New High School for Jordan Springs

Transport Impact Assessment

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Appendix A Transport Working Group Minutes

1 Introduction

This New High School for Jordan Springs Transport Impact Assessment has been prepared to accompany a Review of Environmental Factors (REF) for the Department of Education (DoE) for the construction and operation of a New High School for Jordan Springs (the activity) under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI). This document has been prepared in accordance with the Guidelines for Division 5.1 assessments – Consideration of environmental factors for health services facilities and schools, October 2024 (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This report examines and takes into account the relevant environmental factors in the Guidelines and *Environmental Planning and Assessment Regulations 2021* under Section 170, Section 171 and Section 171A of the EP&A Regulation as outlined in Table 1-1.

Table 1-1: Summary of Relevant Section of the Part 5 Guidelines and EP&A Regulation

Regulation / Guideline Section	Requirement	Response	Report Section
Transport and Infrastructure State Environmental Planning Policy 2021. EP&A section 171A(a) and 171A(r)	(a1) Impact during construction – such as noise, vibration, traffic, construction vehicle routes, access and parking, pollution/dust, water and stormwater flow, sediment and run-off, waste removal, servicing arrangements, bushfire, flooding, contamination, other construction occurring in the area.	• Traffic impacts on the road network are expected to be negligible, as outlined in report section 6. • The site is proven to be serviceable by delivery truck, as per report section 4.3.7 and 4.4.7.	• Section 6 • Section 4.3.7 and 4.4.7
Transport and Infrastructure State Environmental Planning Policy 2021. EP&A section 171A(a) and 171A(r)	(a2) impact post-construction (including from any development, activity, public-address systems and sirens, signage, events, hours of operation, or out of hours use of facilities, helicopter facilities, emergency facilities) which may include: (vii) traffic and parking impacts, pedestrian and road safety (including pedestrian and cyclist conflict and safety), operation of the surrounding road network, impact on road capacity, including peak hour, intersection performance and any cumulative impact from surrounding approved developments, impacts of potential queuing in drop-off/pick- up zones and bus bays during peak periods, emergency drop-offs, servicing and loading/unloading areas, large vehicles and height clearances, parking arrangements and rates. Consider in the context of availability, frequency, location	• Traffic impacts on the road network are expected to be negligible, as outlined in report section 6 • Parking impacts are mitigated as per report section 4.3.5 and 4.4.5 • Pedestrian and road safety is addressed with the provision of active transport infrastructure as part of the project, as described in report section 4.3.1 and 4.4.1	• Section 6 • Section 4.3.5 and 4.4.5 • Section 4.3.1 and 4.4.1 • Section 4.3.6 and 4.4.6 • Section 4.3.4

Regulation / Guideline Section	Requirement	Response	Report Section
	and convenience of public transport and consequences of parking overflowing into adjoining streets.	• Pick up and drop off zone queuing impacts are mitigated as per report section 4.3.6 and 4.4.6 • Bus access is provded for as per report section 4.3.4 and 4.4.4.	and 4.4.4.
Transport and Infrastructure State Environmental Planning Policy 2021. EP&A section 171A(a) and 171A(r)	(m1) environmental problems of waste during and after construction (left over construction materials, and personnel waste), transport and disposal of waste, ongoing use and eventual decommission of the development (ie for Scenario 2 temporary works).	Waste collection and vehicle access and egress will be fully accommodated by the project.	Section 4.3.8 and 4.4.8

1.1 Documentation Review

The following plans/ reports identified in Table 1-2 have been reviewed to inform the assessment contained within this report.

Table 1-2: Plans and reports reviewed

Discipline	Document name	Revision	Date
Traffic Engineering and Transportation Planning	Jordan Springs Central Precinct Stage 5 Traffic Impact Assessment (WSP)	C	13/05/2024
Architecture	JSHS-DJRD-00-00-DR-A-0250 Overall Ground Floor Plan	04	25/10/2024
Architecture	JSHS-DJRD-00-00-DR-A-0506(P02)_SCENARIO 2 STAGE 1 2 OPERATIONAL	02	10/02/2024
Civil	JOSPHS-DJRD-00-00-DR-A-209020	A	16/07/2024

1.2 Proposed Activity Description

The proposed activity for the construction and operation of a New High School for Jordan Springs is proposed to have a capacity of 1,000 students and 80 staff to meet forecast enrolment demand associated with population growth in Jordan Springs and Ropes Crossing. The school will provide permanent General Learning Spaces (GLS), Support Learning Spaces (SLS), staff facilities and a library across three (3), three storey buildings, a single storey hall, sports field, three (3) outdoor sport

courts, 72 operational at grade parking spaces (including two (2) accessible spaces), 100 bicycle spaces and landscaping.

Public domain works and the permanent off-site OSD Basin are to be constructed by others under separate planning pathways.

1.3 Proposed Activity Scenarios

The project scope of works includes two (2) Scenarios, to allow construction and operation of the school, with (Scenario 1 – preferred option) or without (Scenario 2 – Interim Solution) the public domain works and permanent off-site basin being constructed by others under a separate planning pathway.

1.3.1 Scenario 1 – Preferred Option – Road network completed and permanent OSD Basin Constructed

External works undertaken by others to facilitate Scenario 1

- Construction of Park Edge Road;
- Any adjustments to Infantry Street;
- Kiss and drop zone along Park Edge Road;
- Support drop off zone located along Infantry Street; and
- Construction and operation of OSD Basin off site.

Note – Scenario 1 is not to proceed if external works undertaken by others are not completed.

- **Scenario 1**
  - Construction and Operation of the New High School for Jordan Springs, including:
    - Decommissioning of existing on-site OSD basin;
    - Demolition of roads and associated services within the site boundary;
    - Tree removal within the site boundary
    - Earthworks;
    - Three (3) multi-storey classroom buildings;
    - One (1) school hall;
    - Three (3) outdoor sport's courts;
    - One (1) sport's field;
    - 72 at grade car parking spaces, including two (2) accessible parking spaces, and waste services, accessed via Park Edge Road;
    - 100 bicycle parking spaces across; and
    - Landscaping.

1.3.2 Scenario 2 - Interim Solution – Road network not completed, Permanent OSD Basin not constructed

- **Scenario 2 - Stage 1**
  - Construction and operation of a temporary on-site OSD Basin;
  - Construction and operation of the New High School for Jordan Springs, including;
    - Demolition of roads and associated services within the site boundary;
    - Tree removal within the site boundary
    - Earthworks;
    - Three (3) multi-storey classroom buildings;
    - One (1) sport's field;

  - Temporary carpark - 72 at grade car parking spaces, including two (2) accessible parking spaces and waste services, located on the northwest corner of the site, accessed off Armoury Road;
  - 100 bicycle parking spaces across;
  - Temporary Kiss and drop facilities on Armoury Road; and
  - Associated landscaping.

- **Scenario 2 - Stage 2**
  Stage 2 is not to be undertaken until the temporary OSD basin under stage 1 works is completed and operational.
  - Decommissioning of existing on-site OSD basin, prior to the following works being undertaken:
    - 72 at grade car parking spaces, including two (2) accessible parking spaces, and waste services, located on the southeast corner of the site. This car park cannot be constructed until the decommissioning of the existing OSD basin is completed and will be non-operational with no road connection until completion of Scenario 2 – Stage 3;
    - One (1) school hall;
    - Three (3) outdoor sport's courts; and
    - Associated landscaping.

External works undertaken by others to facilitate Stage 3
- Construction of Park Edge Road;
- Any adjustments to Infantry Street;
- Kiss and drop zone along Park Edge Road;
- Support drop off zone located along Infantry Street; and
- Construction and operation of OSD Basin off site.

Note – Scenario 2 - Stage 3 is not to proceed until the external works undertaken by others have been completed.

- **Scenario 2 - Stage 3**
  - Connection of the southeast carpark to Park Edge Road;
  - Rectification works along Armoury Road to remove temporary kiss and drop facilities and cross over for temporary carpark;
  - Demolition of temporary carpark, once permanent car park is operational; and
  - Decommissioning of temporary OSD basin.

1.4 Road Layout Scenarios

For the purpose of this Traffic Impact Assessment, the access arrangements for different road layout scenarios depending on the status of Infantry Street, Wianamatta Parkway and Park Edge Road have been investigated. The road layouts for these scenarios investigated include the following. Note that the road layout scenarios are not to be confused with development scenarios outlined above, which relate to the project works and are independent on the completion of Wianamatta Parkway.

- Scenario 1 – permanent option. The permanent access plan for the new High School at Jordan Springs accounts for the presence of the complete road network, including Wianamatta Parkway, Infantry Street, Lasetter street and proposed Park Edge Road. See report Section 4.3 for access arrangements.

- Scenario 2 – interim option. The interim solution takes into account the current road network, excluding Infantry Street, Lasetter Street, and the proposed Park Edge Road. See report Section 4.4. In the absence of the eastern side of Infantry Street, Lasetter Street and proposed Park Edge Road, two temporary access plans have been devised to accommodate the school's needs. These are:
    - Scenario 2A: Interim scenario without Wianamatta Parkway
    - Scenario 2B: Interim scenario with Wianamatta Parkway.

1.5 Activity Site

The project site is located on the corner of Armoury Road and Infantry Street in Jordan Springs and is legally described as part of Lots 2 and 3 in DP 1248480.

Figure 1-1 provides an aerial photograph of the project site, outlines the boundaries of the project site (in red) and the boundaries of Lots 2 and 3 in DP 1248480 (in blue).

Figure 1-1: Aerial photograph

The project site is within the Central Precinct of the St Mary's Release Area in the Penrith Local Government Area.

1.6 Other Approvals

- External works and construction of the permanent off-site OSD Basin are to be constructed by others.

1.7 Proposed Intake Catchment

The proposed intake catchment for the new High School at Jordan Springs is shown in Figure 1-2.

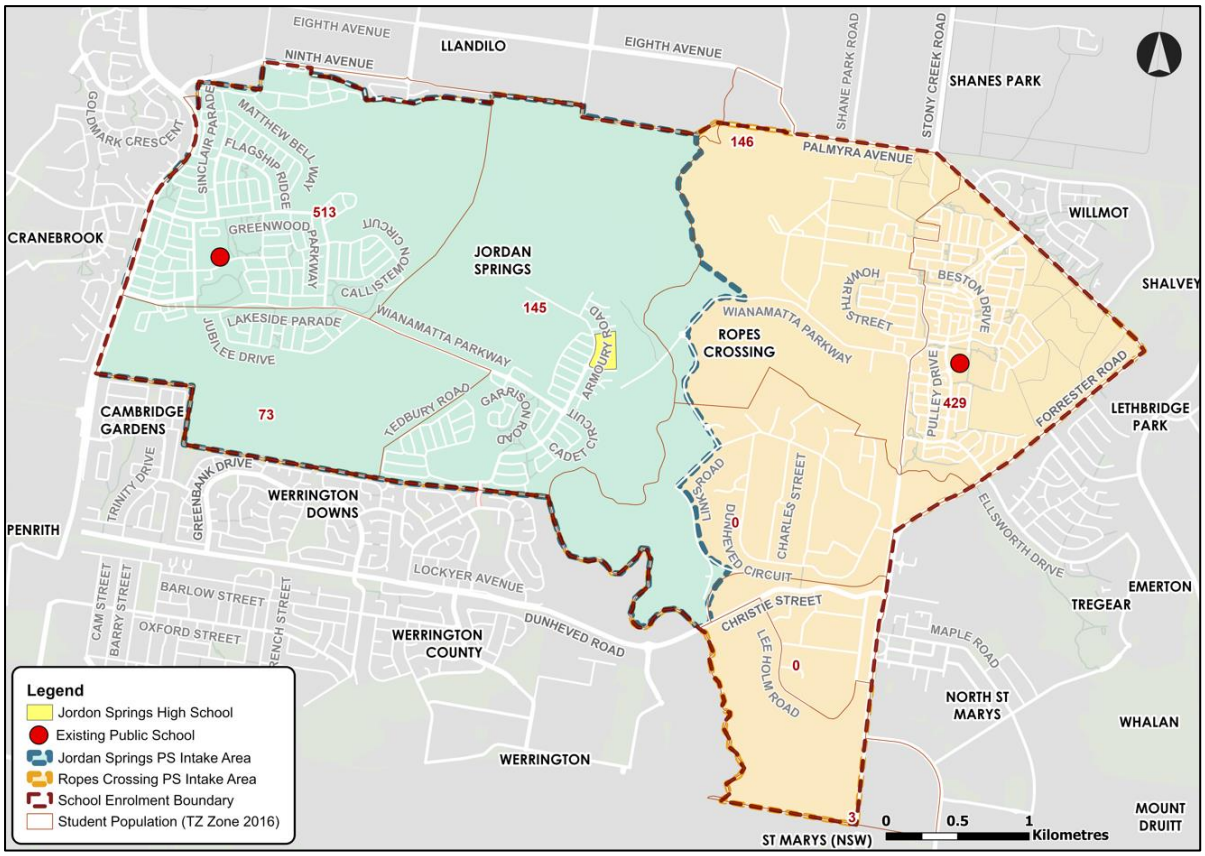

Figure 1-2: Proposed intake catchment for new Jordan Springs High School

2 Transport Assessment

2.1 Transport Network

2.1.1 Walking

The pedestrian infrastructure surrounding the school site comprises a network of footpaths, shared paths, and crossings. Footpaths are generally present along all roads adjacent to the site, with widths varying between 1.5 and 2.5 metres. According to the Penrith City Council Footpath Strategy, urban areas should have footpaths on both sides of the road, with a minimum width of 1.5 metres on collector and lower-order streets. For routes leading to key destinations such as schools, parks, and shopping areas, the strategy recommends a minimum width of 2.5 metres, with a preference for 3-metre paths or wider.

Currently, footpaths are absent on Lasetter Street, Crew Lane, and the eastern section of Wianamatta Parkway. However, plans by Penrith City Council (PCC) are in place to construct footpaths along these roads prior to the school's opening. The proposed locations for these new footpaths are illustrated in Figure 2-1.

Roundabouts featuring refuge crossings are located at the junction of Armoury Road and Infantry Street, southwest of the school, as well as at the intersection of Armoury Road and Poynting Street. Additionally, similar roundabouts with refuge crossings are situated at the intersection of Armoury Road and Wianamatta Parkway, enhancing safety for residents of Jordan Springs West and Jordan Springs South.

Transport for New South Wales (TfNSW) has developed plans to implement two signalised pedestrian crossings on Wianamatta Parkway, east of Armoury Road. These crossings will connect to Pointing Street and the proposed Park Edge Road. The primary objective of this initiative is to improve safety for students commuting from Ropes Crossing and residents of Jordan Springs.

Figure 2-1 illustrates the school's access points and the surrounding existing and future walking network.

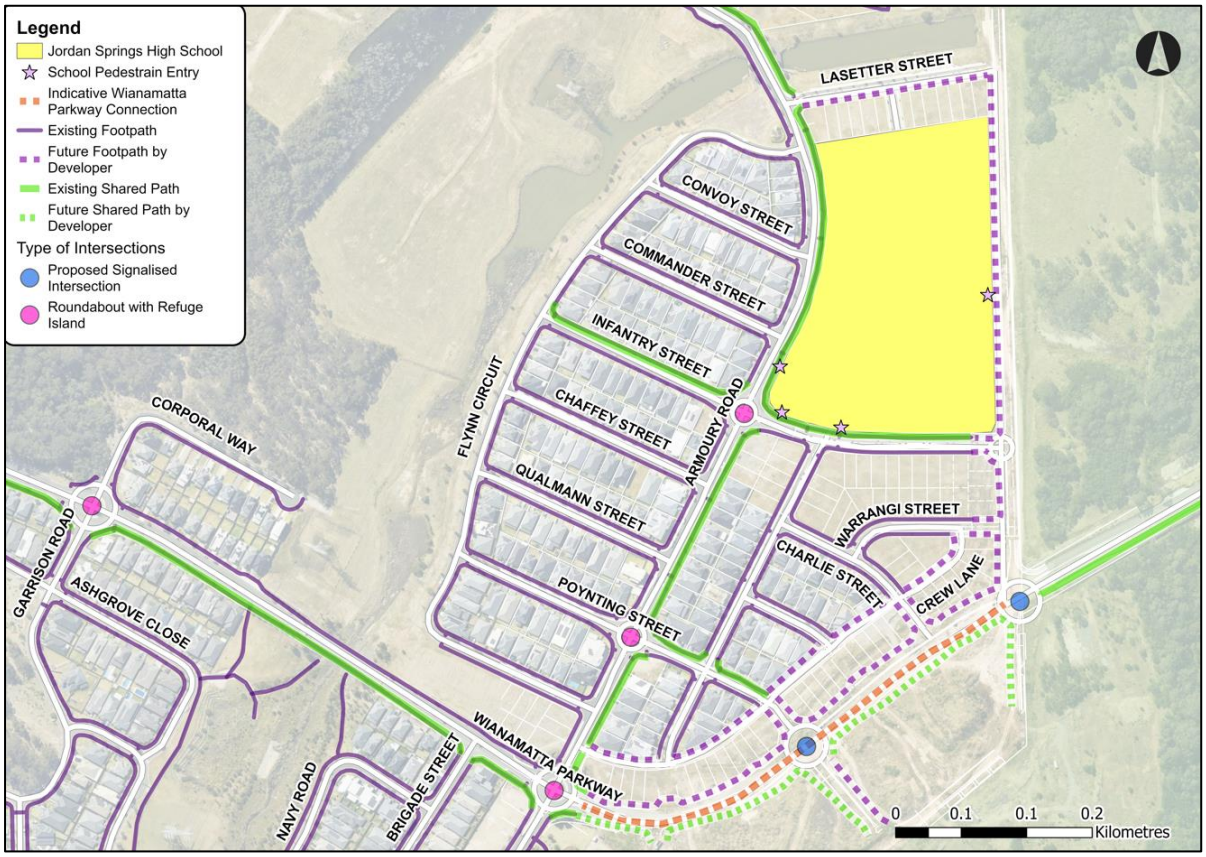

Figure 2-1: Pedestrian Site Access Points and Surrounding Walking Network

2.1.2 Cycling

The school site at Jordan Springs East is well connected with Jordan Springs West via a shared path along Wiannamatta Parkway. There is a missing connection of 500 metres (from the intersection of Armoury Road and Wianamatta Parkway) along Wianamatta Parkway East that could improve connectivity to Ropes Crossing as shown in Figure 2-3. However, PCC plans are in place to construct shared paths along this section. The shared path network coverage is shown in Figure 2-2.

The existing bicycle network primarily covers the eastern side of Armoury Road and connects to Jordan Springs West via Wianamatta Parkway (Figure 2-3 and Figure 2-4). In the vicinity of the school site, off-road shared paths are provided along Armoury Road and Infantry Street.

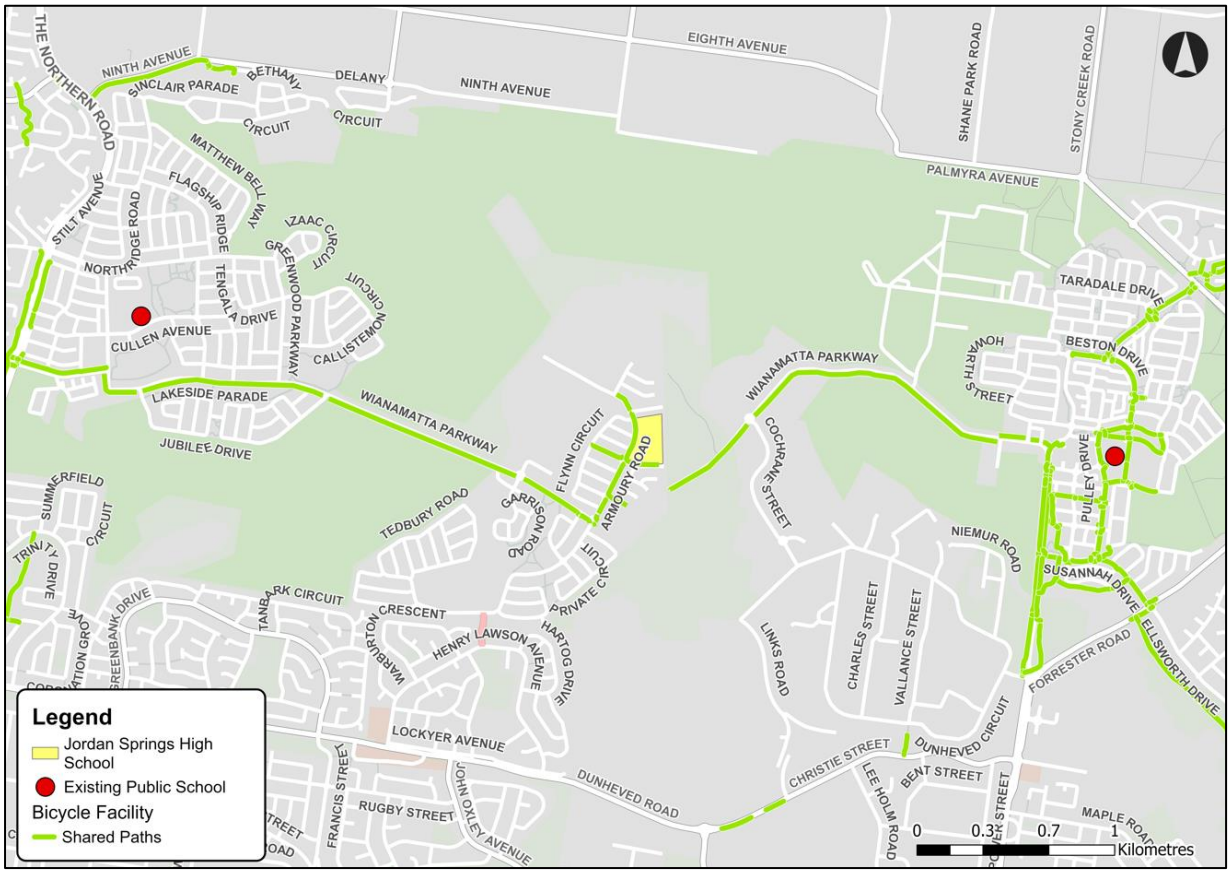

Figure 2-2: Surrounding bicycle infrastructure

Figure 2-3: Existing shared paths along armoury road adjacent to site

Figure 2-4: Shared Paths along the Southern Side of Wianamatta Parkway

2.1.3 Bus Services

Figure 2-5 illustrates the existing public transport network surrounding the school site. The eastern and western end of school enrolment boundary falls outside the School Student Transport Scheme (SSTS) exclusion zone. This indicates that all students who are qualified for free bus pass are more likely to travel to school by bus if the service is available.

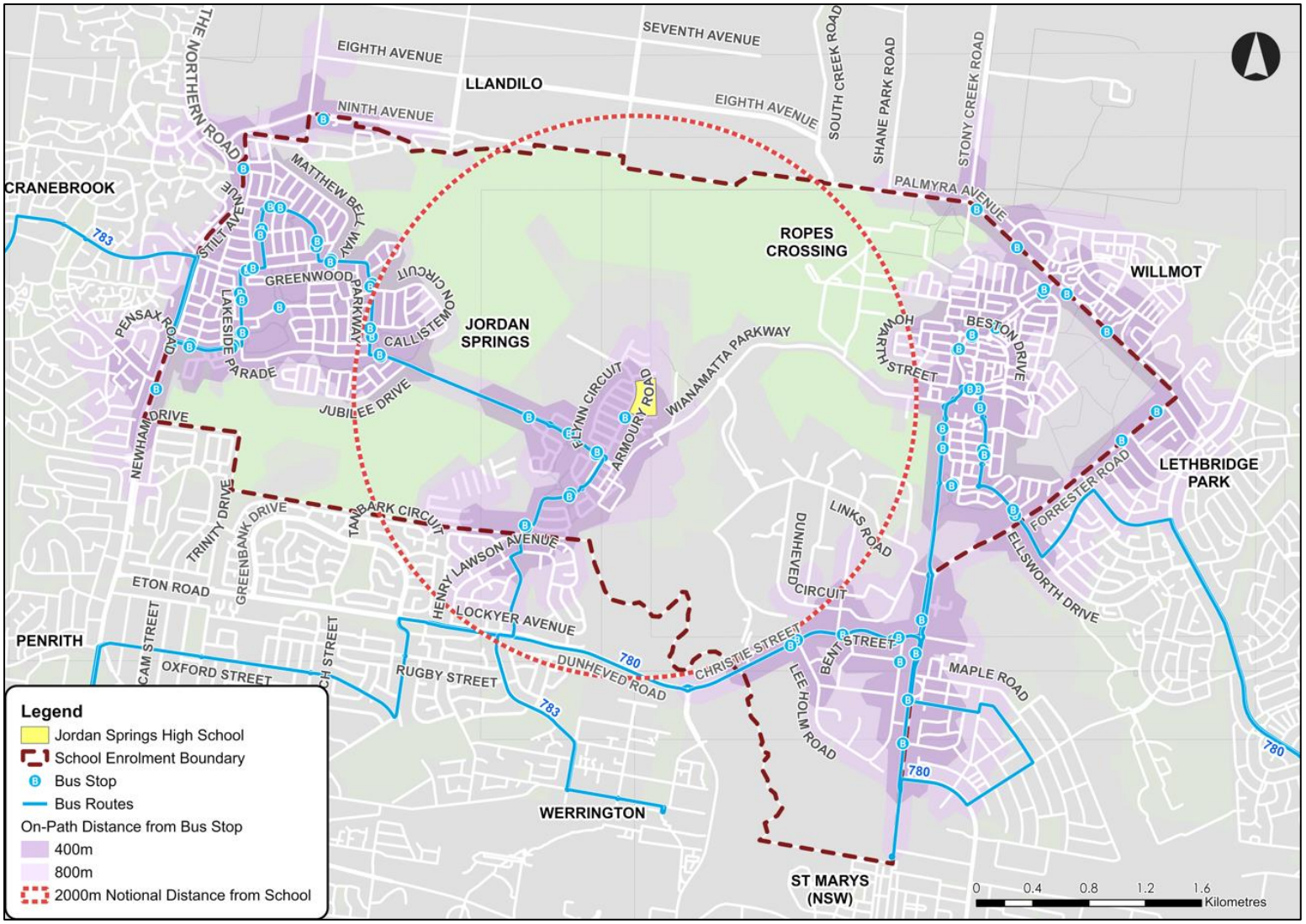

Figure 2-5: Existing Public Bus Network (AM and PM Peak)

Bus Route 783 – Werrington to Penrith via Jordan Springs along Wianamatta Parkway is the primary bus service currently operating near the site and surrounding areas. This bus operates every 30 minutes on weekdays. One additional bus route operates along Dunheved Road, approximately 2.5 Kilometres south form the school site, i.e., Route 780 – Mount Druitt to Penrith via Ropes Crossing and Jordan Spring East which is also operated by Busways.

