New High School for Leppington and Denham Court

Transport Impact Assessment

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1 Introduction

This Traffic Impact Assessment (TIA) has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the new high school for Leppington and Denham Court (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The proposed activity is for the construction of a new high school located at 128-134 Rickard Road, Leppington, NSW, 2179 (the site).

The New High School for Leppington and Denham Court is henceforth referred to as Leppington HS.

The purpose of the Transport Assessment is to:

- Review the school's future travel demand to inform transport baseline and potential achievement to set the school transport vision and objectives
- Consider and address users of all ages and abilities
- Establish transport modes to promote during construction and post-occupancy
- Identify transport infrastructure and operations required to meet school travel demand
- Inform the site design, master plan, Construction Traffic and Pedestrian Management Plan (CTPMP) and School Travel Plan (STP)
- Address road safety concerns
- Comply with the DoE Transport Planning Advisory Note.

The School Transport Plan is undertaken separately throughout the school's operation and guides the day-to-day transport of the school after project construction.

Whilst the opening year for the high school is proposed to be 2027, this report uses travel zone projections for 2029 as the closest year to opening to analyse student distribution across the intake catchment ie where students are forecast to be living. This approach is consistent with all forecast and growth projections made in previous reporting for the upgrade of the Leppington Public School (Leppington PS) and the Leppington Education Campus.

1.1 Site description

The site is known as 128-134 Rickard Road, Leppington, NSW, 2179 and is legally described as Lots A and B in Deposited Plan 411211. The site is located on the eastern side of Rickard Road and is approximately 4.1ha in area. The site is located immediately south of the existing Leppington Public School at 144 Rickard Road and is approximately 700m south of Leppington Train Station.

Figure 1-1 below provides an aerial image of the site.

Figure 1-1: Aerial image of site (source: NearMap)

The northern portion of the site is currently used for residential purposes. The southern portion of the site is used for agricultural purposes, with multiple greenhouses and an existing pond on the property.

1.2 Proposed Activity Description

The proposed activity is for a new high school for Leppington and Denham Court. The new high school will accommodate up to 1,000 students across 3 new buildings that will comprise 48 permanent teaching spaces (PTS), 3 support teaching spaces (STS), 19 specialist labs/workshops/kitchens and a hall. Buildings 1, 2 and 3 will be clustered along the southern boundary and the hall will be located in south-east corner of the site. The activity also includes the construction of a sports field in the centre of the site and 3 x multipurpose courts along the northern boundary. The proposed scope of works is illustrated in Figure 1-2 below.

Figure 1-2: New High School for Leppington and Denham Court (source: djrd)

1.3 Consultation

Stakeholder engagement was conducted during the Transport Working Group meeting and the Planning meeting conducted with Camden Council to discuss the external works such as the Rickard Road changes to allow for the school to be developed. The key outcomes of these meetings are outlined in Table 1-1. Minutes for the Transport Working Group are provided in **Appendix A**.

Table 1-1: TWG Meeting Details

Stakeholder Meeting	Meeting Date	Key Items Discussed	Outcome
Transport Working Group #1	11 September 2024	Swept path assessment for any roads that would provide access for buses needs to be added in the report	Camden Valley Way, Bringelly Road, Ingleburn Road and Rickard Road are already functioning bus routes and no upgrades to intersections are required to accommodate proposed bus routes. Swept path for buses using the intersection of Rickard Road and Ingleburn Road are shown in **Figure 7-3**.
		Crossing options to be investigated on Rickard Road for students who are being dropped off/picked up on/from western side of Rickard Road to cross safely	A pedestrian crossing is not provided on Rickard Road because pick-up and drop-off on the western side of Rickard Road is discouraged due to safety concerns. All pick-up an drop-off is to occur within the kiss and drop zone located within the internal road.
		Investigate future bus services provided by TfNSW Bus Planning team and have discussion with them to determine how the buses can service the Education Campus	Transport for NSW, with assistance from DoE, is to continue to optimise school bus route planning to suit the needs of the high school students in line with the north and south areas identified as suitable for providing bus services shown in report section **Error! Reference source not found.**.
		Modelling for kiss and drop queueing in to be included	The length of the kiss and drop zone is calculated using a first principles approach, in which the demand and processing capacity of the kerb-side space is modelled at a high level. The reach target mode share for private vehicles (31%) is used to determine the required length. Other assumptions that are adopted to provide rationale for minimising queuing on Rickard Road during usage of the kiss and drop zone are outlined in Error! Reference source not found..
Proposed road works meeting with Camden Council	19 December 2024	It was noted by Council that there should be localised road widening on the high school side of Rickard Rd to allow for the road median to be installed	This has been accommodated in the site plan as per **Figure 1-2**.
		Council noted that a children's crossing is proposed for the public school (location to be confirmed)	This does not provide an opportunity for high school students to cross Rickard Road as the school crossing is only operational with a school crossing supervisor.

1.4 Future context

The Draft Leppington Town Centre Development Control Plan (Draft LTC DCP) as per the Draft Leppington Town Centre Zoning Review identifies the desired vision for the transport network within Leppington. The Zoning Review was supported by a masterplan which was published in September 2022 and updated in 2023.

The Draft LTC DCP proposes Rickard Road as a 37.6m wide transit boulevard, with two travel lanes in each direction. No driveways will be permitted on Rickard Road and bus stops are proposed to be in-lane, removing the need for buses to weave back into the traffic lane.

A new signalised intersection is proposed on Rickard Road with the future "South Road", located directly south of the proposed Leppington HS site. The future proposed road network also includes a road directly east of the site and north of the existing Leppington Public School.

As the timing of the new road network is not yet confirmed, the school proposes to provide a temporary access along the southern boundary of the site to allow the provision of a kiss and drop and access to the proposed staff car parking.

Upon provision of the South Road, the school's kiss and drop function and pedestrian entrance is proposed to be relocated here, and the area of the temporary access will be converted to landscape area. The proposal for Rickard Road as a transit boulevard with no driveways means that the construction of South Road and/or East Road must occur prior to the duplication of Rickard Road.

The intersection of Rickard Road and Ingleburn Road is also proposed to be signalised in alignment with the duplication of Rickard Road.

As the Leppington Town Centre is developed as per the Draft LTC DCP, the school's student intake area will progressively shift closer towards the site, reducing the reliance on the kiss and drop zone and enabling walking and cycling as a much more viable mode of transport.

1.4.1 Additional high school capacity in South West Growth Area

Austral High School is planned to be in operation in 2029. This new school is proposed within the suburb of Austral, north of Bringelly Road.

The Austral High School intake catchment is proposed to cover the portion of the Leppington HS intake catchment north of Bringelly Road. This means that new year 7 students who are living north of Bringelly Road will, once Austral High School opens, need to attend that school. A small portion of students in year 8 and above who live in the Austral High School intake area are also expected to choose changing schools because of the closer distance to travel to that school. The effects of Austral High School coming online are examined in report Section 3.2.2.

