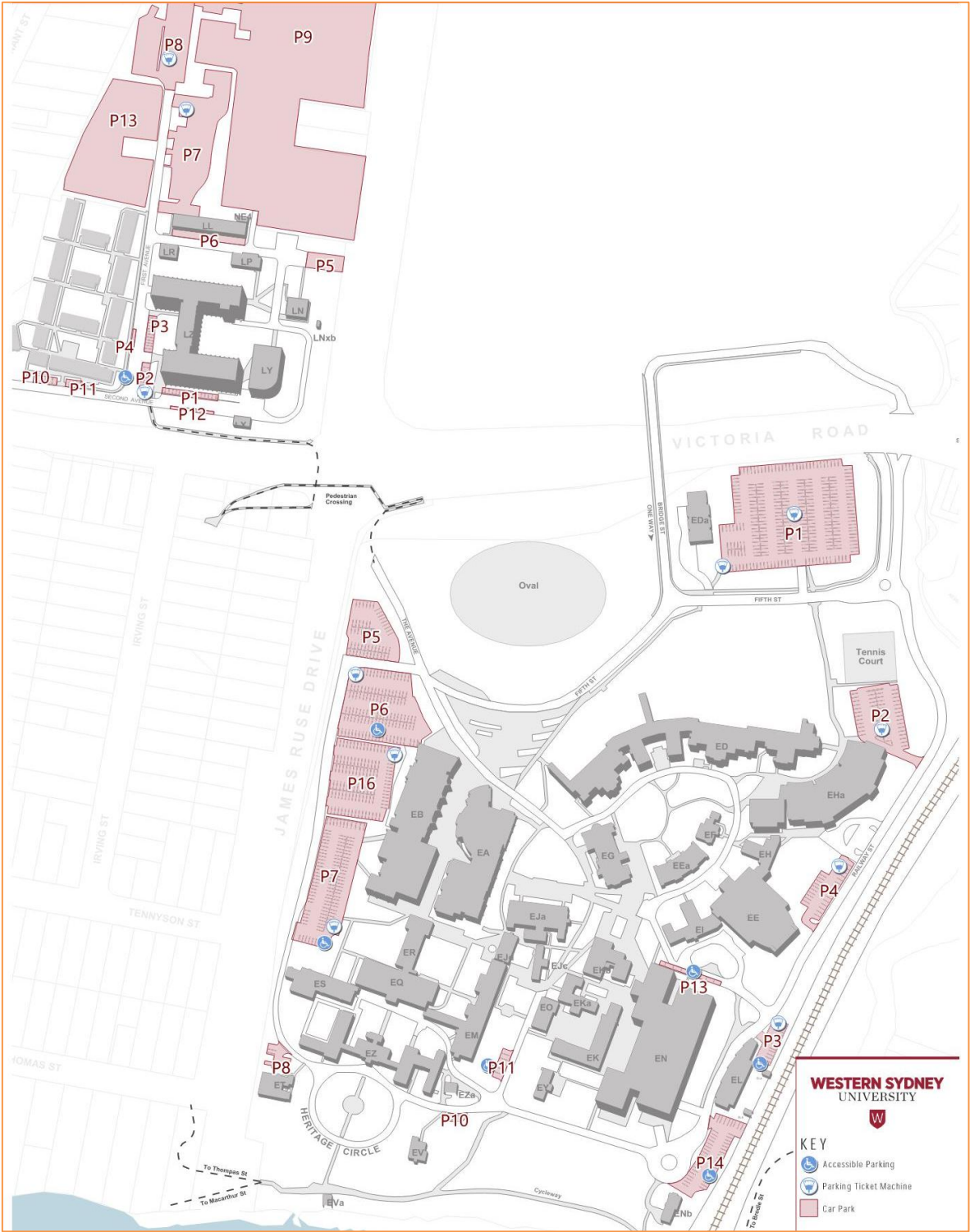


Figure 17: Parking at the WSU Parramatta Campuses
Source: Western Sydney University

Table 10: Parramatta Campuses Parking Spaces

	Parking Lot	Regular Parking Spaces	Accessible Parking Spaces	Total Parking Spaces
Parramatta North	P1	14	1	15
	P2	3	4	7
	P3	10	0	10
	P4	2	0	2
	P5	32	0	32
	P6	17	0	17
	P7	67	0	67
	P8	71	0	71
	P10	5	1	6
	P11	4	0	4
	P12	5	0	5
	P13	65	0	65
Parramatta South	P1	284	0	284
	P2	61	2	63
	P3	10	2	12
	P4	37	0	37
	P5	38	0	38
	P6	108	2	110
	P7	93	5	98
	P8	9	0	9
	P10	5	0	5
	P11	0	6	6
	P13	0	7	7
	P14	43	0	43
	P16	96	0	96
	Total	1,079	30	1,109

Parking Permits are required for all users parking at WSU. The permits are split into the following categories:

- Blue
 - Eligible to park in blue and yellow bays
 - Costs \$9/day (staff), \$11.58/fortnight (ongoing staff/contracts of 6 months or more), \$151/half year, \$302/year
- Red & Red with bollard
 - The individual dedicated space in the red bay, plus blue and yellow bays
 - Red permit costs \$29.82/fortnight (ongoing staff/ contracts of 6 months or more), \$778/year
 - Red permit with bollard costs \$33.85/fortnight (ongoing staff/ contracts of 6 months or more), \$883/year
- Orange
 - Eligible to park in yellow, blue and red bays (5:30pm to 5:30am only)
 - \$47/half year, \$94/year
- Green
 - Eligible to park in green, blue and yellow bays
 - Costs \$302/year

The occupancy of the on-site car parks within the Parramatta North and South campuses have been reviewed to assess the historical usage trends. Nearmap imagery has been used to review the occupancy of each car park lot within both the Parramatta campuses. Where uncertainties arose due to unclear imagery, a conservative approach has been taken. The Nearmap imagery used in this study includes 14 days of data from August 2022 to February 2024. Figure 17 above displays all parking lots within the university totalling 1,109 parking spaces.

The results of the car park analysis were categorised below into ‘peak’ or ‘off-peak’ periods in order to best assess impacts during peak periods, based on whether the car park was most evidently used (as opposed to relying on day of the week or time of year, which may be more variable and may be unclear from Nearmap data alone). Peak and non-peak periods are identified in Figure 18, illustrating the selection of these based on the noticeably higher occupancy (and lower vacancy).

The historical analysis shows that the on-site parking adequately supports the current university operations, with surplus vacancies for both peak and off-peak times. The key outputs of this analysis are captured in Table 11 below. Figure 18 shows a detailed overview of the occupancy study results.

Table 11: Summary of historical car parking analysis

	Peak periods	Off-peak periods
Average occupancy	730	252
Average vacancy	379	857
Total capacity	1,109	1,109

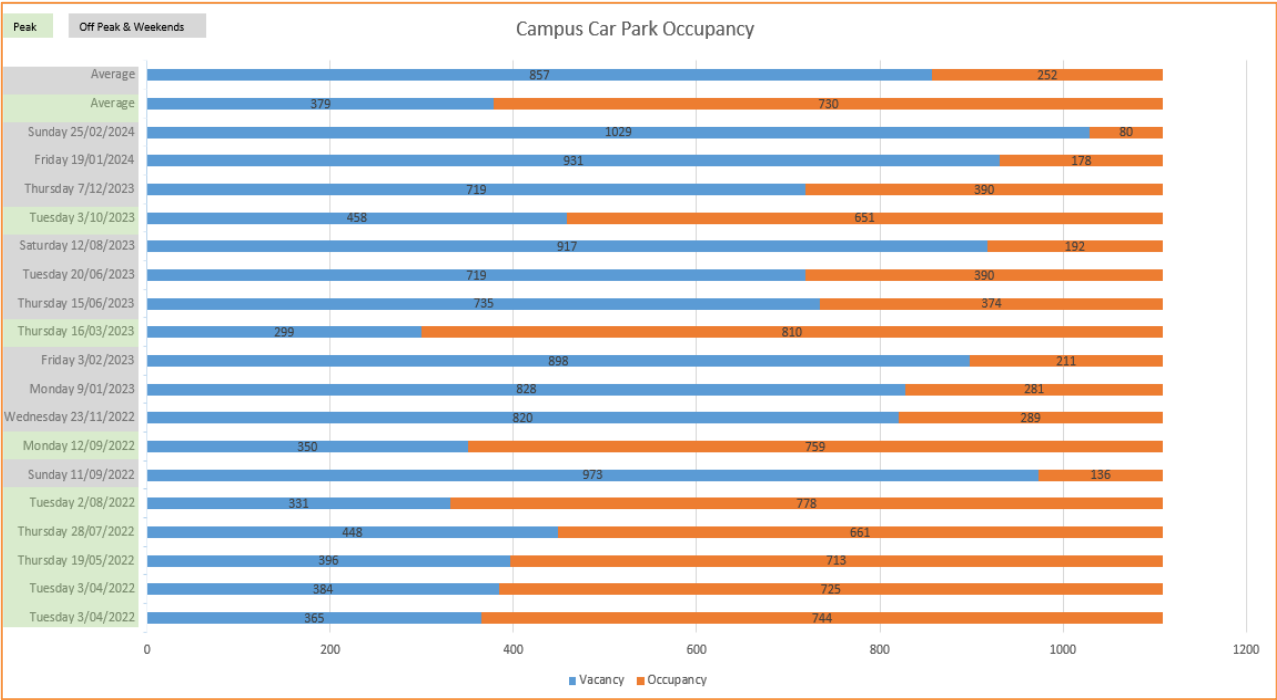


Figure 18: WSU Parramatta Detailed Car Park Occupancy

2.7 Traffic Conditions

2.7.1 Vehicle Movements

The site is surrounded by state roads including Victoria Road and James Ruse Drive, each with 2 – 3 travel lanes in each direction. These roads contain high numbers of vehicle volumes every day, including cars, buses, and trucks. This is consistent with on-site observations which showed a consistent flow of traffic along Victoria Road.

TfNSW records traffic volumes at various counters across the state, which can be accessed via the Traffic Volume Viewer webpage. Historical volume data (from 2006 – 2018) has been recorded for a location on Victoria Road just north of the site as shown in Figure 19, and a summary of the key traffic volumes are shown in Table 12. It is noted that the average volumes were shown to reduce in the later year of 2018.

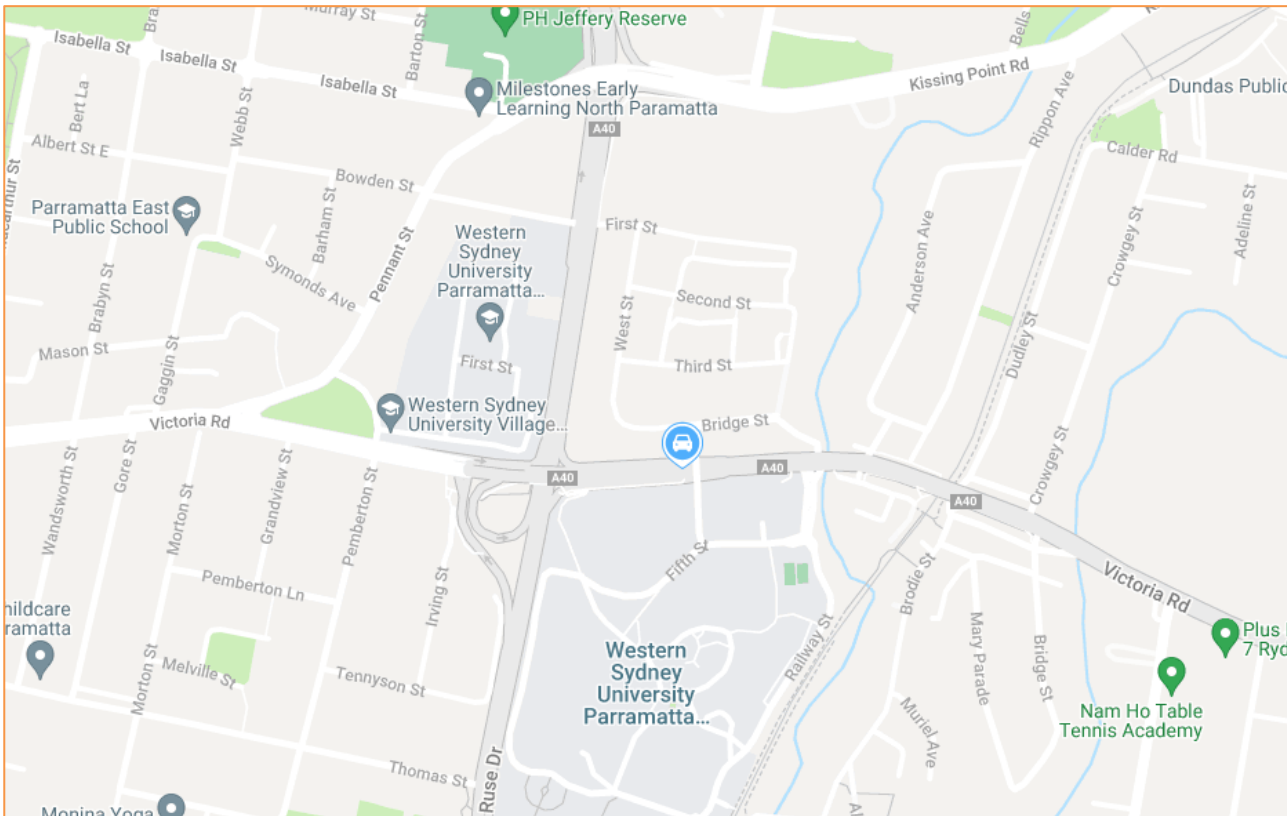


Figure 19: Location of Volume Counter
Source: TfNSW Traffic Volume Viewer

Table 12: Historical Traffic Volumes at Victoria Road

Collection year	Collection period	Peak period	Direction	Average volume (approx.)
2006 – 2018	Weekdays	6:00am – 10:00am	Eastbound + westbound	17,800
		3:00pm – 7:00pm		18,700
2018		6:00am – 10:00am		15,500
		3:00pm – 7:00pm		15,000

2.7.2 Intersection Performance

As explained in more detail in Section 10, traffic modelling has not been undertaken for this project, as the project is targeting net zero traffic generation which would result in negligible impacts to the performance of the surrounding road and intersection network.

However, in order to understand the performance of the nearby intersections, reference is made to the traffic impact assessment reports prepared for the PLR Stage 1 and Stage 2:

- **PLR Stage 1:** *Operational Traffic and Transport Technical Assessment Report* prepared by GTA Consultants, dated 15 August 2017¹
- **PLR Stage 2:** *Technical Paper 2 – Transport and Traffic* prepared by GHD, dated 24 October 2022²

The key findings in terms of intersection performance along the Victoria Road corridor are summarised in Table 13. The locations of each of these intersections are shown in Figure 20.

Table 13 reports on the future year scenario with the PLR project, as this best represents the intersection performance expected during operation of the proposed ICoE. For the PLR Stage 1 report, this is for the year 2026 and for the PLR Stage 2 report this is for the year 2031. The Level of Service (LOS) for both the morning (AM) and evening (PM) peaks are shown in Table 13.

Generally, the intersections along Victoria Road near the Parramatta CBD (west of the site) are shown to operate with a satisfactory LOS of C during the AM peak, with a deteriorating LOS in the PM peak with LOS ranging between D to F. The intersections towards Rydalmere and Ermington (east of the site) are shown to have better performances, with acceptable operation of LOS B and C for majority of the intersections in both AM and PM peaks. The intersections of Victoria Road with Park Road and Spurway Road are shown to be at capacity across both peaks.