The bus stops serviced by these routes closest to the site are as follows:

- The Armoury Road bus stop on the southern part of school site (Figure 2-6). This stop is only used for one service in the AM peak and one service in the PM school peak.
- Werrington County Shopping Village, Dunheved Rd, Werrington County.

A summary of bus services is provided in Table 2-1. Note that the 780 bus route does not currently service the area however an opportunity exists to reroute this service to suit the needs of the new high school (see section 3.1.4).

Table 2-1: Bus Services Summary

Bus Type	Route	Route Name	Arrival/ Departure Times	Bus stop location closest to the site
Public Bus	783	Werrington to Penrith via Jordan Springs along Wiannamatta Parkway	8:02am, 8:36am 3:49pm	Armoury Road opposite to Chaffey Street. (School Bus Only)
	780	Mount Druitt to Penrith via Ropes Crossing and Jordan Spring East	8:11am, 8:39am 3:13pm, 3:38pm	Werrington County Shopping Village, Dunheved Rd,

Source: TfNSW, 2024

Figure 2-6: Bus stop is provided on Armoury Road, south of Infantry Street

2.1.4 Road Network

The road network within the study area accommodates various modes of travel, including pedestrian and bicycle traffic, public transit, commercial freight, and private vehicles. The road network is governed by a hierarchical administrative structure that categorises roads into state, regional, and local classifications. This classification system is based on each road's connectivity and significance within the broader transportation network. Roads that have a high freight task are generally assigned a state road classification. Regional and local roads, on the other hand, are managed and funded by local councils. Regional roads perform an intermediate function and due to their network significance, Transport for NSW provides financial assistance to councils for the management of their regional roads. Information on the key roads surrounding the school site is summarised in Table 2-2, with locations shown in Figure 2-7.

Table 2-2: Summary of Key Roads

Key road	Active transport provisions	Road configuration	Classification	Speed limit (km/h)
Wianamatta Parkway	Shared paths provided on the southern side of the road.	One traffic lane in each direction. The road connecting Jordan Springs West and Ropes Crossing. Restricted on-street parking available with no parking in different section.	Local	50
Lakeside Parade	Footpaths are provided on southern side of the road, whereas shared path provided on the northern side of the road.	One through lane of traffic in each direction with no centre line making. Unrestricted on-street parking is available.	Local	50
Armoury Road	Footpaths are provided on western side of the road, whereas shared path provided on the eastern side of the road.	One through lane of traffic in each direction with no centre line making. Unrestricted on-street parking is available.	Local	50 (school zones will apply)
Infantry Street	Footpaths are provided on southern side of the road, whereas shared path provided on the northern side of the road.	One through lane of traffic in each direction with no centre line making. Unrestricted on-street parking is available.	Local	50 (school zones will apply)
Lasetter Street	Footpaths are provided on southern side of the road. There are no cycleways.	One through lane of traffic in each direction with no centre line making. Unrestricted on-street parking is available.	Local	50 (school zones will apply)

Source: National Roads and Major Roads | Digital Atlas of Australia

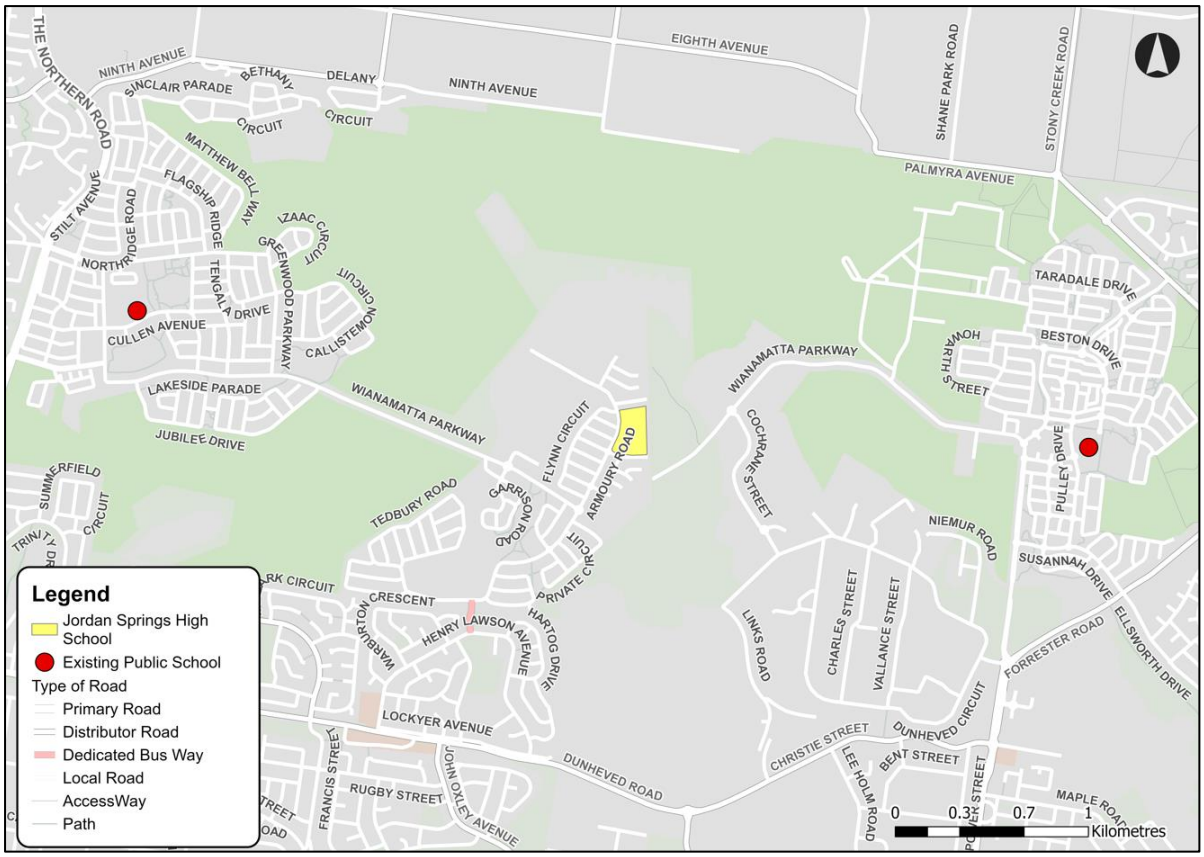

Figure 2-7: Surrounding Road Network

3 Intake catchment assessment

The catchment area for the new High School for Jordan Springs will encompass two existing public schools:

- Jordan Springs Public School, located at the western side of the school site
- Ropes Crossing Public School, located at the eastern side of the school site.

Students from the newly developed Jordan Springs East residential area, as well as those currently enrolled in the aforementioned public schools who will have reached high school age by the time Jordan Springs High School commences operations, are anticipated to form the student body of the new high school.

Depersonalised data (2023) was provided for the Jordan Springs Public School and Ropes Crossing Public School student population by the Department of Education NSW. An overview of student residential locations is shown in Figure 3-1.

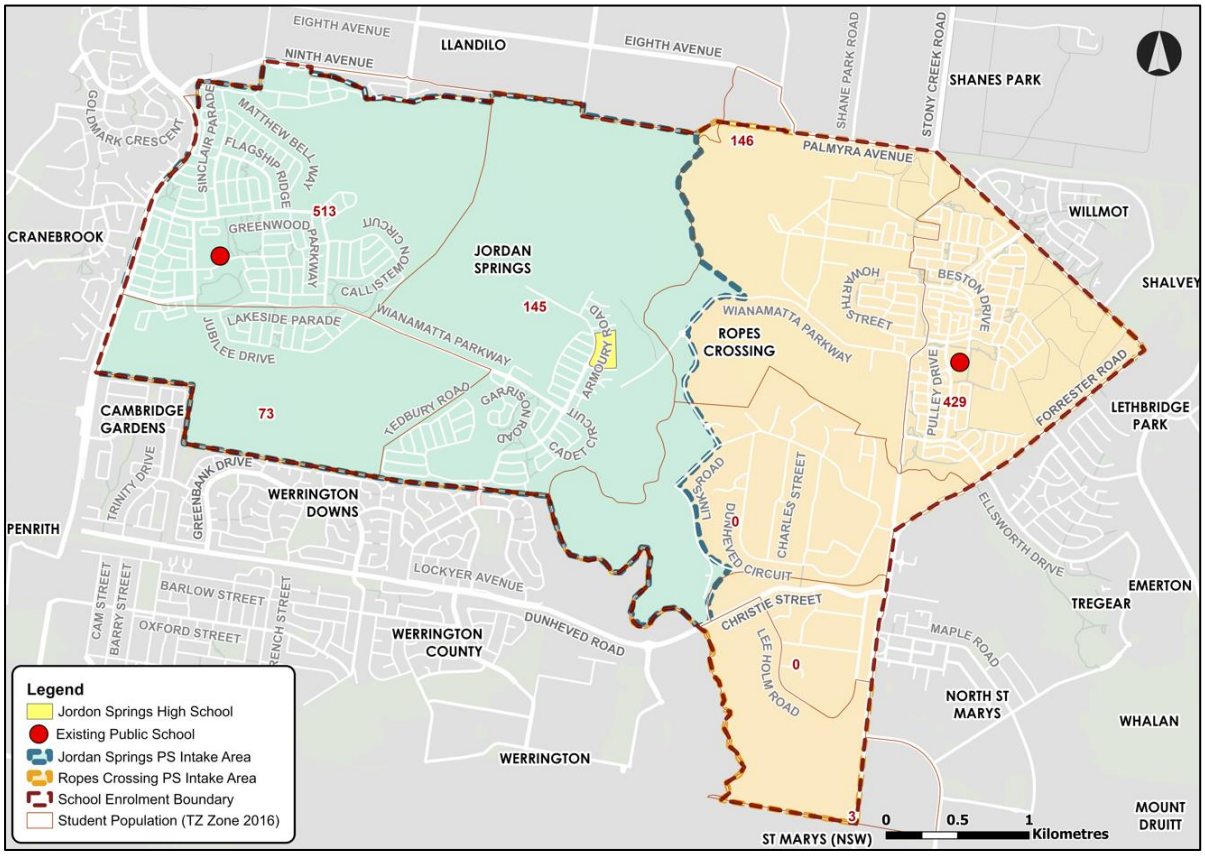

Figure 3-1: 2023 Student Enrolment Distribution

3.1.1 Walking Catchments

Figure 3-2 shows the on-path walking catchments from the school pedestrian access points in the bands of 400m, 800m, 1,200m, and 2,300m.

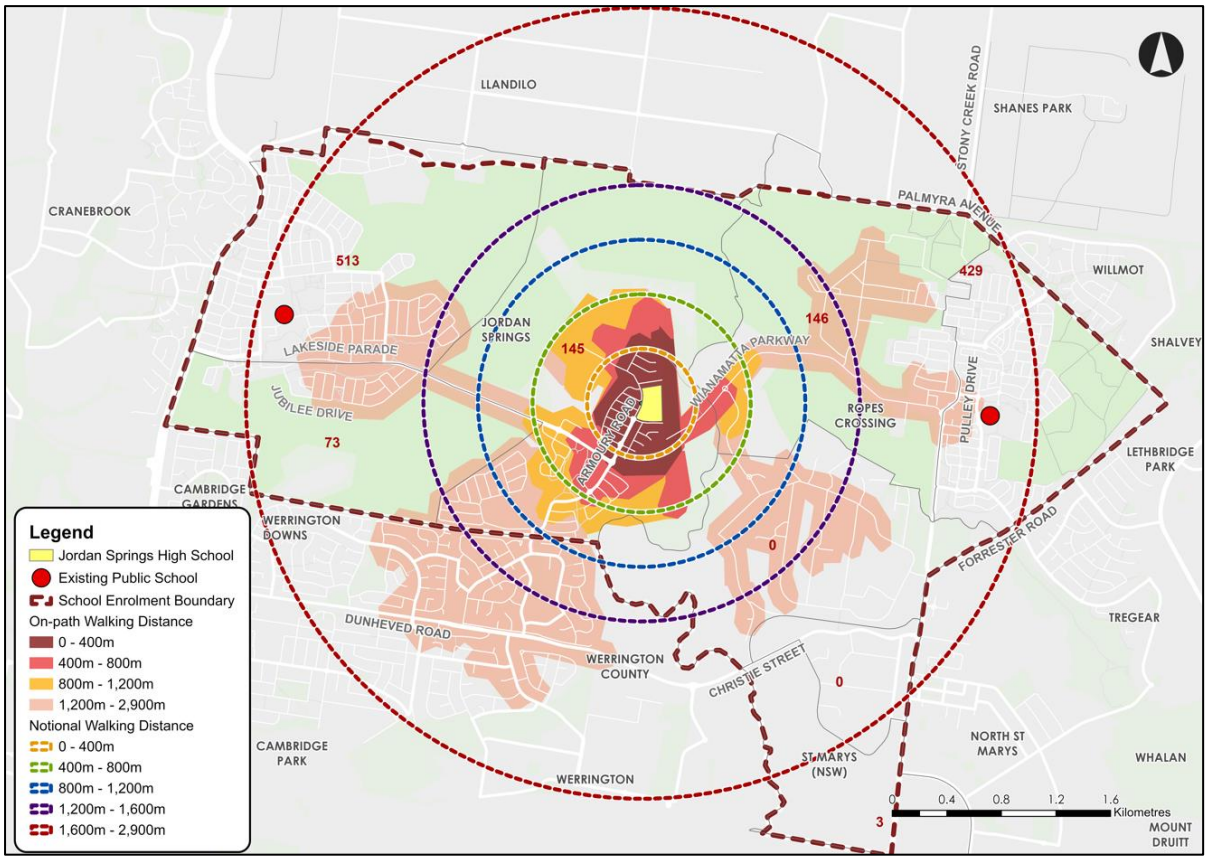

Figure 3-2: Walking Catchments

The percentages of students across the walking catchment bands are shown in Table 3-1.

Table 3-1: Summary of Students Living in Walking Catchments

Catchment	Notional (as crow flies)			Actual (on- path)		
	No. of Students	**% of Students**	**Cumulative %**	**No. of Students**	**% of Students**	**Cumulative %**
0-400m (5 minutes)	21	1.6%	1.6%	21	1.6%	1.6%
401-800m (10 minutes)	39	3.0%	4.6%	30	2.3%	3.9%
801-1,200m (15 minutes)	39	3.0%	7.6%	26	2.0%	5.9%
1,201-1,600m (20 minutes)	51	3.9%	11.5%	13	1.0%	6.9%
Outside 1,600m (more than 20 minutes)	1,159	88.5%	100%	1,219	93.1%	100%

Source: 2023 Student Depersonalised Data, DoE

3.1.2 Cycling Catchments

In addition to the pedestrian catchment guidelines described by SINSW, the catchment areas for cycling are analysed in the increments of 1,200m band, as shown in Figure 3-3.

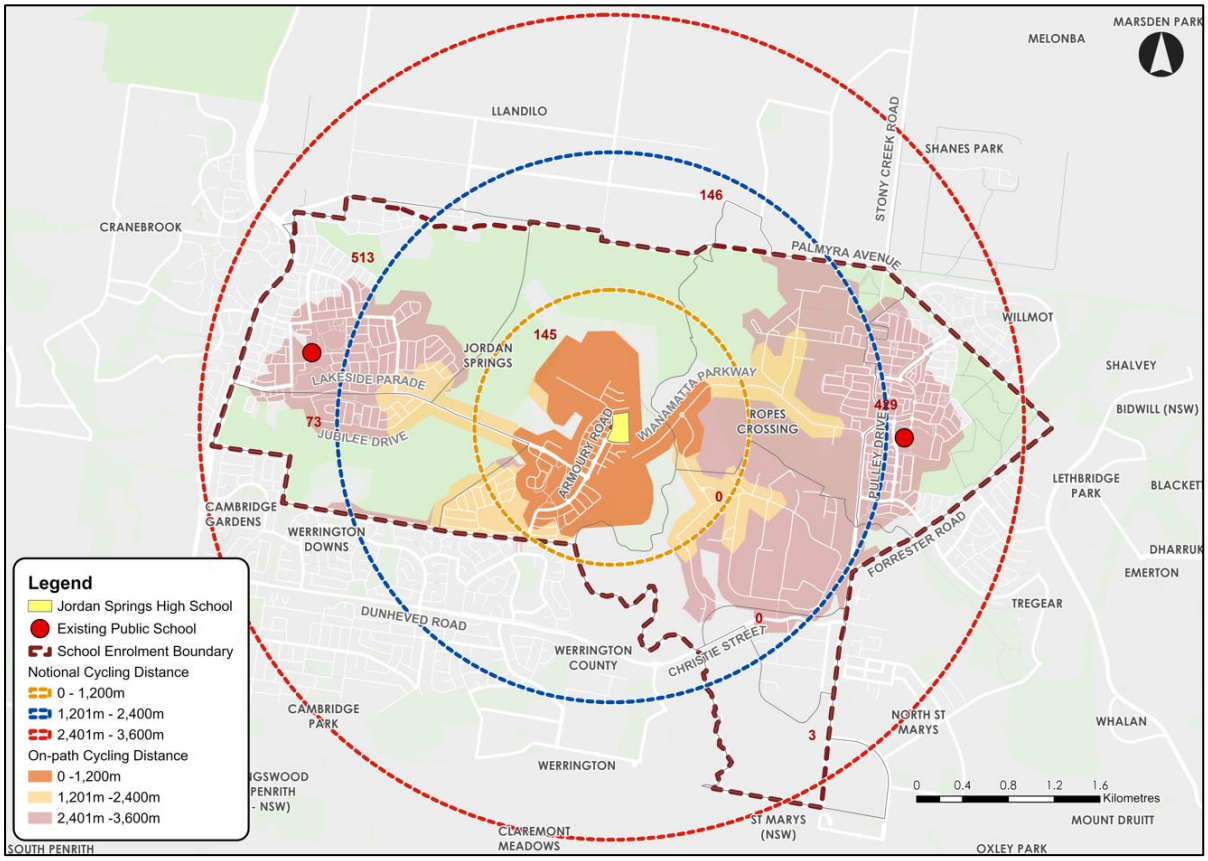

Figure 3-3: Cycling Catchments

The percentages of students across the cycling catchment bands are shown in Table 3-2.

Table 3-2: Summary of Students Living in Cycling Catchments

Catchment	Notional (within crow flies)			Actual (on- path)		
	No. of Students	**% of Students**	**Cumulative %**	**No. of Students**	**% of Students**	**Cumulative %**
0-1,200m (5 Minutes)	99	7.6%	7.6%	77	5.9%	5.9%
1,201-2,400m (10 Minutes)	505	38.6%	46.1%	115	8.8%	14.7%
2,401-3,600m (15 Minutes)	705	53.9%	100%	840	64.2%	78.8%
Outside 3,600m (more than 15 Minutes)	0	0.0%	100%	277	21.2%	100%

Source: 2023 Student Depersonalised Data, DoE

3.1.3 Shortest Path Analysis

A shortest path analysis has been conducted to assess the potential utilization of pedestrian access gates at Armoury Street and Infantry Street by students. Figure 3-4, Figure 3-5, and Figure 3-6 illustrate the shortest paths to the school, along with the estimated number of students likely to use each route, crossing, and school gate for each access scenario. An overview of each of the road access scenario s is provided in **Section 4.2**.

The analysis yields the following projections:

- Approximately 102 students are anticipated to walk or cycle to school from the Jordan Springs West Area and Garrison Road for all access scenarios.
- An estimated 92 students are expected to cycle to school from the Ropes Crossing area, utilising Wianamatta Parkway and Park Edge Road for Scenario 1 and Scenario 2B.
- Roughly 65 students are projected to walk or cycle to school from Jordan Springs South via Armoury Road for Scenario 1 and Scenario 2A and 2B.
- Approximately 167 students are anticipated to cross Wianamatta Parkway/ Armoury Road pedestrian crossing southern side for all three options and proposed Wianamatta Parkway/ Pointing Street signalised intersection for Scenario 1 and Scenario 2B.

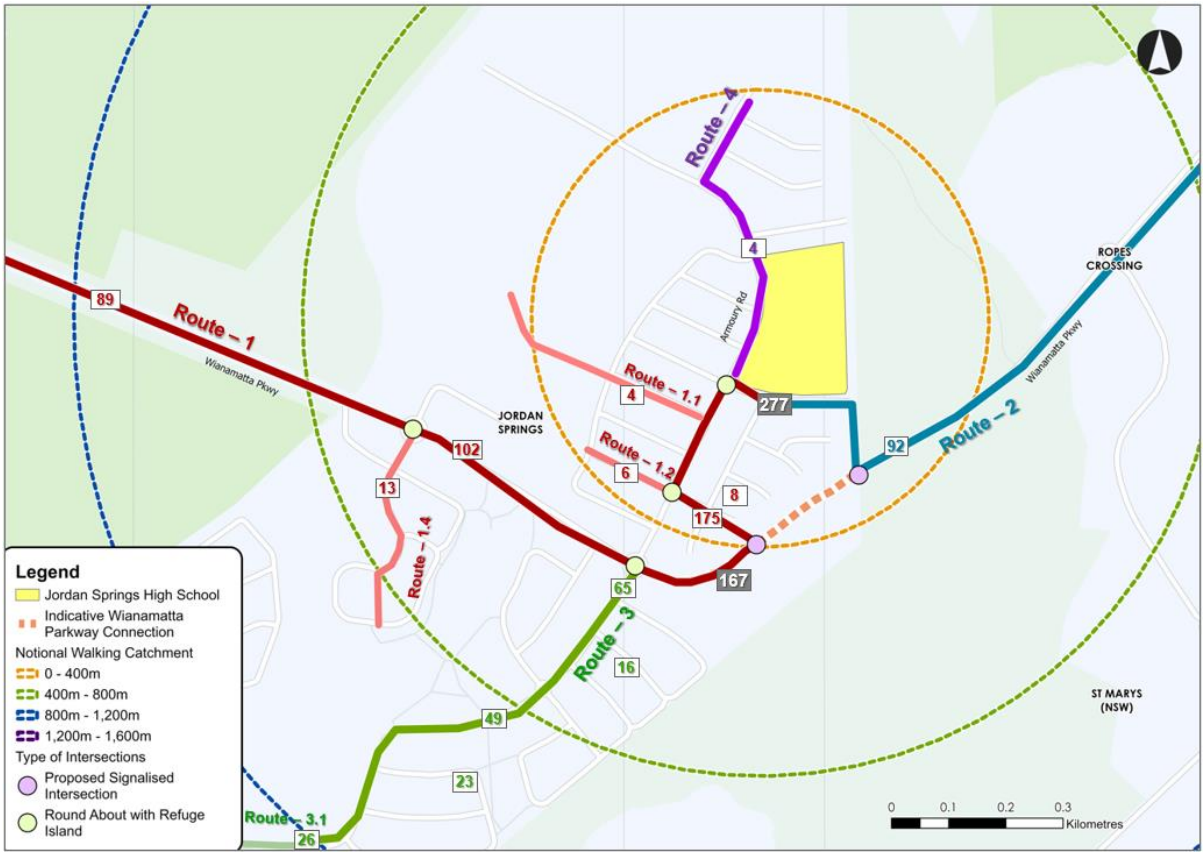

Figure 3-4: The Future Active Transport Routes Connecting to Jordan Spring HS (Scenario 1)

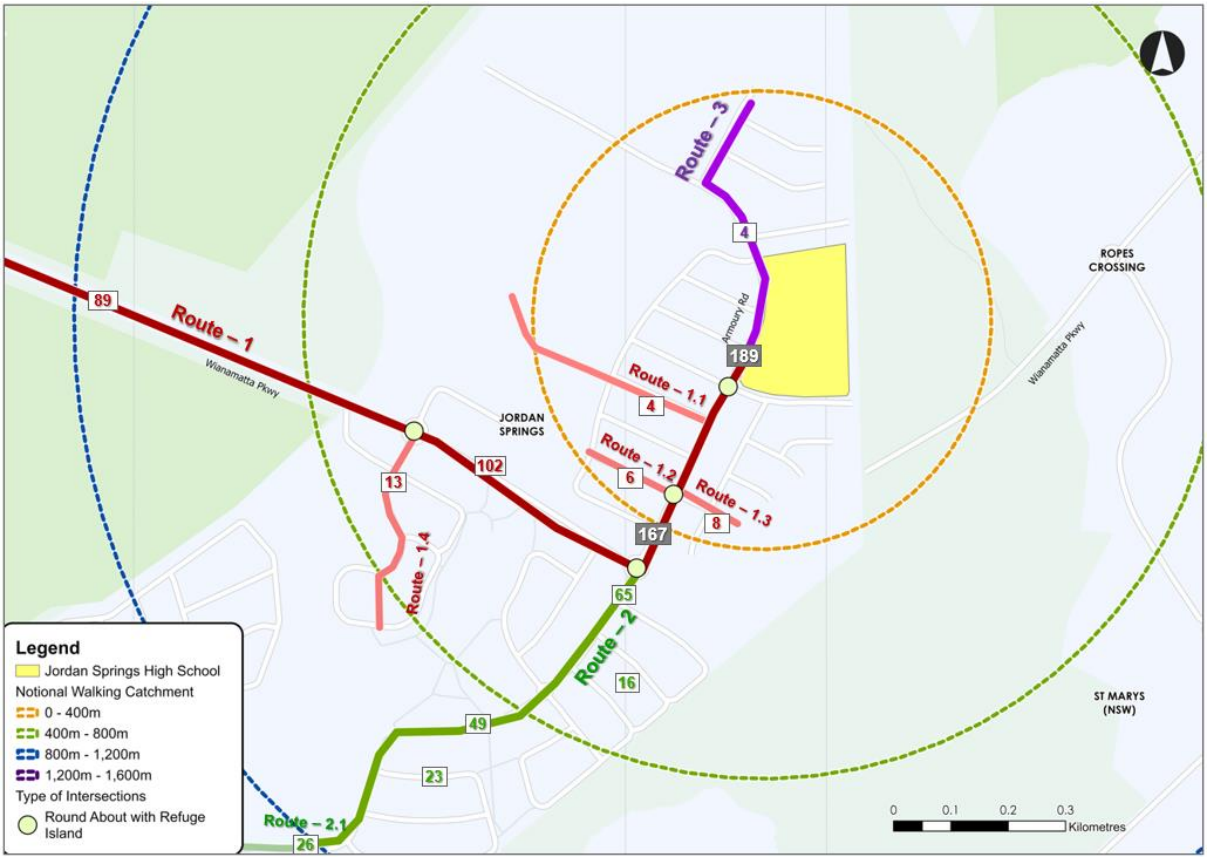

Figure 3-5: The Future Active Transport Routes Connecting to Jordan Spring HS (Scenario 2A)