1.4.2 Previous Leppington Town Centre modelling

The Leppington Town Centre and Precincts Traffic Modelling Study was completed by Arup consultants for Camden Council in 2022. The model outputs cover the Leppington Town Centre and

the Leppington Precinct. Outputs included an assessment of the full build out of development by 2041.

As the Arup study considers a fully developed town centre and road network, it is not considered relevant to inform the traffic conditions and road network impacts in 2027 when Leppington HS opens.

Additional traffic modelling for key intersections relevant to this Ref has been undertaken and explained in report Section 4.

1.5 Traffic Impact Assessment approach

As described in Section 1.4, the Leppington Town Centre is planned to significantly change the density and infrastructure provision of the area surrounding the Leppington HS site. Currently however, there are a number of issues in the transport network that contribute to safety and congestion concerns:

- Rickard Road's current state as a rural road with one travel lane per direction
- High existing background traffic volumes, approaching network capacity in peak periods
- Priority controlled intersection at the intersection of Ingleburn Road/ Rickard Road
- Leppington Public School, located directly north of the proposed Leppington HS site with limited road frontage on Rickard Road that places constraints on pick up and drop off activities for the public school.

This contributes to a highly constrained environment prior to the development of the town centre and subsequent upgrades to the road network. This TIA has been structured to respond to this complexity.

The following enrolment scenarios are examined in this TIA:

- **Student enrolment scenario 1** – opening year, 2027. In this scenario, up to 270 students are expected to be enrolled.
- **Student enrolment scenario 2** – up to 500 students enrolled. An enrolment capacity is set at 500 students in order to mitigate excessive congestion in the road network prior to road network upgrades planned for the Leppington Town Centre. Austral High School is operational.
- **Student enrolment scenario 3** – greater than 500 students enrolled. A Modification to the REF will be required at the point in time when enrolment exceeds 500 students to assess the conditions of the road network, the provision of additional transport infrastructure and the status of development within the Leppington Town Centre.

1.6 School Transport Plan annual review

An annual review of the School Transport Plan must be undertaken to do the following:

- Review student enrolment numbers and distribution across the intake catchment
- Identify whether and how Austral HS affects the Leppington HS enrolment and intake catchment, and the effects on the mode share and requirements for buses
- Assessment of the changing need for remote PUDO locations and suitable locations
- Whether additional road network capacity is provided by the development of the Leppington Town Centre

- Whether additional bike parking is required for students.

The final review of the School Transport Plan is to be undertaken once the maximum capacity of the school has been reached.

2 Existing conditions assessment

2.1 Walking and cycling

The existing pedestrian infrastructure surrounding the proposed Leppington HS location is limited to a footpath located on the eastern side of Rickard Road (school's frontage). The footpath connects north to the adjacent Leppington Public School, Leppington Station and commuter car park (approximately 400 metres) and extends south to the intersection of Rickard Road and Neptune Road, providing access to Leppington Village and a series of new residential developments (approximately 1,000 metres). Currently, no pedestrian crossings of Rickard Road exist at the school's frontage.

There are no identified pedestrian desire lines due to the limited land use and low residential density within the vicinity of the school. Excluding Leppington Station and Leppington Village, land use around the school is primarily large lot residential as well as land purposed for agricultural activities.

Similarly, no dedicated cycling infrastructure is connected to the school site as of September 2024. Cycling is limited to the pedestrian footpath on Rickard Road.

Existing active transport infrastructure is shown on Figure 2-1.

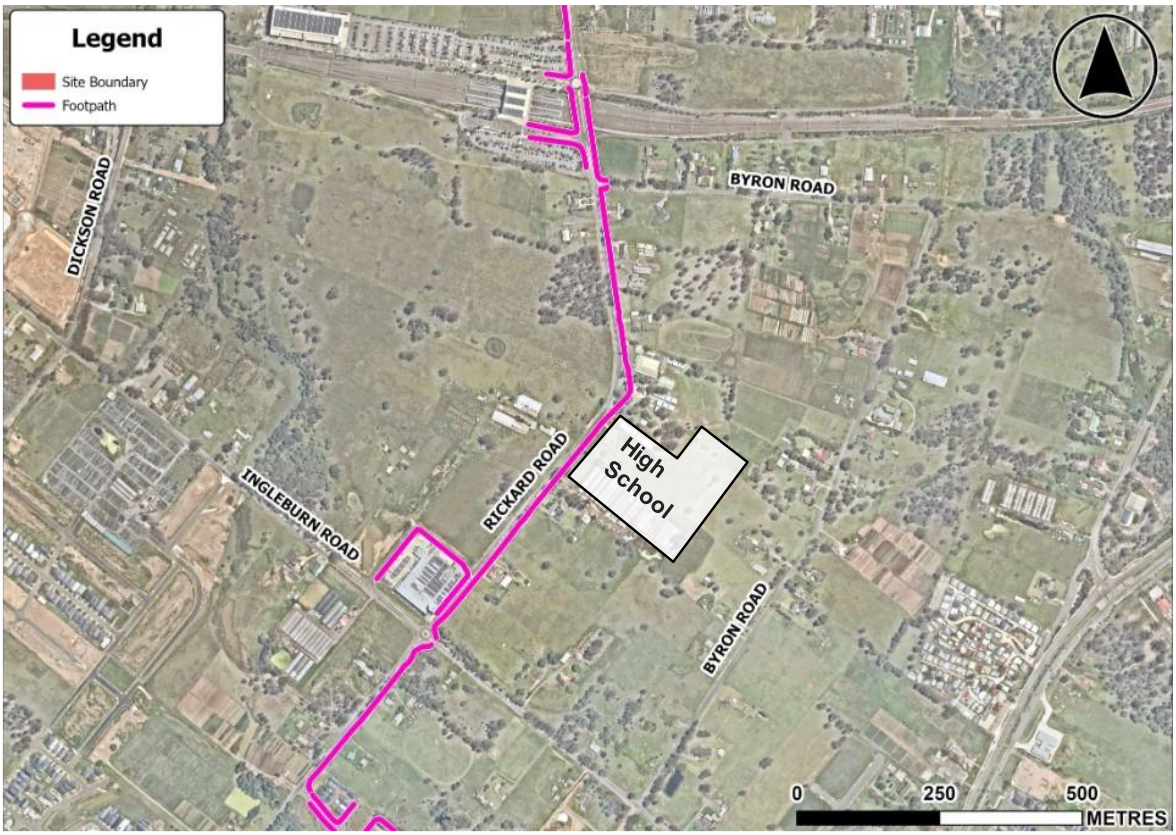


Figure 2-1: Existing walking infrastructure

2.2 Public and school bus network

Currently, the existing Leppington PS is serviced by a total of four public bus services and two school bus services during the AM period and a total of three public bus services and four school bus services during the PM period.