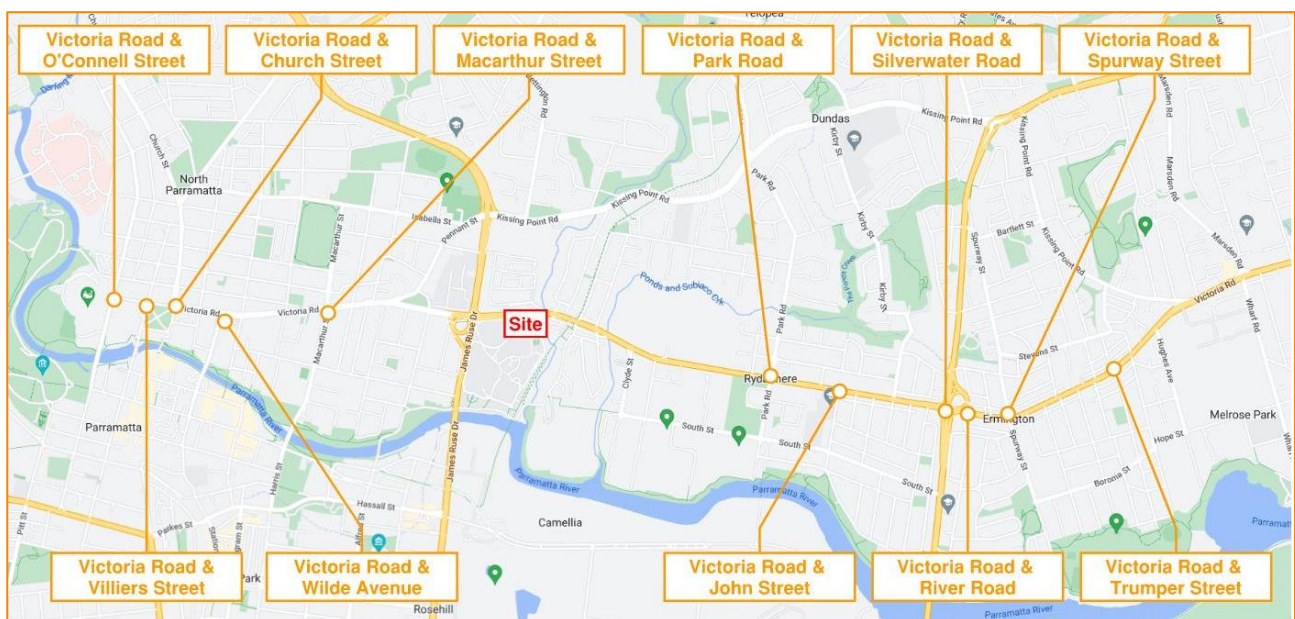


Figure 20: Locations of Analysed Intersections along Victoria Road

¹ <https://www.planningportal.nsw.gov.au/major-projects/projects/parramatta-light-rail-stage-1>

² <https://www.planningportal.nsw.gov.au/major-projects/projects/parramatta-light-rail-stage-2>

Table 13: Intersection Performance

Source	Intersection	Intersection Type	Scenario	Peak	Level of Service
PLR Stage 1 (GTA, 15/08/17)	Victoria Road & Macarthur Street	Signals	2026 with PLR Stage 1	AM	C
				PM	D
	Victoria Road & Wilde Avenue	Signals	2026 with PLR Stage 1	AM	C
				PM	F
	Victoria Road & Church Street	Signals	2026 with PLR Stage 1	AM	C
				PM	D
	Victoria Road & Villiers Street	Signals	2026 with PLR Stage 1	AM	C
				PM	F
	Victoria Road & O-Connell Street	Signals	2026 with PLR Stage 1	AM	F
				PM	F
PLR Stage 2 (GHD, 24/10/22)	Victoria Road & Park Road	Signals	2031 with PLR Stage 2	AM	F
				PM	E
	Victoria Road & John Street	Give-way	2031 with PLR Stage 2	AM	B
				PM	B
	Victoria Road & Silverwater Road	Signals	2031 with PLR Stage 2	AM	B
				PM	C
	Victoria Road & River Road	Signals	2031 with PLR Stage 2	AM	B
				PM	B
	Victoria Road & Spurway Road	Signals	2031 with PLR Stage 2	AM	E
				PM	D
	Victoria Road & Trumper Street	Signals	2031 with PLR Stage 2	AM	B
				PM	B

2.8 Travel Mode

2.8.1 Travel Mode Survey

The existing travel mode splits have been calculated based on travel mode survey results & bus shuttle demand data from the Strategic Travel Demand Assessment (STDA) by *Pentelic Advisory, July 2023* as well as observations of parking usage around the site. The calculated existing mode splits as shown in Table 14 have been derived based on the following:

- The travel mode survey from the STDA outlines a 3% mode split for walking.
- The travel mode survey from the STDA outlines a 5% mode split for public bus.
- TTW has undertaken a study of the usage of the on-site car parks over the past 2 – 3 years (refer to Section 2.6.2), and this data shows an average of around 105 occupied parking spaces at the Parramatta North campus of WSU during the busiest days at the university. To align with the observed occupancy levels, an assumption has been made for about 70 users or a 2% mode split for park & ride.
- A count of the shuttle bus users outlined in the STDA indicates 3,500 daily passengers on the shuttle bus, or about 1,750 shuttle users. Taking away the 2% of these which are related to park & ride from the North Campus, this translates to a 48% mode split for shuttle bus.
- Based on the remainder, an assumption has been made for a 42% mode split for car only.

From the results, it is shown that the shuttle bus is highly used by approximately half of the university population. This is followed by car usage with similarly high usage, and relatively low usage of public buses and active transport.

Table 14: Travel Mode Survey Results

Travel mode	Mode split
Walk	3%
Bicycle	0%
Shuttle bus only	48%
Public bus	5%
Park & ride	2%
Car only	42%
Total	100%

2.8.2 Census Travel Data

Method of Travel to Work (MTWP) data from the Australian Bureau of Statistics (ABS) Census provides an estimate of travel modes to and from the local area as defined by Statistical Area Level 2 (SA2) zones. The site is located within SA2 zone 'Ermington – Rydalmere' as illustrated in Figure 21.

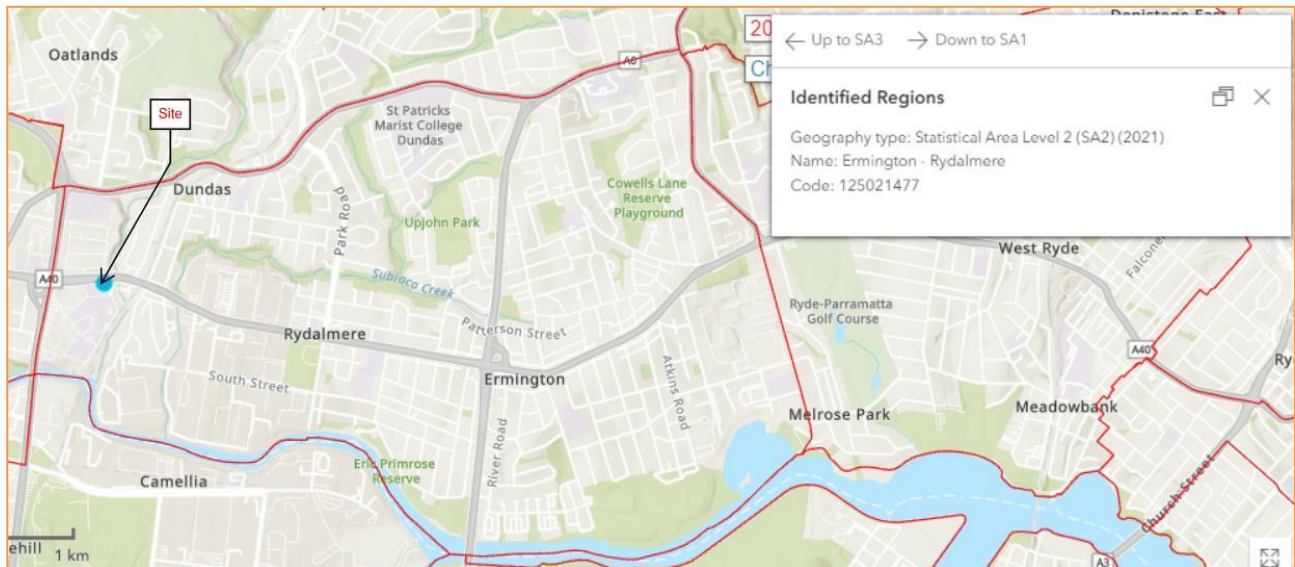


Figure 21: Statistical Area of Site

Source: ABS

Responses for “worked at home”, “did not go to work”, and “mode not stated” have been excluded from this analysis. The census travel data is summarised in Table 15, for this SA2 zone as both a place of work (i.e., travelling from somewhere else to Rydalmere) and as a place of residence (i.e. travelling from Rydalmere to somewhere else).

Table 15: Census Travel Data

Note: Values may not add to totals shown due to rounding

Source: ABS

Travel mode	2016		2021	
	Place of Work	Place of Residence	Place of Work	Place of Residence
Train	5%	14%	4%	5%
Bus	3%	6%	3%	3%
Ferry	0%	0%	0%	0%
Tram	0%	0%	0%	0%
Taxi	0%	0%	0%	0%
Car, as driver	83%	70%	83%	80%
Car, as passenger	4%	5%	5%	6%
Truck	1%	1%	1%	1%
Motorbike/scooter	0%	1%	1%	1%
Bicycle	0%	1%	1%	1%
Other Mode	0%	1%	1%	1%
Walked only	1%	1%	1%	2%
Total	100%	100%	100%	100%

Table 16: Categorised Census Data

Travel mode	2016		2021	
	Place of Work	Place of Residence	Place of Work	Place of Residence
Public Transport	8%	20%	7%	8%
Active Transport	1%	4%	4%	5%
Private Vehicle	88%	76%	89%	87%
Total	100%	100%	100%	100%

The census travel data shows that:

- The majority of the population commute via private vehicle, which is the most popular mode of travel for both workers and residents.
- In both cases where workers were travelling to Rydalmere and residents travelling from Rydalmere, carpooling was the second most popular option from the 2021 census data and was closely followed by train, and then bus.
- However, from the 2016 census data, for workers travelling to Rydalmere, train was the second most popular option and was closely followed by carpooling, and then bus. For residents travelling from Rydalmere, train was the second most popular option, followed by bus, and then carpooling.
- The use of public transport decreased from 2016 to 2021. However, it is acknowledged that data in 2021 was collected during the COVID-19 pandemic, when travelling via public transport was minimal and so the results for 2021 may be skewed because of this.
- The use of active transport and private vehicles increased from 2016 to 2021.

2.9 Nearby External Works

2.9.1 Parramatta Light Rail Stage 2

PLR Stage 2 has received approval, with main construction works expected to start in 2025. Stage 2 will connect Parramatta CBD to Sydney Olympic Park via Rydalmere, Melrose Park and Wentworth Point as shown in Figure 22. This includes connections to the train network, and the future Sydney Metro West. Services will be available approximately every 7.5 minutes between 7am and 7pm on weekdays.

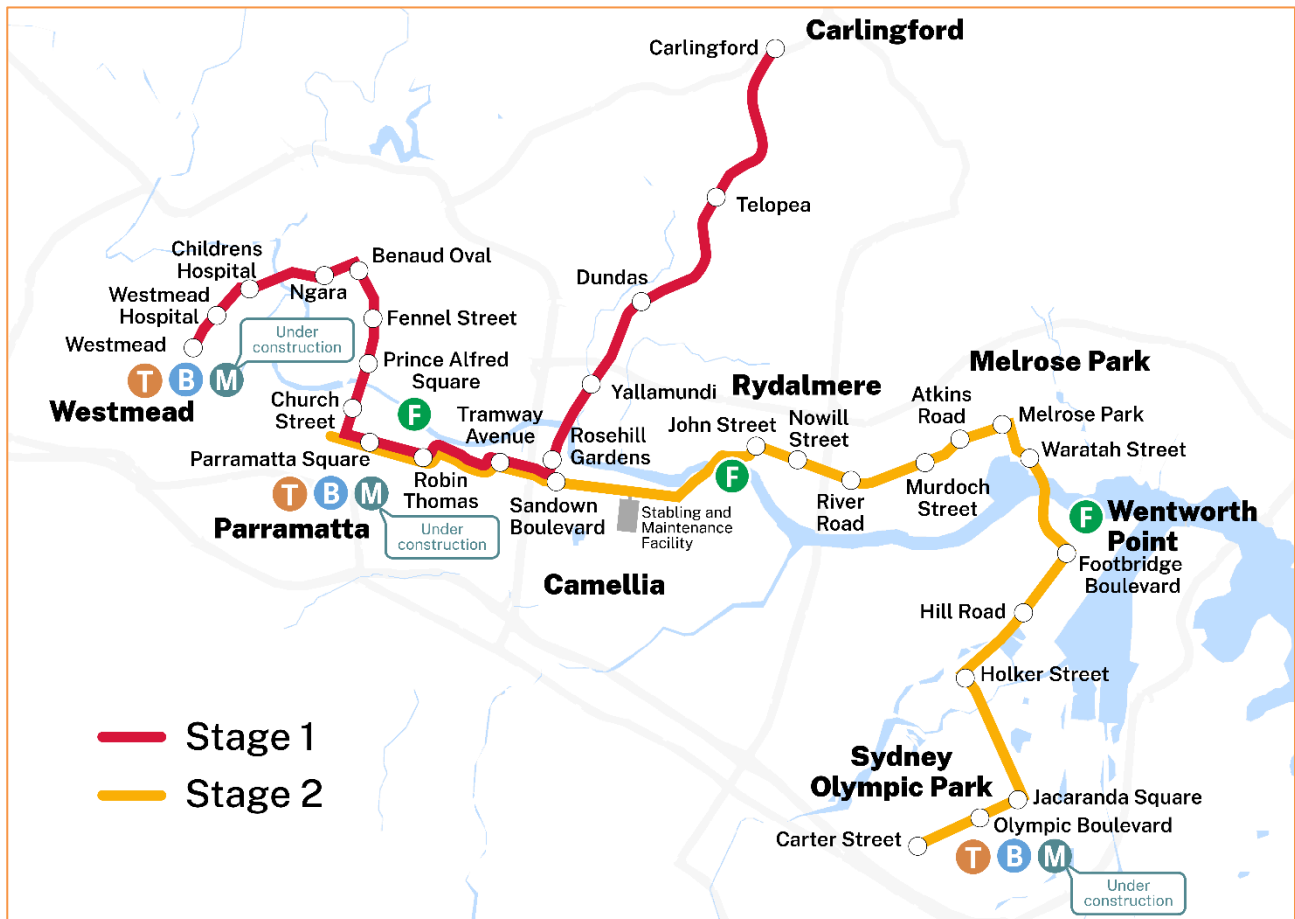


Figure 22: PLR Stage 1 & 2
Source: Parramatta Light Rail

2.9.2 Victoria Road Revitalisation Project

TfNSW's future vision for Victoria Road includes long and short-term projects to revitalise the road corridor by providing better access to safe and sustainable travel modes, including prioritisation of public transport. In particular, TfNSW is improving the bus services along Victoria Road by:

- Improving bus service reliability.
- Reducing journey times for bus users.
- Supporting frequent bus services.

Section 3 Proposed Works

This SSDA specifically seeks detailed approval for the following works:

- Site preparation including demolition of the existing car park, tree removal and installation of inground utility infrastructure services.
- Construction of a three-storey Indigenous Centre of Excellence encompassing:
 - Ground level facilities, including but not limited to; a dedicated arrival area, outdoor amphitheatre, multipurpose court and theatre, and gallery. Associated workspaces, teaching spaces, meeting areas, lounge areas and other amenities are to be provided throughout the ground floor.
 - First floor level comprising meeting space and dedicated educational facilities including learning areas and teaching spaces.
 - Second floor level comprising offices, and collaboration spaces.
 - Roof level plant and services.
- Construction of internal driveway and car parking spaces areas, including:
 - 13 with hardstand area spaces adjacent to the new dedicated arrival zone for the proposed ICoE development
 - 106 temporary replacement P1 spaces proposed in new western car park to the west of Bridge Street, adjacent to the existing oval
 - 181 temporary replacement P1 spaces proposed in new eastern car park on the southern side of Fifth Street
- Landscaping works to provide outdoor educational and recreational spaces.

The overall proposed site plan is illustrated in Figure 23.

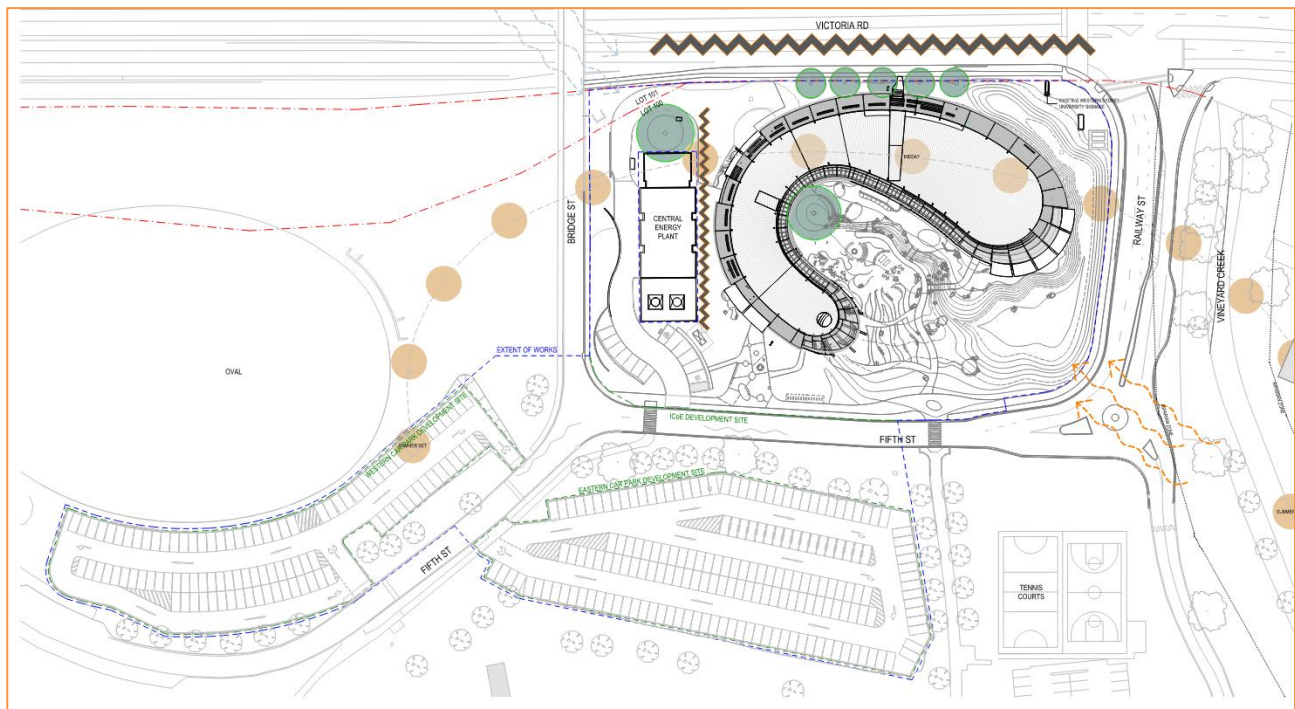


Figure 23: Proposed Site Plan
Source: Jackson Clements Burrows Architects

The occupancy levels for the proposed ICoE have been provided by WSU and are recorded in Table 17. This table presents the total users at the ICoE, as well as the portion of these which would be new or additional users estimated to be generated by the ICoE development (as opposed to users who would already be attending the campus in other buildings, prior to the ICoE development).