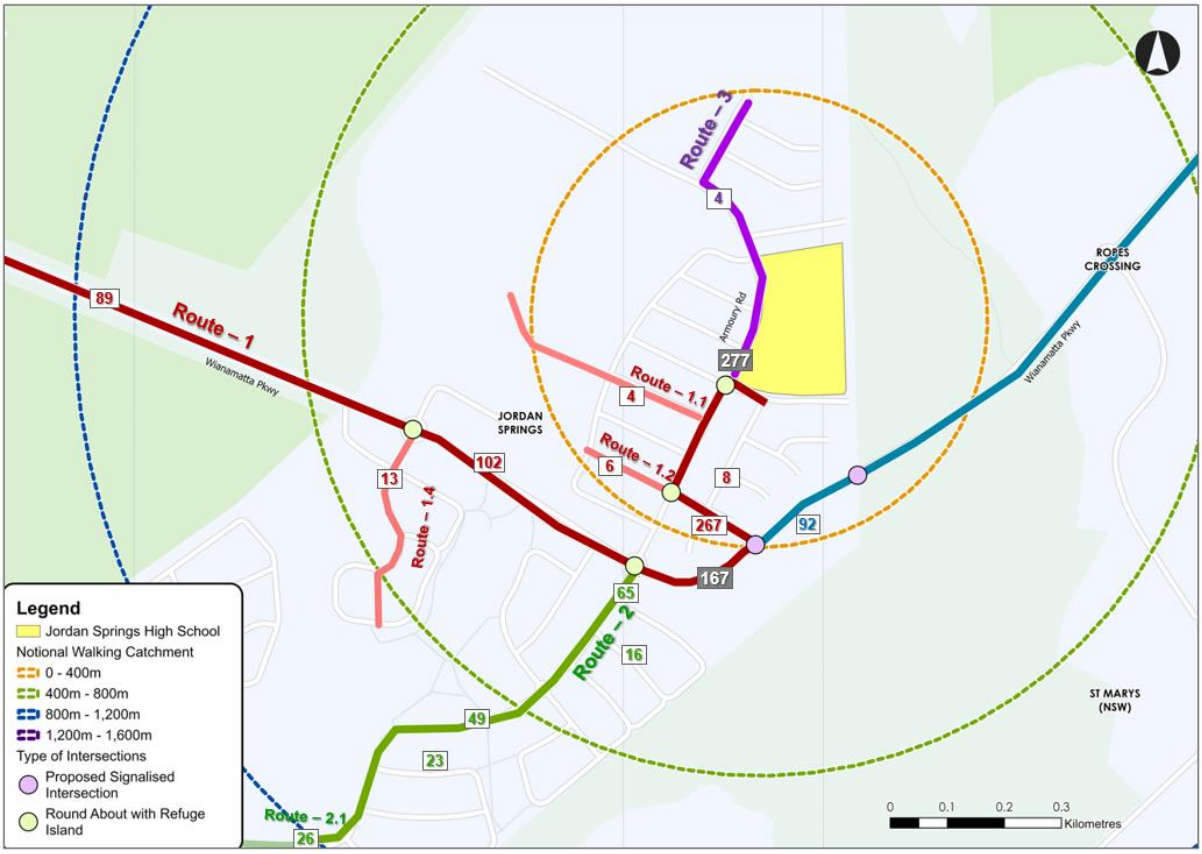

Figure 3-6:The Future Active Transport Routes Connecting to Jordan Spring HS (Scenario 2B)

3.1.4 Bus Service Demand Analysis

Demand assessment for school buses takes into account potential students from Jordan Springs West and Ropes Crossing Public School, as they are forecast to be attending the new school (Table 3-3).

Eligibility for the School Student Transport Scheme (SSTS) is determined by the student's residence in relation to the school. High school students residing beyond a 2 km notional distance or a 2.9 km actual route distance from the school are deemed eligible for the SSTS. Based on the analysis conducted, it has been determined that 56% of the student population meets the eligibility criteria for the school bus pass.

A proposal has been put forward to extend Routes 783 and 780, which are public bus services, with a new bus stop to be located on Armoury Road, north of Infantry Street for Scenario 1. This extension would operate during pre- and post-school hours. The plan involves extending bus services originating from Jordan Spring West and Ropes Crossing along Wianamatta Parkway, Park Edge Road, Lasetter Road, and Armoury Road. A new bus zone and shelter is to be provided on the eastern side of Armoury Road, north of Infantry Street in the preferred road layout scenario, as per Figure 4-6. Bus zone signage is to be provided as part of the project.

It is necessary to ensure that Park Edge Road and Lasetter Street have sufficient width to accommodate buses, including school charter services, school special routes, and potential future

bus routes from Ropes Crossing. This assessment is crucial to ensure the feasibility and safety of the proposed extension.

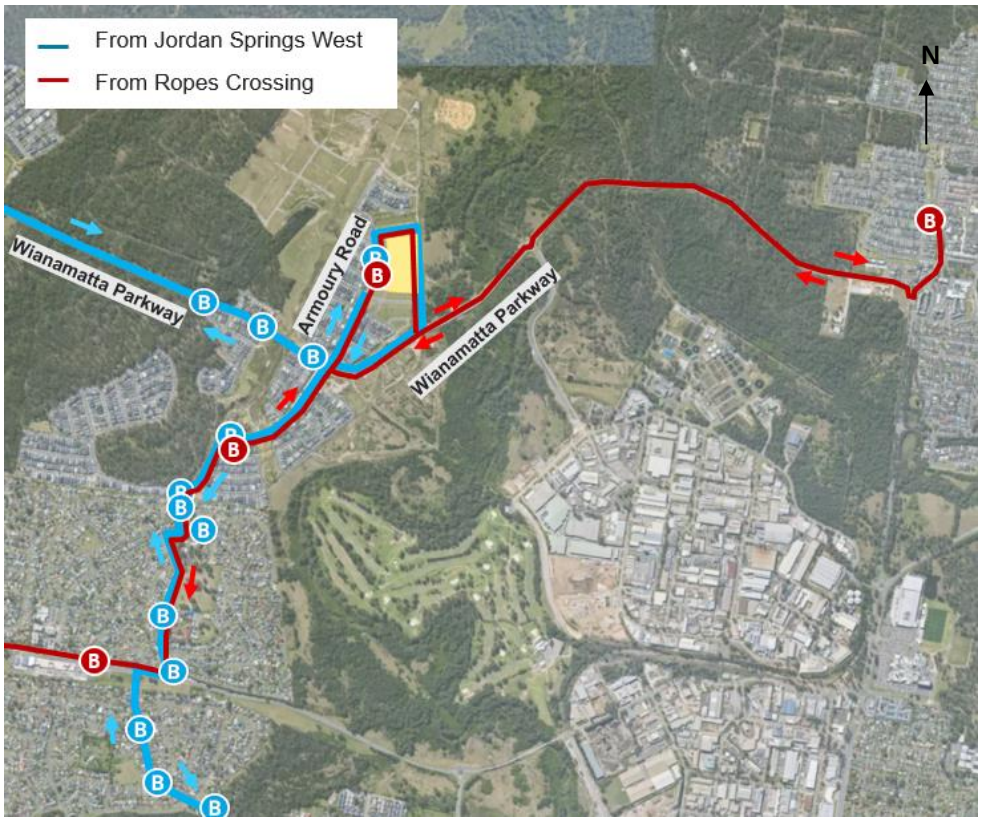

Figure 3-7: Recommended Bus Route Changes for Route 780 and Route 783 for Scenario 1

The proposed public transportation enhancement plan for Scenario 2A includes an extension of Route 780, utilising the current bus stop located on Armoury Road, south of Infantry Street. Due to the unavailability of Wianamatta Parkway for Scenario 2A, the proposal suggests extending bus services that originate from Ropes Crossing along Christie Street and Armoury Road. To accommodate this expansion, the existing bus zone will be enlarged to support various services, including regular bus routes, school charter services, school-specific routes from Ropes Crossing during pre- and post-school hours (Figure 3-8).

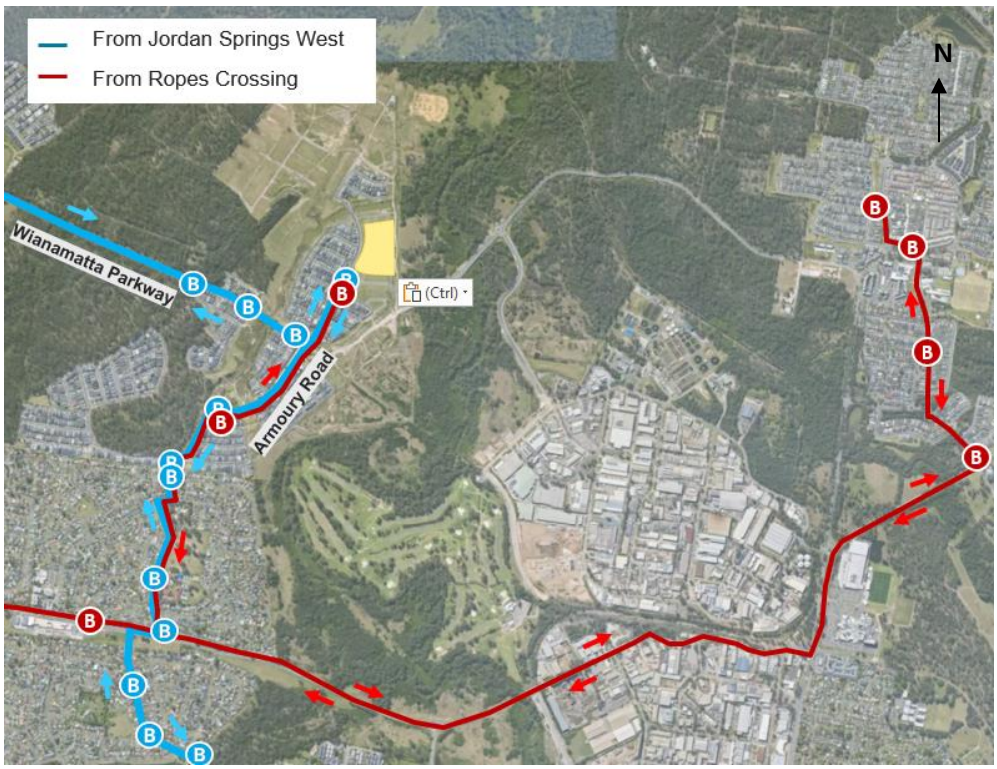

Figure 3-8: Recommended Bus Route Changes for Scenario 2A

The proposed public transportation enhancement plan for Scenario 2B, similar to Scenario 1, incorporates an extension of Routes 783 and 780. Like Scenario 2A, this extension also will use the existing bus stop situated on Armoury Road, south of Infantry Street. To facilitate this expansion, the current bus zone will be enlarged to accommodate regular bus routes, school charter services, and dedicated school routes originating from Jordan Springs and Ropes Crossing during pre- and post-school hours (as illustrated in Figure 3-9).

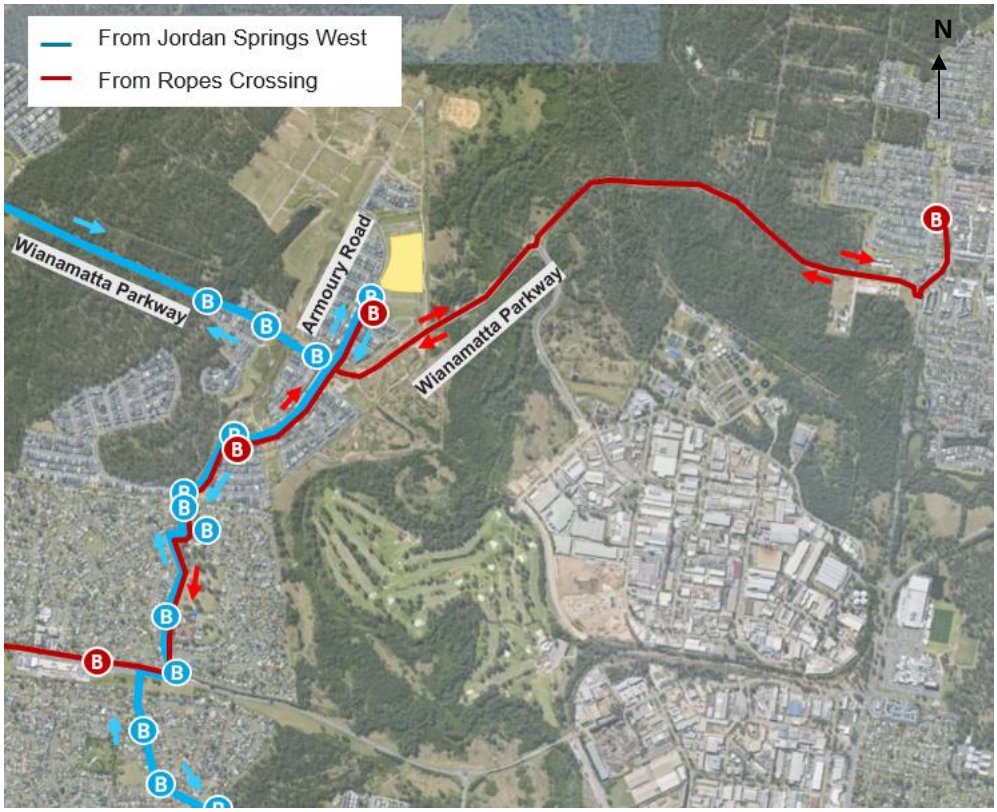

Figure 3-9: Recommended Bus Route Changes for Scenario 2B

3.1.5 Bus Zone Demand

An assessment has been conducted to evaluate the necessary allocation of bus zone spaces and the required length of the bus zone (as detailed in Table 3-3). Based on the findings of this analysis, it is recommended that a bus zone with shelter be established along Armoury Road, specifically on the side adjacent to the school. This zone should be designed to accommodate three standard buses for Scenario 1 and Scenario 2B, and four standard buses for Scenario 2A, each measuring 12.5 metres in length. In accordance with the specifications outlined in Table 3-3, the total length of the proposed bus zone is approximately 60 metres for Scenario 1 and Scenario 2B, and approximately 80 metres for Scenario 2A.

Table 3-3: Bus Requirements Analysis

Moderate mode share targets for 1,000 Students	Bus bay Assessment		
	Scenario 1	Scenario 2A	Scenario 2B
Student demand for public transport	352	430	344
Assumed capacity of buses	60	60	60
Number of buses required	6 (352/60 = 5.9)	8 (430/60 = 7.17)	6 ((344/60 = 5.73)
Bus dwell time per pick up (mins)	5	5	5
Bus dwell time per set down (mins)	1	1	1
Service drop off and pick up period (mins)	20	20	20
Bus space capacity (per 20 mins)	4	4	4
Bus zone space required	3	4	3
Bus zone length	57 metres	76 metres	57 metres

The dimensions for the school bus bay are in alignment with the Transport for NSW Bus Infrastructure Guide, which outlines the lengths required for bus draw-in and draw-out. Additional space in-between idling buses is also recommended (1 metre between buses).

This results in a proposed provision of 60m for Scenario 1 and 2B (see Figure 4-6), and 80m for Scenario 2A (see Figure 4-13). The Bus Infrastructure Guideline is outlined in Figure 3-10.

3.7 Draw in and draw out lengths

The minimum lengths for draw in and draw out are shown in the table below.

Bus Stop Dimension (m)	Standard	Long Rigid	Articulated
Length of Bus	12.5	14.5	18.0
Minimum draw-out length	6.0	6.5	8.0
Minimum draw-in length	11.5	14.0	14.0
Bus Zone length for one bus	30.0	35.0	40.0

Note: (1) Dimensions are based on stopping at the bus stop sign with a suitable length of straight, flat standard height kerb to stop alongside.

Figure 3-10: Bus Infrastructure Guideline, Transport for NSW

3.1.6 School Drop-off and Pick-up

An analysis is undertaken to assess the capacity of the school kiss-and-drop zones in servicing the demand during the school pick-up / drop-off periods. The assumptions made in calculating the required number of kiss and drop spaces to effectively service the school and analysis outputs are provided in Table 3-4. Results indicate that Scenario 1 necessitates a total of 16 designated kiss-and-drop spaces to adequately accommodate the private vehicle mode share under moderate target

solutions. In contrast, Scenario 2A and 2B each require 17 kiss-and-drop spaces to meet the anticipated demand.

Table 3-4: Kiss-and-Drop Analysis

Description	**Scenario 1**	**Scenario 2A**	**Scenario 2B**
Number of students using car mode share	367 students	381 students	375 students
Dwell time per pick-up/drop-off car	2 minutes	2 minutes	2 minutes
Pick-up/drop-off period length of time	30 minutes	30 minutes	30 minutes
Assumption of number of students per vehicle	1.5 students	1.5 students	1.5 students
Pick-up/drop-off spaces required for moderate mode share (37% car mode share)	16 spaces, **104 metres**	17 spaces, **119 metres**	17 spaces, **119 metres**

Note: It is assumed that the extension of Wianamatta Parkway to Ropes Crossing (with two signalised intersections) would be operational by the time the school opens

Sixteen school pick-up / drop-off spaces will be located along proposed Park Edge Road in Scenario 1 and seventeen school pick-up / drop-off spaces will be located along Armoury Road in Scenario 2A and 2B.

4 Transport Access

4.1 Existing road layout

The existing road network in the vicinity surround the proposed site is shown in Figure 4-1. Wianamatta Parkway is does not extend to the intersection with Armoury Road, and Park Edge Drive is also not provided.

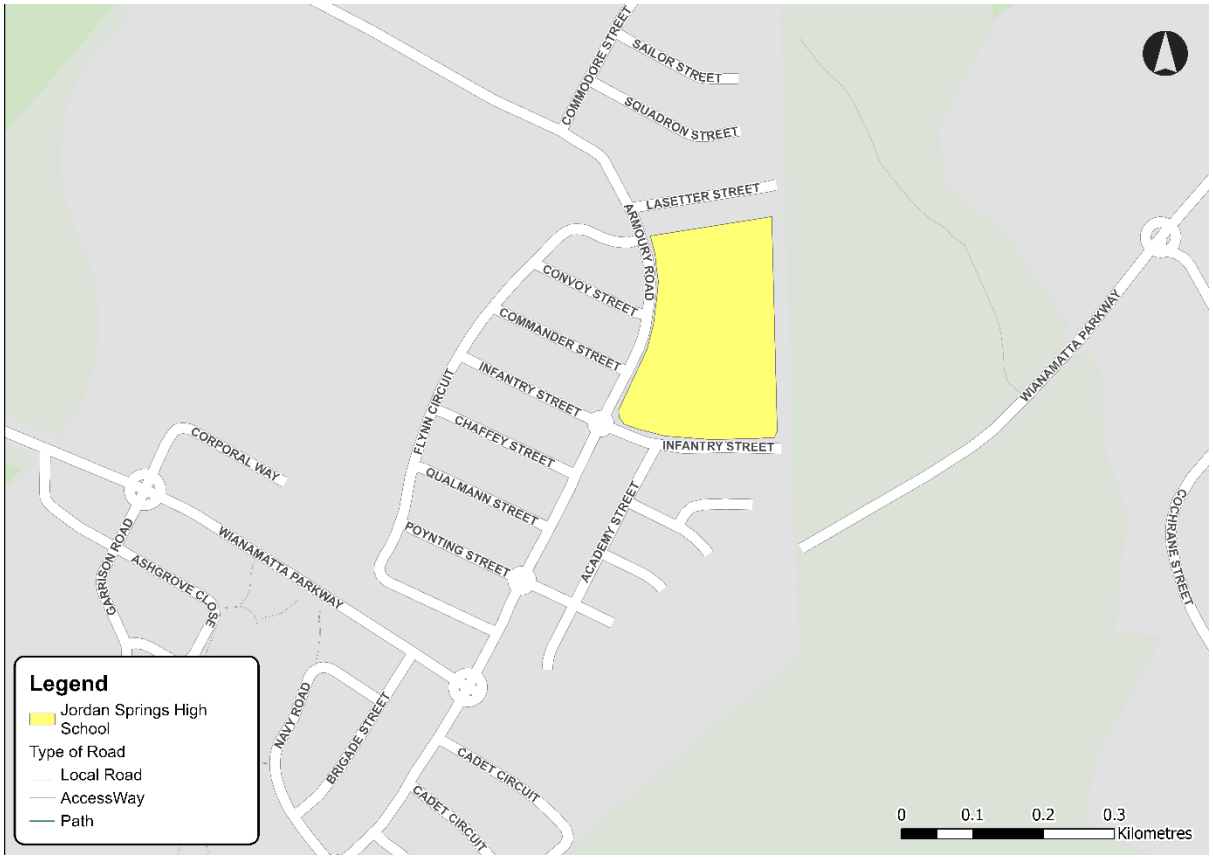

Figure 4-1: Existing road network

4.2 Road layout scenario overview

According to the site layout and road construction plans (Figure 4-5), the proposed Park Edge Road will be constructed and Infantry Street and Lasetter Street will undergo road widening. These activities will be undertaken by a third party. However, it is important to note that during the school's initial opening phase, some of these planned roadways may not yet be fully operational.

In light of these considerations, individual traffic intervention plans have been developed for the new High School at Jordan Springs, addressing both current and future road network configurations:

Scenario 1 – Preferred Option (permanent)

The permanent access plan for the new High School at Jordan Springs accounts for the presence of the complete road network, including Wianamatta Parkway, Infantry Street, Lasetter street and proposed Park Edge Road. This scenario optimises traffic flow and enhances safety for all road users.

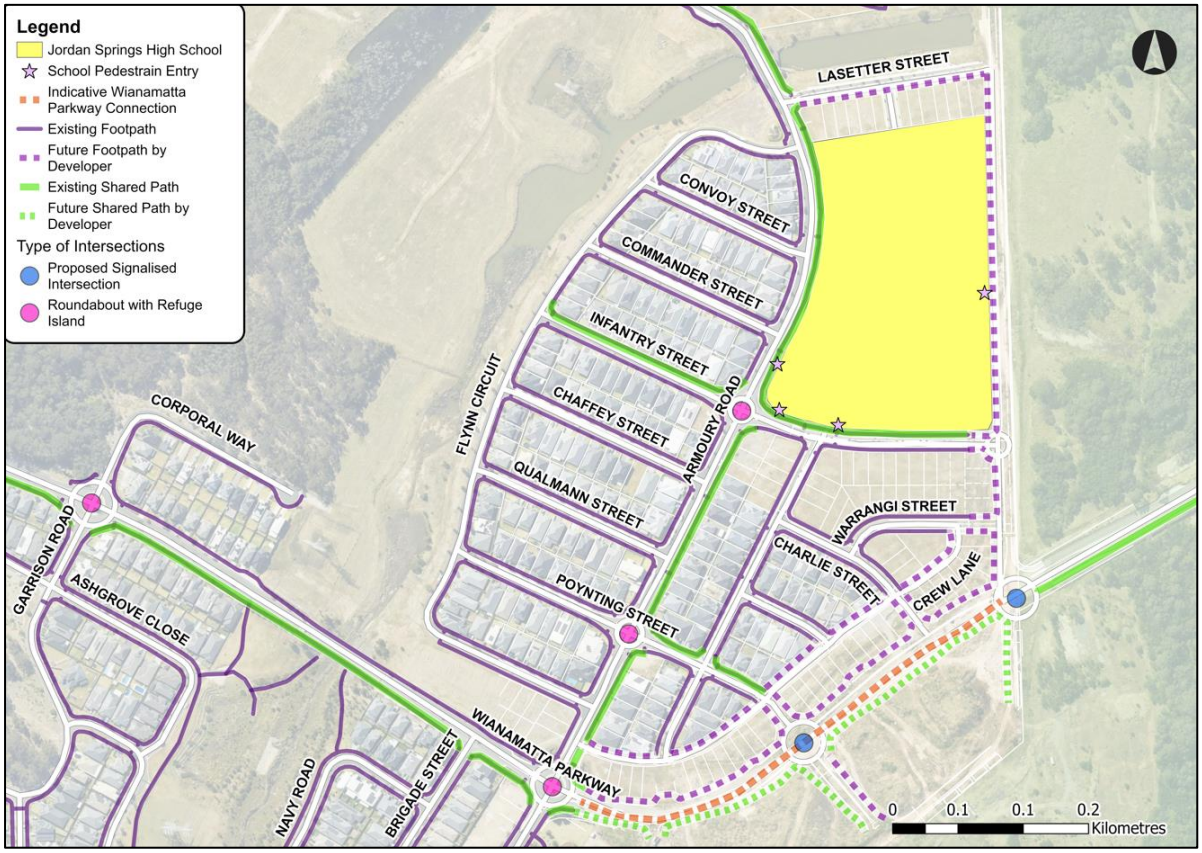

Figure 4-2: Roads available for Scenario 1

For Scenario 1, the following assumptions are made:

- All planned roadways, including Wianamatta Parkway and Park Edge Road, will be fully operational as depicted in Figure 4-2.
- The widening of Infantry Street and Lasetter Street will be completed.
- The proposed signalised intersections along Wianamatta Parkway will be implemented.