It is assumed that the proposed high school will be serviced by the same public and school bus services which cater to the existing public school. It is noted that the existing service timings are planned on the basis of public school bell-times, so by 2027, they will have to be reviewed (and potentially adjusted) based on the proposed high school bell times.

The existing AM and PM public and school bus services that cater to the Leppington PS and will cater to the proposed Leppington HS are shown in Table 2-1 and Table 2-2 respectively.

The morning and afternoon bus routes are shown in Figure 2-2 and Figure 2-3.

Table 2-1: AM bus routes and schedules

Route ID	Route Name	Arrival Time
1020	Catherine Field to Carnes Hill Marketplace	8:50 AM
1025	Leppington (South) to Leppington PS and Carnes Hill	8:45 AM
841	Narellan to Leppington via Gregory Hills	8:49 AM
856	Bringelly to Liverpool	7:22 AM
858	Oran Park to Town Centre to Leppington	8:43 AM
861	Denham Court to Carnes Hill via Austral	8:28 AM

Table 2-2: PM bus routes and schedules

Route ID	Route Name	Arrival Time
2028	John Edmonson HS to Leppington	3:20 PM
2032	Good Shepherd PS to Bringelly & Kelvin Park	3:26 PM
2044	Leppington PS to Ridge Square & Narellan	3:22 PM
2051	John Edmondson HS to Rossmore & Leppington	3:10 PM (ARR) 3:18 PM (DEP)
841	Leppington to Narellan via Gregory Hills	3:06 PM 3:25 PM
858	Leppington to Oran Park Town Centre	3:30 PM

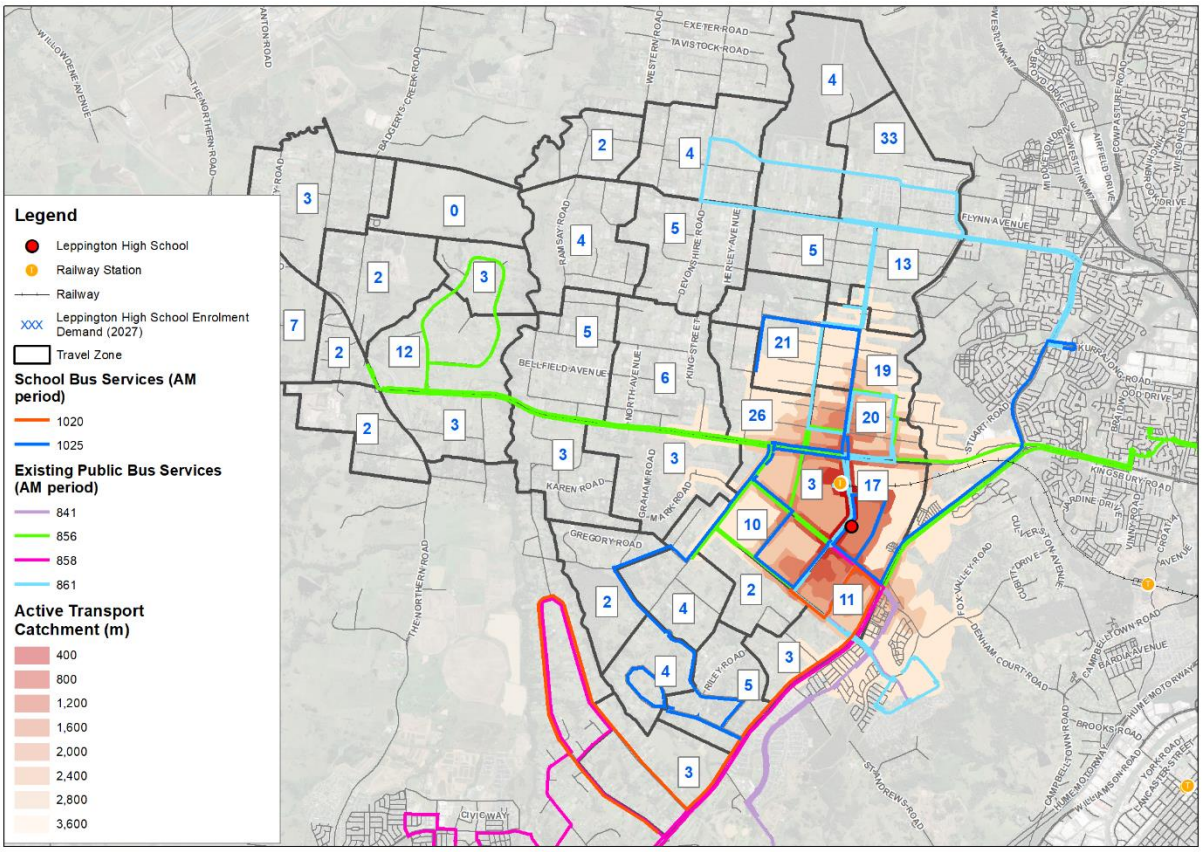


Figure 2-2: Existing bus network (AM)