Table 17: ICoE Occupancy Levels

Operating Times	Total Users	<u>Additional</u> Users
Monday to Friday (9am-6pm)	633	110
Saturday to Sunday (9am-1pm)	517	302
Day Event (6x a month)	1,078	710
Night/Weekend Event (4x a month)	963	928

The Strategic Travel Demand Assessment (*Pentelic Advisory, July 2023*), attached to Appendix B for reference, estimates the total existing campus population to be approximately 3,500 typical daily users. Therefore, the future campus populations following the development of the ICoE are as shown in Table 18.

Table 18: Campus-Wide Occupancy Levels

Operating Times	Existing	Additional Users Generated by ICoE	Total
Monday to Friday (9am-6pm)	3,500	110	3,610
Day Event (6x a month)	3,500	710	4,210

Based on the occupancy levels of the ICoE and the campus as a whole, there are three key scenarios that this assessment will focus on, and these are as follows:

- **Typical operations** – during typical operations on weekdays, WSU have estimated that of the total 633 users, about 110 of these will be additional users generated by the development of the ICoE. The remaining users consist of existing students, staff and visitors who would already attend the campus. It has also been advised that the ICoE would operate with approximately 40 staff during typical operations.
 - On weekdays, the total campus population following the development of the ICoE would be about 3,610 users.
- **Peak operations** – the busiest period at the university campus as a result of the ICoE will be during day events, where WSU have estimated that of the total 1,078 users, about 710 of these will be additional users generated by the ICoE.
 - During event days, the total campus population following the development of the ICoE would be about 4,210 users.
- **Largest net change** – the ICoE is estimated to have the largest number of additional users to the university during night / weekend events, with about 928 users.
 - Whilst this is the peak additional occupancy at the proposed ICoE, this is not the peak occupancy at a campus-wide level, because the rest of the campus will have low usage at night and on weekends. Therefore, this scenario would not generate impacts beyond existing high-occupancy conditions.

3.1 Site Access

The design provides access to the ICoE at several distributed entry points for pedestrians from Fifth Street, including a formal entry, accessed directly from the Elders car park spaces. The Elders car park spaces can be accessed via Fifth Street. The new western and eastern car parks can be accessed via Fifth Street, to the southwest of the proposed ICoE. All entry points are displayed in Figure 24. All entry points are located along the university's internal road network; there are no new access points proposed to the public road network.

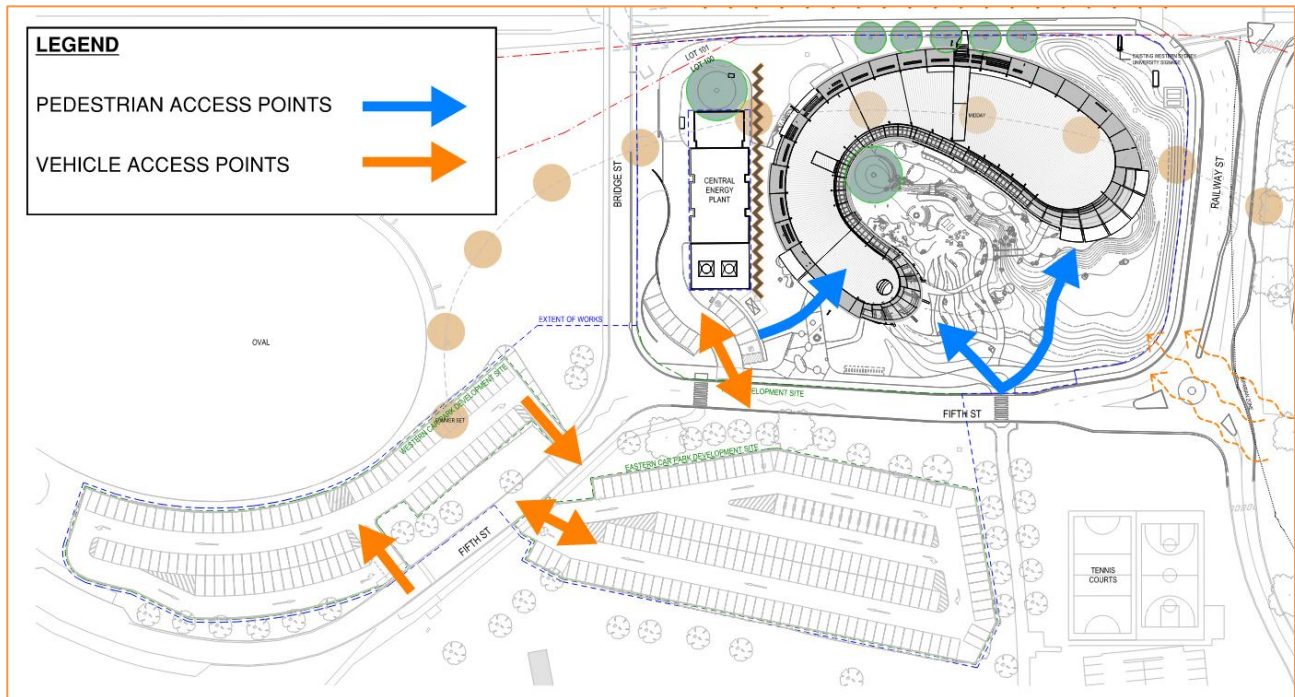


Figure 24: Site Access
Source: Jackson Clements Burrows Architects

Section 4 Travel Demands

4.1 Transport Hierarchy

The transport strategy for the project is designed as a sustainable transport strategy, prioritising non-vehicle modes such as active transport (i.e. walking, cycling) and public transport and discouraging private vehicle travel (including car parking). This strategy is consistent with NSW Government policy, specifically the Road User Space Allocation Policy. This hierarchy is illustrated in Figure 25.

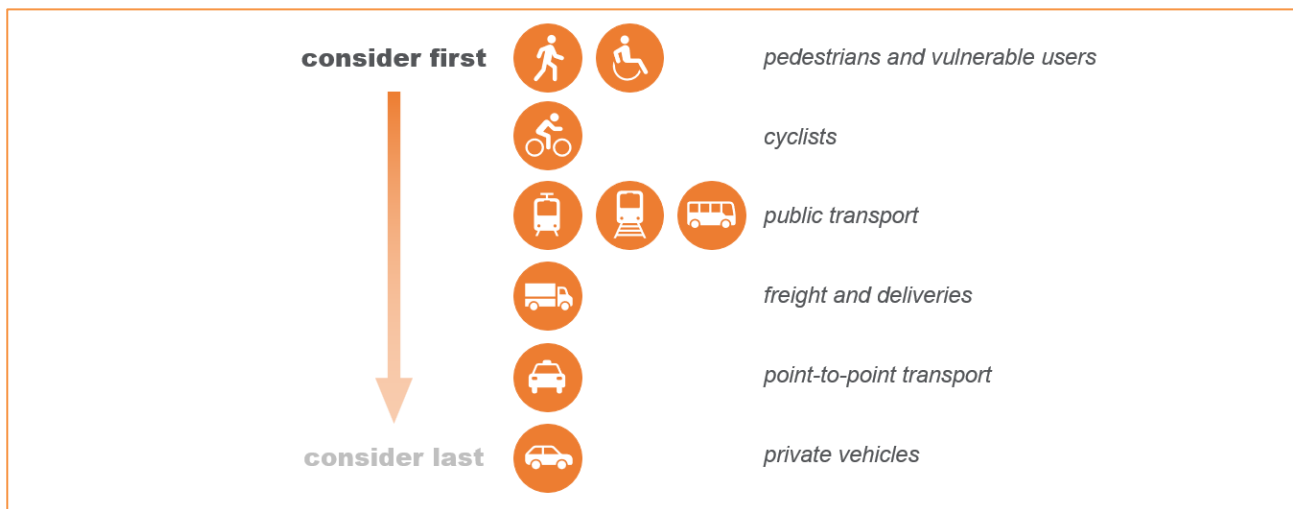


Figure 25: Sustainable Transport Hierarchy

Source: Adapted from TfNSW Road User Space Allocation Policy

4.2 Travel Mode Splits

Travel mode splits outlining the portion of users (combination of staff, students and visitors) travelling to the campus by each different mode of transport are shown in Table 19. The existing mode splits are detailed further in Section 2.8.1, and outline the existing travel behaviour at the WSU Parramatta campuses. The future travel mode splits shown in Table 19 have been developed based on these existing travel habits, as well as consideration of the existing and proposed transport provisions in the area. Applying the existing and future travel mode splits to the expected campus population results in the travel demand volumes for each mode of transport as shown in Table 19.

In the longer term, it is expected that, with transport infrastructures such as the adjacent ATL and PLR now in place, better connectivity will further encourage the uptake of non-car travel modes. The Green Travel Plan prepared for the site includes further discussions on long-term travel mode splits that outline more ambitious targets for active and public transport, including consideration of usage of the light rail. This TAIA focuses on the minimum travel mode shift required as outlined in Table 19, and as explained further in Section 4.3.

The mode splits and travel demand volumes shown in Table 19 are for the weekday scenario, for the typical population on Monday to Friday. As summarised in Table 17, the typical occupancy levels at the ICoE is estimated to be 110 additional users to the site, which results in an increase from an existing campus population of 3,500 up to 3,610 following the development of the ICoE. Moreover, it should be noted that the “Post-development Future” scenario is purely based on existing transport provisions at the time of assessment, and therefore does not rely on the PLR operation, in reality the PLR will have commenced operation prior to the opening of the ICoE.

The ICoE is also proposed to have day, night and weekend events with larger occupancies that need to be considered. These considerations are detailed further in Section 4.4.

Table 19: Campus-Wide Travel Mode Splits
Note: totals may not add exactly due to rounding

Travel mode	Existing		Post-development Future		Long Term	
	%	#	%	#	%	#
Walk	3.0%	105	3.1%	111	5.1%	184
Bicycle	0.0%	0	0.0%	0	2.3%	83
Light rail + Shuttle bus	48.0%	1,680	49.1%	1,771	52.5%	1,895
Public bus	5.0%	175	5.1%	184	3.5%	126
Park & ride	2.0%	70	2.0%	74	2.0%	74
Car only*	42.0%	1,470	40.7%	1,470	34.6%	1,248
Total	100%	3,500	100%	3,610	100%	3,610

*'car only' refers to the number of people utilising private vehicle, which includes people who carpool, **not** the number of vehicles driving on campus.

Based on the existing travel mode splits at a campus-wide level shown in Table 19, the key traffic considerations and impacts are as follows:

■ **Active transport**

- Active transport in the form of walking and cycling only is not highly used by those attending the university campus. This is expected as staff and students travel from all over Sydney and are unlikely to live within walking or cycling distance of the WSU Parramatta campuses.
- However, it is noted that walking and cycling still form an important component of many people's journey to the university, including connection to nearby public transport services. Therefore, adequate on-campus and nearby pedestrian and cyclist infrastructure is necessary to support travel to and from the university.
- It is anticipated that current walking and cycling patterns will be reasonably consistent into the future, but improved active transport infrastructure such as the new ATL adjacent to the PLR corridor will likely result in increased usage of active travel.

■ **Public transport**

- The existing mode splits for public transport show a high usage (about half of the population) of the WSU shuttle bus for travellers to the university. It is expected that the university will experience continued high usage of the shuttle bus into the future and once the ICoE is operating.
- An uptake in public transport usage is expected to occur due to improved public transport infrastructure in the local area, including the PLR (Stage 1 opened in December 2024) and the Victoria Road revitalisation project to enhance public bus services.
- It is likely that a significant proportion of shuttle bus users will shift to the PLR, as both modes provide the same connection to Parramatta station. Therefore, the future travel demand for the shuttle bus is likely to decrease, due to an uptake in PLR usage.

■ **Private vehicles**

- Slightly less than half of the campus population currently travel by private vehicle to the university. This includes some users that park at the Parramatta North campus of WSU and catch the shuttle bus down to the south campus.
- Additional private vehicle usage and associated traffic generation of the ICoE project would result in additional vehicle volumes at the Victoria Road & Railway Street intersection. It is acknowledged that Victoria Road is a state road corridor and contains high levels of traffic volumes each day. Therefore, any worsening of the performance of this intersection would have

a negative impact on the general traffic along this major corridor, which needs to be addressed and mitigated.

- The overall private vehicle mode share at the WSU Parramatta campuses is anticipated to reduce over time, as the university sees an uptake in active and public travel as described above. Further, the implementation of the Green Travel Plan which targets increased usage of sustainable travel modes will contribute to a reduction in private vehicle travel.

4.3 Transport Strategy

As discussed above, Victoria Road is a heavily congested corridor, and it is important for this project to avoid traffic impacts to the surrounding road network. Therefore, the transport strategy for this project is to enable and encourage a campus-wide shift away from private vehicle usage in order to mitigate the impacts of additional traffic generation, and to align with the transport hierarchy of prioritising sustainable travel. In other words, this proposal is seeking campus-wide net zero traffic generation, by which any future traffic generated by the ICoE would be offset by overall reductions in traffic generation at the WSU Parramatta campuses.

As shown in Table 19, the future scenario is targeting a minor reduction in private vehicle usage of 1.3% (from 42.0% to 40.7%) to achieve net zero traffic generation. This is a very minor shift from existing travel behaviour, due to the low demands and minimal impact expected from the ICoE development. This level of change is considered reasonable and achievable due to the following:

- Proposed on-site bike parking and end-of-trip facilities, as well as the adjacency to the ATL that runs along the light rail corridor.
- Good existing bus services and public transport such as the PLR.
- Easily accessible shuttle bus service offered by WSU.
- Implementation of a Green Travel Plan (a preliminary version has been prepared and submitted separately as part of this SSDA) to promote sustainable travel behaviours, and encouragement measures to demonstrate the feasibility of a mode shift from private vehicles to public and active transport.

Therefore, the proposed mode shift towards active and public transport is considered achievable. However, the following sections of the report also take into consideration the impacts that would result and potential mitigation measures if the mode shift was not fully achieved.

4.4 Event Days

The proposed ICoE will hold regular events that generate larger volumes of people compared to typical day-to-day operations. This includes day events occurring 6 times per month, and night / weekend events occurring 4 times per month, with the occupancy levels as shown in Table 17.

The events at the proposed ICoE will be supported by the capacity and protocols that WSU currently deploys in staging large events at the Parramatta South campus. The types of events held at the ICoE will be similar in nature to the events that currently take place on the campus, such as student orientation week and graduations, including users of all demographics. WSU currently undertakes an event planning process that includes transport planning and risk assessment for operation of all events on campus, and this will also be the case for future events at the ICoE.

The travel demands during day events have been calculated and summarised in Table 20. The travel demands are based on the estimated future mode splits from Table 19 including the mode shift of 1.3% away from car usage and applying these to the peak event population of 710 additional users at the ICoE, or a total of 4,210 users at the whole campus.

The travel demand generated during day events is expected to be suitably accommodated due to the following:

- Similar to the above, the existing and proposed improvements to the active and public transport network around the university will reduce car usage.
- This includes the new PLR which is expected to pick up a significant proportion of current shuttle bus usage.
- Relatively high levels of car park vacancy observed through a study of historical usage of the university's on-site car parks.
- Overflow parking provisions at the Parramatta North campus of WSU to be used for events.
- Implementation of a Green Travel Plan for events to promote sustainable travel.

A more detailed impact assessment of event days is included in the following sections.

Table 20: Travel Mode Splits on Event Days
Note: totals may not add exactly due to rounding

Travel mode	Existing		Post-development Future		Long Term	
	%	#	%	#	%	#
Walk	3.0%	105	3.1%	129	5.1%	215
Bicycle	0.0%	0	0.0%	0	2.3%	97
Light rail + Shuttle bus	48.0%	1,680	49.1%	2,065	52.5%	2,210
Public bus	5.0%	175	5.1%	215	3.5%	147
Park & ride	2.0%	70	2.0%	86	2.0%	86
Car only*	42.0%	1,470	40.7%	1,714	34.6%	1,455
Total	100%	3,500	100%	4,210	100%	4,210

*'car only' refers to the number of people utilising private vehicle, which includes people who carpool, **not** the number of vehicles driving on campus.

For night and weekend events (as discussed in Section 3), occupancy of the ICoE itself will represent a higher net change in campus-wide users than the day events (928 additional users vs 710 additional users). However, these events would occur outside peak campus activity periods, when the baseline campus activity is significantly lower, and therefore this scenario does not represent a peak impact scenario despite showing the largest net change. Traffic movements, car parking usage, and general transport activity during these scenarios would be within existing conditions limits and has therefore not been assessed further.

Section 5 Pedestrians

As outlined in Table 19, travel to and from the university and the proposed ICoE by walking only is not highly used (approximately 3%), as people who attend the WSU Parramatta campuses live all over Sydney and are unlikely to be within walking distance of the campus. Therefore, the on-site and nearby pedestrian infrastructure is important for those few who do walk to the university, but more significantly, it is important for those who walk to nearby public transport services such as bus stops on Victoria Road and Yallamundi light rail station.