The Scenario 1 Master Plan is shown in Figure 4-6. Responsibilities for infrastructure provision is also indicated.

Scenario 2 – Interim

The interim solution takes into account the current road network, excluding Infantry Street, Lasetter Street, and the proposed Park Edge Road. In the absence of the eastern side of Infantry Street, Lasetter Street and proposed Park Edge Road, two temporary access plans have been devised to accommodate the school's needs. These are:

- Scenario 2A: Interim scenario without Wianamatta Parkway (Figure 4-3)

- Scenario 2B: Interim scenario with Wianamatta Parkway (Figure 4-4).

These interim solutions ensure safe and efficient entry and exit points for students, staff, and visitors while utilising the existing road infrastructure. Both access solutions have been carefully designed to minimise congestion, prioritise pedestrian safety, and facilitate smooth traffic movement during peak school hours.

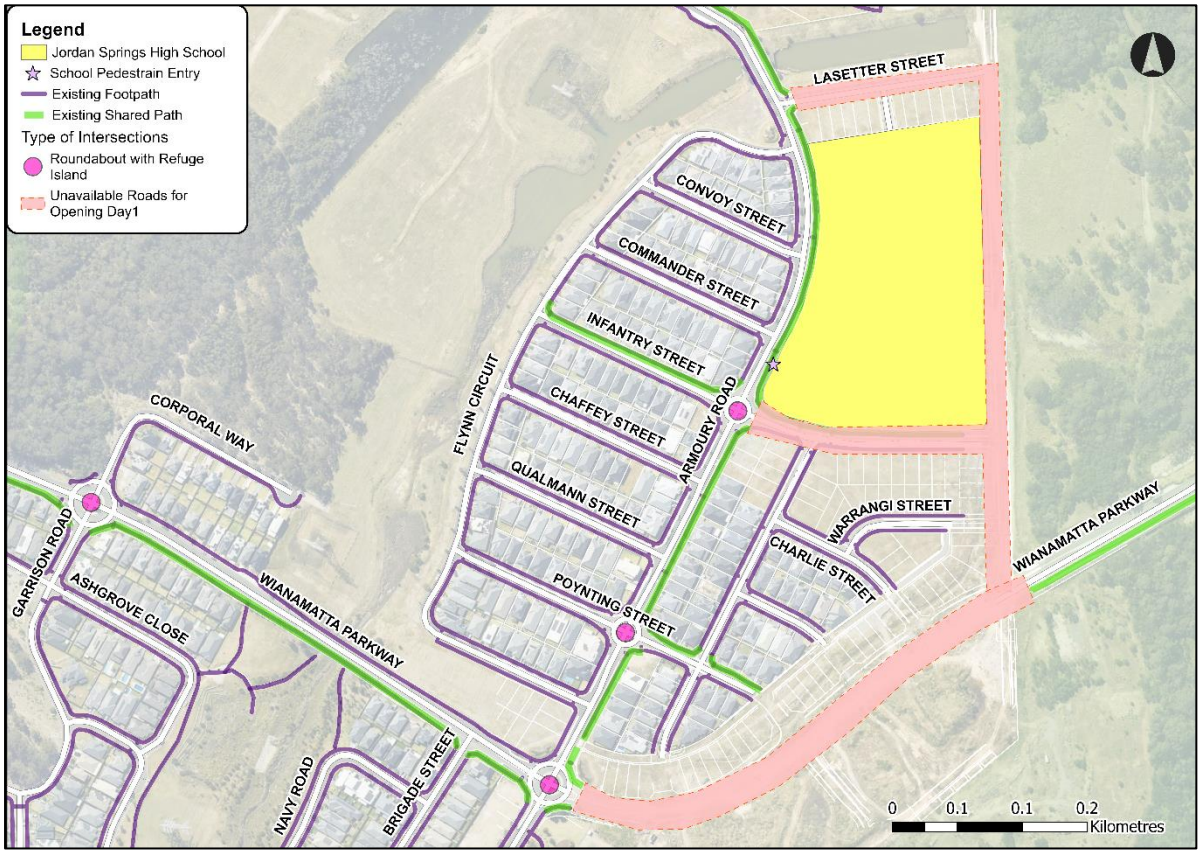

Figure 4-3: Roads available for Scenario 2A

For Scenario 2A, the following assumptions are made:

- All planned roadways, I.e., Wianamatta Parkway and Park Edge Road, will not be completed as depicted in Figure 4-3.
- The widening of Infantry Street and Lasetter Street will not be completed.
- The proposed signalised intersections along Wianamatta Parkway will not be implemented.

For Scenario 2B, the following assumptions are made:

- The planned roadways are partially available, i.e., Wianamatta Parkway will be fully operational, however, Park Edge Road, will not be completed implemented as illustrated in Figure 4-4.
- The reconstruction of Infantry Street and Lasetter Street will not be completed.
- The proposed signalised intersections along Wianamatta Parkway will be available.

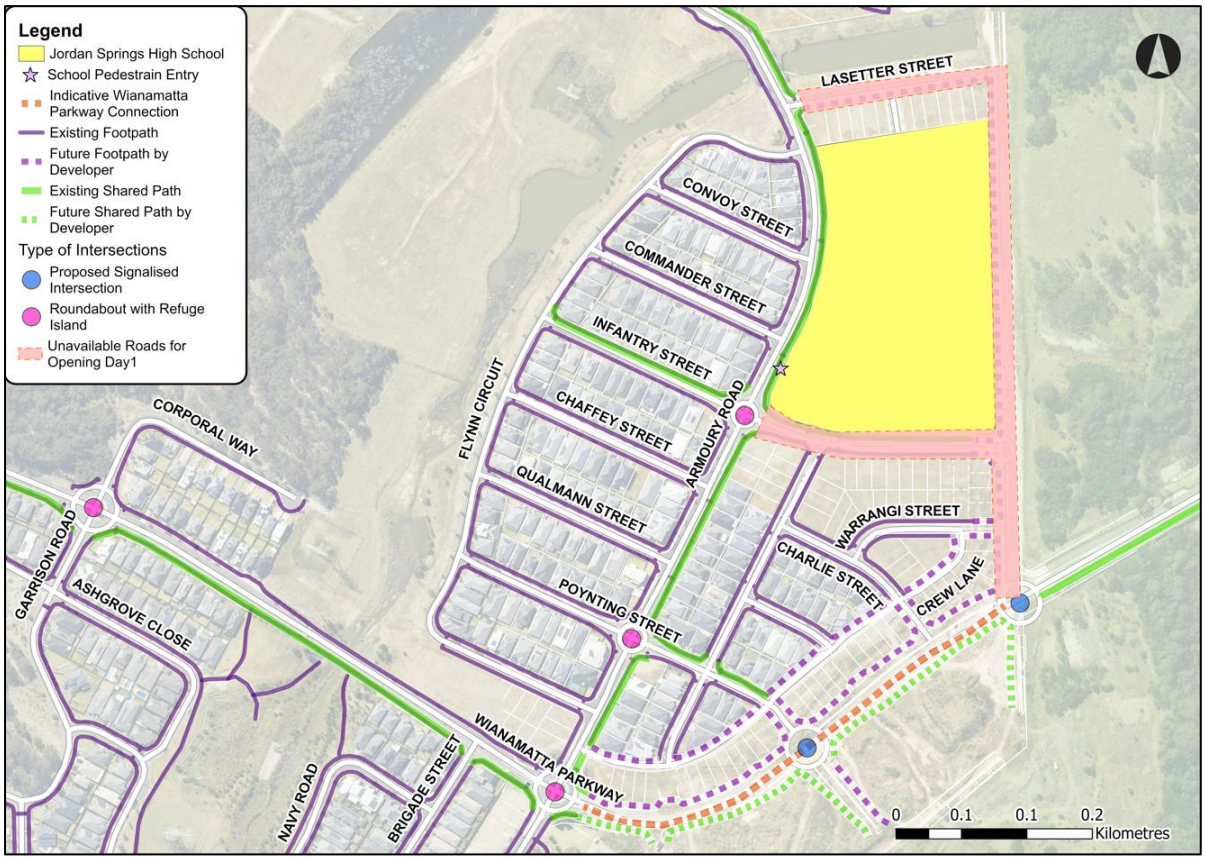

Figure 4-4: Roads available for Scenario 2B

The Scenario 2A and 2B Master Plan is shown in Figure 4-7. Responsibilities for infrastructure provision is also indicated.

Figure 4-5: Site Plan – Road Construction (Drawing no: JOSPHS-DJRD-00-00-DR-A-209020, dated 16/07/2024)

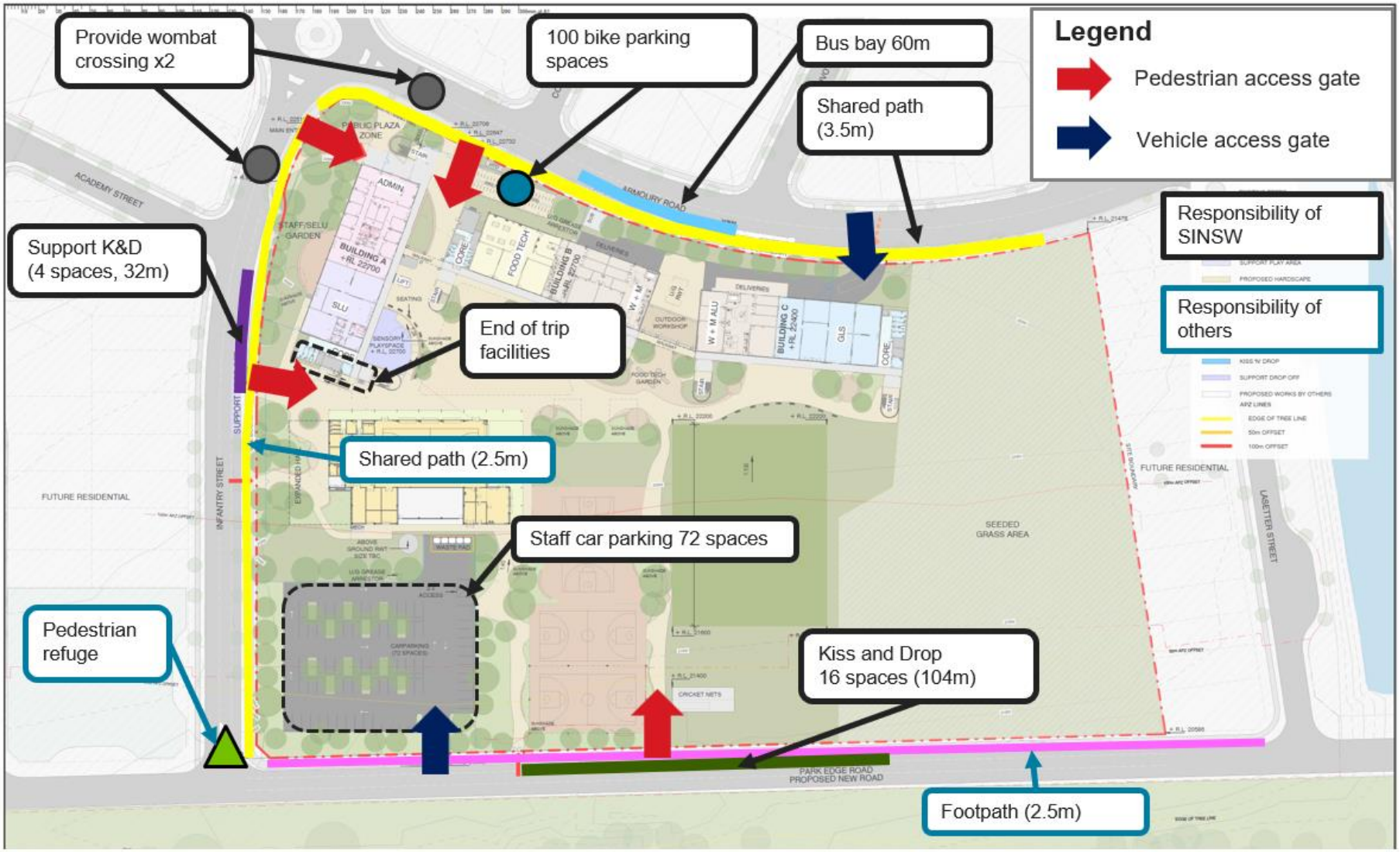

Figure 4-6: Master Plan – Scenario *1*

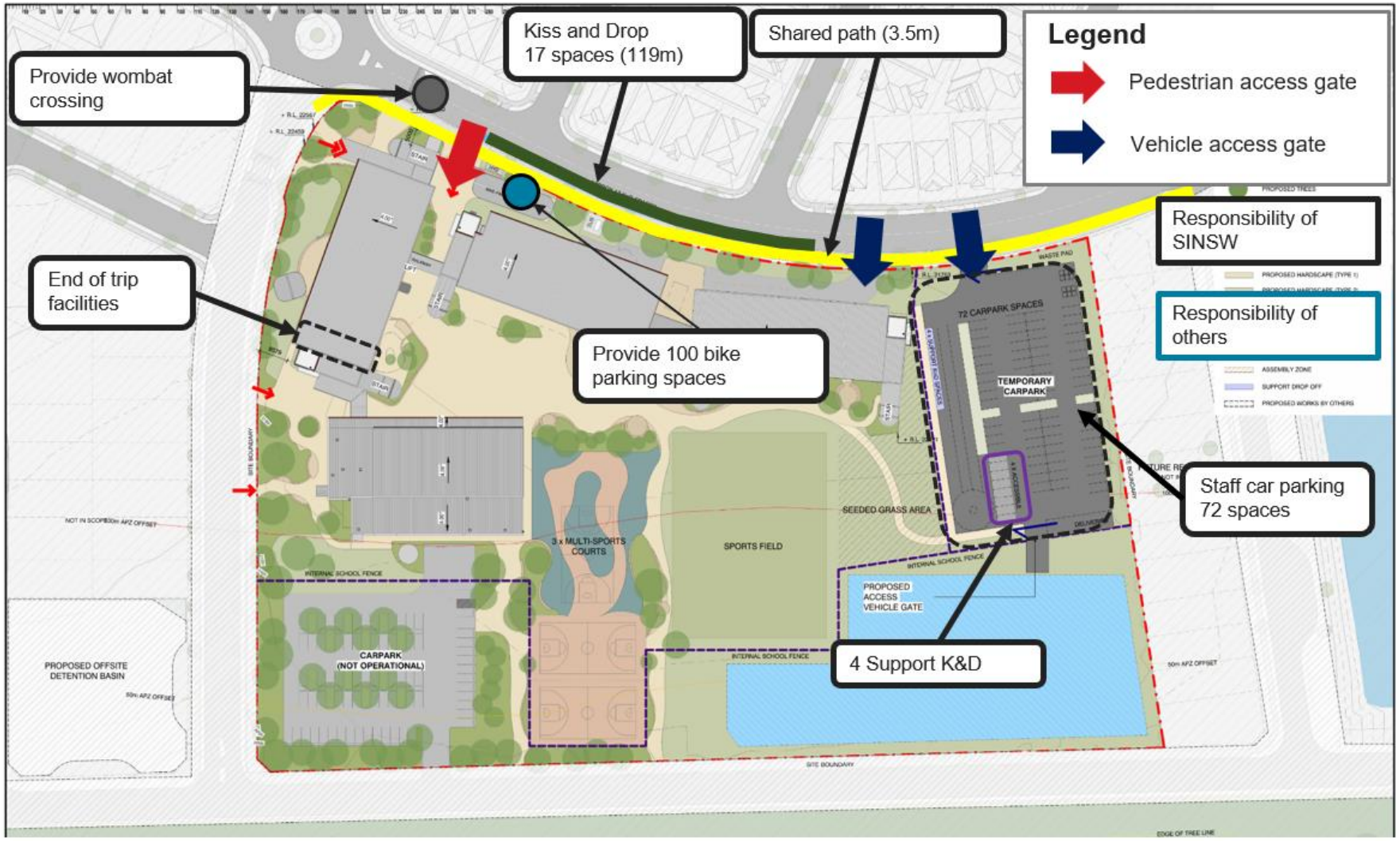

Figure 4-7: Master Plan – Scenario 2A and Scenario 2B

4.3 Scenario 1 – Preferred

4.3.1 Pedestrian Access

Two pedestrian entrances are located on Infantry Street, at the south-western corner of the site adjacent to the wombat crossing (main school entrance), and adjacent to the supports drop off area. Additional pedestrian access points are located on Park Edge Road, catering for the Kiss and Drop zone, and on Armoury Road, near the intersection with Commander Street.

Active transport infrastructure to support students walking and riding to school is shown in Figure 4-8. The items that are to be provided as art of the project are indicated as SINSW responsibility. A wombat crossing is proposed on the southern side of the intersection of Wianamatta Parkway with Armoury Road.

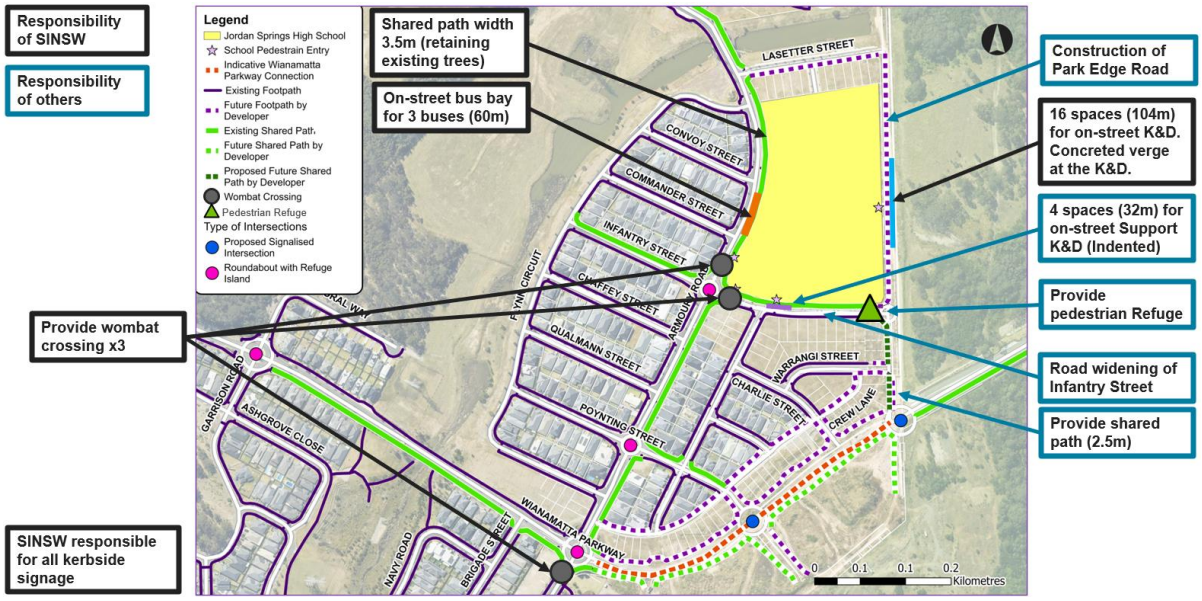

Figure 4-8: Scenario 1 – active transport infrastructure provisions

4.3.2 Bicycle Parking

Bicycle parking for students is proposed to be located adjacent to the pedestrian access point on Armoury Road. 100 bike parking spaces are proposed.

4.3.3 End-of-trip Facilities

End-of-trip facilities for staff, including showers, are proposed to be available with the administrative building (administrative building), located adjacent to the south-western entrance of the school site via Armoury Road. Two showers are proposed for four (4) staff assumed to be riding to school (see section 5.2).

4.3.4 Bus Access

The bus shelter and bus stop are proposed on Armoury Road adjacent to the pedestrian access as shown in Figure 4-6. The information regarding number of buses and bus bays required can be found in Section 3.1.4. 60 metres of bus zone length is provided for, as shown in Figure 4-6.

4.3.5 Car Parking

On-site vehicle parking arrangements for school staff and teacher is located at the south-eastern side of school site along the proposed Park Edge Road. The proposed school car parking spaces are shown in Figure 4-6. The plan includes designated staff parking spaces as well as two accessible parking spots located in the northeastern section of the staff parking area.

The Penrith Development Control Plan (DCP) 2014 does not specify parking requirement for schools. Instead, parking requirements have been estimated based on the provision of parking spaces for 90% of the staff. With a projected staff population of 80 in 2027, 72 parking spaces are required, as this represents 90% of the staff.

4.3.6 School Drop-off and Pick-up Zones

For scenario 1, the school pick-up / drop-off spaces is located along proposed Park Edge Road as shown in Figure 4-6, with a length of 104m.

Sixteen spaces are provided for student's drop-off and pick-up for road layout Scenario 1. Additionally, four "support drop-off and pick-up zones" are proposed along Infantry Street, situated in front of the pedestrian entrance shown in Figure 4-6. The support drop-off is to be designed in accordance with AS2890.6.

Student pick up and drop off demands are described in Section 3.1.6.

On Park Edge Road outside of the proposed bus zone and school pick-up/ drop off areas, a no stopping parking restriction is applied to the kerb space along the boundary of the school. This aims to prevent vehicles from queuing outside of the pick-up and drop-off zone.

4.3.6.1 Vehicle circulation

Vehicle circulation patterns associated with kiss and drop movements for Scenario 1 road layout are shown in Figure 4-9. Vehicles approach the school site from the east, south and western directions, and circulate around the site in an anti-clockwise direction in order to access the kiss and drop zone and exit the vicinity. Vehicle volumes associated with the kiss and drop are indicated, and have been determined based on the moderate target mode share, as described in section 5.1.3.

Intersection performance is discussed further in section 6.2.

Figure 4-9: Scenario 1 – kiss and drop vehicle circulation

4.3.7 Service Vehicle Access

There is a separate entry via Armoury Road for service or emergency vehicle as shown on Figure 4-6. Swept paths for delivery vehicle entry and exit of the site is shown in Figure 4-10. The design vehicle for delivery and loading is 12.5 heavy rigid vehicle.

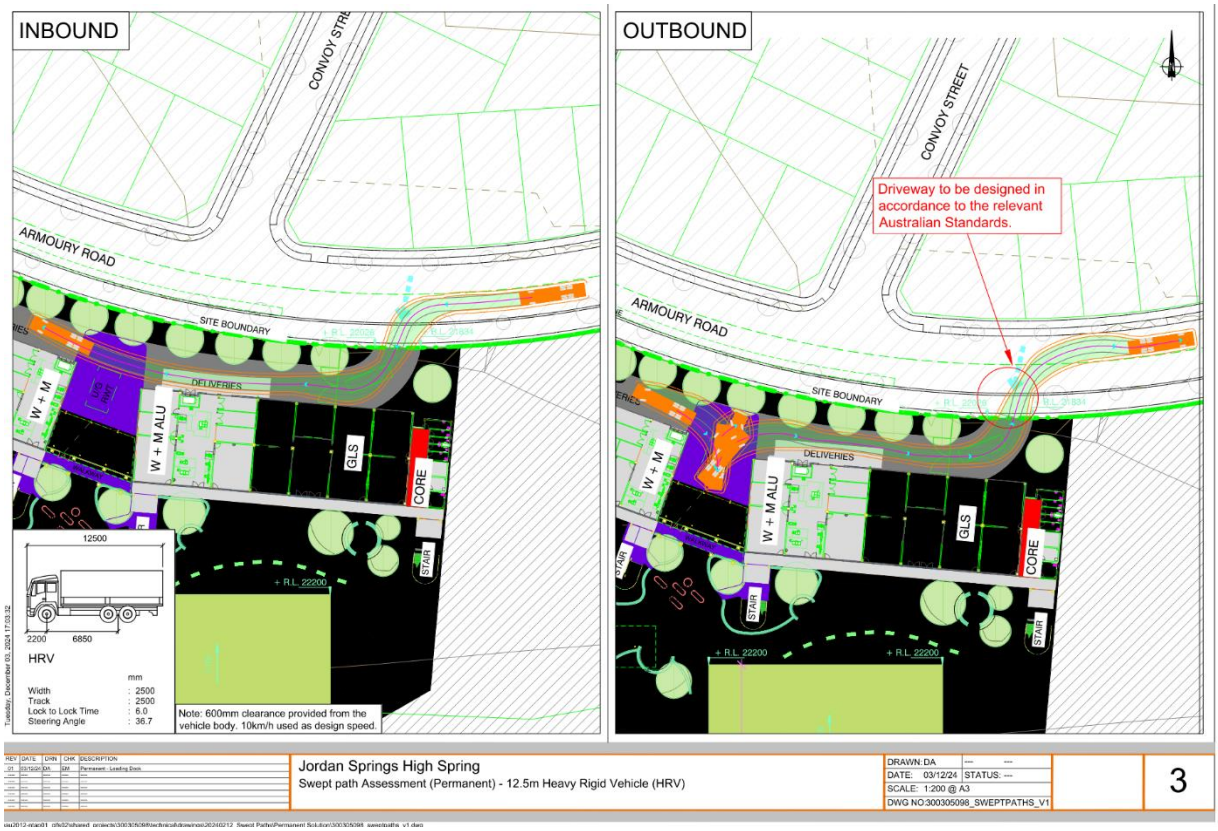

Figure 4-10: Scenario 1 – service vehicle access

4.3.8 Waste Management Access

For waste management operations, access is via the staff parking entry proposed on Park Edge Road, as shown on Figure 4-6. Swept path analysis for the waste vehicle is shown in Figure 4-11. It is assumed that the period for waste collection falls well outside of school operational hours, and that no vehicles will be parked in the car park at the time.