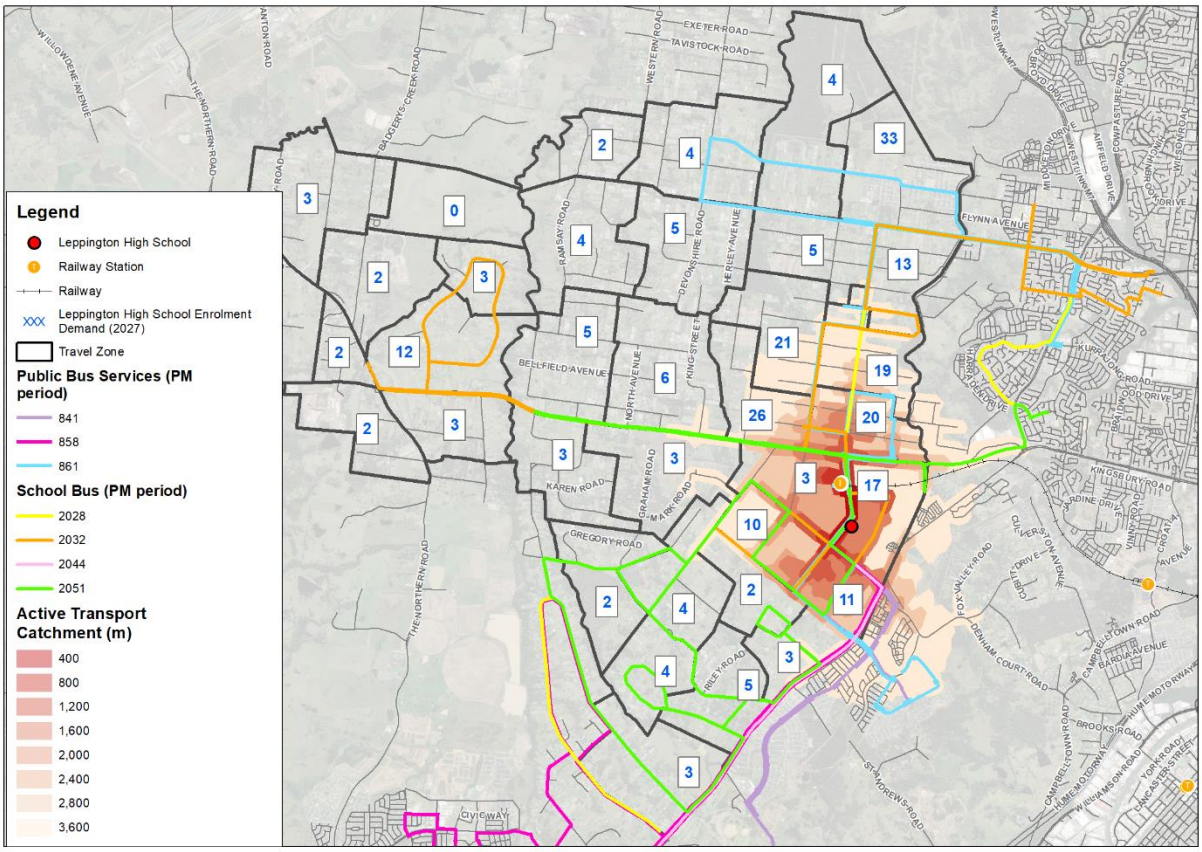


Figure 2-3: Existing bus network (PM)

2.3 Road network

Leppington HS has one frontage on Rickard Road. Rickard Road is currently a local, rural road bounded by Bringelly Road to the north and Heath Road to the south. Rickard Road has one lane in each direction.

3 Intake area and student population

3.1 Staged enrolment approach

As described in Section 1.4, the Leppington Town Centre area is set to evolve over the next 20 years into a high residential density and transit oriented hub. The planning process for Leppington HS therefore needs to be adaptive to changing conditions of student population within the intake catchment and provision of transport infrastructure upgrades. It is not realistic to plan for a high school with a student population of 1,000 students operating in 2027, given the low density of the intake catchment and existing high schools at John Edmondson and Oran Park. Therefore, a staged enrolment approach has been adopted, with capacity to develop a Modification to the REF in the future when more than 500 students attending Leppington HS is viable. The Modification will respond to the changed road network, infrastructure and residential density conditions of the Leppington Town Centre.

It is expected that residential development within the Leppington Town Centre cannot occur in isolation from road infrastructure upgrades, and that, as students move closer towards the school, additional road capacity will be opened up. This will also enable higher active transport mode shares.

3.2 Calculating future student demands

Future student demands for intake catchment areas are identified by DoE as part of their internal assessment using the Eagle Eye platform. The future demand information however does not identify where in the catchment the students are living or how far away from the site. In order to understand the distribution of students across the catchment and therefore understand the modes of transport available to students, the state government's Travel Zone Projection information is used. Future population is distributed across travel zones as a result of strategic modelling of future development areas.

The results of the Travel Zone Projection analysis are presented in this section. The understanding of how this relates to mode share is discussed in Section 5.

3.2.1 Opening year 2027

It is expected that Leppington HS will open on day 1 term 1 of 2027 with up to 270 students. This is likely because students who are already living in the intake catchment will already be enrolled at other high schools and only a proportion of them will decide to change enrolments to Leppington HS. New year 7 students will however enrol at Leppington HS. The 2027 intake catchment and expected demand is shown in Figure 3-1.

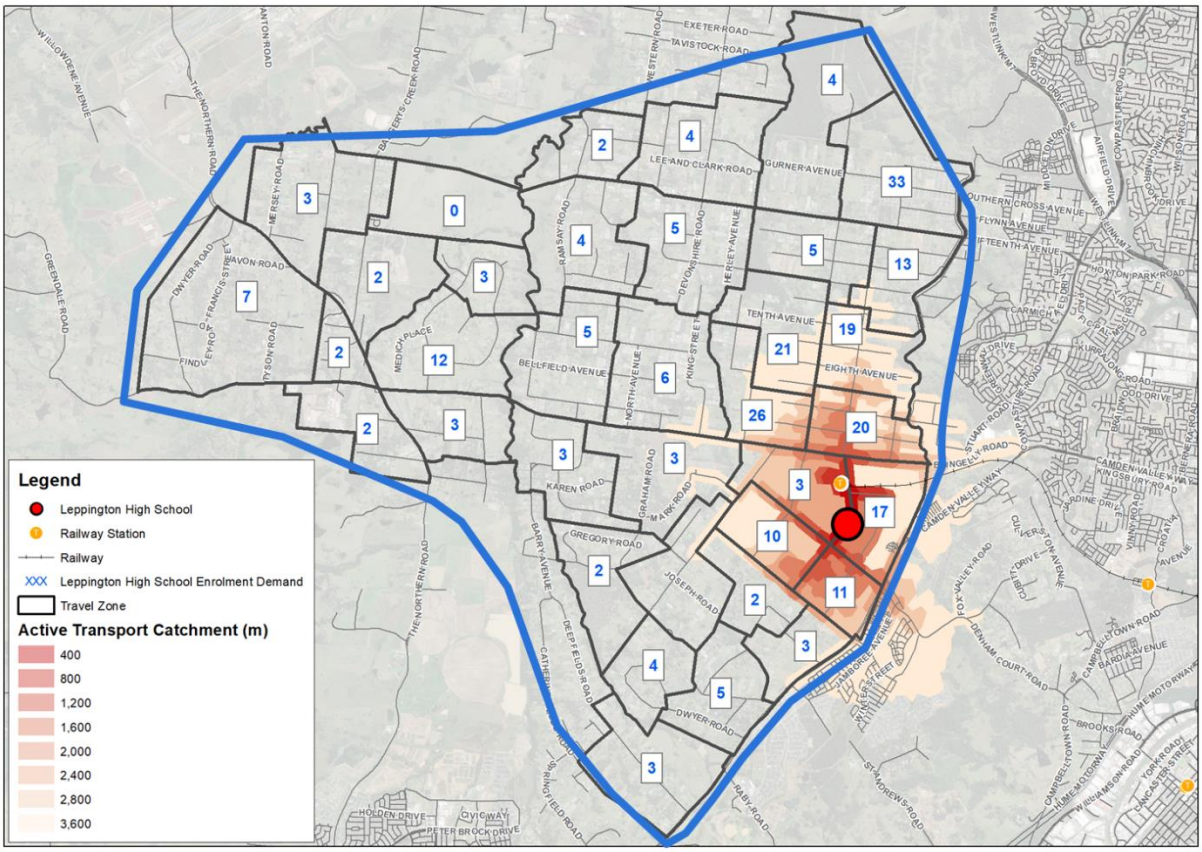


Figure 3-1: Day 1 term 1 2027 intake catchment and student demands – up to 270 students

The expected breakdown of students within the intake catchment for 2027 day 1 term 1 is shown in Table 3-1.