The bus stops on Victoria Road are approximately 3-minutes' walk from the proposed site and can be reached via wide footpaths and safe crossing points at the Victoria Road & Railway Street intersection (signalised crossing for south & west legs, zebra crossing for north leg & south leg slip lane). A direct footpath connection is available between the site and the ATL that runs adjacent to the light rail corridor from Parramatta to Carlingford. The ATL itself also provides good connectivity towards Parramatta CBD and the residential suburbs to the north.

Further to this, the campus provides internal footpaths and crossings to accommodate safe and efficient pedestrian movements, including two zebra crossings to the south of the proposed ICoE that provide direct connection into the proposed site access points.

Considering the above, the existing and approved future pedestrian infrastructure provides very good amenity for pedestrian activity around the campus as well as highly accessible connections to nearby public transport services. Therefore, the ICoE project is not proposing any pedestrian infrastructure in addition to what is already available within and around the campus. The proposal does include end-of-trip facilities including showers, changerooms and lockers to support existing demand and encourage an uptake of active travel to the site.

Section 6 Cyclists

Similar to walking as discussed above, the baseline mode split for travel by bicycle or other rideable only as shown in Table 19 is low, as people travelling to the WSU Parramatta campuses typically come from outside a reasonable cycling distance. However, cycling is an important travel mode for the university, particularly considering the proximity to existing bicycle facilities and the connections these provide into public transport services for a multi-modal journey. For example, Parramatta station is a 10-minute cycle from the university. The ATL also provides good connectivity towards Parramatta CBD to the south and Carlingford to the north.

The proposal includes bicycle parking at the main building entry to the southwest corner of the building, totalling to 28 bicycle parking spaces as shown in Figure 26. The building contains 5 lockers and 4 shower / change areas.

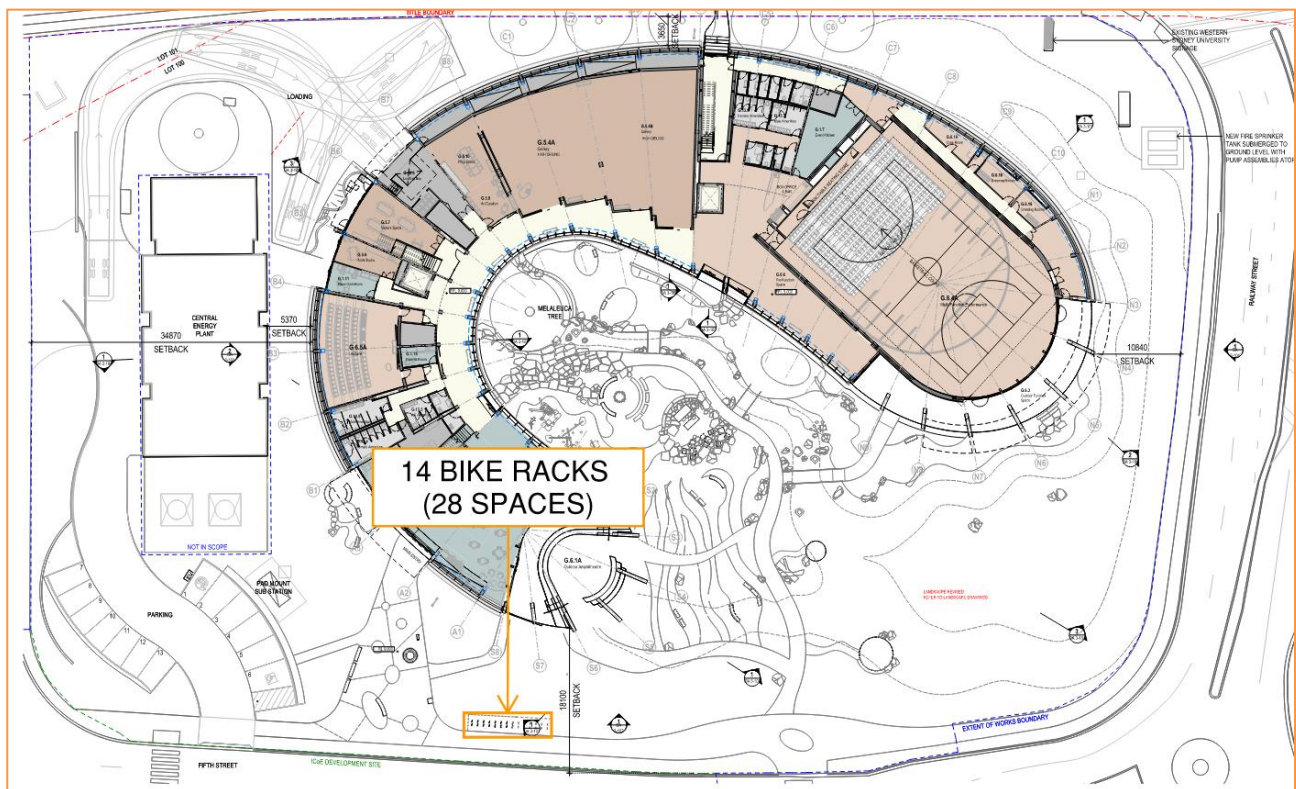


Figure 26: Bike Parking Provision
Source: Jackson Clements Burrows Architects

6.1.1 Bike Parking

Parramatta Development Control Plan (DCP) 2023 is the current DCP for this site. The DCP outlines a minimum number of bicycle parking spaces required for tertiary institutions as follows:

- 1 space per 10 staff
- Plus 1 space per 10 students expected on campus at any one time.
- The DCP also requires all bicycle parking to be located in a safe and secure location that is undercover and convenient for users, in the form of Class B lockers for staff.

For the proposed occupancy levels of 633 users at the ICoE, the DCP would require 64 bike parking spaces for students and staff.

However, it is noted that the ICoE development is estimated to generate 110 additional users, and the remaining would be existing students and staff who would already be attending the campus. Therefore, the additional demand generated by the ICoE would require 11 bike parking spaces at DCP rates. Further, the mode share for bicycles is low, and it is unlikely that bicycle parking spaces provided at the full DCP rate would see high usage. Therefore, the proposed bicycle parking provision of 28 spaces is sufficient to support the anticipated future demand, and to encourage further uptake.

6.1.2 End-of-Trip Facilities

Table 21 outlines the relevant rates for end-of-trip facilities as per the DCP and per the *NSW Guidelines to Walking and Cycling*.

Table 21: End-of-Trip Facility Rates and Requirements

Guideline	Showers		Changerooms		Lockers	
	Rate	Provision	Rate	Provision	Rate	Provision
Parramatta DCP Rates ³	1 shower per 10 staff	4 showers	1 change room per 10 staff	4 change rooms	1 locker per staff bicycle spot	4 lockers
NSW Guidelines to Walking & Cycling	2 showers (1 male and 1 female)		2 changerooms (1 male and 1 female)		1 locker per 3 bike racks	10 lockers
Proposed Provision	4 shower / change areas				5 lockers	

To support the bicycle mode share and encourage further uptake, the ICoE proposes bike parking and end-of-trip facilities in the form of showers, changerooms and lockers. This includes:

- 28 bike parking spaces located near the main entries to the building. Bike parking shall be provided in accordance with AS2890.3:2015.
- 4 showers / change areas and 5 lockers.

The proposed cyclist facilities are expected to support any future increase in cycling activity for users travelling to the ICoE by bike or rideable. The end-of-trip facilities are sufficient to meet the DCP rates and support expected demand. Furthermore, the existing cyclist infrastructure surrounding the site is sufficient, and the proposal does not include any further off-site cyclist infrastructure.

³ The DCP rate is for non-residential premises

Section 7 Public Transport

As discussed in Section 4, the transport strategy for this project is to enable and encourage a campus-wide shift away from private vehicle usage in order to produce net zero traffic generation following the development of the ICoE. In the context of the WSU Parramatta campuses, public transport and encouraging an uptake in the usage of this travel mode is key to achieving this mode shift, by making the most of the widely available public transport network surrounding the campus. As outlined in Table 19, the future mode split for public transport is 54%, comprising 49% via the PLR / WSU shuttle bus, and 5% via public bus.

However, the high existing usage of the shuttle bus services is expected to decrease following the completion of the new PLR and improvements to the Victoria Road bus network. It is expected that shuttle bus users will shift towards the PLR due to its increased convenience, frequency and capacity.

The bus network along Victoria Road and the future PLR are the key public transport services available within close proximity to the university, both of which provide connection into the broader train and future metro services at Parramatta station. In terms of buses, the journey to Parramatta station takes 15 – 20 minutes and services are available approximately every 5 – 10 minutes during peak times. The light rail was recently opened in December 2024, and services are available every 7.5 minutes between 7am and 7pm on weekdays, with each vehicle having capacity for up to 300 passengers.

Further to the public transport network, WSU also provides a free shuttle bus service between each of the campuses in Parramatta including Parramatta City Campus Precinct (adjacent to Parramatta station), South Parramatta and North Parramatta. The estimated frequency of the shuttle bus services is every 25 minutes on weekdays, as well as an express bus between the Parramatta North and South campuses available every 15 minutes. These services are provided throughout the day, generally from about 7:00am to 11:00pm on weekdays and 7:30am to 6:00pm on Saturday. For further detail about the shuttle bus service operation, refer to Section 2.5.2. The Strategic Travel Demand Assessment by Pentelic Advisory (refer to Appendix B) reports on the shuttle bus usage throughout May 2023. A key insight from this study includes an average of 3,500 shuttle bus trips taken per day (approximately 1,750 daily users), including about 70 users who park at the North Campus and catch the shuttle to the South Campus. As mentioned above, it is anticipated that a significant proportion of these existing shuttle bus users will shift to the light rail service, as it provides the same connection to Parramatta CBD but with added convenience. Therefore, it is assumed that the 1,750 shuttle bus users will be spread across both the shuttle and light rail services.

Therefore, considering the widely available and well serviced public transport network surrounding the university, any additional demand from the ICoE project as well as the mode shift towards sustainable travel is expected to be comfortably accommodated within the existing and future public transport infrastructure and services. During typical weekday operations, the expected future demand for public transport would be 54.2% (up from 53.0%), equating to approximately 1,955 users (up from 1,855). This additional demand of 100 users would be readily accommodated by the PLR, as well as spare capacity within the existing public and shuttle bus services. Therefore, no additional public transport works are proposed as part of the ICoE development.

7.1.1 Event Days

During event days, the ICoE generates greater travel demands, with the public transport mode split of 54.2% equating to approximately 2,280 users at a campus-wide level. This is a significant increase in the number of people travelling via public transport to the university (+ 425 users) compared to existing usage (up from 1,855).

Nonetheless, similar to discussions above, the new PLR is expected to pick up a significant proportion of this public transport demand, with capacity that could readily accommodate on the order of 425 passengers across a day.

Section 8 Loading and Servicing

For service and loading, the proposed ICoE includes a loading dock located in the northwest corner of the site. The dock can be accessed via an internal road to the west of the existing services building and includes a turning bay to accommodate reverse-in manoeuvres to the loading dock area.

The loading dock and access road are designed to accommodate vehicles up to and including a 12.5m Heavy Rigid Vehicle (HRV), with capacity for one vehicle in the loading dock at a time. The proposed loading dock contains a minimum height clearance of 4.5 metres, which is suitable for an HRV.

It has been advised that waste collection typically occurs in the early morning and deliveries would occur throughout the day. Waste from the ICoE would be collected from the building's waste area then taken to the central waste facility at the Parramatta South campus where it is taken off-site every fortnight. The access road accommodates one-way truck movements only, but this is sufficient as it is expected that truck movements will be infrequent and unlikely to overlap. Furthermore, there is a passing opportunity provided by the turning bay if two trucks do access the site simultaneously.

Swept path analysis for the loading dock and access road is provided in Appendix A, with an extract shown in Figure 27. Service vehicle facilities are designed in accordance with AS 2890.2:2018.

In terms of vehicle requirements for the existing services building to the west of the ICoE, it has been advised that a small vehicle (e.g. maintenance ute) would require daily access. As described above, the loading dock and access road are designed to accommodate an HRV, so any smaller vehicle would be comfortably accommodated.

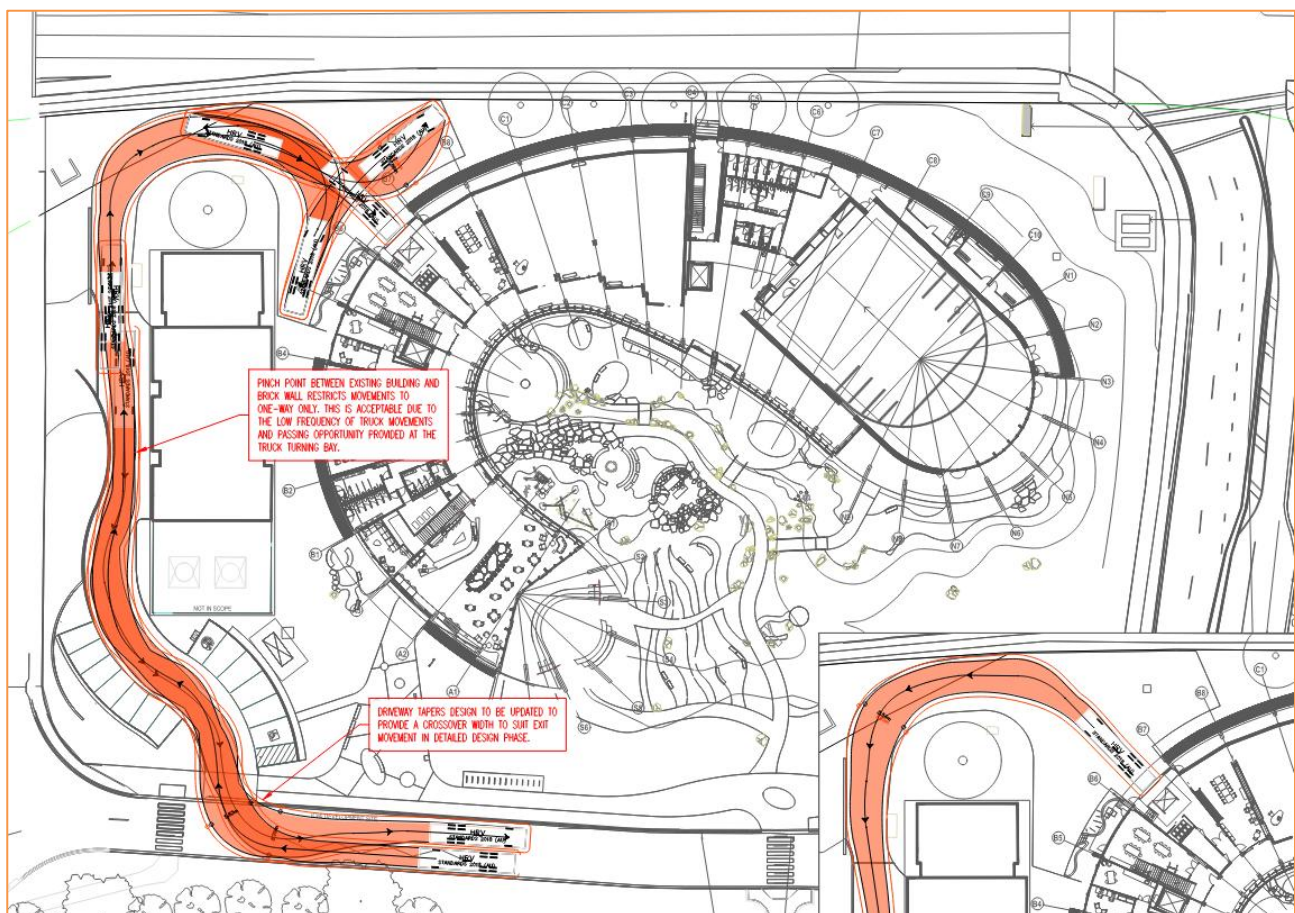


Figure 27: Vehicle Path to Loading Dock

Source: TTW

Section 9 Car Parking

9.1 Demands

Future car parking demands have been calculated for the weekday scenario, for the typical population on Monday to Friday. As shown in Table 22, the expected component of car parking demand generated by the ICoE development would be 20 vehicles.

As demonstrated in Table 22, the campus-wide car parking demand can remain at a net-zero parking demand (i.e. 660 total vehicles) following operation of the ICoE with a reduction in private vehicle mode split of only 1.3%.

As discussed in Section 2.8.1, a historical parking occupancy study of the university's on-site car parks has been undertaken using data from the past two to three years. On average, this data shows about 730 occupied parking spaces during the busiest days at the university. Out of these 730 spaces, approximately 70 are currently used for park & ride from the North Campus (or, 2% of the existing campus population), and so the average number of spaces currently occupied by car only travellers would be 660 spaces, and this demand is targeted to experience no change as a result of the ICoE development as demonstrated in Table 22. Comparing the observed occupancy level of 660 spaces, and the existing car mode split of 42.0%, this would result in an occupancy / turnover factor of 2.2. This factor represents a combination of vehicle occupancy and parking space turnover, to address the fact that each parking space at the campus will likely experience some level of turnover throughout the day, and that there may be more than one person per car.