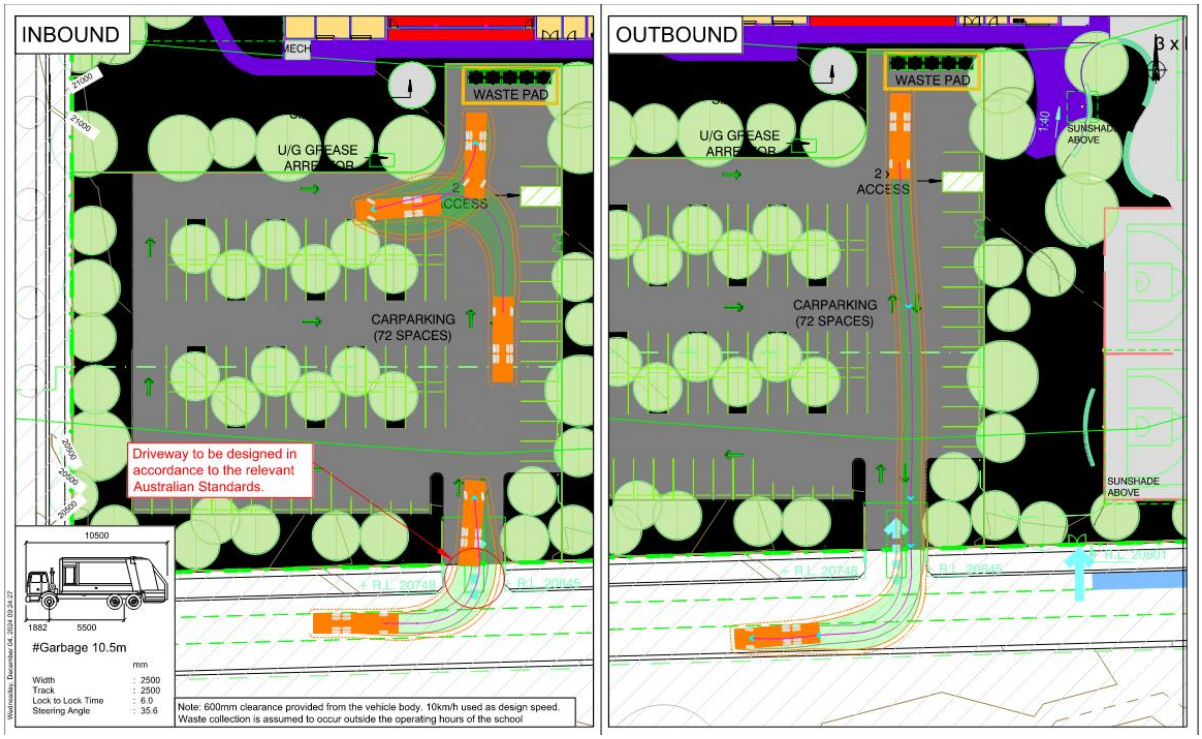

Figure 4-11: Scenario *1 – waste vehicle access*

4.4 Scenario 2 – Interim

4.4.1 Pedestrian Access

For the temporary road layout scenarios (2A and 2B), the main and only pedestrian and visitor entry will be from Armoury Road (Figure 4-7). Active transport infrastructure to support students walking and riding to school is shown in Figure 4-12. The items that are to be provided as art of the project are indicated as SINSW responsibility. A wombat crossing is proposed on the southern side of the intersection of Wianamatta Parkway with Armoury Road.

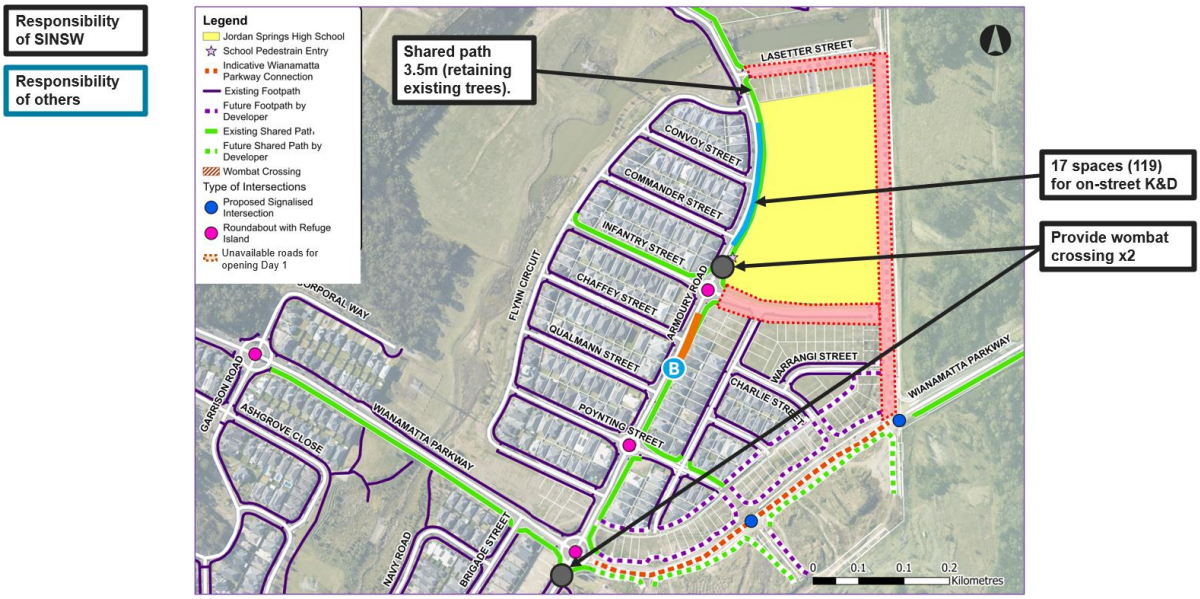

Figure 4-12: Scenario 2 – active transport infrastructure provisions

4.4.2 Bicycle Parking

Like Scenario 1, the 100 on-site covered bicycle parking facilities is proposed in close proximity to the Armoury Street pedestrian entry (Figure 4-7).

4.4.3 End-of-trip Facilities

Like Scenario 1, end-of trip facilities i.e., two showers are proposed for Scenario 2A and 2B. The facilities are proposed to be located within the administrative building.

4.4.4 Bus Access

The existing bus stop is located along Armoury Road south of Infantry Street is proposed to be used for both Scenario 2A and Scenario 2B. The existing bus bay is proposed to be expanded for both scenarios. Further information on this can be found in Section 3.1.4. 80 metres of bus zone length are provided for, as seen in Figure 4-13.

The location of the bus zone for the interim scenario layout is shown in Figure 4-13.

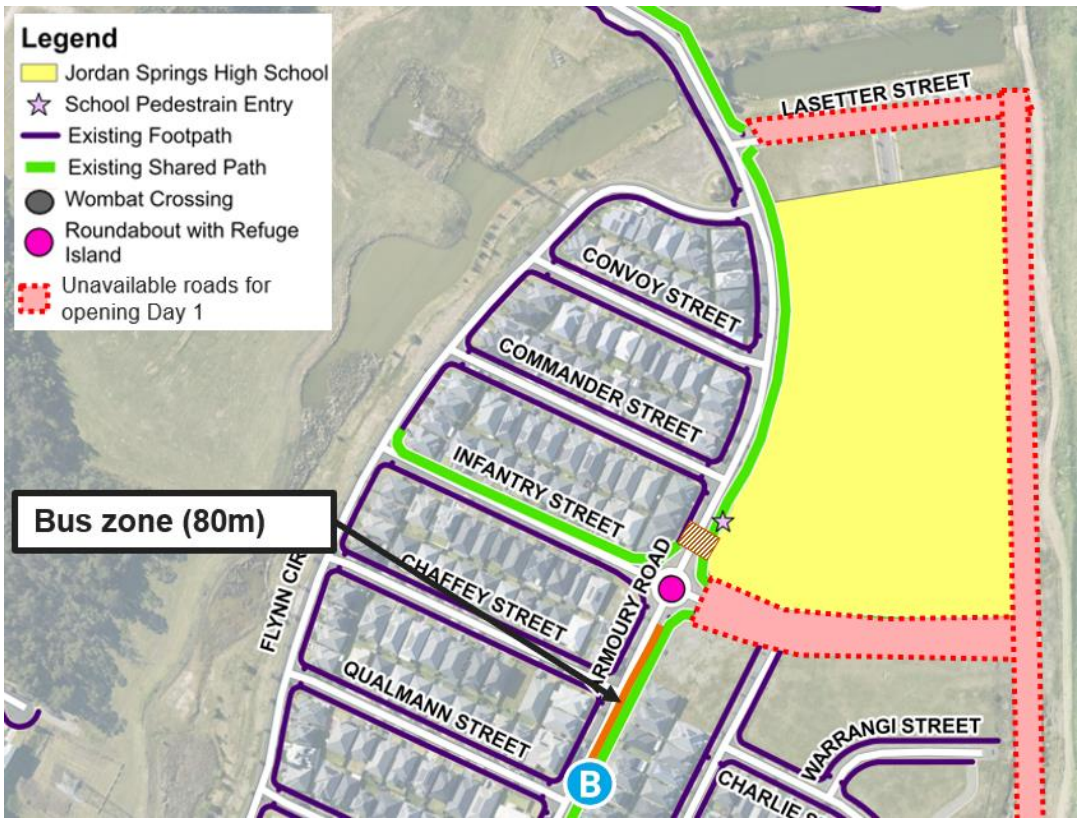

Figure 4-13: Bus zone location – interim scenario

4.4.5 Car Parking

The staff car parking proposed for Scenario 2A and 2B is located on the northern side of school site along Armoury Road. The proposed school car parking spaces are shown in Figure 4-7. The staff parking provision is consistent with Scenario 1 ie 72 parking spaces.

The plan includes designated staff parking spaces as well as two accessible parking spots, and four ‘support drop off and pick up zone’ located in the south-western section of the staff parking area for both Scenario 2A and Scenario 2B.

4.4.6 School Drop-off and Pick-up Zones

For Scenarios 2A and 2B, the school pick-up / drop-off spaces is located on Armoury Road as shown in Figure 4-7. Seventeen spaces are provided for student drop-off and pick-up (length of 119m).

Further information on this can be found in Section 3.1.6.

4.4.6.1 Vehicle circulation

Vehicle circulation patterns associated with kiss and drop movements for Scenario 2A and 2B road layouts are shown in Figure 4-14 and Figure 4-15. Vehicles approach the school site from the south and western directions for both road layouts, and from the east in layout 2B. Vehicle circulate around Infantry Street and Flynn Circuit to access the kiss and drop zone on Armoury Road before exiting the

precinct via the roundabout at the intersection with Wianamatta Parkway. Vehicle volumes associated with the kiss and drop are indicated, and have been determined based on the moderate target mode share, as described in section 5.1.3.

Intersection performance is discussed further in section 6.3.

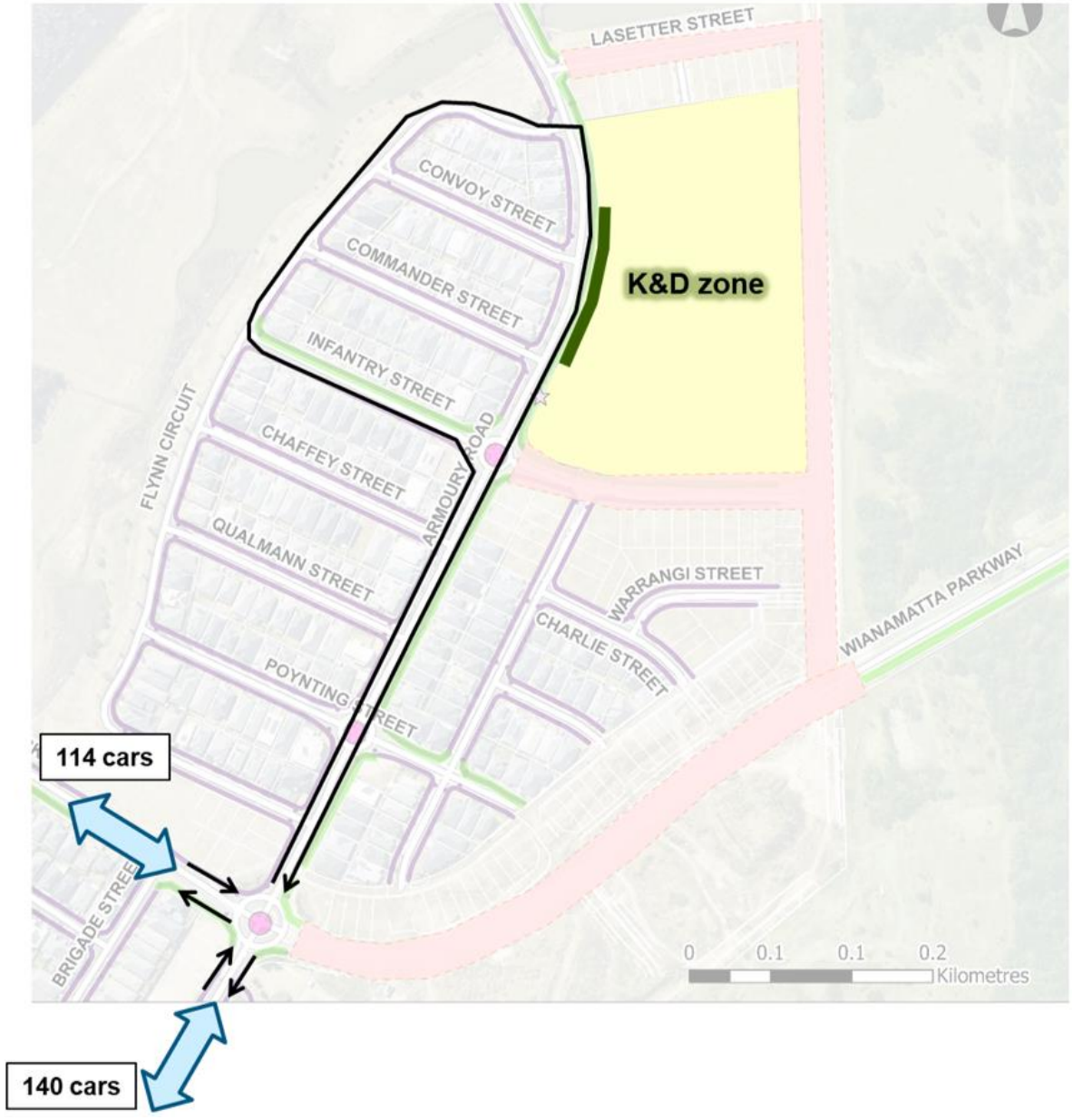

Figure 4-14: Scenario *2A – kiss and drop vehicle circulation*

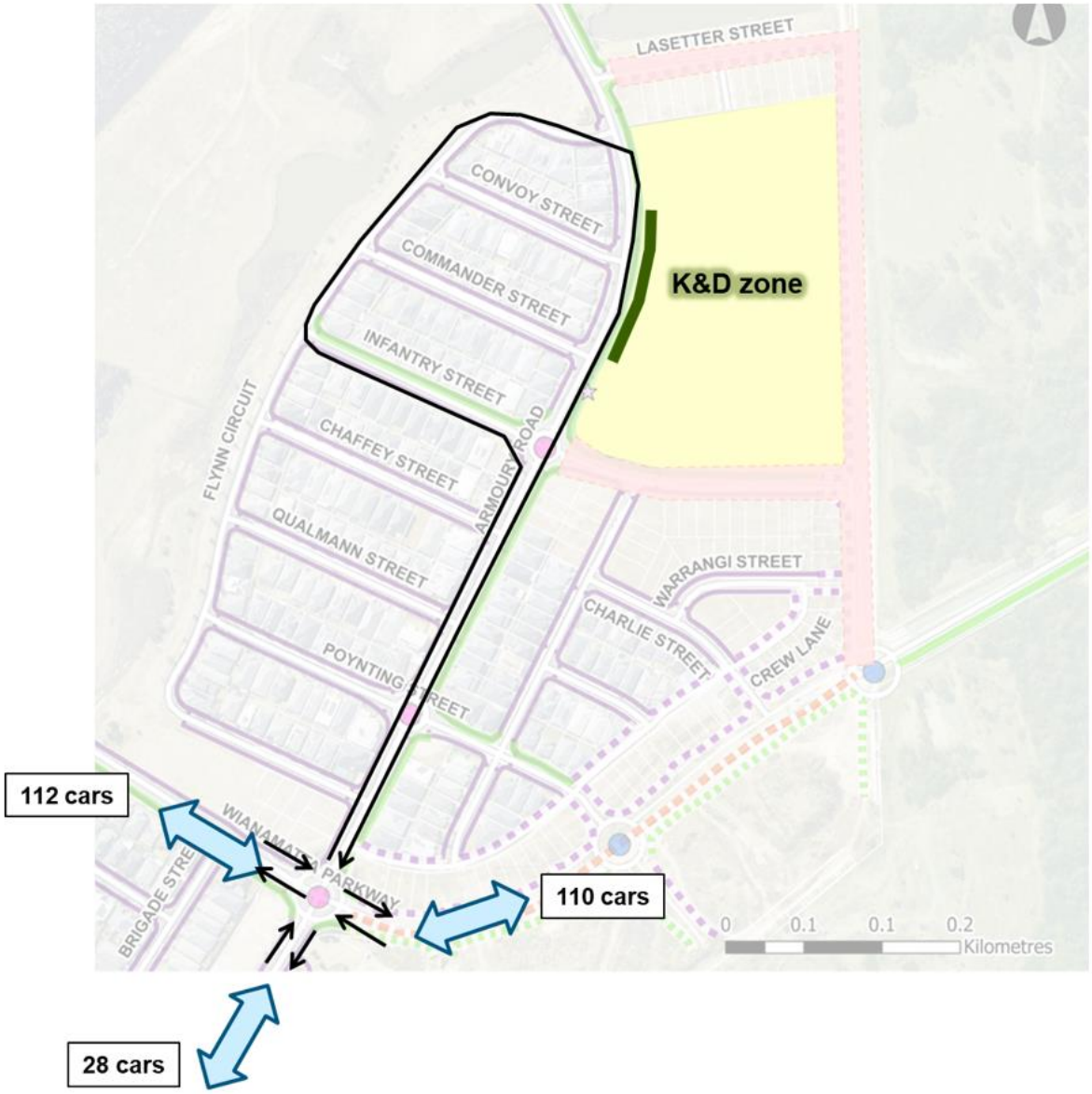

Figure 4-15: Scenario *2B – kiss and drop vehicle circulation*

4.4.7 Service Vehicle Access

Like Scenario 1, the service or emergency vehicle is proposed to have a separate entry via Armoury Road, as shown in Figure 4-7. Swept path assessment for delivery vehicle entry and exit of the site is the same as Scenario 1, as shown in Figure 4-10. The design vehicle for delivery and loading is 12.5 heavy rigid vehicle.

4.4.8 Waste Management Access

For waste management operations, the staff parking entry via Armoury Road is proposed to be used (Figure 4-7). Swept path analysis for the waste vehicle is shown in Figure 4-16. It is assumed that the

period for waste collection falls well outside of school operational hours, and that no vehicles will be parked in the car park at the time.

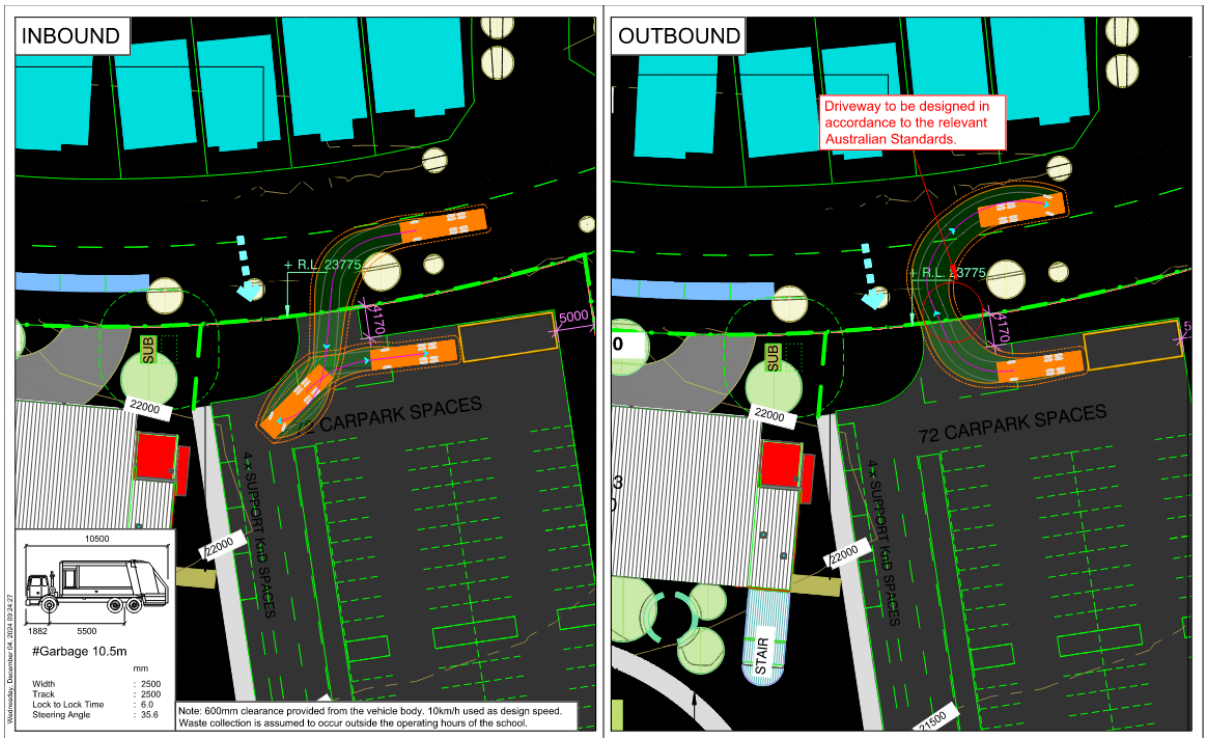

Figure 4-16: Scenario *2 – waste vehicle access*

5 Mode Share Targets

5.1 Student Mode Share

The purpose of the School Transport Plan is to determine ways in which a higher proportion of students can sustainably travel to school and reduce their reliance on private vehicles. To do this, mode share targets have been determined for the school to encourage travel to school via active and public transport modes. It is intended that the school will work towards meeting these targets following the completion of works on site.

As part of this analysis, three mode share scenarios are provided:

- Base Case Scenario – The existing mode share as calculated by the depersonalised data 2023 for Jordan Springs Public School and Ropes Crossing Public School
- Moderate Scenario – transport recommendations enable a shift towards walking, cycling, and catching a bus. This represents an achievable outcome.
- Reach Scenario – Sustainable mode share is maximised, and students are further shifted from private vehicles to buses. This reach scenario represents the maximum achievable outcome.

When considering the mode shares a variety of data sources were analysed to determine the outcomes based on distance. This included the residential location of students through depersonalised data, walking and cycling catchments, walking, and cycling catchments, access to public transport and eligibility to the SSTS scheme, in addition to the kiss-and-drop capacity and bus service availability. The benchmark mode shares also considered. Mode share targets are not differentiated by time of day.

5.1.1 Benchmark Mode Share

The mode share of the proposed school is anticipated to align with those of existing high schools with similar transport conditions and context.

The mode share of Rouse Hill High School serves as case study, given its location within the Western Sydney growth area and its comparable growth pattern to Jordan Springs. The location of the school and intake catchment is shown in Figure 5-1. Similar to the new High school at Jordan Springs site, the school is in a fairly isolated location from surrounding suburbs however does have sufficient provision of active transport and bus services, aligning with the proposal for Jordan Springs.

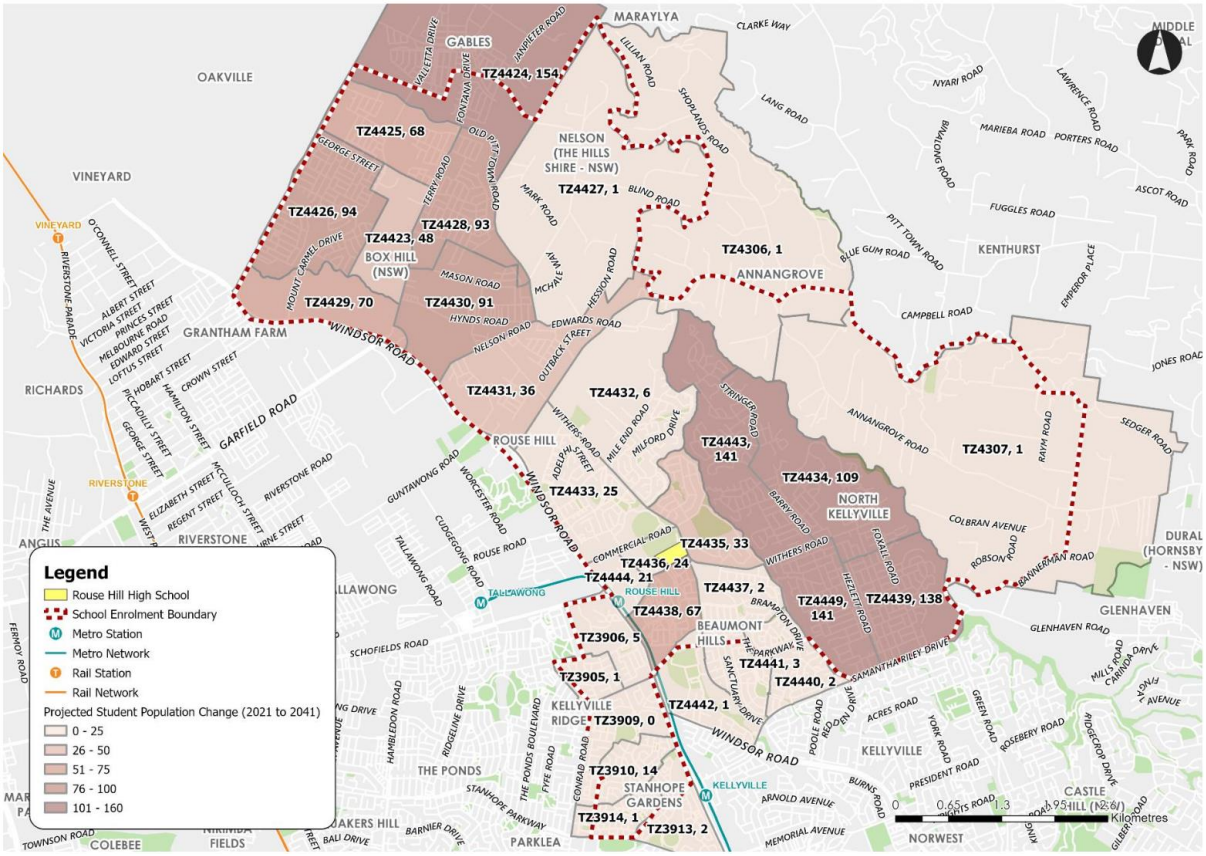

Figure 5-1: Rouse Hill High School intake catchment

The mode share for students travelling to Rouse Hill High School was informed by the survey conducted amongst the students. The survey was undertaken on 4 August 2023 for Year 7 to 10 students and on 28 August 2023 for Year 11 to 12 students, with a total of 763 students completing the survey. This equates to almost 75% of the 2023 student population. The mode share breakdown is depicted in Figure 5-2 and outlined in Table 5-1.