Table 3-1: Active transport catchment (day 1 term 1 2027 – 270 students)

0 to400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000 to 2,400m	2,400 to 3,600m	>3,600m
1	3	7	16	14	15	45	169
0%	1%	3%	6%	5%	6%	17%	63%

3.2.2 Austral High School catchment

In 2029, Austral High School is expected to open; the school covers a significant portion of the current Leppington HS intake catchment, north of Bringelly Road. This will truncate the Leppington HS intake catchment, as shown in Figure 3-2. It is expected that at this time, up to 500 students would be enrolled at Leppington HS.

With the introduction of Austral High School, it is assumed that 30% of students who are living north of Bringelly Road and are enrolled at Leppington HS will switch to Austral High School, and 70% of students will remain at Leppington HS. This, as well as the additional students joining Leppington HS from south of Bringelly Road, results in a higher proportion of students travelling to and from the suburbs of Leppington and Catherine Field. The expected student demands in 2029 (up to 500

students) is shown in Figure 3-2, and the breakdown of the distance bands the students are likely to be living in is shown in Table 3-2.

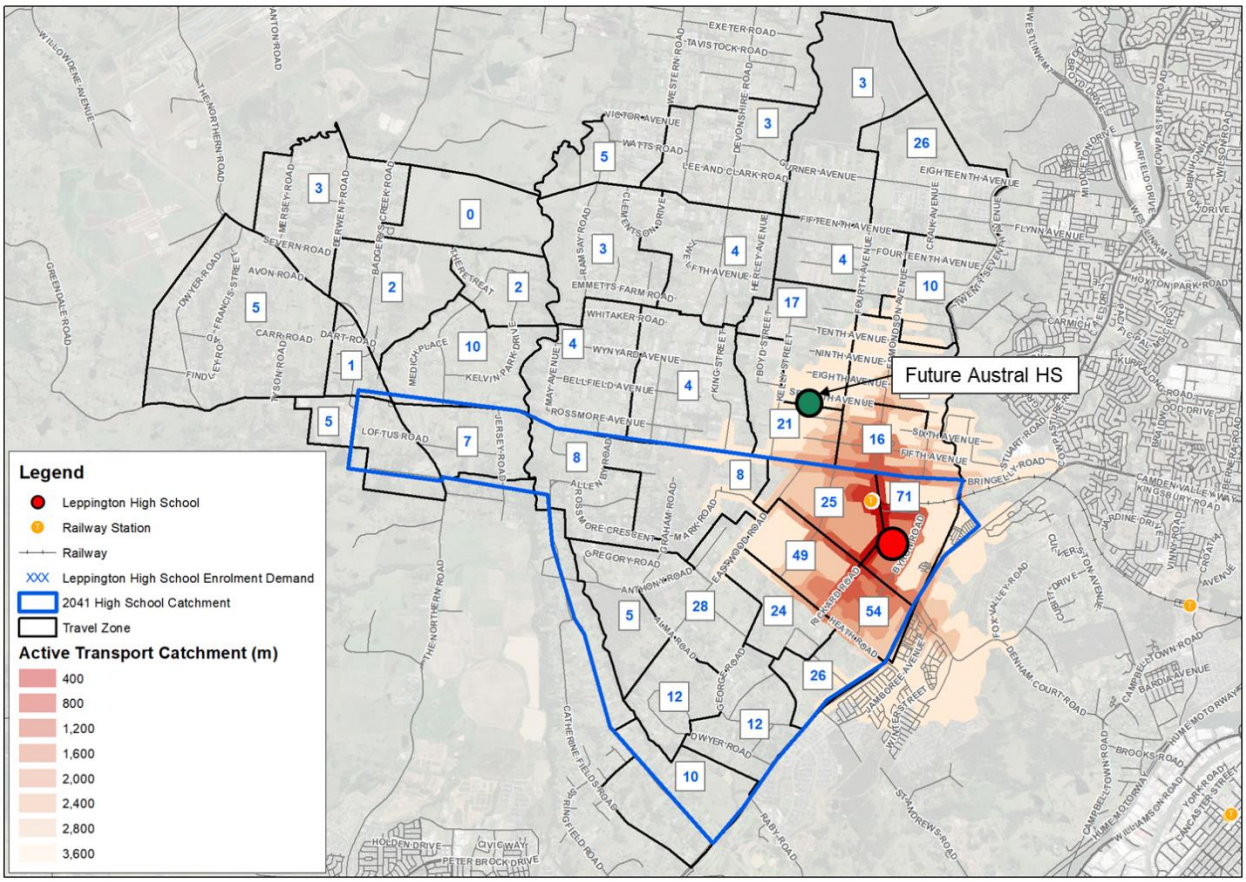


Figure 3-2: 2029 intake catchment and student demands – up to 500 students

Table 3-2: Active transport catchment (2029 – up to 500 students)

0 to400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000 to 2,400m	2,400 to 3,600m	>3,600m
18	34	38	77	46	27	69	190
4%	7%	8%	15%	9%	5%	14%	38%

If the student enrolment increases over 270 students, then one of the following strategies needs to occur so that the road network does not fail:

- Increase of road network capacity; or
- Decrease in demand on the road network; ie
    - No increase in student population beyond 500 students; or
    - Mode shift to other modes ie walking, cycling and buses.

As described in Section 1.4, the Leppington Town Centre development and subsequent road network upgrades are expected to begin. The residential development relies on the upgrade and enhancement of the road network including the duplication of Rickard Road. At this point in time, expected to be at around the year 2029, student populations will shift closer towards Leppington HS

in the surrounding development sites, hence enabling a higher active transport mode share. If this does not occur however, it means that alternate modes such as buses will be relied upon to reduce vehicular demands.

Buses can be implemented in any or all of the following ways:

- Increased capacity on public buses
- Typical school bus services connecting along high student density desire lines
- Remote pick-up and drop-off bus stops located throughout the intake catchment with direct shuttle bus services to and from Leppington HS.

When the enrolment reaches 500 students without the upgrade of the surrounding Leppington road network (specifically the intersection of Rickard Road and Ingleburn Road), then the enrolment must be capped to reduce the congestion of vehicles on Rickard Road. The main intention of Leppington High School is to service the future town centre, which further reinforces the need to only increase capacity over 500 students when the density increases. Furthermore, residential development cannot occur in isolation of infrastructure upgrades, meaning that by the time of expansion above 500 students, additional road network capacity will be captured.

3.3 School student transport subsidy

Eligibility requirement for free bus travel via the School Student Travel Scheme (SSTS) is as follows:

- The straight-line distance from the student's home address to school is more than 2km (notional distance)
- The walking distance from home to school is 2.9km or further (on-path distance).