Table 22: Car Parking Demands for ICoE

Note: calculations may not add up exactly due to rounding

Scenario	Category	Occupancy / turnover factor	Car mode split	Users	Car volume	Total cars
Existing	Total campus	2.2	42.0%	3,500	660	660
Future	ICoE	2.2	40.7%	110	20	660
	Rest of campus			3,500	640	

9.2 Proposal

In terms of car parking, the proposal includes the following works:

- Demolition of the existing 284-space P1 car park.
- Construction of a 13-space car park for designated use by Elders visiting the site, including 1 accessible parking space and 1 electric vehicle charging space.
- Construction of P1 replacement car parks, including:
 - 106-space car park on the western side of Bridge Street
 - 181-space car park on the southern side of Fifth Street

It is noted that the replacement car parks will provide a total of 287 parking spaces, which results in 3 additional parking spaces compared to the existing P1 car park. Therefore, following the removal of the P1 car park and the new car park works, there will be no reduction to the campus-wide parking capacity as a result of the ICoE project. The proposal will result in an increase to the total campus parking capacity from 1,109 to 1,125 spaces.

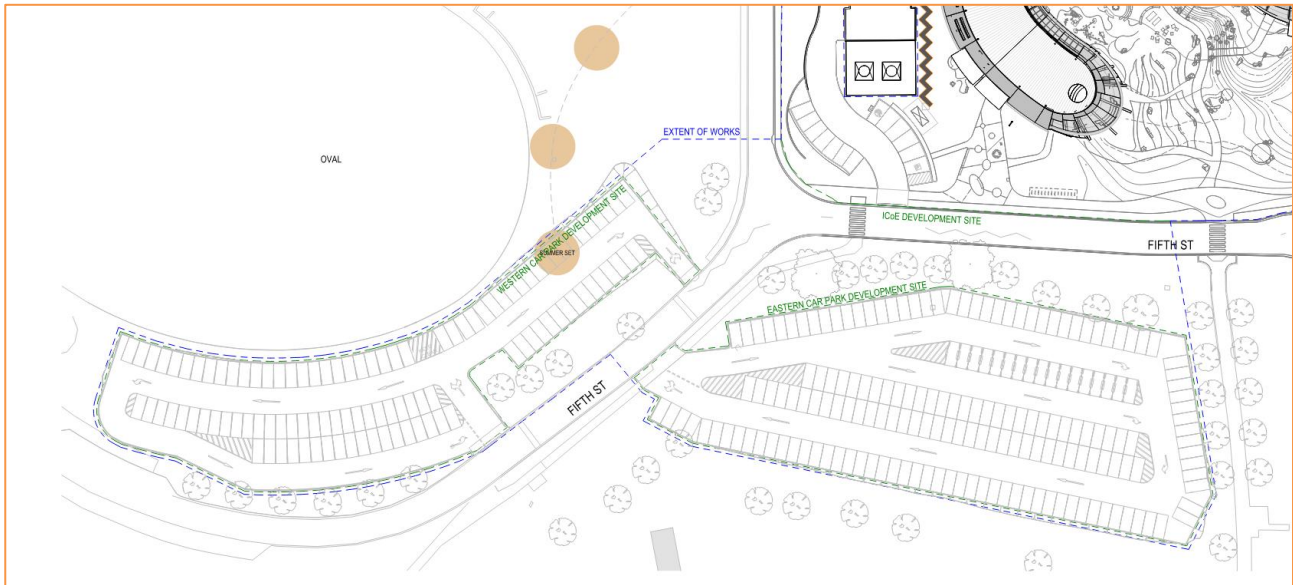


Figure 28: Proposed Car Parks
Source: Jackson Clements Burrows Architects

9.3 Analysis

9.3.1 DCP Requirements

The Parramatta DCP does not contain a car parking rate for educational establishments, but states that *“required parking to be confirmed through a traffic and transport impact assessment. The assessment must demonstrate the development will not result in any adverse impacts on on-street parking in surrounding residential areas”*. Given this, Section 9.3 provides a site-specific assessment of the required car parking based on the forecast travel demand and overall transport strategy of the proposal.

The DCP does not contain a car parking rate for other relevant land uses such as community facilities, galleries or theatres.

Section 8.2.4 of the DCP addressed the Local Centre of Camellia and Rydalmere, within which the proposed ICoE site (and the WSU Parramatta South campus more generally) is located. Section 8.2.4.4 (Travel Plans and Travel Information Guides) notes the objective of *“[increasing] opportunities to use public transport, to cycle or walk to work.”* This section also references a requirement for a Travel Plan, which is expected to be required in any case for this SSD as a typical condition of development consent. A preliminary Green Travel Plan has been prepared as part of this SSD to encourage the use of sustainable travel modes.

Section 8.2.4.7.3 (The University Special Area) further specifies that *“development should integrate with the public transport network and facilitate access for pedestrians and cyclists to the site and, where appropriate, through the site.”* The recently constructed footpath connection from the university to the ATL improves the connection to public transport for pedestrians and cyclists through the university site. Generally, throughout Section 8.2.4 of the DCP, a strong focus is provided on non-car travel modes, encouraging a reduction in car usage, which is reflected in the transport strategy for this project.

9.3.2 Adequacy of Proposal

The total car parking provision at the Parramatta campuses (across the North and South campuses) is increasing by 16 spaces to a total of 1,125 spaces as a result of the ICoE development.

Due to the campus-wide reductions in private vehicle use (refer to Section 4.3), the car parking demands of the ICoE development are expected to be offset, resulting in net zero growth in campus-wide parking demand.

From the calculations in Table 22, the existing parking demand is approximately 660 across the campus at a car mode split of 42.0%. Following the campus-wide reduction in car usage to 40.7%, and the introduction of new users at the ICoE, the future parking demand will consist of approximately 20 spaces generated by the ICoE and 640 for the remainder of the campus, totalling to the pre-development parking demand of 660.

Given the numerous sustainable transport options for travel to and from the WSU Parramatta campuses, the minor mode shift away from car usage of 1.3% is considered to be an appropriate proposal. Therefore, the overall impact to on-campus parking is expected to be negligible.

It is acknowledged that the proposed departure from the existing mode splits may not be able to be fully achieved or may occur over time as the new ICoE is established and the GTP is implemented. In the case where this is not achieved, the development of the ICoE would generate approximately 21 additional vehicles to the site. This calculation is based on no change to the existing campus travel behaviour and the existing mode splits applied to the additional ICoE users (i.e. existing car mode split of 42.0% applied, rather than the reduced mode split of 40.7%). In this instance, reference is made to the parking occupancy study detailed in Section 2.6.2 which surveys the existing usage of the car parks across the campus. The key outcome of this study is that the minimum number of vacant spaces recorded on the campus was 299 during peak times. Further, the proposal includes an additional 16 spaces to accommodate parking demand, resulting in a total of 315 spaces estimated to be available. Therefore, there is sufficient spare capacity within the existing campus car parks to accommodate the expected demand of 21 additional vehicles if the full mode shift is not achieved.

This anticipated shift away from a reliance on private vehicle usage is consistent with NSW legislation including Section 3.58 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* ('the T&I SEPP'). For developments for the purpose of an educational establishment, the T&I SEPP states that "*the consent authority must take into consideration... the accessibility of the site concerned, including... the potential to minimise the need for travel by car.*" As detailed throughout this report, there are various mechanisms and services in place to accommodate the reduced need for travel by car.

9.3.3 Events

The parking demand generated by the ICoE will be larger during events compared to typical day-to-day operations. Table 23 summarises the car parking demands generated by the ICoE development, as well as the campus-wide demands, for both existing conditions and during future events at the ICoE.

As outlined earlier in Table 17, there are different event scenarios, including day events and night / weekend events, both of which are outlined in Table 23 below.

Table 23: Event Car Parking Demands for ICoE & Campus

Note: calculations may not add up exactly due to rounding

Scenario	Category	Occupancy / turnover factor	Car mode split	Users	Car volume	Total cars
Existing	Total campus	2.2	42.0%	3,500	660	660
Day events	ICoE	2.2	40.7%	710	130	770
	Rest of campus			3,500	640	
Night / weekend events	ICoE	2.2	40.7%	928	170	810
	Rest of campus			3,500	640	

The key findings from Table 23 are as follows:

- **Day events** – the parking demand during day events is estimated to increase by 110 vehicles compared to existing operations (770 spaces up from 660). This is due to the addition of 710 users generated by the ICoE, as well as the 1.3% reduction in car travel that the project is targeting.
- **Night / weekend events** – the parking demand during night / weekend events is estimated to increase by 150 vehicles compared to existing operations (810 spaces up from 660).
 - This calculation assumes that the ICoE event occurs on top of the peak university operations with 3,500 users on-site. However, these events would occur on the weekend or out-of-hours, meaning the campus activity would be significantly less.

Across both day and night / weekend events, the increases in parking demands can be comfortably accommodated within the existing vacancy of the on-site car parks at the university. Table 24 summarises the average vacancy data from the parking occupancy study detailed in Section 2.6.2, which shows there is sufficient spare capacity within the on-site car parks to accommodate the increases in parking demands for both event scenarios.

Table 24: Car Parking Vacancy Levels during Events

Scenario	Increase to parking demand	Average car parking vacancy
Peak periods (day events)	110 vehicles	379 spaces
Off-peak periods (night / weekend events)	150 vehicles	857 spaces

To ensure this spare vacancy is available during event days, the university should review the parking permit system to make sure this vacancy is available and can be accessed by different user types e.g. staff only parking may be opened up to other users during events. This shall be at the discretion of the university to manage parking access as required.

Further, the Parramatta North campus of WSU contains additional overflow parking that could be utilised if required during events.

9.3.4 Sensitivity Analysis

As outlined in Table 4, DPHI as part of the RTS Key Issues letter requested a 54% car mode split be applied for private car usage for the project. The following analysis is for a sensitivity test that considers the resulting car parking impacts of a higher 54% car mode split.

For the **typical weekday** scenario:

- 54% car usage for the existing typical campus population of 3,500 results in 1,890 car users
- The campus population is estimated to increase to 3,610 following the development of the ICoE.
- To align with the net zero traffic generation that the project is targeting, the car mode split would need to reduce to 52.4% (1,890 car users out of 3,610 total users).
- Therefore, the project would be targeting a minor reduction in car usage of 1.6%. Compared to the 1.3% reduction in car usage outlined above in Section 4.3, this is very minor and only requires a further reduction in car usage by 0.3%. This is an achievable level of change due to the proposed on-site bike parking and end-of-trip facilities, implementation of a Green Travel Plan, and the existing services and future improvements to the surrounding network (Parramatta Light Rail, Active Transport Link, WSU Shuttle Buses).

For the **event day** scenario:

- Following the development of the ICoE, the event day campus population is estimated to be 4,210 (an increase of 710 users).
- Applying the car mode split reduction of 1.6% (i.e. 52.4% car usage), the forecast number of car users is 2,204 users on event days. Compared to existing conditions, this is an increase of 314 car users. For comparison, the assumptions in Section 4.4 result in an increase of 244 car users on event days.

Car parking demands:

- Applying a 54% car mode split and the occupancy / turnover factor described in Section 9.1, the existing weekday scenario would generate a total car parking demand of 849 cars, as shown in Table 25 below.
- For the future scenario, the campus-wide reductions in private vehicle use (52.4% down from 54%) means the car parking demands of the ICoE development are expected to be offset, resulting in net zero growth in campus-wide parking demand.
- During future day events, the total car parking demand is 990 cars as shown in Table 25 which is an increase of 141 cars compared to existing operations. For comparison, the assumptions in Section 9.3.3 result in an increase of 110 cars on event days.
- During future night / weekend events, the total car parking demand is 1,041 cars as shown in Table 25, which is an increase of 192 cars compared to existing operations. For comparison, the assumption in Section 9.3.3 result in an increase of 150 cars on night / weekend events.
- Across both day and night / weekend events, the increases in parking demands can be comfortably accommodated within the existing vacancy of the on-site car parks at the university, as shown in Table 26 below.

Table 25: Sensitivity Analysis Event Car Parking Demands

Scenario	Category	Users	Occupancy / turnover factor	Car mode split		Car volume		Total cars	
				Assumed Split	Sensitivity Check	Assumed Split	Sensitivity Check	Assumed Split	Sensitivity Check
Existing	Total campus	3,500	2.2	42.0%	54.0%	660	849	660	849
Day events	ICoE	710	2.2	40.7%	52.4%	130	167	770	990
	Rest of campus	3,500				640	823		
Night / weekend events	ICoE	928	2.2	40.7%	52.4%	170	218	810	1,041
	Rest of campus	3,500				640	823		

Table 26: Car Parking Vacancy Levels During Events

Scenario	Increase to parking demand		Average car parking vacancy
	Assumed Split	Sensitivity Check	
Peak periods (day events)	110 vehicles	141 vehicles	379 spaces
Off-peak periods (night / weekend events)	150 vehicles	192 vehicles	857 spaces

9.4 Design

Car parking has been designed in accordance with AS2890.1:2004. Key design parameters for 90-degree angled parking include:

- Classification: Class 2 (medium-term parking) or higher
- Parking space width: 2.5m or higher
- Aisle width: 5.8m (or as required by class)
- Parking space length: 5.4m
- Gradient: 1:20 (5%) maximum

Swept path analysis for the ICoE car park and vehicle access point is provided in Appendix A.

9.5 Operation

The proposed 13-space car park is for designated use by Elders visiting the site. The proposed 106-space western car park and 181-space eastern car park are expected to operate in accordance with the university's existing permit system. There will be no boom gate or other access control systems in place.

9.6 Accessible Parking

The Building Code of Australia (BCA) defines accessible parking requirements as a portion of total capacity depending on the land use. The ICoE would be defined as multiple different building Class types. Typically, for non-residential building classes, the BCA requires at least 1 accessible parking space per 50 car parking spaces. For the proposed Elders car park capacity of 13 spaces, the development is required to provide a minimum of 1 accessible parking space, which the proposal meets and therefore complies with the BCA. For

the P1 replacement car parks, no accessible parking spaces are proposed, as there are no existing accessible parking spaces at the P1 car park, and it is intended that the accessible parking requirements are met elsewhere within the campus.

Accessible car parking has been designed in accordance with AS2890.6:2022.

Section 10 Traffic Impacts

10.1 Traffic Generation

10.1.1 WSU ICoE Traffic Generation

Traffic generation of the proposed ICoE development has been calculated using existing travel behaviour, including existing travel mode splits for car usage shown above in Table 19.

It is noted that the RMS Guide to Traffic Generating Developments does not contain traffic generation rates for the specific land uses proposed at the ICoE, and so an empirical assessment as shown in Table 27 has been undertaken.

Table 27: Daily Vehicle Volumes Generated by ICoE
Note: calculations may not add up exactly due to rounding

Traffic generation	ICoE
No. of new users	110
Future car mode split	40.7%
Occupancy / turnover factor	2.2
Vehicle volume	20

Based on the vehicle volumes calculated in Table 27, the proposed ICoE at existing mode splits would result in a total traffic generation of 20 vehicles, however this will represent an included component of campus-wide traffic rather than net growth in traffic, as described in the following section.

10.1.2 Campus Traffic Generation

The traffic generation for the campus as a whole has been calculated and summarised in Table 28. This includes the existing scenario, as well as the future scenario which contains the increased number of users following the new ICoE and the mode shift away from car usage applied.

Table 28: Daily Vehicle Volumes Generated by Campus
Note: calculations may not add up exactly due to rounding

Traffic generation	Existing	Future	Difference
No. of users	3,500	3,610	+ 110
Car mode split	42.0%	40.7%	- 1.3%
Occupancy / turnover factor	2.2	2.2	
Vehicle volume	660	660	No change

It is acknowledged that the combined capacity of the new eastern and western car parks will result in a net increase of 3 parking spaces compared to the existing P1 parking provision. However, this will generate a negligible traffic increase, and the primary factor in determining future traffic generation is the car mode split reductions as outlined in Table 28.

10.2 Traffic Impacts

As discussed at length throughout this report, the transport strategy for this project involves shifting students, staff and visitors away from car usage, and towards more sustainable travel modes. In doing so, the goal of the proposal is to produce net zero traffic generation at a campus-wide level, so that any traffic generated by the ICoE is offset by overall reductions in traffic generation at the campus. As demonstrated in Table 28, the

resulting post-development traffic generation would be no different to the existing condition and would result in negligible impacts to the performance of the surrounding road and intersection network.

Furthermore, the demolition of the existing P1 car park, and the construction of the new eastern and western car parks will not result in any changes to the current traffic generation and trip distribution to the site, as the replacement car parks will be provided fully within the Parramatta South campus as per the existing P1 car park. In particular, the traffic volumes at the Victoria Road / Railway Street intersection will not be impacted by the car park replacement project.

Therefore, traffic modelling has not been undertaken for this proposed development, as impacts are negligible. It is also noted that the proposal does not include changes to any existing intersection configurations or operations.

Section 11 Cumulative Impacts

11.1 Parramatta Light Rail Stage 2

In terms of the ICoE project and impacts to the WSU Parramatta campuses, Stage 2 of the PLR will enhance the public transport network around the Rydalmere and Parramatta area, meaning those attending the university have better connectivity and access to the suburbs to the east. Additionally, Stage 2 will provide connections to the train network, and the future Sydney Metro West. Stage 2 of the PLR will further facilitate an increase in the usage of public transport for travel to and from the university and contribute towards the sustainable transport strategy of the ICoE project.

Main construction works are expected to start in 2025 and will support the future operations of the Parramatta campuses. Cumulative impacts with the proposed ICoE could include cumulative construction vehicle activity along Victoria Road. However, the ICoE site is well connected to the broader state road network including James Ruse Drive, meaning construction vehicle traffic is likely to be well distributed with minimal impacts. Furthermore, the expected construction vehicle volumes associated with the proposed ICoE are likely to be low in number.