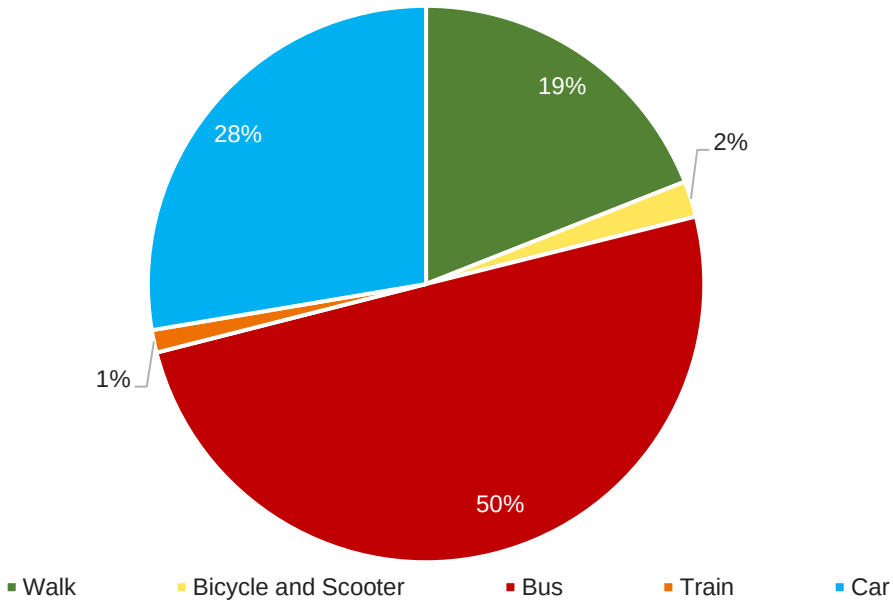

Figure 5-2: Rouse Hill High School Students' PM peak Travel Mode Share for Term 3 2023

Table 5-1: Rouse Hill High School Mode Share for Term 3 2023

Mode	PM Peak	
	Number of Students	**Mode Share**
Walk	145	19%
Bicycle/Scooter	13	2%
Bus	381	50%
Train	10	1%
Car	211	28%

Rouse Hill High School achieved a bus mode share of 50% and an active transport mode share of 21%, despite a low level of students living within a 1,200m walk of the school.

It is therefore considered that Rouse Hill High School provides a suitable benchmark to be applied to the mode share targets for the new School at Jordan Springs.

5.1.2 Base Mode Share

The New High School for Jordan Springs base mode share is informed by the depersonalised data from 2023 for Jordan Springs Public School and Ropes Crossing Public School. The assumptions were made based on the students living within different catchments of school site. For example, students staying within 1,200 metre catchments are considered for walking.

Table 5-2 shows the baseline mode share for Scenario 1 and Scenario 2B.

Table 5-2: Baseline Mode Share for Scenario 1 and Scenario 2B

Mode	Mode Share	Number of Students
Walking	8%	85
Bicycle and other micro mobility	19%	190
Public transport	27%	268
Private vehicle	46%	457
Total	**100%**	**1,000**

As the assumption is that the Wianamatta Parkway will not be operational for Scenario 2A, students residing in Ropes Crossing will be unable to use bicycles as a means of transportation to school. Consequently, those students who would have typically cycled will instead rely on public transportation or private vehicles for their travel to/from school.

Table 5-3 shows the baseline scenario mode share distribution for Scenario 2A.

Table 5-3: Baseline Mode Share for Scenario 2A

Mode	Mode Share	Number of Students
Walking	8%	85
Bicycle and other micro mobility	11%	104
Public transport	35%	351
Private vehicle	46%	460
Total	**100%**	**1,000**

5.1.3 Moderate Mode Share

The moderate mode share targets (Table 5-4, Table 5-5, and Table 5-6) builds on the base case mode share (base case) and accounts for transport initiatives. Transport initiatives include:

-
- Implementing active transport encouragement programs
- A greater proportion of students walking within the 0 – 800m catchment bands
- A greater proportion of students cycling within the 1,200 – 2,400m catchment bands
- An increase in student bus patronage over the 2,900m catchment through the promotion of the SSTS scheme.

The moderate mode share targets apply a conservative comparison to the benchmark mode share for Rouse Hill High School outlined in Table 5-1.

Table 5-4: Moderate Mode Share Target for Scenario 1

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
Walking	%	95%	75%	70%	45%	2%	0%	**8%**
	no. of students	17	26	21	18	4	0	85
Bicycle and other micro-mobility	%	0%	15%	20%	20%	20%	21%	**20%**
	no. of students	0	5	6	8	50	128	196
Public Transport	%	0%	0%	0%	10%	39%	40%	**35%**
	no. of students	0	0	0	4	99	249	352
Private Vehicle	%	5%	10%	10%	25%	40%	40%	**37%**
	no. of students	1	3	3	10	102	248	367

Table 5-5: Moderate Mode Share Target for Scenario 2A

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
Walking	%	95%	75%	70%	45%	2%	0%	**8%**
	no. of students	17	26	21	18	4	0	85
Bicycle and other micro-mobility	%	0%	15%	20%	20%	9%	10%	**11%**
	no. of students	0	5	6	8	23	62	104
Public Transport	%	0%	0%	0%	10%	45%	50%	**43%**
	no. of students	0	0	0	4	114	312	430
Private Vehicle	%	5%	10%	10%	35%	44%	40%	**38%**
	no. of students	1	3	3	14	112	248	381

Table 5-6: Moderate Mode Share Target for Scenario 2B

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
Walking	%	95%	75%	70%	45%	2%	0%	**8%**
	no. of students	17	26	21	18	4	0	85
Bicycle and other micro-mobility	%	0%	15%	20%	20%	20%	21%	**20%**
	no. of students	0	5	6	8	50	128	196
Public Transport	%	0%	0%	0%	10%	38%	39%	**34%**
	no. of students	0	0	0	4	97	243	344
Private Vehicle	%	5%	10%	10%	25%	40%	41%	**38%**
	no. of students	1	3	3	10	102	255	375

5.1.4 Reach Mode Share

The reach mode share targets (Table 5-7 and Table 5-8) builds on the moderate mode share target and aims to provide a state that represents the maximum achievable outcome. The considerations for this state include:

- Active and public transport usage is maximised by advocating for these modes to students and parents.
- The majority of students residing within 800m of a bus stop who qualify for free transport services, as per the SSTS, utilise the service.
- An increase in students cycling that reside within the 1,600 – 1,900m catchment of the school.

The reach mode share targets provide a comparable target to that of the Rouse Hill High School benchmark school.

Table 5-7: Target (reach) Mode Share Target for Scenario 1 and Scenario 2B

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
Walking	%	90%	80%	70%	45%	2%	0%	**8%**
	no. of students	16	27	21	18	5	0	87
Bicycle and other micro-mobility	%	5%	15%	20%	20%	22%	24%	**22%**
	no. of students	1	5	6	8	56	146	222
Public Transport	%	0%	0%	0%	18%	54%	55%	**49%**

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
	no. of students	0	0	0	7	137	341	486
Private Vehicle	%	5%	5%	10%	17%	22%	22%	**21%**
	no. of students	1	2	3	7	56	137	205

Table 5-8:Target (reach) Mode Share Target for Scenario 2A

Mode		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,400m	Over 2,400m	Total
Walking	%	90%	80%	70%	45%	2%	0%	**8%**
	no. of students	16	27	21	18	5	0	87
Bicycle and other micro-mobility	%	5%	15%	20%	20%	9%	10%	**11%**
	no. of students	1	5	6	8	23	62	105
Public Transport	%	0%	0%	0%	18%	55%	60%	**52%**
	no. of students	0	0	0	7	140	374	521
Private Vehicle	%	5%	5%	10%	17%	34%	30%	**29%**
	no. of students	1	2	3	7	87	187	286

5.1.5 Summary

A summary of the target mode shares is outlined below in Table 5-9, Table 5-10, and Table 5-11.

Table 5-9: Student Mode Share Target Summary for Scenario 1

Mode	Existing Baseline Mode share	Moderate Mode share Targets	Reach Mode share Targets
Walking	8%	8%	8%
Cycling	19%	20% (↑ 1%)	22% (↑ 3%)
Public Transport	27%	35% (↑ 8%)	49% (↑ 22%)
Private Vehicles	46%	37% (↓ 9%)	21% (↓ 25%)

Table 5-10: Student Mode Share Target Summary for Scenario 2A

Mode	Existing Baseline Mode share	Moderate Mode share Targets	Reach Mode share Targets
Walking	8%	8%	8%
Cycling	11%	10% (↓ 1%)	11%
Public Transport	35%	43% (↑ 8%)	52% (↑ 17%)
Private Vehicles	46%	38% (↓ 8%)	29% (↓ 17%)

Table 5-11: Student Mode Share Target Summary for Scenario 2B

Mode	Existing Baseline Mode share	Moderate Mode share Targets	Reach Mode share Targets
Walking	8%	8%	8%
Cycling	19%	20% (↑ 1%)	22% (↑ 3%)
Public Transport	27%	34% (↑ 7%)	49% (↑ 22%)
Private Vehicles	46%	38% (↓ 8%)	21% (↓ 25%)

5.2 Staff Mode Share

It is anticipated that the majority of staff members (90%) will use private vehicles as their primary mode of transportation to and from the school during both morning and afternoon peak periods. Staff residing in Jordan Springs East and Jordan Springs West are expected to walk or cycle to the school. The assumption is that 5% of the staff will opt for cycling, while 2% will choose to walk.

Since bus Route 783, which operates from Werrington to Penrith via Jordan Springs along Wianamatta Parkway, is currently the primary public transportation service in the vicinity of the school and surrounding areas, it is assumed that 3% of staff members residing along this route will use public transport for their commute to the school.

Table 5-12 shows the staff mode share target.

Table 5-12: Staff mode share target

Mode	Mode Share	Number of Staff
Walking	2%	2
Bicycle and other micro mobility	5%	4
Public transport	3%	2
Private vehicle	90%	72
Total	**100%**	**80**

6 Traffic Modelling

6.1 Existing network performance

The existing Jordan Springs development area road network is partially constructed, as described in report section 4.1. The result of this is the Jordan Springs East development area creates a cal-de-sac function in which there is no through vehicle movements as there are no through roads. This aligns with observations in Jordan Springs East of low vehicle volumes, made up solely of the local trips from the low-density residential housing, using the intersections of Armoury Road with Infantry Street and with Wianamatta Parkway.

The addition of vehicle trips associated with the school for each road layout scenario is described in the sections below.

6.2 Scenario 1 network performance

For Scenario 1, the full road network in Jordan Springs East is assumed to be in place. This means that additional vehicle through-movements are added to the network ie connecting to Ropes Crossing via Wianamatta Parkway etc ie refer to section 4.2.

The *Jordan Springs Central Precinct Stage 5 Traffic Impact Assessment (WSP, 2024)* considers the in-principle impact of the Stage 5 subdivision development and associated internal road layouts. The Traffic Impact Assessment presents an option for the New High School for Jordan Springs with 1,000 students. This Traffic Impact Assessment therefore presents performance results of the road network under the Scenario 1 road layout with inclusion of the new High School for Jordan Springs and the proposed through traffic connecting between Ropes Crossing etc.

The assumed trip generation adopted for the High School in the AM peak (7:45am to 8:45am) was 0.47 trips per students and the PM peak (5:00pm to 6:00pm – commuter peak period) trip generation rate was 0.27 trips per student. The AM period trip generation rate therefore aligns with the baseline mode share target of 46% (see report section 5.1.2).The implications of the baseline mode share being reflected in the model is that the results represent a conservative output, as the moderate and reach targets are to be pursued as described in section 5.1.3 and 5.1.4.

It should be noted that the PM peak aligns with the commuting peak, and will not align with the school pick-up period, which is likely to be somewhere between 2:30pm and 3:30pm.

Intersection performance was assessed at the following locations:

- Wianamatta Parkway / Armoury Road
- Wianamatta Parkway / Poynting Street
- Wianamatta Parkway/ Park Edge Road
- Infantry Street/ Armoury Road
- Infantry Street/ Park Edge Road.

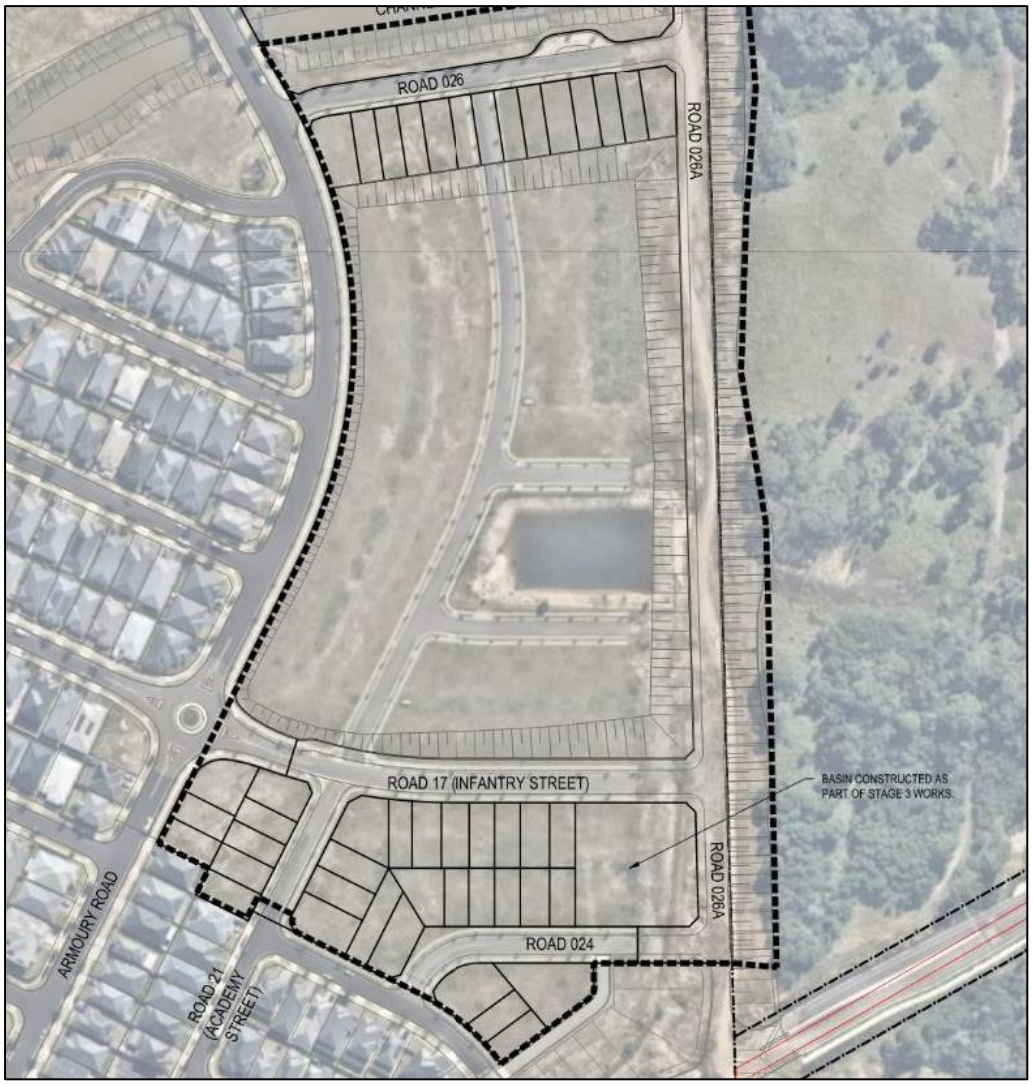

Figure 6-1:Jordan Springs Central Precinct internal road network

The results indicate a satisfactory intersection performance overall at LOS B or better for the whole network. Results of the intersection modelling are shown in Table 6-1 and Table 6-2.

Table 6-1: Infantry Street – network performance (intersections)

	Infantry Street/Armoury Road		Infantry Street/Park Edge Road	
	AM peak	PM peak	AM peak	PM peak
Option 2 - With JS high school				
Total Volume (veh)	839	751	604	621
Degree of Saturation	0.3	0.29	0.17	0.22
Average Delay (s)	6.2	4.4	1.9	0.5
Level of Service	A	A	NA	NA
95% Back of Queue	14.5	16.0	1.3	0.8

Table 6-2: Jordan Springs Central Development - network performance (intersections)

	Wianamatta Parkway/ Armoury Road		Wianamatta Parkway/Road 13		Wianamatta Parkway/Road 26A/Road 27	
	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak
Option 2 - With JS high school						
Total Volume (veh)	2,134	2,505	1,771	2,174	1,780	1,982
Degree of Saturation	0.867	0.946	0.845	0.834	0.809	0.742
Average Delay (s)	15.7	18.6	16.7	27.0	19.4	12.0
Level of Service	B	B	B	B	B	A
95% Back of Queue	134.8	215.5	64.5	112.7	115	62.1

Considering that the modelled PM peak experiences much higher traffic volumes than the period between 3pm and 4pm (assumed high school bell time), additional traffic modelling will not be required as the intersection performance is expected to perform similarly at Level of Service B or better. This is supported by the trip generation rate that was used which aligns with the baseline mode share adopted in this TIA.

6.3 Scenario 2 network performance

Within Scenario 2, two road layouts are investigated:

- Scenario 2A road layout does not permit vehicle movements from Wianamatta Parkway east and Park Edge Road is not available (see Figure 4-3). Kiss and drop vehicle movements associated with this road layout are shown in Figure 4-14.
- Scenario 2B road layout does permit vehicle movements from Wianamatta Parkway east and Park Edge Road is not available (see Figure 4-4). Kiss and drop vehicle movements associated with this road layout are shown in Figure 4-15.

Scenario 2A

In Scenario 2A, vehicle movements are removed from the eastern approach of the site, and relocated to the southern approach ie approaching the roundabout on Wianamatta Parkway from the south. In this road layout, through traffic from regional locations via Wianamatta Parkway is not permitted, meaning that background volumes using the intersection are reduced significantly. Therefore the impact of the kiss and drop related traffic on the intersection of Armoury Road and Wianamatta Parkway is expected to minimally alter the modelled level of service in Scenario 1 (Level of Service B). this is emphasised by the fact that the Scenario 1 modelling adopted a conservative car mode share.

The circulation pattern of vehicles at the intersection of Armoury Road and Infantry Street means that non-opposing roundabout movements are introduced ie left hand movement from the southern side of roundabout versus through movement from the northern side of the roundabout. The impact on Level of Service for this intersection is therefore likely to be minimal in comparison to the Scenario 1 results (Level of Service A).

Scenario 2B

In Scenario 2B, additional vehicle movements are added to the eastern approach of the intersection of Wianamatta Parkway and Armoury Road in the order of 110 vehicles. Background traffic on Wianamatta Parkway due to regional trips accessing Ropes Crossing etc are maintained in this layout, similar to Scenario 1. Therefore the addition of 110 vehicles to the roundabout intersection of Wianamatta Parkway and Armoury Road are expected to perform at a similar (Level of Service B) or slightly worse Level of Service in comparison to Scenario 1, especially considering that the modelled performance was conservative.

Similarly to Scenario 2A, the impact on the roundabout at the intersection of Armoury Road and Infantry Street is expected to be minimal due to the non-opposing traffic movements.

7 Mitigation Measures and Planned Works by Others

7.1 Mitigation Measures

Table 7-1: Mitigation Measures by School Infrastructure NSW (SINSW) for Scenario 1

Mitigation type	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Walking and cycling	Prior to commencement of school operation	Provide pedestrian entrances on Armoury Road (main entrance), Park Edge Road and Infantry Street.	To ensure accessibility and safety for students, teachers, staff and visitors by creating multiple, well-distributed entry points that facilitate safe movement into and out of the school.
Walking and cycling	Prior to commencement of school operation	Provide: • 1x wombat crossing on Armoury Road, south of school main entrance. • 1x wombat crossing on Infantry Street, east of pedestrian entrance. • 1x wombat crossing at the southern side of the intersection of Wianamatta Parkway and Armoury Street.	To enhance pedestrian and cyclist safety, particularly for students accessing the school site, by creating dedicated crossing points that reduce vehicle speeds and provide clear priority to pedestrians.
Walking and cycling	Prior to commencement of school operation	A secure covered bicycle storage area (with 100 racks) close to the school gates on Armoury Road. Provide spaces for future bicycle racks close to the pedestrian entry on Infantry Street.	To encourage and facilitate cycling to school by providing convenient, safe, and weather-protected parking for students' bicycles, thereby promoting sustainable transportation and reducing traffic congestion around the school.
Walking and cycling	Prior to commencement of school operation	Provide shared path with 3.5m width on Armoury Road outside of school site.	To provide safe access for students who are walking or riding.
Walking and cycling	Prior to commencement of school operation	Provide 2x end of trip facilities in the administrative building	To allow staff to ride to work.

Mitigation type	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Public Transport	Prior to commencement of school operation	Install a bus zone along Armoury Road (on the school side) with provision for three standard 12.5 m buses and/or coaches for excursions. Arrival of school buses to be staggered to manage bus demand during the peak hours. Bus zone area can be used for parking after the school hours. Bus zone length is approx. 60m.	To manage peak-hour bus demand, provide adequate space for school buses and excursion coaches, and optimise the use of road space by allowing parking outside of school hours.
Private Vehicle	Prior to commencement of school operation	Kiss and drop zones along the western side of Park Edge Road (16 spaces, 104m) and support unit Kiss and drop on the northern side of Infantry Street (4 spaces, 32m).	To provide designated areas for parents to safely and efficiently drop off and pick up their children during peak school hours, reducing traffic congestion and improving safety around the school.
Private Vehicle	Prior to commencement of school operation	Provide staff parking within the school site and entry and exit from Park Edge Road. No parking is provided for students.	To reduce demands for on-street parking.
Waste collection	During operations	All waste collection is to occur outside of school operational hours ie between 7pm and 7am.	To allow for waste vehicle maneuvering within the staff car parking area.
Behaviour change	During operations	Implement the School Transport Plan programs outlined in Table 11-8, prior to the relevant stage of operation.	To achieve the target mode shares set out in section 5.

Table 7-2: Mitigation Measures by School Infrastructure NSW (SINSW) for Scenario 2A and Scenario 2B

Mitigation type	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Walking and cycling	Prior to commencement of school operation	Provide pedestrian entrance on Armoury Road.	To ensure accessibility for students, teachers, staff, and visitors to facilitate safe movement into and out of the school.
Walking and cycling	Prior to commencement of school operation	Provide: • 1x wombat crossing on Armoury Road, west of school main entrance. • 1x wombat crossing at the southern side of the intersection of Wianamatta Parkway and Armoury Street.	To enhance pedestrian and cyclist safety, particularly for students accessing the school site, by creating dedicated crossing points that reduce vehicle speeds and provide clear priority to pedestrians.
Walking and cycling	Prior to commencement of school operation	Provide a secure covered bicycle storage area (with 100 racks) close to the school gates on Armoury Road.	To encourage and facilitate cycling to school by providing convenient, safe, and weather-protected parking for students' bicycles, thereby promoting sustainable transportation, and reducing traffic congestion around the school.
Walking and cycling	Prior to commencement of school operation	Provide shared path with 3.5m width on Armoury Road outside of school site.	To provide safe access for students who are walking or riding.
Public Transport	Prior to commencement of school operation	**Scenario 2A** Extend the existing bus zone along Armoury Road (south of Infantry Street) with provision for four standard 12.5 m buses and/or coaches for excursions. Arrival of school buses to be staggered to manage bus demand during the peak hours. Bus zone area can be used for parking after the school hours. Bus zone length is 80m. Eight school special bus services are needed to accommodate the student demand.	To manage traffic congestion by expanding bus capacity, staggering arrivals, and optimizing space usage around the school during peak hours and after school.

Mitigation type	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
		Scenario 2B Extend the existing bus zone along Armoury Road (on the southern side of school) with provision for three standard 12.5 m buses and/or coaches for excursions. Arrival of school buses to be staggered to manage bus demand during the peak hours. Bus zone area can be used for parking after the school hours. Bus zone length is 60m. Six school special bus services are needed to accommodate the student demand.	
Private Vehicle	Prior to commencement of school operation	Provision of: • Pick-up and drop-off zone along the eastern side of Armoury Road (17 spaces, 119m). • Support pick-up and drop-off zone located within the staff car parking area.	To provide designated areas for parents to safely and efficiently drop off and pick up their children during peak school hours, reducing traffic congestion and improving safety around the school.
Private Vehicle	Prior to commencement of school operation	Provide staff parking within the school site and entry and exit from Armoury Road. No parking is provided for students.	To reduce demands for on-street parking.
Private Vehicle	Prior to Scenario 2 Stage 3	The Park Edge Road car park is to be non-operational until access via Park Edge Road is provided ie Scenario 2 Stage 3.	No safe access will be provided to the Park Edge Road car park until Scenario 2 Stage 3.
Waste Collection	During operations	All waste collection is to occur outside of school operational hours ie between 7pm and 7am.	To allow for waste vehicle maneuvering within the staff car parking area.
Behaviour Change	During operations	Implement the School Transport Plan programs outlined in Table 11-8.	To achieve the target mode shares set out in section 5.