Based on the eligibility requirement, 75% of Leppington HS students would be eligible for free bus travel during the opening year in 2027. In enrolment scenario 2, this decreases to 47%, reflecting the fact that higher density is proposed within the Leppington Town Centre, and more students will be able to walk or ride.

The Leppington Education Campus Rapid Transport Assessment recommends areas suitable for providing school bus services. These routes are proposed for high school students, however, would also cater to students at Leppington PS. These areas were discussed with Transport for NSW Bus Planning Team during the Transport Working Group process, as outlined in Appendix A.

4 Road network impacts and modelling

It was determined that the road network under current infrastructure conditions can accommodate up to 120 additional vehicles in the network in the opening year of 2027, during the 3PM to 4PM time frame (see Section 4.4). By understanding the capacity of the road network prior to infrastructure upgrades occurring, this provides an understanding of what alternate mode shares need to be accommodated. These transport mode shares are outlined in Section 5.

The traffic modelling to determine the opening year network capacity is outlined below.

4.1 Traffic survey data

Classified Intersection counts were collected by TIS (*Traffic Information Specialists*) on a typical weekday, Tuesday, November 19, 2024, for the following intersections:

- Rickard Road / Byron Road (Priority)
- Rickard Road / Ingleburn Road (Roundabout)
- Ingleburn Road / Byron Road (Priority).

4.2 Future traffic demand estimation

Existing traffic volumes for 2024 (base year) were derived from intersection count surveys and 7-day tube count data on Rickard Road conducted in November 2024. The future demands for the assessment year 2027 were calculated by adding the background traffic growth and the traffic volumes generated by the development to the base year volumes. Background traffic growth was assumed to be 1.5% per annum (compound).

4.3 Future 2027 performance (without school development)

This scenario represents the 2027 future conditions without considering the development. The network layout remains same as the existing base year layout and traffic demand for this scenario considers only the background traffic growth.

The 2027 network layout without development, as generated in SIDRA is shown in Figure 4-1.

Figure 4-1: Future 2027 SIDRA schematic (without development)

4.3.1 Intersection performance

Table 4-1 shows the intersection performance results for the future 2027 (without development) scenario in the AM and PM peak respectively. The key findings are listed below.

- All three intersections operate at LOS C or better with acceptable delays and spare capacity in both AM and PM peaks.
- *Traffic Modelling Guidelines* (Roads and Maritime Services, 2013) outlines that a roundabout has a maximum practical degree of saturation of 0.85. In both AM and PM peaks, the degree of saturation of intersection at the Rickard Road / Ingleburn Road exceeds the practical value of 0.85 for roundabouts. This suggests that the intersection is nearing capacity and after 2027, the need to duplicate Rickard Road is exacerbated.

Table 4-1: Future 2027 intersection performance (without development)

Intersection	AM peak					PM Peak				
	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)
Rickard Road / Byron Road	1179	0.299	8	A	1	988	0.288	8.2	A	1
Rickard Road / Ingleburn Road	2180	0.882	34	C	7	2278	0.955	36.2	C	12
Ingleburn Road / Byron Road	2016	0.668	22.9	B	3	2147	0.617	22.9	B	3

4.4 Future 2027 performance (with development)

In the opening year, 2027, it is expected that the school will have up to 270 enrolments, as described in Section 3.1.

Modelling was undertaken in order to determine what school development the road network can handle before failure. As a starting point, the baseline mode share was tested, and it was determined that 156 students in 120 vehicles can be accommodated. The remaining 114 students will need to use alternate modes of transport.

The layout as generated in SIDRA is shown in Figure 4-2. In this scenario, traffic demand was estimated by combining the school development traffic with anticipated background traffic growth, assumed to be 1.5% per annum. However, the analysis incorporates additional assumptions regarding development traffic and includes a redistribution of background traffic to reflect the likely conditions (described in Section 4.4.1).

Figure 4-2: Future 2027 SIDRA schematic (with development traffic for opening year)

Figure 4-3 illustrates the distribution of development traffic across the network under a left-in/ left-out arrangement for the school driveway.

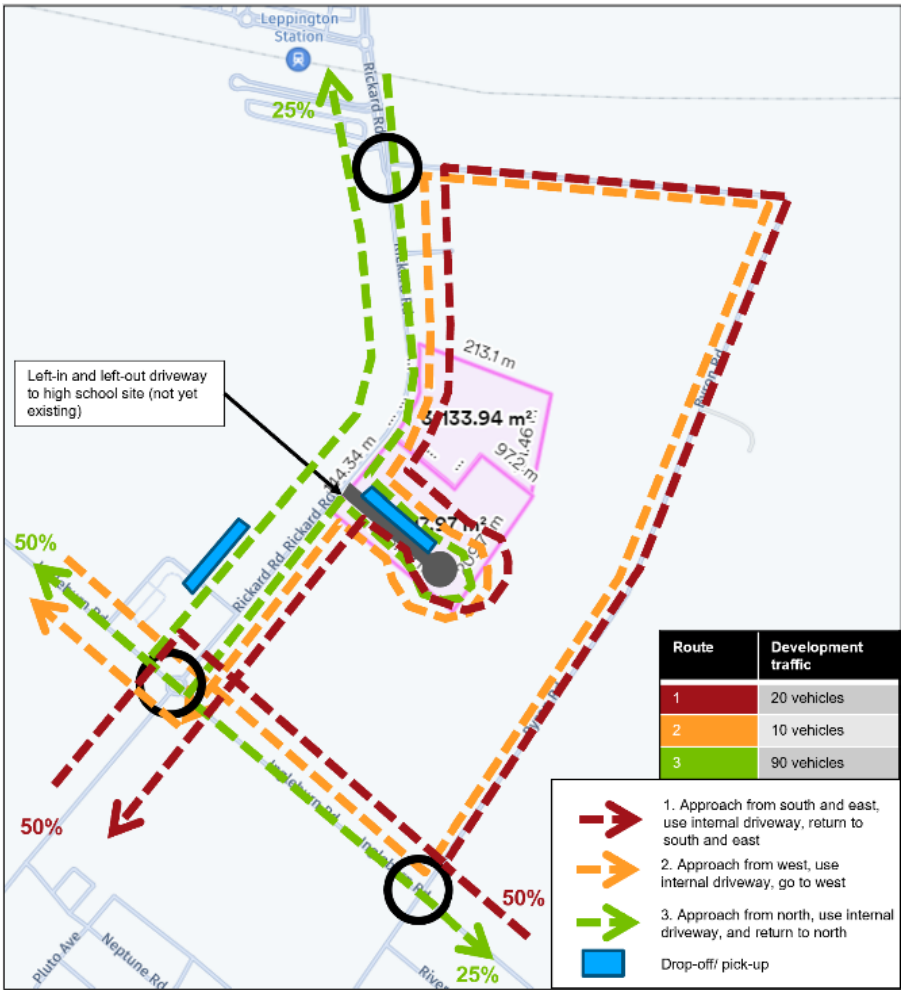


Figure 4-3: Opening year school traffic redistribution

4.4.1 Background traffic redistribution

The roundabout at Rickard Road/ Ingleburn Road becomes congested when school traffic is introduced. Consequently, the background traffic is likely to reroute to alternative roads to avoid this congestion. Northbound and southbound traffic on Rickard Road may use Dickson Road, Eastwood Road and Heath Road as alternative routes. Similarly, vehicle movements eastbound and westbound on Ingleburn Road may reroute to Heath Road. To account for this traffic pattern, a background traffic redistribution was applied for the SIDRA assessment with the following changes:

- Westbound and eastbound background traffic at the roundabout is reduced by 20%, assuming these vehicles would reroute without using Ingleburn Road
- Northbound and southbound background traffic at the roundabout is reduced by 10%, assuming these vehicles would reroute without using Rickard Road.