11.2 Victoria Road Revitalisation Project

Improvements to existing bus services along Victoria Road will provide benefits to those travelling to and from the university, particularly as bus stops along this road are within close proximity (approximately 3 minutes' walk) and therefore highly accessible from the campus. These service improvements will allow a greater uptake in public transport travel and aligns with the sustainable transport strategy of the ICoE project.

Section 12 Mitigation Measures

Table 29 summarises the physical infrastructure, operational measures and external improvements that will support the transport needs of the ICoE project and allow the project to achieve acceptable performance and safety. These mitigation measures have been incorporated into the assessment of development impacts in the sections above where necessary and require no additional or separate assessment.

Table 29: Mitigation Measures

Item	Timing	Responsibility	Notes
Physical Infrastructure			
28 bike parking spaces provided on-site	Prior to occupation	WSU	To support expected mode share.
4 showers, changerooms & 5 lockers	Prior to occupation	WSU	To DCP requirements.
Pedestrian entry points	Prior to occupation	WSU	Designed to be aligned to existing zebra crossings.
On-site loading dock for service & deliveries	Prior to occupation	WSU	To be designed in compliance with AS2890.2.
On-site car park for Elders	Prior to occupation	WSU	To be designed in compliance with AS2890.1.
New western & eastern car parks to replace existing P1	Prior to P1 demolition	WSU	To be designed in compliance with AS2890.1.
Operational Measures			
Implementation of a Green Travel Plan	Prior to occupation	WSU	To promote sustainable travel & shift away from private vehicle use.
Existing shuttle buses between Parramatta campuses	Ongoing	WSU	Services available every 25 minutes on weekdays.
External Improvements			
PLR Stage 1	Ongoing	NSW Government	Resulting in an increase in public transport usage.
PLR Stage 2	Post-occupation (construction commencing 2025)	NSW Government	Provides connections to broader transport network.
Victoria Road revitalisation project	Ongoing	Transport for NSW	Improved reliability and frequency for bus users.

12.1 Road Safety

The proposal has been developed with consideration of road safety elements and impacts on the site and around the local precinct. The key road safety considerations in the current design are:

- The site access points, building entries and areas of main pedestrian activity are located away from Victoria Road, with access from Fifth Street.
- The ICoE entry points tie into the existing zebra crossings on Fifth Street, providing safe connection across the roadway and across to the network of footpaths on-campus.
- The vehicle access points are located away from the main pedestrian entry points to the ICoE and other university buildings, where minimal pedestrian activity is expected.
- A direct footpath connection is provided from the Elders car park to the building, so that pedestrians do not have to walk around via the roadway to access the building.
- The internal service road and loading dock are located at the back of the building away from areas of pedestrian activity.

Section 13 Conclusion

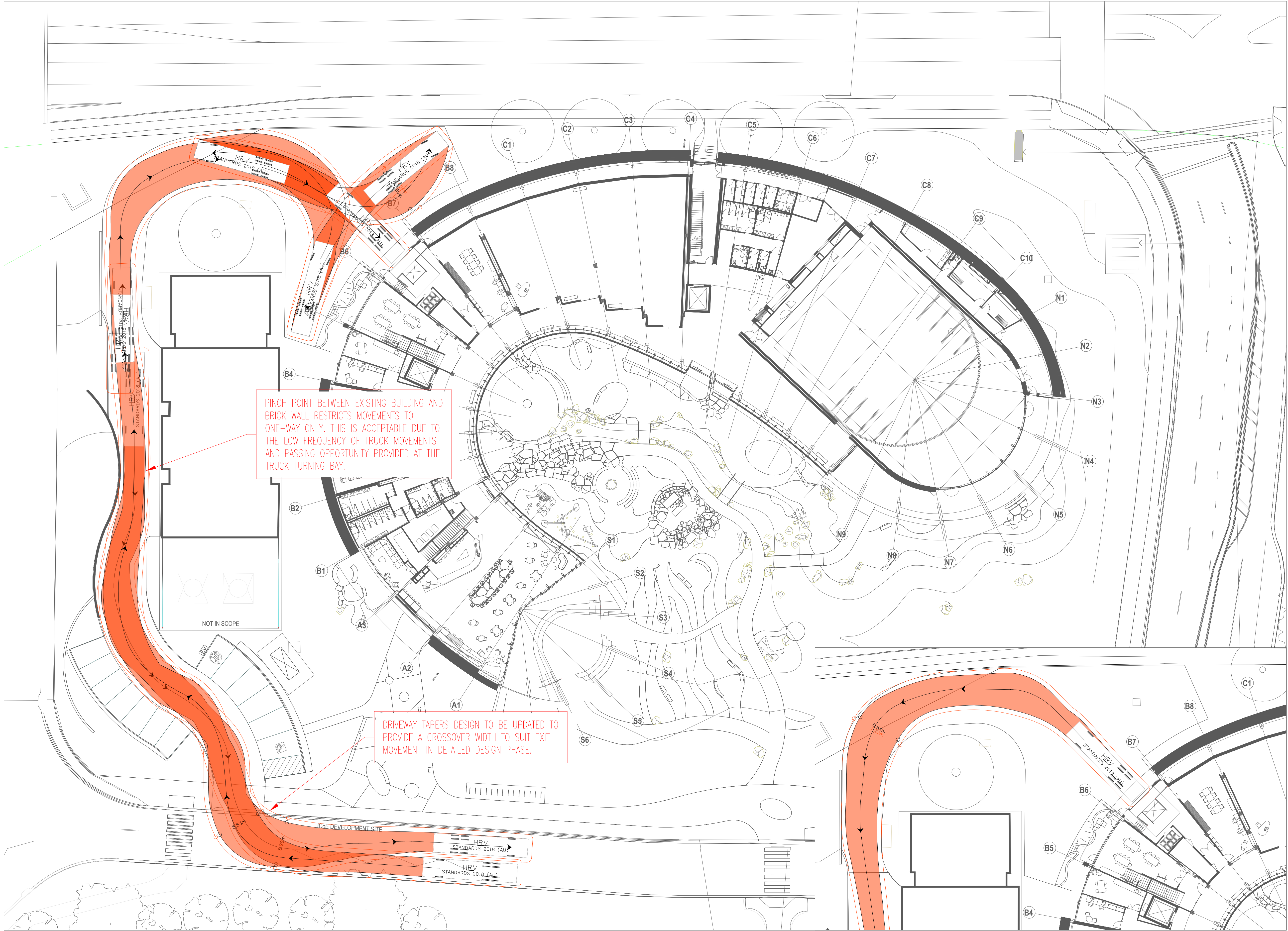
The overall transport strategy for the proposed Indigenous Centre of Excellence is as follows:

- Provide a sustainable transport strategy, prioritising active and public transport and discouraging travel by private vehicle.
- Provide on-site bicycle parking and end-of-trip facilities to encourage and facilitate pedestrian and cyclist movements.
- Benefit from the highly accessible and well-serviced public transport network within proximity to the university and encourage an uptake in this travel mode through the implementation of a GTP.
- Accommodate service vehicles on the site with a dedicated on-site loading dock for vehicles up to and including 12.5m Heavy Rigid Vehicles, separated from the car park and pedestrian areas.
- Provide an on-site car park for designated use by Elders, with capacity for 13 parking spaces, including 1 accessible parking space.
- Provide two on-site car parking areas to replace the existing P1 car park, with a combined capacity of 287 spaces.
- Facilitate an overall shift away from private vehicle use at a campus-wide level, in order to mitigate the impacts of additional traffic generation and parking demand at the proposed ICoE.

The project team has approached Council and TfNSW for pre-lodgement consultation of the transport strategy across all elements of the project, and the detailed design will be progressed following any relevant commentary from the agencies.

The transport provisions of this project across all travel modes have been selected and developed in order to provide a sustainable, safe and efficient site. These provisions include physical on-site facilities, along with management measures to be implemented during operation of the centre. The project also takes into consideration the high quality active and public transport infrastructure and services available to university students, staff and visitors external to the campus. Overall, the transport strategy is considered appropriate, with adequate infrastructure and management measures to support the traffic and transport needs of the site.

Appendix A Swept Path Analysis



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4	REVISED ISSUE FOR RTS	EC	EC	06/06/25										
3	REVISED ISSUE FOR RTS	EC	EC	09/04/25										
2	REVISED ISSUE FOR SSDA	EC	EC	20/05/24										
1	ISSUED FOR SSDA	EC	EC	03/05/24										

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Project
WSU INDIGENOUS CENTRE OF EXCELLENCE

Sheet Subject
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LOADING DOCK
12.5m HEAVY RIGID VEHICLE**

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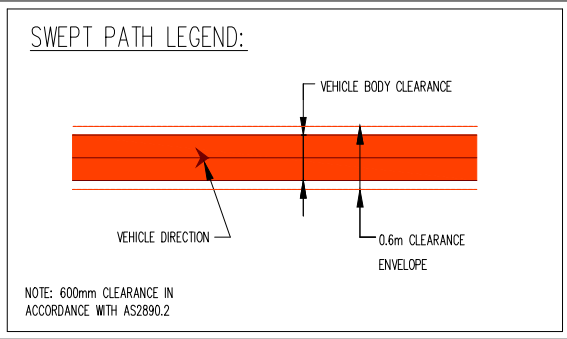
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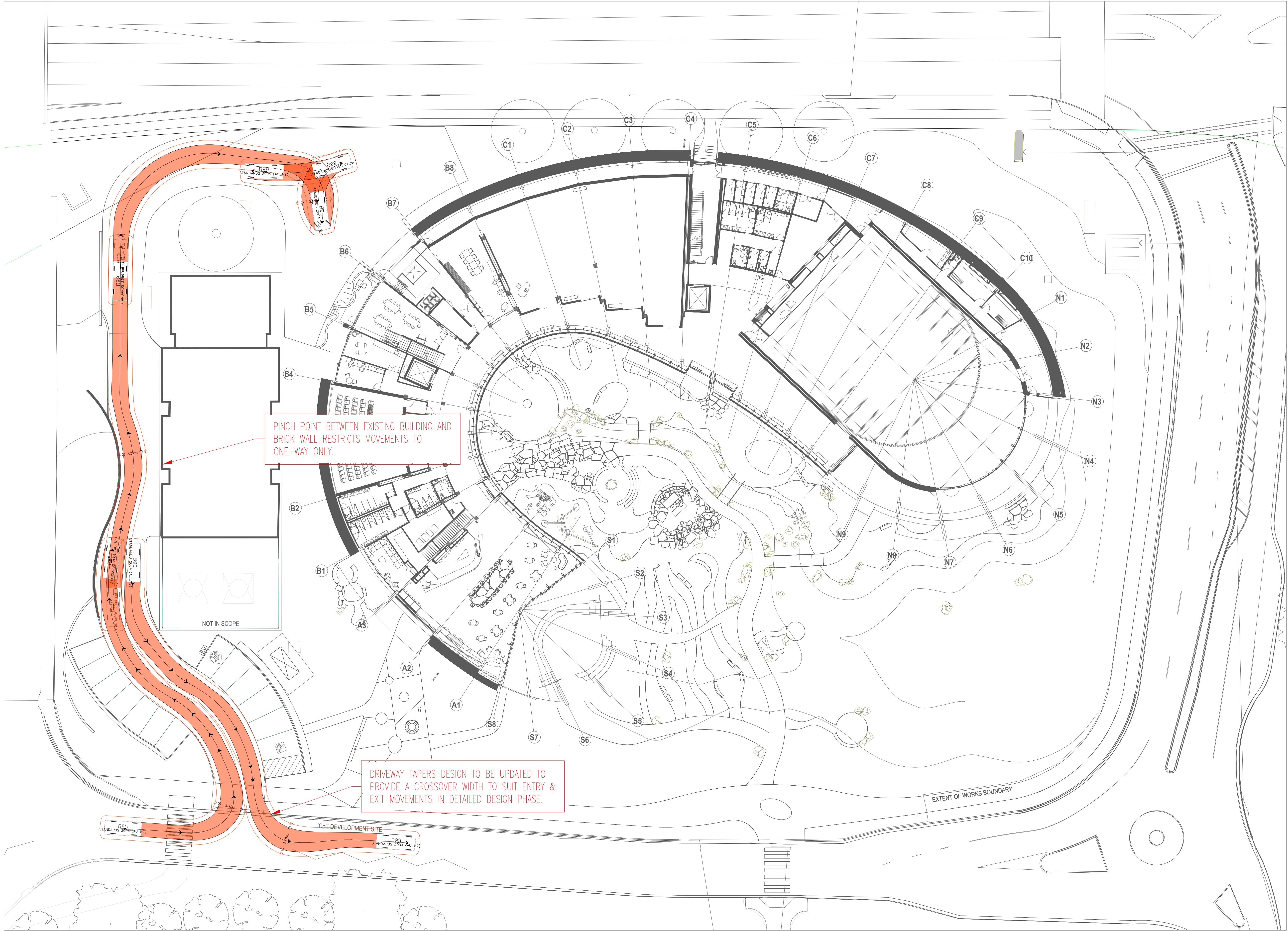
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Project
WSU INDIGENOUS CENTRE OF EXCELLENCE

Sheet Subject
**SWEPT PATH ANALYSIS
CAR PARK & CIRCULATION
B99 & B85**

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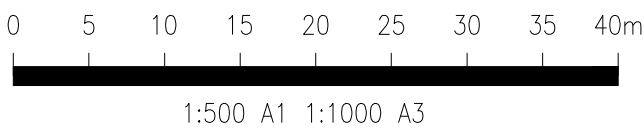
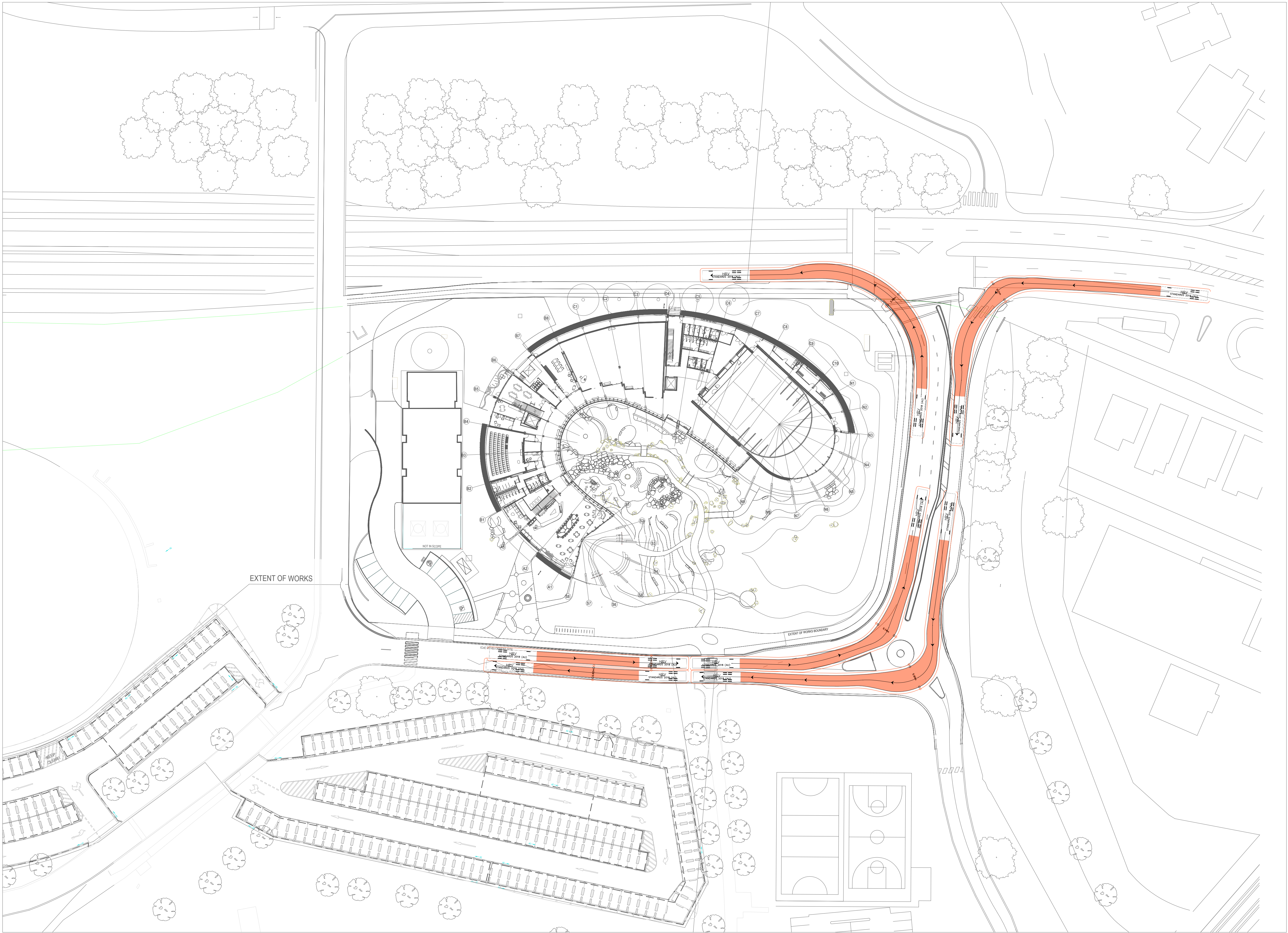
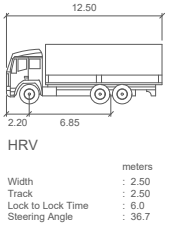
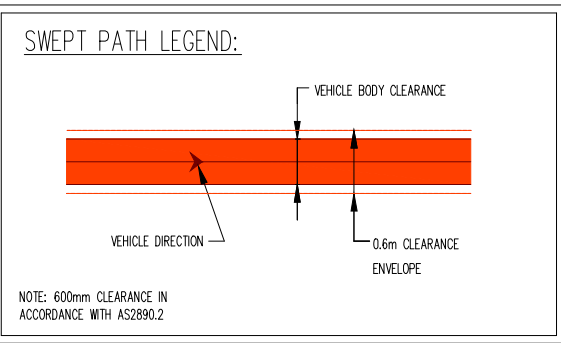
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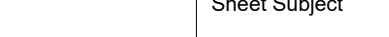
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Appendix B Strategic Travel Demand Assessment (Pentelic Advisory, July 2023)