7.2 Planned Works by Others

The works planned by others for Scenario 1 only are shown in Table 7-3. No additional works are planned by others for Scenario 2A and 2B.

Table 7-3: Scenario 1 – Planned Works by Others

ID	Mode	Type	Planned works
1	Car	Road network	A third party is to construct Park Edge Road. A 2.5m footpath is to be provided on the eastern side of the road.
2	Car	Road network	A third party is to widen Infantry Street, between Armoury Road and Park Edge Road. A shared path of width 2.5m is to be provided on the northern side of Infantry Street in this location.
3	Active transport	Crossing	A third party is to construct a pedestrian refuge on the western side of the intersection of Park Edge Road and Infantry Street, as shown in Figure 4-8.

8 Transport Working Group Outcomes

The purpose of forming a Transport Working Group (TWG) is to create a forum for key stakeholders to discuss the impacts of a new school or school upgrade on the existing transport network. The TWG provides an opportunity for stakeholders to collaboratively review transport impacts, develop and discuss mode share targets, future upgrades, and initiatives to minimise and mitigate the impacts and agree on a way forward for the school design.

The TWG for the New High School for Jordan Springs included representatives from:

- Penrith City Council (PCC)
- Transport for NSW (TfNSW)
- Department of Education/ Schools Infrastructure NSW (SINSW).

Two online meetings were held on 26th June 2024 and 28th August 2024. Key topics discussed during the TWG meetings, and the agreed outcomes are shown in Table 8-1. The minutes of the meetings are attached as **Appendix A**.

A key aspect of the TWG was to discuss matters concerning student safety for pedestrian/ cycling movements made around the school. Key issues that were highlighted included, a lack of suitable crossing opportunities, vehicles speeding above the reduced speed limit during school zone operations as well as any potential conflicts between road vehicles and vulnerable persons. The extent to which these points were discussed and captured and detailed in Table 8-1 below.

A third TWG meeting was held on 27 November 2024 to close out all items previously discussed. There were no further comments or concerns raised by Transport for NSW or Penrith City Council representatives.

Table 8-1: Key Discussions TWG

Discussion	Outcome
Walking and Cycling safety: Wombat Crossing	
• The proposed raised wombat pedestrian crossing on Wianamatta Parkway, west of its intersection with Armoury Road has the safety concern due to Wianamatta Parkway's status as a collector road and bus route, which could lead to potential traffic conflicts. Two potential locations for the crossing were proposed: - Option A: Approximately 20 meters from the roundabout - Option B: Approximately 90 meters from the roundabout Option A has been preferred, suggesting that the wombat crossing be positioned near the bus zone and closer to the roundabout on Wianamatta Parkway.	• Decision has been made to install a wombat crossing on Armoury Road, south of its intersection with Wianamatta Parkway. The existing pedestrian refuge island on the western side of Wianamatta Parkway will be removed to discourage students from crossing Wianamatta Parkway, thereby enhancing safety. It is expected that students traveling from the western part of Jordan Springs will use the new crossing on the southern section of Armoury Road and proceed to use the proposed signalized intersection at Pointing Street.
Walking and Cycling safety: Shared Path	

Discussion	Outcome
• The shortest path analysis for active transport routes highlighted a concern for students travelling from Ropes Crossing. The current design shows a future footpath on western side of the Park Edge Road. It was recommended to implement a shared path on Park Edge Road to connect with the shared path on Wianamatta Parkway to Infantry Street.	• PCC to provide the comments to Lendlease (developer) to implement a shared path on Park Edge Road till Infantry Street. • TfNSW and the Council have indicated and agreed that all active transport facilities should be implemented before the school's opening to establish sustainable travel behaviours from Day 1 • SINSW stated that a travel coordinator will be appointed for the first year after the school's opening to conduct a travel survey each term and identify issues related to transport.
Road and parking requirements	
• Roads leading to the school site i.e., Park Edge Road and Lasetter Street required to review to accommodate bus traffic in anticipation of future bus routes proposed. • Parking for teachers and staff has been proposed to provide on the school site. Visitors and student to park in the surrounding streets.	• TfNSW and PCC to review proposed bus routes, staff parking and road cross sections.
Proposed Changes to Bus Routes	
• The existing bus route 780, which operates from Ropes Crossing, does not serve the school site. In contrast, the current bus route 783 offers limited service to the school site. Assessment has been required for potential extensions of Routes 783 and 780 (two public bus services) to the new bus stop on Armoury Road, north of Infantry Street, during before and after school peak hours. However, TfNSW notes that due to ongoing changes in the area, confirming alterations to specific routes (780 and 783) is challenging at present. • Dedicated school bus services have been proposed (equivalent to six school buses) to connect Jordan Springs, Ropes Crossing, and the high school to meet the public transport moderate mode share targets set for the school. TfNSW has indicated that, due to current constraints in acquiring new buses and drivers, a maximum of two buses could be provided for the school. • The future bus route plan of TfNSW that currently excludes Park Edge Street and does not incorporate the eastern area. As Park Edge Road and the area east of Wianamatta Parkway are not yet constructed, confirming bus route changes to new routes is not feasible at this time. However, TSA has confirmed that Park Edge Road is designed to accommodate buses. • The proposed bus zone with shelter along Armoury Road, on the school side, capable of accommodating three standard 12.5-meter buses required to be evaluated by local Council. The approximate length of the bus zone should be 60 meters.	• TfNSW to review analysis and bus network in early 2026. Stantec to ensure pavement extends from the curb to the footpath. • TfNSW to note and Stantec to coordinate with TfNSW in early 2026 • Stantec to update the analysis once approved design received from authorities.

9 Evaluation of environmental impacts

It is determined through this Traffic Impact Assessment that the Project will not have a significant effect on the environment for all road layout scenarios (ie 1, 2A and 2B).

10 Construction Traffic Management Plan Mitigation Measures

10.1 Introduction

The opinions in the Chapter are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. This chapter relates solely to the specific project for which Stantec was retained and the stated purpose for which the Plan was prepared.

10.1.1 Purpose of CTMP

The following Construction Traffic Management Plan (CTMP) is a high level and strategic plan that must integrate and coordinate with the wider Penrith City CTMP. The next sections outline specific inputs for the school site, however must be viewed in conjunction with any other the traffic management strategy for the Jordan Spring Precinct.

10.1.1.1 Objectives

The primary objectives of the CTMP include the following:

- To identify the need for adequate and compliant traffic management requirements within the vicinity of the school
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction vehicles
- Establishment of a safe pedestrian environment around the site
- To inform the Contractor and set the ground rules for managing construction traffic associated with the site.

The overall principles of traffic management during the construction activity include:

- Provide an appropriate and convenient environment for pedestrians
- Minimise the impact on pedestrian movements
- Maintain appropriate capacity for pedestrians at all times on footpaths around the site
- Maintain appropriate public transport access
- Maintain current levels of parking within the precinct
- Maintain permanent access to/ from the hospital accesses for emergency services
- Restrict construction vehicle movements to designated routes to/ from the site
- Manage and control construction vehicle activity around the site
- Minimise impacts to general traffic in the vicinity of the site.

10.2 Construction Traffic Management Plan

10.2.1 Description of construction activities

The proposed works include the construction of a high school to cater for 1,000 students. The proposed upgrades to the site will include a built form, including:

- Flexible learning areas
- Administration and staff facilities
- Multi-purpose hall and covered outdoor learning area
- Outdoor play areas at ground level
- Landscaped outdoor learning areas
- Car parking.

The indicative program for the works is summarised in Table 10-1.

Table 10-1 Construction stages for new High School for Jordan Springs

Stage	Description	Start date	Duration
REF	Construction	2025	TBC

10.2.2 Work hours

It is anticipated that work associated with the development will generally be carried out between the following hours of construction:

- Monday to Friday (other than public holidays) (7:00am to 5:00pm)
- Saturday (8:00am to 1:00pm)
- Sunday/ public holiday (no work).

In addition to regular work hours, there will be occasions where specific out-of-hours work is required. The contractor will be responsible for instructing and controlling all sub-contractors regarding the hours of work. Any work conducted outside of the approved construction hours would be subject to specific prior approval from Council.

10.2.3 Construction worker parking and traffic

For both scenarios, construction worker vehicles can be accommodated on site itself because of its size. In case of no availability of school site, alternative vacant land located on the south of Lasetter Street adjacent to the school site and South of Infantry Street can be used. Construction workers should be guided where appropriate parking is available around the site on induction. Workers will also be encouraged to use public transport services like buses. During site induction, workers would be informed of the existing bus networks servicing the site. Appropriate arrangements should be made for any equipment/ tool storage and drop-off requirements.

Any construction worker arrivals and departures by vehicle would typically be outside of road network peak hours and as such, are unlikely to impact the surrounding road network. The Principal Contractor would be required to outline a schedule of worker start and finish times and demonstrate that this does not have any significant impact on local traffic activity. It is also expected that the

Principal Contractor would be required to implement measures to reduce worker car travel, such as shuttle buses from key transport nodes or designated remote pick-up points as necessary.

10.2.4 Construction traffic volumes

The site will have various types of construction vehicles accessing the site. The largest standard construction vehicles regularly accessing the site would include 12.5-metre heavy rigid vehicles. It is likely that a limited number of larger special-purpose vehicles (e.g. floats for plant and equipment, large mobile cranes) will be required, however, these would be subject to a separate oversize and over-mass application process, with an analysis of the specific vehicle access and manoeuvring requirements.

10.2.5 Site access

It is proposed that construction vehicles would enter and exit the site via the routes Figure 10-1.

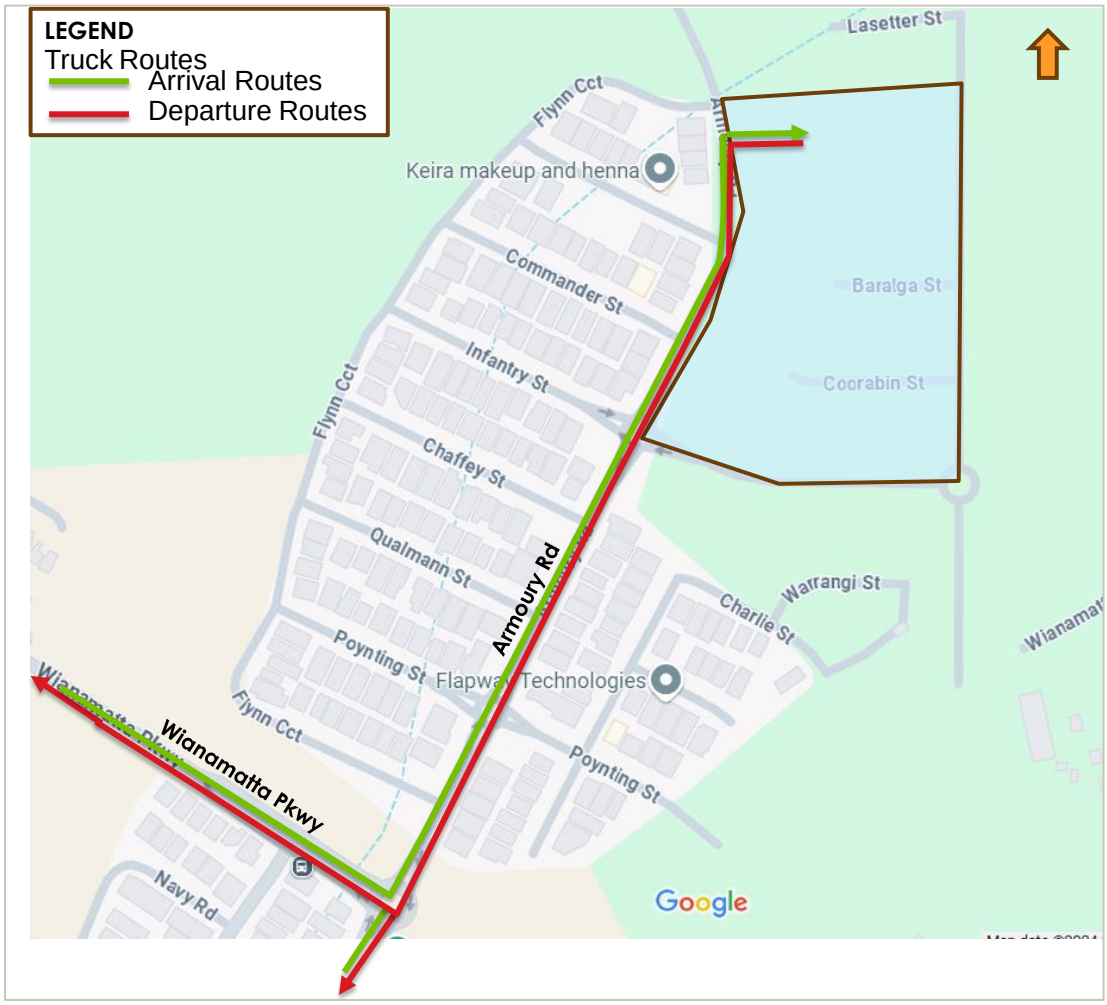

Figure 10-1: Proposed Site Access

As part of the detailed CTMP, a traffic guidance scheme (formerly a traffic control plan) will be prepared in accordance with the principles of the Transport for NSW Traffic Control at Work Sites

manual. The traffic guidance scheme (TGS) would primarily show where “Trucks” signs would be located at specific locations (such as uncontrolled intersections) along the approved truck routes to warn other road users of the increase in construction vehicle movements.

10.2.6 On-street work zones

No works zones are proposed at this stage for both scenarios, however, may change subject to the proposed methodology of the appointed contractor and the comprehensive CTMP to be developed.

10.2.7 Construction vehicle routes

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, all construction vehicles will be restricted to the State and Regional Road network where practicable. It is expected that vehicles will approach the site from Armoury Road to reach the relevant access point for both scenarios. All vehicles are to enter and exit the site in a forward direction.

Construction vehicles should be advised to follow the routes shown on Figure 10-1. No queueing or marshalling of construction vehicles will be permitted on public roads.

10.2.8 Traffic guidance scheme

Detailed information for work site operations is contained in the Traffic Control at Work Sites manual version 6.0 (Transport for NSW, 2020). The control of traffic at work sites must be undertaken with reference to WorkCover requirements and any other Workplace Health and Safety manuals.

The Principal Contractor will be required to provide TGSs for the proposed works which will generally consider the following:

- Construction vehicle activity, including the loading/ unloading of trucks to be conducted within the work site.
- Pedestrians and all passing vehicles will maintain priority.
- A clear definition of the work site boundary is to be provided by the erection of site fencing and/ or A and B Class hoardings around the site boundaries.
- All construction vehicle activity will be minimised during peak periods, where possible.

10.2.9 Pedestrian and cyclist management

During the construction period, pedestrian and cyclist movements are to be maintained as much as possible. Where works require the closure of an existing pedestrian route, a suitable alternative is to be provided. Class A hoarding/ ATF fencing would be provided between pedestrian paths and any work site. Where overhead works are occurring, B-Class hoarding will be provided where pedestrian movement is being maintained.

It is expected that cyclist or pedestrian routes would be impacted by the proposed construction works. The existing shared path on the school side of Armoury Road will be impacted during construction periods, it is expected that the traffic controllers manage foot traffic during the arrival and departure of heavy vehicles.

Where pedestrian or cyclist routes are affected, accredited traffic controllers will be provided to manage the impact and minimise conflict between vehicles and pedestrians or cyclists.

10.2.10 Public transport

Given the infrequent heavy vehicle movements associated with the construction works, the overall impact on existing public transport services on Armoury Road is expected to be negligible. This includes the impact on the identified local area bus services.

10.2.11 Traffic movements in adjoining areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

10.3 Mitigation measures

The following table outlines mitigation measures to potential issues during construction activities (Table 10-2).

Table 10-2: Mitigation measures to potential issues during construction activities

Issue	Mitigation measure
Construction worker parking accommodated on site	Construction workers should be guided where appropriate parking is available on and around the site on induction, and also be encouraged to use public transport services mainly buses. During site induction, workers would be informed of the existing bus networks servicing the site. Appropriate arrangements should be made for any equipment/ tool storage and drop-off requirements.
Construction workers arriving by vehicle	The Principal Contractor would be required to outline a schedule of worker start and finish times and demonstrate that this does not have any significant impact on local traffic activity. It is also expected that the Principal Contractor would be required to implement measures to reduce worker car travel, such as shuttle buses from key transport nodes or designated remote pick-up points as necessary. All arrivals and departures will be limited to construction site operational hours described in section 10.2.2.
Addition of construction related vehicles to the local transport network	Construction vehicles are advised to follow specified routes (see Figure 9 1). The Principal Contractor will be required to provide TGSs for the proposed works. All construction vehicle movements will be limited to site operational hours described in section 10.2.2.
Obstructions to pedestrian and cyclist movements	Where pedestrian or cyclist routes are affected, accredited traffic controllers will be provided to manage the impact and minimise conflict between vehicles and pedestrians or cyclists.
Final CTMP	Prepare a final Construction Traffic Management Plan prior to the commencement of the relevant stage of construction that is generally consistent with the measures outlined in this preliminary Plan (ie Section 10 of this Traffic Impact Assessment).

11 School Transport Plan

11.1 Introduction

This School Transport Plan has been prepared in conjunction with the NSW Department of Education, TSA Riley, Penrith Council, Transport for NSW, and with reference to the NSW Department of Education Transport Assessment and School Transport Plan Report Guidelines.

This School Transport Plan has been informed by the preceding transport assessment, which comprised of a spatial analysis of current and future student enrolments and the geographic distribution of students in relation to the school, site investigations, and the setting of base case, moderate and reach travel mode share targets.

While the targets for active and sustainable travel are aspirational, there is an opportunity to shift and shape active and sustainable travel behaviours through the development of the new High School for Jordan Springs. To this end, the Plan has been developed with focused and specific actions to increase the rate of use in active travel and public transport options to travel to school. The measures included in the School Transport Plan include:

- Sustainable transport encouragement programs to increase the rate of walking and cycling to school.
- Efforts to increase registration into the School Student Transport Scheme (SSTS), which is used by school bus operators and Transport for NSW to measure the demand for a dedicated school bus.
- Communications program to convey positive road safety messaging and expected standards of behaviour for a kiss and drop.

11.2 Transport goals

This section of the report utilises the understanding of external transport conditions for the new High School identified through the preceding transport assessment and defines the vision and objectives for the school to be achieved through the School Transport Plan. The vision and objectives support the adoption of the ideal transport scenario for which the school should aspire to achieve. This is to be supported through the implementation of measures proposed as part of the Transport Assessment, by following the communications plan to promote the use of active and public transport and through the continuous monitoring of performance in support of the travel coordinator role.

As identified in the report guidelines, the overall vision for the School Transport Plan is to deliver efficient, safe, and sustainable access to school during the planning, construction and operation of school assets. To support this statement, the objectives that support the vision are:

- To proactively identify and meet school travel demand safely, efficiently and sustainably, and to deliver transport infrastructure to meet school travel demand.
- To maximise the use of active and public transport modes to reduce car traffic before and after school day start and end times.
- To decongest the road networks around schools.
- To increase active travel to and from school in a safe transport environment.
- To enhance connectedness to the neighbourhood and community through safe travel to and from school.

- To empower children and young people to be safe road users now and into the future.
- To meet the DoE's duty of care of students which extends beyond the school boundary, if there is a foreseeable risk of injury or harm to students as they travel to and from school.
- To "reduce the administrative burden" on a school principal (managing kiss-and-drop behaviour, parent and community complaints, calling bus companies etc) by reducing the time and effort for schools/ principals to coordinate and liaise with council, TfNSW to create a safe, connected transport environment around their school.

11.2.1 Mode share targets

A summary of the mode share targets for each road layout scenario are shown in Table 11-1, Table 11-2 and Table 11-3.

Table 11-1: Baseline mode share

	Road layout Scenario		
Mode	**Permanent Scenario (1)**	**Interim Scenario (2A)**	**Interim Scenario (2B)**
Walking	8%	8%	8%
Bicycle/ scooter	19%	19%	19%
Public transport	27%	27%	27%
Private vehicle	46%	46%	46%
Total	**100%**	**100%**	**100%**

Table 11-2: Moderate mode share

	Road layout Scenario		
Mode	**Permanent Scenario (1)**	**Interim Scenario (2A)**	**Interim Scenario (2B)**
Walking	8%	8%	8%
Bicycle/ scooter	20%	11%	20%
Public transport	35%	43%	34%
Private vehicle	37%	38%	38%
Total	100%	100%	100%

Table 11-3: Reach mode share

	Road layout Scenario		
Mode	**Permanent Scenario (1)**	**Interim Scenario (2A)**	**Interim Scenario (2B)**
Walking	8%	8%	8%
Bicycle/ scooter	22%	11%	22%
Public transport	49%	52%	49%
Private vehicle	21%	29%	21%
Total	100%	100%	100%

11.3 Policies and procedures

To enable the success of the School Transport Plan, specific communication expectations can be applied that consider increasing active and public transport use to school and reducing the rates of driving alone and kiss-and-drop to school.

The following list indicates a range of transport-based policies that support the implementation of infrastructure improvements at a given school.

- Prioritise multi-modal transport access
- Staggered start/end times
- Multiple kiss-and-drop locations
- Remote kiss-and-drop
- Parking allocation and location
- Parking management system operations
- School access policies for access via a pedestrian gate, bicycle cage, driveways and parking at arrival/end times, during oosh, school day and outside hours
- Share our space

The transport-related items proposed as part of the site design and TIA recommendations include:

- Provision of appropriate pedestrian crossings
- Encouragement of carpooling amongst students
- Adjustment of bus services
- Provision of on-site bicycle and micromobility parking.

The policies that are to be considered at the new High School for Jordan Springs, which support the infrastructure and service improvements agreed upon in the transport assessment are discussed in further detail below.

11.4 School transport operations

As part of the NSW Department of Education's code of conduct, all personnel have a legal obligation to keep students safe and support their well-being. Student safety is most important around school bell times when the chances of physical harm resulting from accidents are increased. The appropriate management of school transport operations should be considered a high priority for the school, which falls under their duty of care. The schools duty of care is supported by a four-step process, as shown in Figure 11-1.

Figure 11-1: Managing a Schools Duty of Care and Road Safety Process

To support the Duty of Care Process shown in Figure 11-1, Table 11-4 details the aspects under the four headers that need to be considered by the school in managing risk and improving the overall safety and well-being of students. Further information in support of this can be found on the NSW Department of Education website.

Table 11-4: Managing a School's Duty of Care and Road Safety

Managing a School's Duty of Care and Road Safety
Educate
Which student groups need to be educated about road safety concerns? • Individual or small groups of students? • Year/stage group of students? • The whole school? How will road safety education be made relevant? This can be achieved through: • Localised, school-specific teaching and learning activities • Identified outcomes • A strengths' based approach
Inform
Which parents/carers need informing about the road safety concern? The parents of: • Individual or small groups of students • A year/stage group of students • All students? How will it be communicated? • Social media (Facebook, school apps, Twitter, Instagram, TikTok) • Newsletters • School website • Enrolment pack information, • Orientation day • School noticeboard sign, email • Meetings • Take-home activity/note

Managing a School's Duty of Care and Road Safety
Notify

If emergency services assistance is required, call them before calling the WHS Incident Report and Support Hotline.

All WHS related incidents and injuries, including a near miss, must be reported in line with Incident Notification & Response Procedures. This includes any non-workplace incident that impacts students, staff and the school community, e.g. travel to/from school

Situations that have the potential to cause injury to an employee, student, member of the community, volunteer, or contractor should also be reported to the Incident Report and Support Hotline. This includes non-workplace situations, e.g. travel to/from school

It is valuable to report all concerns to:

- Highlight that a risk exists
- Contribute to managing your duty of care
- Get the concern noted so appropriate support and corrective actions can be initiated to prevent further incidents
- Build a data profile that Health and Safety, and School Infrastructure NSW Directorates can use to bring about change for your school.

Who needs notifying if student/s are unsafe road users or the infrastructure is unsupportive of a safe school site or school zone:

1. Parents/carers
2. Internally: school staff, P & C, school WHS Committee, WHS Advisor, WHS Incident Hotline, Assets Management Unit, local Director Educational Leadership, local Road Safety Education Officer
3. Externally: Council Road Safety Officer or general manager, Transport for NSW, police highway patrol/liaison officer, council parking rangers, bus operator

Notifications can either be made by phone call, face-to-face informal discussion/formal meeting, email, formal letters, Snap send solve app

Document

Who will document, record and track the actions?

- Class teachers, SASS staff, and school executives will be responsible for reporting these actions.
- The school principal will be responsible for managing these actions

11.4.1 Day to day school operations

Table 11-5 details transport site access that is active during day-to-day school operations. For this, appropriate measures should be considered to support student safety.