Figure 4-4 shows the potential detour routes for the background traffic.

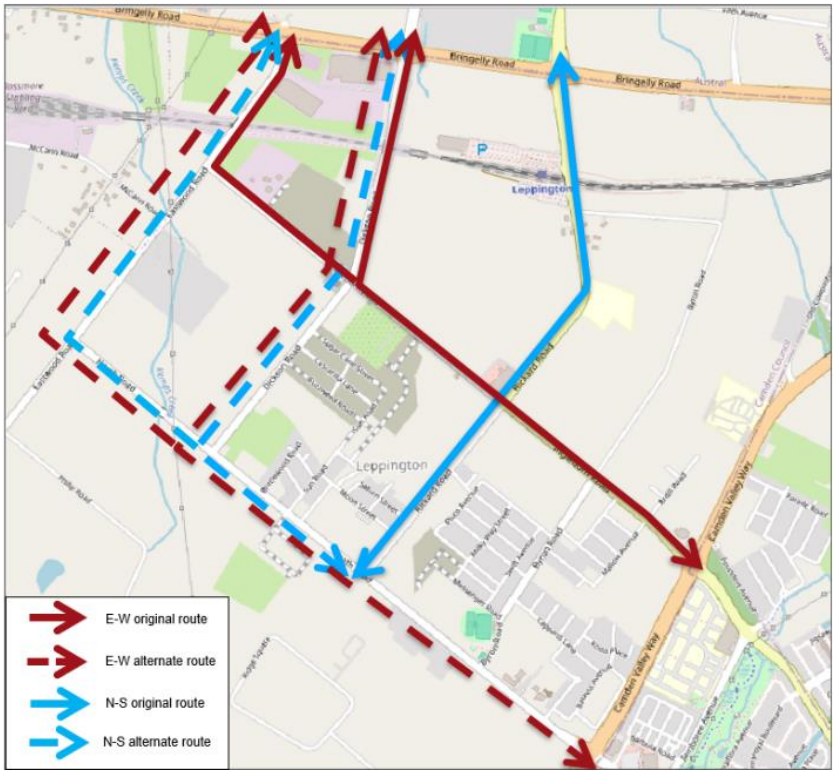


Figure 4-4: Background traffic detour routes

4.4.2 Intersection performance

Table 4-2 shows the performance results in the AM and PM peaks. The key findings are listed below:

- The roundabout performs at LOS B and LOS C with spare capacity and acceptable delays in the AM and PM peaks respectively.
- The Rickard Road/ School Driveway intersection performs at LOS A with spare capacity and acceptable delays.

Table 4-2: 2027 intersection performance (with development traffic for opening year, left-in/ left-out driveway)

Intersection	AM Peak					PM Peak				
	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)
Rickard Road / Ingleburn Road	2,124	0.794	26.8	B	5	2,181	0.859	32.6	C	6
Rickard Road / School Driveway	1,349	0.342	6.2	A	1	1,155	0.335	6.1	A	1
Ingleburn Road / Byron Road	1,905	0.628	20.1	B	3	1,984	0.570	18.7	B	2
Rickard Road / Byron Road	1,303	0.302	8.5	A	1	1,123	0.333	8.8	A	1

4.5 Future 2029 performance (with development)

The student enrolment scenario with up to 500 students attending Leppington HS is modelled with an assumed year of 2029 ie two years after the opening year. In this scenario, the vehicle volumes associated with Leppington HS and applied re-routing are consistent with the opening year ie 120 vehicles, however the background traffic is grown by two years. Note that the number of vehicles associated with Leppington HS will be maintained through measures adopted in the School Transport Plan and the adequate supply of school buses.

4.5.1 Intersection performance

Table 4-3 shows the performance results in the AM and PM peaks. The key findings are listed below:

- The roundabout performs at LOS C with spare capacity and acceptable delays in the AM and PM peaks respectively.
- The Rickard Road/ School Driveway intersection performs at LOS A with spare capacity and acceptable delays.

Table 4-3: 2029 intersection performance (with development traffic), left-in/ left-out driveway)

Intersection	AM peak					PM Peak				
	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)	Volume (veh/h)	DoS (v/c)	Delay (sec)	LoS	Queue length (veh)
Rickard Road / Ingleburn Road	2,184	0.839	30.7	C	6	2,246	0.913	42	C	8
Rickard Road / School Driveway	1,380	0.350	6.2	A	1	1,180	0.343	6.2	A	1
Ingleburn Road / Byron Road	1,957	0.649	21.1	B	3	2,044	0.590	20.6	B	3
Rickard Road / Byron Road	1,336	0.310	8.6	A	1	1,151	0.341	8.9	A	1

5 Mode share targets

Mode share targets refer to the proportion of trips made by different modes of transport, such as walking, cycling, public transport, and private vehicles. These targets are categorised into baseline, and reach targets to set progressive goals for improving sustainable transport options. These targets have been defined based on desired method of access to the school site given a number of transport infrastructure and service recommendations, whilst considering the physical constraints that place limitations on capacity.

The forecast mode shares have been developed and refined under an iterative process of consultation with the Transport Working Group for the Leppington Education Campus in March 2024.

5.1.1 Assumptions

Mode share is determined based on how far away students are forecast to be living and the modes of safe, connected and accessible transport options that are available to them. Refer to report Section 3.2 for an outline of how student distribution across the intake catchment is determined.

The following considerations feed into developing a baseline mode share:

- The on-path distance away from the school site
- The availability of active transport infrastructure and any major gaps in the network
- The availability of public transport services as well as the convenience and frequency
- The assumed likelihood of using each mode of transport
- Consideration of family and social factors such as parents dropping students off on their way to work etc.

Mode share targets build on the baseline mode share to determine the effects of interventions such as providing bus services, active transport infrastructure and behavioural change initiatives etc. For mode share targets, the likelihood of a student using a certain mode may increase or decrease.