Western Sydney University (WSU) Parramatta South Campus

Strategic Travel Demand and Parking Provision Analysis

20 July 2023



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Outline

1. Campus demographics
2. Existing transport provision
3. Existing transport demand



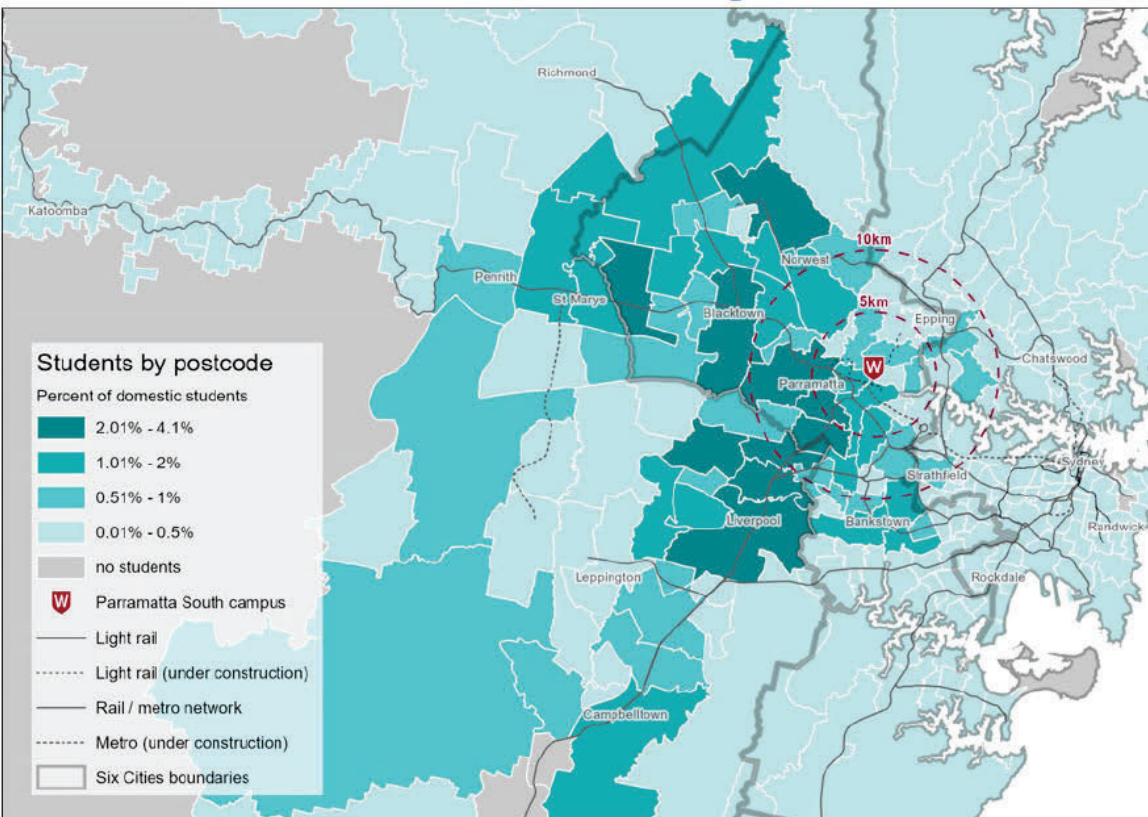
Purpose

- Review existing and projected WSU South campus demographics and travel flows
- Review existing transport provision under “normal” campus operations
- Analyse existing transport demand to understand mode share, travel characteristics and network demand / capacity under “normal” campus operations

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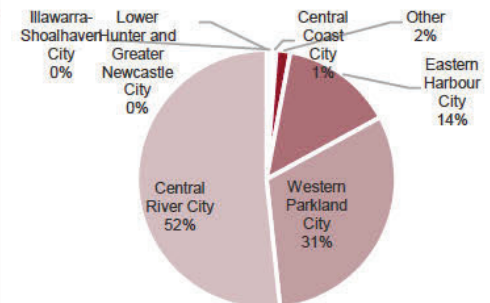
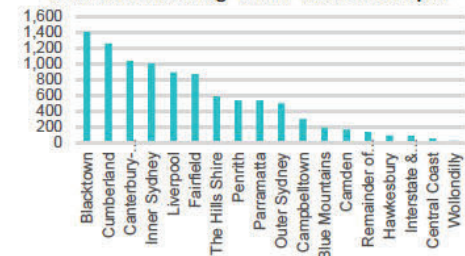
1. WSU South Campus demographics

1.1 Student home profile

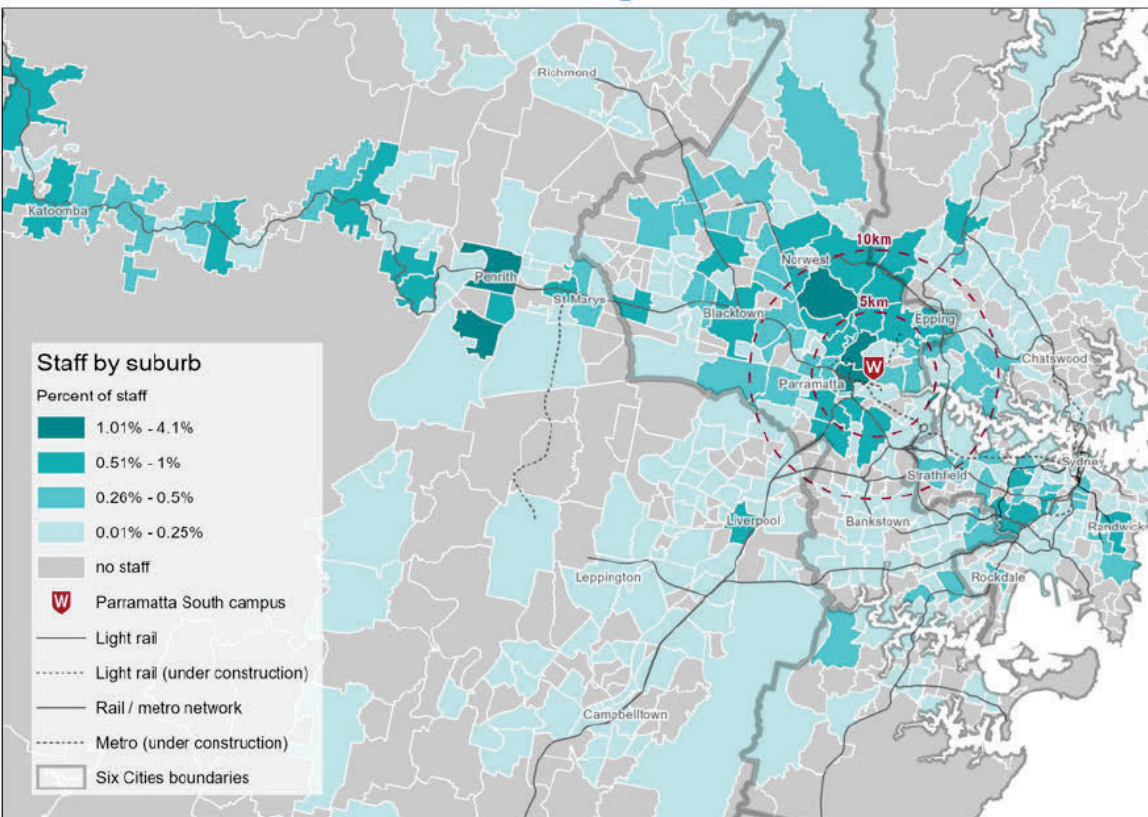


2023 (partial)

- 9,712 domestic students
- 2,616 international students
- 12,328 total students
- 52% of students live in Central River City
- Blacktown LGA is home to 14% of students
- 30% students living within 10km of campus

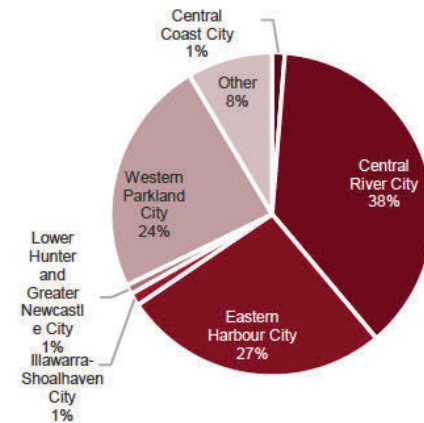


1.2 Staff home profile

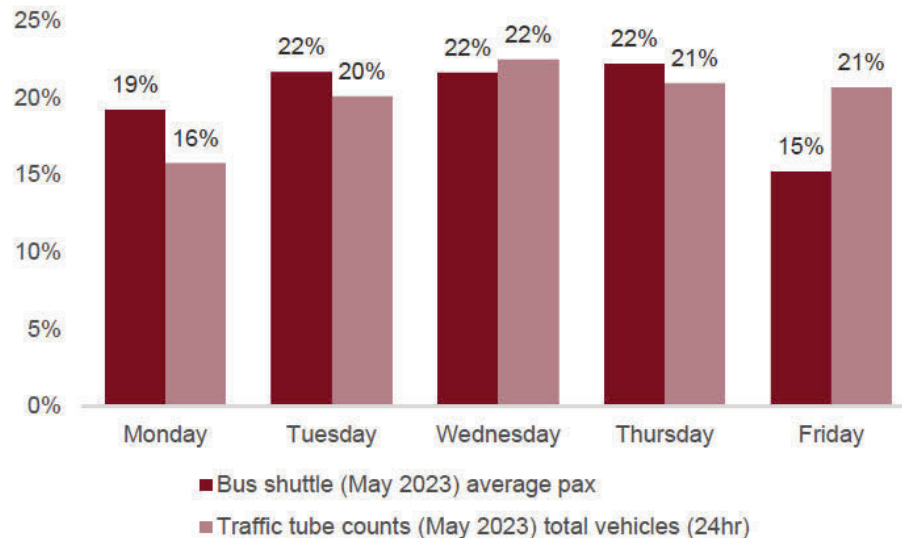


2023 (partial)

- 1,263 ongoing, limited term and casual employees
- 38% of staff live in Central River City
- 27% staff living within 10km of campus



1.3 On campus



- Bus shuttle data and traffic tube counts (Railway Street entrance) show the average distribution of demand across a typical week on campus.
- Tuesday-Thursday indicate higher demand as expected (around 65% of weekday demand). There is no clear busiest day out of these three weekdays.

1.4 Projected growth



- Student demand [measured by Equivalent full-time student load (EFTSL)] is projected to grow by just under 4% per annum to 2025
- This could translate to over 15,000 on campus students in 2025

1.5 Summary – WSU South campus demographics

- Over 80% of students live in Western Sydney and 60% of staff live in Western Sydney
- 30% students living within 10km of campus and 27% staff living within 10km of campus
- The student and staff home profiles reinforce that Parramatta City Centre is the appropriate hub for connectivity to the campus
- Tuesday-Thursday indicate higher demand as expected (around 65% of weekday demand). There is no clear busiest day out of these three weekdays
- Student demand (measured by Equivalent full-time student load (EFTSL)) is projected to grow by just under 4% per annum to 2025

2. WSU South Campus existing transport provision

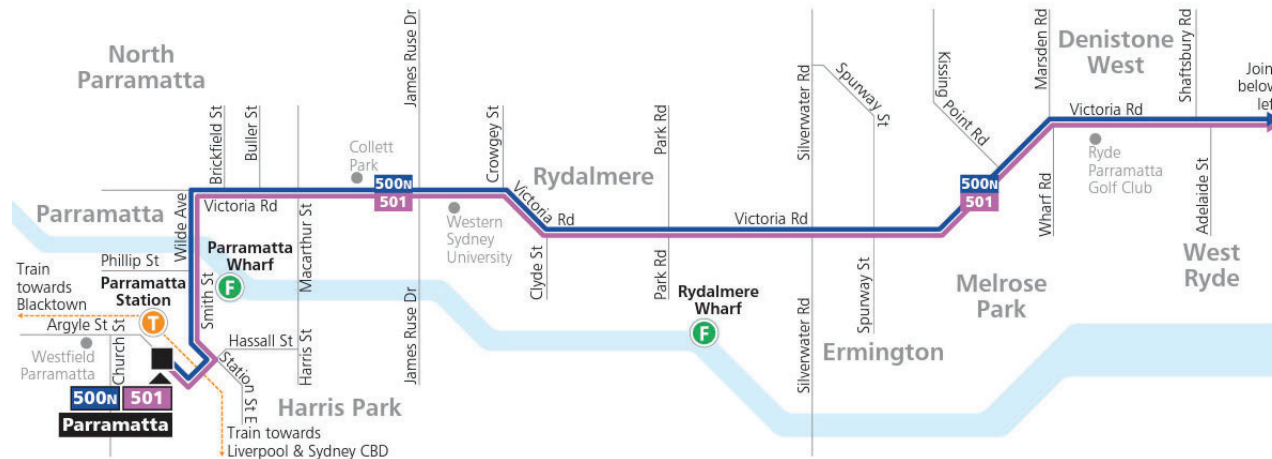
2.1 Free shuttle bus (in-term operation)

- **Green** (Parramatta City - Parramatta South express): Every 25 min weekdays
- **Blue** (Parramatta City, Parra North, Parra South): Every 25 min weekdays, Sat
- **Red** (Parramatta City, Parra South, Parra North): Every 25 min weekdays, every 30 minutes Sat
- North/South : Every 15 min weekdays
- The shuttle runs approx. every 8 min to Parramatta City Centre on weekdays
- From Parramatta Station, the shuttle stop is a 3-4 minute walk



2.2 Regular bus services

- Bus services from Victoria Road at Railway Street provide a service approx. every 5 min to Parramatta City Centre in the weekday peak periods
 - 501 – every 10-15 minutes weekday peak connecting to Parramatta City Centre and Ryde
 - 500N – overnight service connecting to Parramatta City Centre and Ryde / Sydney CBD
 - 521 – Parramatta to Eastwood every 30-60 minutes weekday peak
 - 523 – Parramatta to West Ryde every 30-60 minutes weekday peak
 - 524 – Parramatta to Ryde every 30-60 minutes weekday peak



2.3 Existing road network

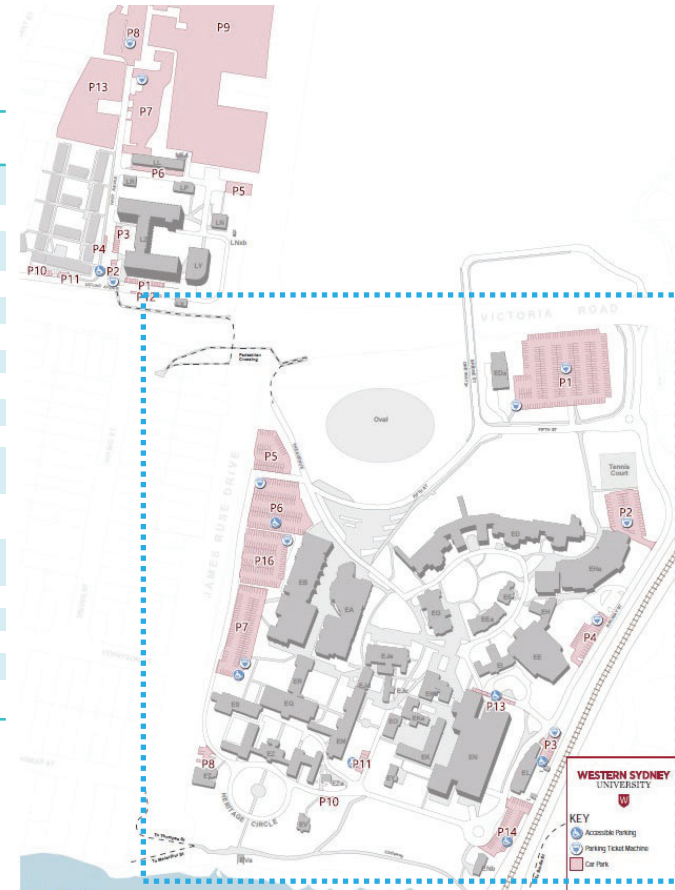


- Access to the south campus is via Victoria Road:
 - Railway Street (all movements)
 - Bridge Street (left-in only) over bridge
- Access to the north campus is via:
 - Victoria Road or Pennant Street into Pemberton Street
- Key state roads (higher order road network) near the site include:
 - Victoria Road
 - James Ruse Drive
 - Kissing Point Road

2.4 Parking supply – Parra South

Type	P1	P2	P3	P4	P5	P6	P7	P8	P10	P11	P13	P14	P16	Totals
Blue	284	55	3	31	38							35	90	536
Green			7			3								10
Red						65	76					3	1	145
Red Bollard						18	11					2		31
Accessible	2	2				2	5			6	7			24
White	6					6	2	7	5					26
Loading							1							1
Motorbike													20	20
Contractor				3		5	1					1		10
Pool Vehicle						7								7
Pool Vehicle - IT							2							2
Pool Vehicle - AMRC				3										3
Other – Security						1								1
Other – VC						1								1
Other – WSC						2								2
Other – OVC													5	5
Undetermined												2		2
Total	284	63	12	37	38	110	98	7	5	6	7	43	116	826

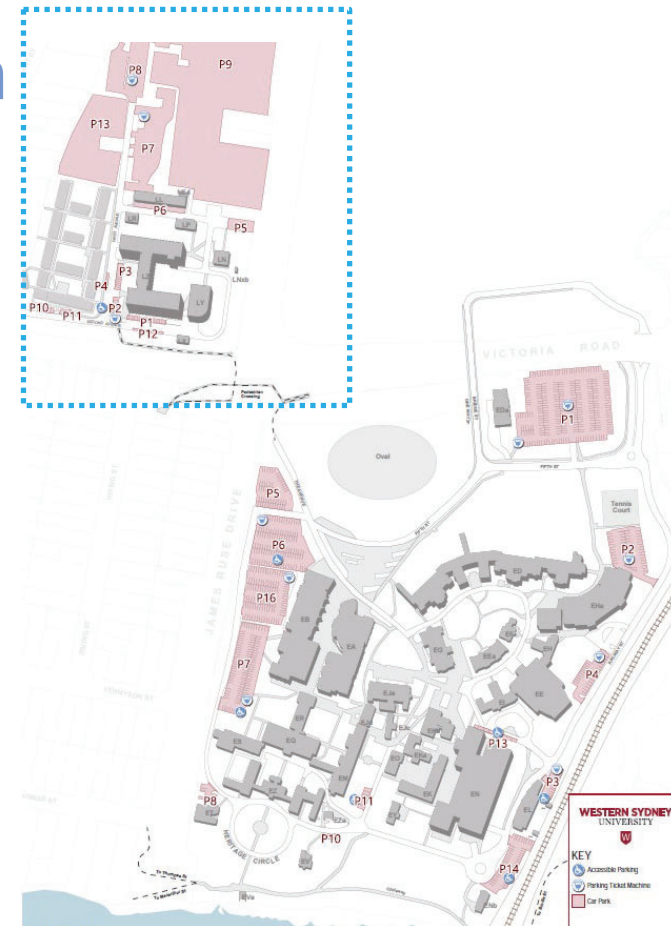
- There are 826 parking spaces on Parramatta South campus (20 motorbike).