Table 11-5: Day-to-Day School Operations

	***On-site*:**	***Adjacent-to-site***	***Management measures***
Site entries, pedestrian and vehicle	N	Y	Y
Kiss-and-drop including Assisted School Transport Program	N	Y	Y
Buses	N	Y	N
Parking	Y	N	Y
Deliveries and service vehicles	Y	N	Y

The following measures have been taken from the NSW Government website for managing school road safety. These measures will need to be implemented to appropriately manage student safety regarding the day-to-day school operations site access:

- Regularly review the school site entry and exit risk management plan.
- Use various communication strategies to inform parents and carers about safe road user behaviours on site and in the school zone.
- Update casual teachers about student arrival and departure procedures.
- Assist students entering and exiting the school safely.
- Where applicable, liaising with the School Crossing Supervisor and/or the Assisted School Travel Program providers on effective management.
- Use various communication strategies to inform parents and carers about safe road user behaviours onsite and in school zones
- Update casual teachers about student arrival and departure procedures
- Assist vulnerable students to allow them to enter and exit the school safely
- Label, number or colour code access points for easier reference and recognition by students, families and staff, eg. pedestrian entry and exits, kiss and drop area, bus travellers, cyclists, etc.
- Spread the arrival and departure of students and families across different pick-up and drop-off accesses to reduce congestion in any one spot, either on or off-site
- Use signage, social media, school website, note home or assemblies to inform students, families, staff and visitors of changes to entry and exit or pick up and drop off arrangements such as construction on site or in the school zone; hazards (fallen trees, power lines, floods); delays to public transport and school buses.

Running in parallel to these measures, parents should be encouraged to:

- Walk their children to school, where possible.
- If driving is unavoidable, park away from the school and walk with their children, or drop off their independent children to walk the rest of the way to increase physical and mental health and help reduce traffic congestion around the school site.
- Remind staff to maintain their own safety to reduce their risk of trips, slips and falls when supervising students at kiss and drop zones. For example:
    - Remain behind the school fence or well away from the edge of the footpath.
    - Do not stand on the road between vehicles (to avoid crush injury).
    - Wear a high-visibility jacket when in or near to the traffic environment
    - Ask drivers to wait until the child is properly buckled up, if the child can do it themselves, before driving off.
    - Remind teachers and other school staff they are not permitted to operate as a School Crossing Supervisor and control traffic. They can assist students cross the road when it is safe to cross.

11.4.2 Event transport operations

An Out-of-Hours Event Management Plan will be required to support the opening of facilities to the community should the new Jordan Springs High School wish to do so.

11.4.3 School Student Transport Scheme (SSTS)

The School Student Transport Scheme provides eligible school students with free or subsidised travel on public transport to and from school and is dependent on where students reside and the availability of public transport. If a student doesn't qualify for free school travel, they may be able to buy a School Term Bus Pass for discounted travel on buses between home and school. Further information on this scheme can be found on the TfNSW website.

11.4.4 Ride to School Day

National Ride2School Day is an annual event that encourages students to ride into school. It provides students with the opportunity to trial cycling into school, which can further increase uptake in the future. Further measures can be provided during Ride2School day such as free breakfasts and bike tuning to encourage a greater number of participants.

11.5 Communication plan

The communications plan provides a range of initiatives and actions, including some to be completed and implemented before the opening of the new school buildings, that will help to achieve the mode share targets and reduce the overall car travel associated with the school. These actions need to be reviewed regularly, at least annually, to review actions and refine them as the school community needs may change over time.

11.5.1 Channels

All communications should be promoted through the appropriate channels used by the school, to help target the widest audience possible. The recommended channels have been provided in Table 11-6.

11.5.2 Messages

The following communications plan has been co-designed and developed across a number of School Transport Plans. The communications plan provides a guide for some of the messages that the School Principal and current staff involved with sustainable transport initiatives may communicate to promote the uptake of walking, cycling and public transport to school.

Table 11-6: Communications plan

What	When	Which Channel	To Whom
Share the vision and targets for the number of students targeted to walk, ride or take public transport to school.	Before school opens and periodically throughout the year	Social Media School website Email newsletters	Staff, parents, and students
Share the walking, cycling, train and bus transport options to travel to the schools, drawing from the TAG.	On the school website at all times	Social Media School website Email newsletters	Staff, parents, and students

What	When	Which Channel	To Whom
Promote and encourage students to use discounted or free travel by signing up to the SSTS to encourage use of public transport as a sustainable travel option.	Regular periodic updates, including at the start of each term	Social Media Newsletters	Students and parents
Promote and encourage participation in National Ride2School Day.	Prior to the annual event in March.	Social Media	Staff, parents, and students
Promote Walk Safely to School Day. Materials available at www.walk.com.au	Prior to the annual event in May	Social Media	Staff, students and parents (targeted at primary school)
Communicate the expected standards of behaviour for Kiss n Drop and Road Safety	Regularly, multiple times each term	Social Media	Students and parents
Conduct discussions with Road Safety officers and School Principals about the access and operations at the Kiss and Drop zone.	Before school opens and periodically throughout the year	School website School Noticeboards	Students and parents
Communicate links to NSW Department of Education Road Safety Website, which is typically included in all public-school websites.	Regularly, multiple times each term	School website Social Media	Students and parents
Communicate road safety education YouTube video links including: Safety – Link School Zone – Link School Crossings – Link	Regularly, multiple times each term	School website Social Media	Students and parents
Communicate external resources supplied by groups such as Bicycle NSW to help reduce barriers to cycling	Regularly, multiple times each term	School website Social Media	Students and parents
Communicate regarding the availability of vouchers which can be applied for through the NSW Government Active Kids Program. Which includes vouchers for sports and recreation purposes up to the value of $50 per child.	Before school opens and periodically throughout the year	Online school communication channels (e.g. Facebook page, newsletters)	Staff, parents, and students

11.5.3 Travel Access Guide

A Travel Access Guide (TAG) provides suggested safe and accessible options for travelling to school. The guide provides advice on safe access initiatives, site access, public transport use, bicycle parking and much more. A TAG will need to be produced as part of the school reopening to provide students with information relevant to:

- Ped scooter parking
- Bicycle parking
- Carpool parking
- Parking management
- End-of-trip facilities (staff)
- Flexible and reconfigurable spaces
- Provision of bubblers and taps to encourage water drinking and less waste
- Kiss-and-drop.

The TAG should also provide supportive measures and messages that can be communicated to parents and carers which help encourage changes in attitude towards forms of transport mode choice. The following are examples of messages which can be used to achieve this:

- Get involved in using active and public transport to school with your student
- Help your student practice the active and public transport they are learning (try for part trip or whole trip)
- Speak to staff and government transport stakeholders about travel to school programs and infrastructure
- Use active and public transport from school drop-off to work
- Report transport issues as the concern arises (eg Send Snap Solve app, Council@ email, phone number)
- Improved quality of life (increased healthy lifestyles, well-being, physical activity)
    - Life-long learning opportunities
    - Transport as a learning and resilience-building opportunity
    - Additional learning opportunities
    - Educational opportunities for parents and the community
    - Joint/community use for transport programs.

11.6 Data collection and monitoring

For the School Transport Plan to be effective it must be reviewed on a regular basis. It is important to ensure that the School Transport Plan is meeting its objectives and having the intended impact on car use and transport choices for the school's staff and students. The School Transport Plan should be reviewed on an annual basis with staff and student travel surveys. The School Transport Plan should be updated and changed to reflect changing circumstances and local context/ facilities.

11.6.1 Data Collection

To monitor the School Transport Plan, a travel questionnaire should be conducted for all staff and students. An initial survey should be used to provide the baseline for travel planning programs. Subsequent survey results should be reported annually by the schools and used to inform funding allocation for successful programs/ removal of unsuccessful programs. Based on the review, the School Transport Plan should then be updated as noted previously.

11.6.2 Ongoing Feedback Framework

The School Principal or staff will manage the ongoing feedback framework to continuously improve the oversight of sustainable travel outcomes for the School in concert with relevant school stakeholders. This may include activities such as:

- Reviewing the adequacy of bicycle racks required periodically.
- Observing road safety activity outside the school grounds to identify any improvements required.
- Observing how pathways are being used, or whether pathway design is inadequate or in the wrong location (for example if 'goat tracks' are worn through particular areas, should a request to Council be put in to improve the pathway in future works programs.

- Observing the operation of any future school buses and the drop-off/pick-up facilities for any potential safety concerns. Make recommendations up to Transport for NSW, Penrith Council, and the bus operator accordingly.
- Liaising with the Penrith Council Road Safety Officer concerning the management of parking behaviours around the school.
- Responding to any other feedback from Transport for NSW, Penrith Council, Police, Residents, Teachers, Parents or Students that might arise from time to time.

11.6.3 Reporting Findings

Findings are to be reported back to the working groups detailed in the following chapter. Findings are to be presented by linking back to the communications plan and governance arrangements discussed. The reporting process will provide the results of the monitoring process with SINSW, Penrith Council, and TfNSW to demonstrate the effectiveness of the School Transport Plan approach in order to expand, revise, strengthen or improve the use of this tool across the portfolio transport programs (report to SINSW, TfNSW). Points of feedback can address issues such as:

- Adopting or revising programs to increase sustainable transport use (school)
- Installing additional infrastructure to accommodate sustainable transport demand (school, council and/ or state government)
- Web tools or apps that enable the school community to report transport issues / missing links (Send Snap Solve or Social PinPoint)

11.7 Governance framework

To capitalise on the potential of the School Transport Plan, ongoing engagement with transport stakeholders is required. On-going engagement with internal and external stakeholder groups will be required with the groups detailed in Table 11-7.

Table 11-7: Internal and External Stakeholders

<table>
<tr><th>Internal Working Group</th><th colspan="3">External Working Group</th></tr>
<tr><td rowspan="3">A working group with school leadership, Road Safety Education Officer, students, teachers, parents/carers and neighbours.</td><td colspan="3">A working group with school leadership, state government agencies and local government</td></tr>
<tr><td>TfNSW</td><td>Penrith Council</td><td>SINSW / DET/ Other</td></tr>
<tr><td>• Active Travel to Schools
• Bus Service Planning
• Bus contract manager
• Assisted School Transport Program
• Subsidised School Transport Scheme</td><td>• Manager, Transport Planning
• Active Travel
• Road Safety Officer
• LGA Travel Coordinator
• Sustainability</td><td>• Travel Coordinator
• Principal
• Road Safety Education Officer
• AMU representative
• Private bus operator</td></tr>
</table>

11.7.1 Travel Coordinator

A Travel Coordinator is required for the duration of construction and the first year of post-occupancy, whilst transport programs must be implemented to achieve travel behaviour change. The role will

initially be funded by the project during delivery. After year 1, subsequent arrangements for the carriage of this role will need to be arranged between SINSW, DET and TfNSW.

The Department of Education and the School Principal will progress the appointment of a Travel Coordinator for the new High School. This includes determining the role and procuring a contractor, or other to promote, coordinate and monitor the implementation of the sustainable travel initiatives. The role of the Travel Coordinator will be enforced until one year after the completion of the upgrade works.

The Travel Coordinator will be responsible for implementing the actions shown in Table 11-8. The actions provide the means to encourage sustainable transport options at the school and will need to be reviewed regularly, at least annually, to review the actions and refine them as the school community needs may change over time.

Table 11-8: Transport Encouragement Programs

Strategy	Action	Target Audience	Timeframe	Responsibility
Enabling Active Travel Through Resourcing				
Walk Safely to School Day	Promote and take part in 'Walk Safely to School Day'. Further information: www.walk.com.au	Staff and primary school students	Annually	Travel Coordinator
School Student Transport Scheme (SSTS)	Promote this scheme among the school community. Applications to the SSTS, for subsidised school term bus pass (students living beyond 2.3 km walking distance from the school or in years K to 2), are used as an indicator for demand for dedicated school buses by Transport for NSW. Therefore, an uplift in applications to the scheme is needed to support the continued provision of school buses to help achieve the school travel targets.	Parents and students (both schools)	Annually	Travel Coordinator
Reduce Car Travel				
Communications Plan	Discuss and refine the Communications Plans and key messages with the School Principals and TfNSW to encourage a higher usage of non-private vehicle modes from staff, parents and students.	Staff, parents and students (both schools)	In 2024 and then annually	Travel Coordinator
Staff car-pooling	Establish and organise a car-pooling scheme that enables staff to share their car trip to the school with more than one person in the car, reducing cars travelling to the school.	All staff (both schools)	In 2024 and ongoing	Travel Coordinator
Parking management plan	Liaise with the Principal and Penrith Council to develop policies to manage the demand for staff parking using the on-site spaces and on-street parking in the surrounding streets if required.	All staff (both schools)	In 2024 and ongoing	Travel Coordinator and Penrith Council
Additional Actions				

Strategy	Action	Target Audience	Timeframe	Responsibility
Inspire the school community towards using active and public transport to travel to school	Communicate to Staff and Students key messages to promote sustainable travel including targets and actions outlined in the School Transport Plan in the Communications Plan.	Staff, students and parents (both schools)	Per communication plan	Travel Coordinator to prepare messaging for the School Principals to send out
Travel Access Guide (TAG)	Distribute a travel access guide and publish on the school website and other school communication mediums so that it is easy to understand the options to travel to school using active modes or public transport.	Staff, students and parents (both schools)	Per communication plan	Travel Coordinator to prepare for the School Principals to send out
Other incentives for staff to use active and public transport	Propose and discuss the following initiatives with the School Principal to consider and implement: • Pre-loaded Opal cards during orientation. • School-subsidised panniers or backpacks for staff committed to active travel. • Salary sacrifice options for purchases of bikes or other micro-mobility options. • Time in staff meetings to share tips and support for staff wanting to start cycling. • Wayfinding at the school with directions to the End of Trip facilities. • A role for a school sustainable travel champion that focuses on modelling the desired behaviours and positive communication around active and public transport.	Staff at both schools	Start in Term1 following occupancy and continue throughout the school year	Travel Coordinator
Travel Surveys for staff and students	• Use travel surveys to be issued to staff and students to obtain workforce data analysis (including staff residential postcodes) to identify changes to the actual staff/student travel origin and destination patterns, to inform strategies that help to reduce car parking demand for staff and students to get to and from the site. • Collaborate with the School Principal on the method and timing to circulate the travel surveys to staff and students as appropriate.	Staff, students and parents (both schools)	Start in Term1 following occupancy and continue throughout the school year	Travel Coordinator

11.7.2 External Transport Working Group

The external Transport Working Group is to follow on from the Transport Working Group formed in the development of this Plan. The Department of Education and the Travel Coordinator should identify and advance relationships with these stakeholders including Council, bus operators and TfNSW – to govern transport issues and opportunities during the implementation of the Travel Plan. If this group already exists due to a previous SINSW project, amend the Terms of Reference to include this school project. Feedback during the external working group should highlight:

- If students are spilling out onto the road, new footpaths or pedestrian crossings required
- If road safety issues are raised by parents or staff, a Road Safety audit may be required to address issues
- If buses are turning away students because the buses are full, ie new bus services are required.

Document arrangements for this group are to include:

- Meeting regularly ie monthly / quarterly.
- Confirm annual travel demand changes (kindergarten starting, and year 6 graduating).
- Report transport usage.
- Inform updates to the School Transport Plan.
- Seek funding for reported missing links or operational issues.
- Collaborative response to key issues.

Appendix A Transport Working Group Minutes

TWG Meeting Minutes

Project:	Jordan Springs High School
Stantec Project No:	300305098
Meeting held on:	Wednesday, 26th June, at 11:00am, online
Next meeting:	TBC, online

Present

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Discussions	Action
1. Introduction	
• Jordan Springs High School is an election commitment project, addressing the growing demand for secondary education in the Jordan Springs and Ropes Crossing communities. This new educational facility will provide residents with convenient access to quality education. School is expected to be operational in Year 2027. • The proposed school location is on Armoury Road in Jordan Springs East. The school will be designed to accommodate 1,000 students when opening in 2027. • RTA has been developed to provide information on the project, identify key infrastructure requirements, codesign and assist in gathering feedback from key stakeholders for input during the planning and development stages.	• All to note
2. Slide Pack	
• The presentation slides prepared by the transport consultant encompass the following key points: an overview of the school's location, transport provisions outlined in the master plan, major access roads leading to the school, analysis to support recommendations, and on-site requirements specific to Jordan Springs High School. • Slide pack is distributed to the key stakeholders for their consideration and feedback.	• Attached
3. Walking and Cycling Safety (Penrith City Council)	
• Stantec stated the study area is well developed (Wianamatta Parkway connection to Ropes Crossing) and consist of various walking and cycling infrastructure to accommodate active demand needs from the school. • Shared pathways are located or will be located along Wianamatta Parkway to Jordan Springs and Ropes Crossing, providing opportunities for students to use bikes as a preferred mode of transport. • Stantec suggested to complete the local bicycle network in Jordan Springs East including connections through Wianamatta Regional Park before opening of the school. • As the shared path is located on the southern side of Wianamatta Parkway, students will cross this road to get to the school. To enhance pedestrian and cyclist safety for students, it was suggested to provide a raised pedestrian crossing (a wombat crossing) on Wianamatta Parkway, west of the intersection with Armoury Road. • Penrith City Council (PCC) has identified challenges in implementing a wombat crossing due to its status as a collector road and bus route, which could pose potential traffic conflicts. SI stated that the location of the crossing is indicative and can be finalised in the later stages of planning process.	Stantec to consider crossing of students of Wianamatta Parkway. Stantec to consider safe access provision around the school.

Discussions	Action
• TfNSW pointed out that two signalised intersections will be provided on Wianamatta Parkway. Stantec to review measures to encourage students to use these intersections for crossing the Parkway. • Speed counts on the surrounding roads have not yet been conducted. PCC advised that once Wianamatta Parkway is complete, its function as a collector road will be realised. • Penrith Council noted that the safe access around the school needs to be further reviewed: the Stantec plans include zebras in questionable locations as well as missing wombat crossings.	
4. Bike Parking provision (Penrith City Council)	
• Both PCC and TfNSW noted that sufficient provision of on-site bicycle parking is to be provided for the number of students using bicycles as a mode of transportation. Stantec stated that bicycle parking facilities are included in the master plan within the school site.	All to note
5. Road and parking requirements (Penrith City Council)	
• Stantec presented road cross sections leading to the school site and requested stakeholders to review Park Edge Road and Lasetter Street to accommodate bus traffic in anticipation of future bus routes proposed. • Stantec propose to provide parking for teachers and staff on the school site. Visitors and student to park in the surrounding streets. TfNSW and PCC agreed.	TfNSW and PCC to review proposed bus routes and road cross sections.
6. Proposed Changes to Bus Routes (TfNSW)	
• TfNSW to consider extension to Route 783 and 780 (2 public buses) with bus stop in Armoury Road north of Infantry Street, before and after school hours. • TfNSW to consider school special bus services (equivalent to 6 school buses) between Jordan Springs, Ropes Crossing and the high school. • Council to consider the proposed bus zone with shelter along Armoury Road (on the school side) three standard 12.5 m buses. Bus zone length is Approx 60m.	Stantec to send presentation slides with analysis to Council and TfNSW for their consideration.
7. Plan to Improve Active Transport Use	
• TfNSW and the Council have indicated and agreed that all active transport facilities should be implemented before the school's opening to establish sustainable travel behaviours from Day 1 • SINSW stated that a travel coordinator will be appointed for the first year after the school's opening to conduct a travel survey each term and identify issues related to transport.	SINSW to note.

Discussions	Action
8. Next Steps	
• Stantec to distribute TWG slides to key stakeholders for their consideration and feedback • The TWG meetings will continue on a monthly or quarterly basis, as required, to discuss issues and resolve common interests to SINSW, TfNSW and PCC. It will allow for collaboration. Separate formal approval pathways will be undertaken.	TWG slides are distributed to stakeholders on 3rd July 2024 No further action required

TWG Meeting Minutes

Project:	Jordan Springs High School
Stantec Project No:	300305098
Meeting held on:	Wednesday, 28th August, at 11:00am, online
Next meeting:	TBC, online

Present

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Apologies

Contact Name	Company	Email
Annelise Beljaars	SINSW	Annelise.Beljaars@det.nsw.edu.au

Discussions	Action
1. Introduction	
The purpose of the meeting was to present the updated Rapid Transport Assessment (RTA) for Jordan Springs High School following feedback from the initial Transport Working Group (TWG) held on 26 June 2024. The RTA has been developed to provide comprehensive information about the project, identify crucial infrastructure requirements, facilitate collaborative design, and gather input from key stakeholders during the planning and development phases.	• All to note
2. Slide Pack	
• The presentation slides prepared by the transport consultant encompass the following key points: an overview of the school's indicative intake area, cross sections of roads around the school, analysis of to support active transport and public transport recommendations, proposed bus network changes and on-site requirements (bus zone, K&D, visitor parking and crossings) specific to Jordan Springs High School. • Slide pack is distributed to the key stakeholders for their consideration and feedback.	• Attached
3. Walking and Cycling (Penrith City Council)	
• Stantec has recommended the installation of a raised wombat pedestrian crossing, on Wianamatta Parkway west of its intersection with Armoury Road. This proposal aims to enhance safety for pedestrians and cyclists, particularly students traveling from Jordan Springs West. Two potential locations were suggested: Option A, approximately 20 meters from the roundabout, and Option B, approximately 90 meters from the roundabout. Penrith City Council (PCC) expressed a preference for Option A, suggesting that the wombat crossing be positioned near the bus zone and closer to the roundabout on Wianamatta Parkway. Transport for New South Wales (TfNSW) advised that PCC should ensure the bus stop does not impede visibility of the wombat crossing. TSA confirmed that this aspect would be addressed during the detailed design phase.	• Stantec to include Option A only in the RTA report. • Project team to note.
• With Option A crossing selected, PCC to review the existing refuge island crossing at the Wianamatta Parkway/Armoury Road roundabout.	• PCC to review existing refuge island crossings at the Wianamatta Parkway/Armoury Road roundabout
• Stantec presented an analysis of the shortest path and active transport routes, highlighting a concern for students travelling from Ropes Crossing. The current design shows a future footpath on western side of the Park Edge Road. It was recommended to implement a shared path on Park Edge Road to connect with the shared path on Wianamatta Parkway. PCC confirmed that,	• PCC to provide the comments to Lendlease (developer) to implement a shared path on Park Edge Road.

Discussions	Action
as Park Edge Road is still in the design stage by Lendlease, it would be feasible to incorporate a shared path instead of a footpath.	
4. Road requirements (Penrith City Council)	
• Stantec presented Lendlease Stage 5 DA road cross-section designs for the routes leading to the school site. Based on the swept path analysis, Stantec stated that the proposed roads and intersection can accommodate the proposed bus movements to the school. In response to this request, Transport for New South Wales (TfNSW) recommended revisiting this matter in early 2026. PCC queried the opportunity to provide an intendent kiss and ride like Jordan Springs PS. However, this is not required, as Park Edge Road is currently wide enough to accommodate parking lanes & two-way traffic flow.	• TfNSW and Stantec to review analysis and bus network in early 2026 PCC to ensure pavement extends to the curb where the drop off and pick up is - full width
5. Bus Routes Extensions (TfNSW)	
• TfNSW to evaluate potential extensions to Route 783 and 780 (2 public buses) to the new bus stop on Armoury Road north of Infantry Street, for school peak hours. However, TfNSW note that the area is undergoing constant changes, making it challenging to confirm changes to specific routes (for 780 and 783) at this stage. Transport for New South Wales (TfNSW) to revisit this opportunity in early 2026.	• TfNSW to review analysis and bus network in early 2026. Stantec to ensure pavement extends from the curb to the footpath.
• TfNSW has shared a future bus route plan that currently excludes Park Edge Street and does not incorporate the eastern area. As Park Edge Road and east of Wianamatta Parkway is not yet constructed, confirming bus route changes to new routes is not possible at this time. However, TSA has confirmed that Park Edge Road is designed to accommodate buses.	• TfNSW to review analysis and bus network in early 2026
• Stantec stated that the analysis recommends providing 6 school bus services to the meet the public transport moderate mode share targets set for the school. TfNSW has indicated that maximum two buses could be provided for the school considering the current constraints of acquiring new buses and drivers.	• TfNSW to note and Stantec to coordinate with TfNSW in early 2026
• TfNSW stated that Wianamatta Parkway/Park Edge Road intersection is confirmed as signalised intersection and Wianamatta Parkway/Poynting Street intersection could be a roundabout. Wianamatta Parkway/Poynting street intersection may not be approved due to the close proximity to neighbouring intersections.	• Stantec to update the analysis once approved design received from authorities
6. Next Steps	
• The TWG meetings will continue on a monthly or quarterly basis, as required, to discuss issues and resolve common interests to SINSW, TfNSW and PCC.	• Stantec to note

Discussions	Action
It will allow for collaboration. Separate formal approval pathways will be undertaken.	

Meeting Notes

Transport Working Group #3

Project:	New School for Jordan Springs Traffic Impact Assessment
Date/Time:	27 November 2024 / 11:00AM
Location:	Location
Next Meeting:	TBC

Present

Kamoru Adetunmbi	Department of Education
Sonia Mallos	Department of Education
Elise Harrison	TSA Riley
Mathew Romanous	TSA Riley
Emily Doyle	TSA Riley
Volker Buhl	Stantec
Elizabeth Muscat	Stantec
Michelle Carter	Transport for NSW
Rosie Selby	Transport for NSW
Mukhwinder Athwal	Transport for NSW
Pahee Rathan	Transport for NSW
Suzan Mehmet	Penrith City Council
Dennis Anthonysamy	Penrith City Council

Distribution

All attendees and apologies.

Minutes

#	Item:	Action:
1	Stantec presented the site access and transport infrastructure arrangements for three road layout scenarios: • Solution 1 – preferred • Solution 2A – interim • Solution 2B – interim.	-
2	Stantec clarified the use of the support kiss and drop zone is only to be used by students/ drivers who require assistance.	-
3	Stantec clarified the location of the wombat crossing on the southern side of Wianamatta Parkway at the intersection with Armoury Road, as well as the route connecting to the school from the south-west.	-

#	Item:	Action:
	This was in response to the Penrith City Council traffic meeting held on 26 September 2024, in which council stated that the wombat crossing should not be located on Wianamatta parkway itself due to it being a collector road with high traffic volumes anticipated.	
4	Council and Transport for NSW supported the proposed Solution 1 as the preferred option and solution 2A and 2B interim options and did not have any further comments.	-
5	No other queries or concerns raised by Council or Transport for NSW.	-

Meeting adjourned time – 11:20am.

Yours sincerely,

Stantec Australia Pty Ltd

Elizabeth Muscat
Senior Transport Planner
Phone: +61 2 626 39477
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Stantec

Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.