2.5 Parking supply – Parra North

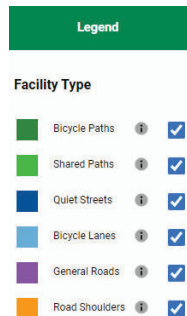
Type	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13*	Totals
Blue	12	3		2		15		71						103
Yellow	1		9		30		67							107
Green														0
Red	3													3
Red Bollard														0
Accessible	1	4												5
Emergency						2								2
White														0
Loading	1		1		1									3
Motorbike							10							10
Contractor	1				1									2
Pool Vehicle			1											1
Pool Vehicle - IT														0
Pool Vehicle - AMRC														0
Other – Security														0
Other – VC														0
Other - WSC	2													2
Other – OVC														0
Other - CLV										5	4			9
Undetermined									500					500
Total	21	7	11	2	32	17	77	71	500	5	4	0	0*	747

- Parramatta North currently provides 747 parking spaces (10 motorbike). The shuttle is available to connect Parramatta North parking to Parramatta South campus.



2.6 Existing bicycle network

- The Parramatta South campus is connected to safe and convenient separated cycling facilities
- Parramatta Valley Cycleway connecting to Parramatta CBD, Ryde and Sydney Olympic Park along Parramatta River
- Parramatta Light Rail Active Transport Links connecting to Carlingford and Telopea
- Connectivity to the regional cycleway network via these two links



2.7 Bicycle facilities

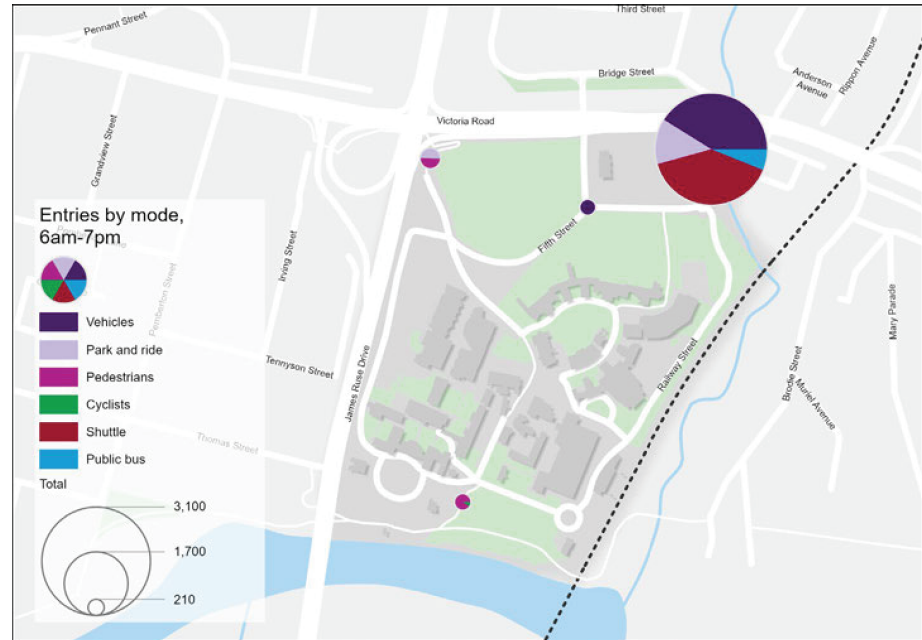
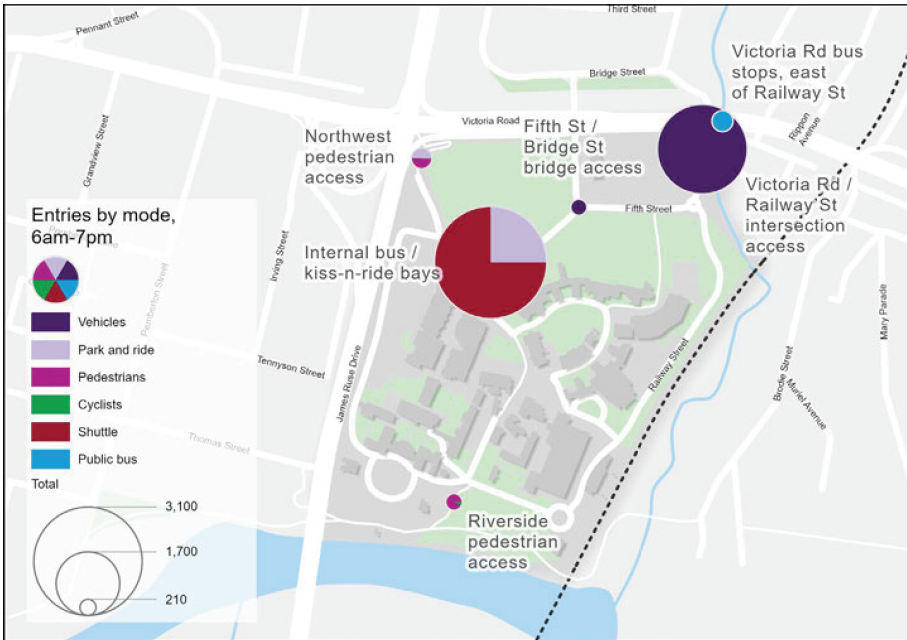
- 32 bicycle parking spaces are provided outside Building EB (north end); outside EHa at 4 different locations on the northern side; and in between Buildings EN and EY.
- Showers are provided at:
 - Parramatta South
 - Building EA, lower ground level (see Building EA security to access facility)
 - Building ED (see Building EA security to access facility)
 - Building EF
 - Building LZ level 1 - men's bathroom

2.8 Summary - existing transport provision

- Existing bus and shuttle services provide good connectivity to the Parramatta City Centre
- There are 826 parking spaces on Parramatta South campus (including 20 motorbike).
- Parramatta North currently provides 747 parking spaces (including 10 motorbike).
- Bus shuttle currently connects Parramatta North parking to Parramatta South campus.
- Direct access is provided from both campuses to the state road network via Victoria Road (and no direct connection to James Ruse Drive)
- The bicycle network provides direct connectivity to the Parramatta Valley Cycleway (towards the south)
- 32 bicycle parking spaces are provided on the south campus

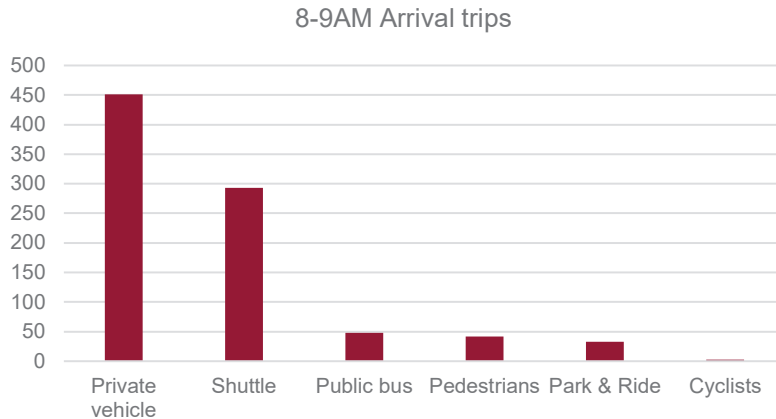
3. Existing transport demand for WSU South Campus

3.1 Existing trips by mode – key gateways

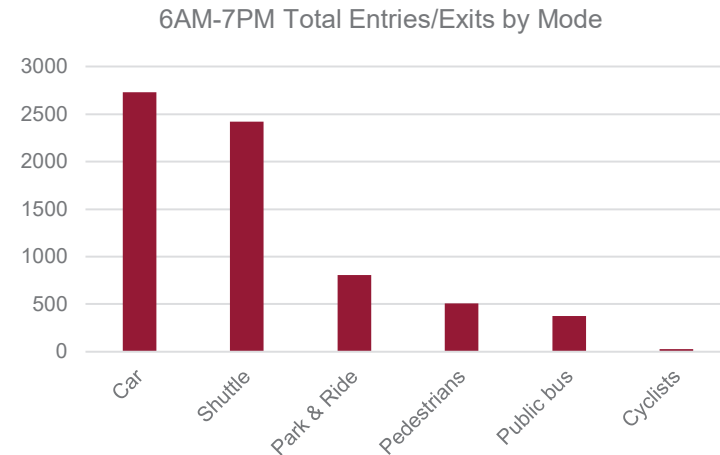


- Transport surveys undertaken on 18 May 2023 (under “normal” operations)

3.2 Existing trips by mode – WSU south campus



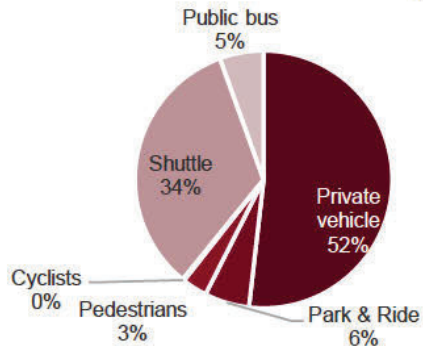
• Transport surveys undertaken on 18 May 2023 (under “normal” operations)



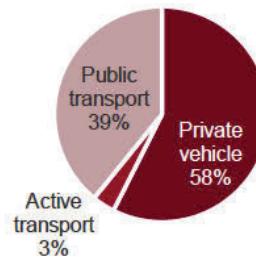
- 870 passenger trip arrivals by all modes between 8-9AM
- 993 total passenger trips by all modes between 8-9AM
- 6928 total passenger trips by all modes between 6AM-7PM

3.3 Existing mode share – WSU south campus

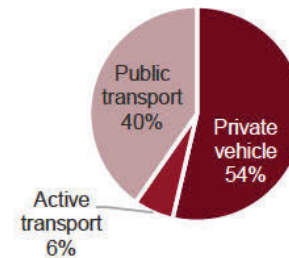
8-9AM Arrival Time - Mode Split



8-9AM Arrival Time - Mode Split



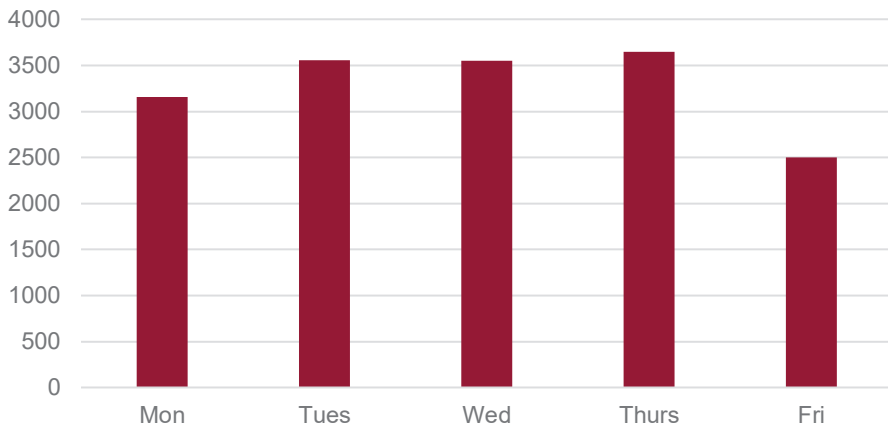
6AM-7PM - Mode Split



- AM peak (arrival) sustainable mode share of 42% (walking, cycling and public transport) and 58% car
- The shuttle bus generates a mode share of 34% in AM peak
- Across the day (6AM-7PM) sustainable mode share of 46% and 54% car
- NOTE: this assumes 25% of shuttle usage across 6AM-7PM for Parramatta North parking (as advised by WSU)

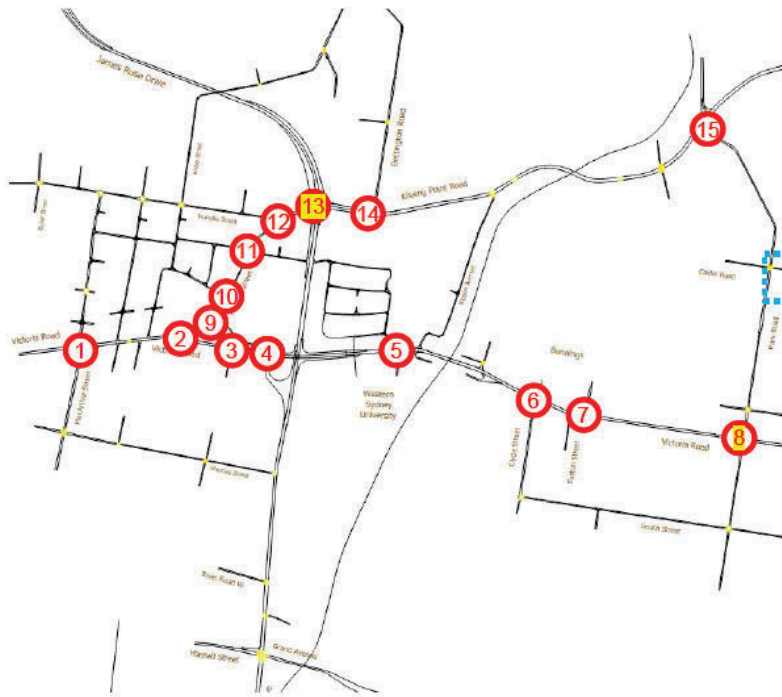
3.4 Bus shuttle demand – WSU south campus

Average daily count - May 2023



- Total weekday passenger count of approx. 76,000 on weekdays in May 2023
- Average over 3,500 passenger count per day Tuesday-Thursday
- Highest daily demand of over 6,000 passenger count on Thursday 16 March
- On surveyed day (18 May 2023) 3,227 passengers were observed boarding/alighting the shuttle at south campus stop between 6AM-7PM.
- The shuttle demand data showed a daily count of 3,965 indicating a good data match

3.5 Existing intersection performance (2018)



		2018 AM		2018 PM	
		Av Delay	LoS	Av Delay	LoS
1	Victoria Rd/Macarthur St	41	C	42	C
2	Victoria Rd/Pennant St	11	A	14	A
3	Victoria Rd/Pemberton St	18	B	16	B
4	Victoria Rd/James Ruse Dr	21	B	18	B
5	Victoria Rd/Railway St	24	B	36	C
6	Victoria Rd/Clyde St	22	B	16	B
7	Victoria Rd/Bunnings Access	15	A	13	A
8	Victoria Rd/Park Rd	59	E	48	D
9	Pennant St/Pemberton St	4	A	7	A
10	Pennant St/Symonds Av	5	A	6	A
11	Pennant St/Collett St	7	A	10	A
12	Pennant St/Isabella St	3	A	5	A
13	Pennant St/James Ruse Dr	25	B	56	D
14	Kissing Pt Rd/Bettington Rd	17	B	24	B
15	Kissing Pt Rd/Park Rd	32	C	30	C

- Victoria Road and Railway Street signalised intersection currently operating satisfactorily based on 2018 traffic modelling results (Level of Service 'B' and Level of Service 'C' during the AM and PM peak hour respectively)