The assumptions of the likelihood of students walking and cycling are outlined in the sections below.

5.1.2 Student enrolment scenario 1 mode share – opening year, 270 students

Existing active transport catchment and bus services are shown on Figure 2-1, Figure 2-2 and Figure 2-3.

The assumptions used to calculate the expected mode share in 2027 opening year with 270 students is outlined in Table 5-1, and the mode share results are shown in Table 5-2. The mode share for cars is capped at 156 vehicles (equal to 58% mode share) in order to keep the impact on the surrounding road network manageable. Walking and cycling mode shares are limited by the distance student live away from school. The assumptions of uptake of walking and cycling are shown in Table 5-1. The remaining students have been allocated to public transport, noting that the existing public transport services cannot satisfy this demand. Additional services are required, these are discussed in the mitigation measures.

Table 5-1: Active transport mode share assumptions – enrolment scenario 1 baseline

	0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000 to 2,400m	2,400 to 3,600m	>3,600m
# students	1	3	7	16	14	15	45	169
% students	0%	1%	3%	6%	5%	6%	17%	63%
Assumed proportion of students walking	0.9	0.8	0.7	0.6	0.4	0	0	0
Assumed proportion of students cycling	0.05	0.05	0.15	0.2	0.2	0.15	0.1	0
Total active transport proportion	0.95	0.85	0.85	0.8	0.6	0.15	0.1	0

# students walking	**1**	**2**	**5**	**10**	**6**	**0**	**0**	**0**	**23**
# students cycling	**0**	**0**	**1**	**3**	**3**	**2**	**4**	**0**	**14**

Table 5-2: Baseline mode share – student enrolment scenario 1

Mode of transport	#	%
Walking	23	9%
Cycling	14	5%
Existing public bus	3	1%
School bus	74	27%
Private vehicle	156	58%
TOTAL	**270**	**100%**

In the opening year, approximately two school buses will be needed to cater for the demands associated with the baseline mode share.

5.1.3 Student enrolment scenario 2 mode share – up to 500 students

It is expected that when enrolments at Leppington HS approach 500 students, Austral High School will be operational, and the Leppington Town Centre will start to be developed. This development cannot occur in isolation of the road infrastructure to service the growth.

The assumptions used to calculate the baseline mode share for enrolment scenario 2 is shown in Table 5-3, and the overall mode share is shown in Table 5-4. Note that the assumptions surrounding the operation of Austral High School as described in 3.2.2 have been applied.

Table 5-3: Active transport mode share assumptions – enrolment scenario 2 baseline

	0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000 to 2,400m	2,400 to 3,600m	>3,600m	
# students	18	34	38	77	46	27	69	190	
% students	4%	7%	8%	15%	9%	5%	14%	38%	
Assumed proportion of students walking	0.9	0.8	0.7	0.65	0.55	0.4	0.05	0	
Assumed proportion of students cycling	0.05	0.05	0.15	0.2	0.2	0.15	0.1	0	
Total active transport proportion	0.95	0.85	0.85	0.85	0.75	0.55	0.15	0	
# students walking	**16**	**27**	**27**	**50**	**25**	**11**	**3**	**0**	**160**
# students cycling	**1**	**2**	**6**	**15**	**9**	**4**	**7**	**0**	**44**

Table 5-4: Baseline mode share– student enrolment scenario 2

Mode of transport	#	%
Walking	135	27%
Cycling	44	9%
Existing public bus	5	1%
School bus	161	32%
Private vehicle	156	31%
TOTAL	**500**	**100%**

When the enrolment approaches 500 students, a mode share target can be set to maximise the use of active transport. By doing so, the demand for school buses to be provided can be reduced. The assumptions used to calculate the target mode share for students are shown in Table 5-5, and the overall mode share is shown in Table 5-6.

Table 5-5: Active transport mode share assumptions – enrolment scenario 2 target

	0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000 to 2,400m	2,400 to 3,600m	>3,600m
# students	18	34	38	77	46	27	69	190
% students	4%	7%	8%	15%	9%	5%	14%	38%
Assumed proportion of students walking	0.9	0.85	0.8	0.7	0.5	0.05	0	0
Assumed proportion of students cycling	0.1	0.15	0.15	0.2	0.25	0.1	0.05	0
Total active transport proportion	1	1	0.95	0.9	0.75	0.15	0.05	0

# students walking	**16**	**29**	**30**	**54**	**23**	**1**	**0**	**0**	**154**
# students cycling	**2**	**5**	**6**	**15**	**12**	**3**	**3**	**0**	**46**

Table 5-6: Target mode share– student enrolment scenario 2

Mode of transport	#	%
Walking	154	31%
Cycling	46	9%
Existing public bus	5	1%
School bus	140	28%
Private vehicle	156	31%
TOTAL	**500**	**100%**

5.1.4 Student enrolment scenario 3 mode share – over 500 students

The trigger for increasing the student population beyond 500 students is the upgrade of the road network and introduction of Leppington Town Centre residential development. At this point in time, a Modification to the REF is required to outline the road network conditions, student population distribution across the intake catchment and the mode share targets that these changes enable.

5.1.5 Staff mode share

A total of 75 full time equivalent staff are forecast to be employed at Leppington HS once the student population reaches 1,000 students. Expected staff mode share and rationale for each mode is outlined in **Table 5-7**.

Table 5-7: Staff mode share target and rationale for each

Mode	Number of Staff (1,000 student capacity)	Percent of Staff	Rationale
Walk	0	0%	• Unlikelihood of staff living within Leppington walking to school
Cycle	2	3%	• Low likelihood of staff living within Leppington walking to school
Public transport	5	7%	• Existing bus network via Rickard Road • Access via Leppington Station
Car, as driver	68	90%	• Distribution of staff amongst other modes • Unlikely use of carpooling amongst staff • Some staff may not have access to efficient and reliable public transport services and are not living within an active transport catchment and therefore will need to drive.
Total	**75**	**100%**	

6 Cumulative impacts

The proximity of Leppington HS to the existing Leppington Public School introduces the potential for cumulative impacts on the transport network. The mitigation measures for each cumulative impact are outlined in Table 6-1.

Table 6-1: Cumulative impacts assessment

Cumulative impact	Mitigation measure
Overlapping queuing associated with Leppington Public School with pick-up and drop-off times at the proposed Leppington HS	• Off-setting bell times by at least 30 minutes between Leppington HS and Leppington Public School • Controlling car mode share at Leppington HS through providing bus services. This will minimise the queue length for the kiss and drop zone at Leppington HS.
Siblings attending both Leppington HS and Leppington Public School, needing to be picked up by single car	• Leppington HS staff will provide supervision for at least 30 minutes after the school bell for students at either school to wait for the bell time of the school with the second bell to be picked up. • The School Transport Plan will include initiatives to encourage parents/ guardians to pick up one time only during the school bell time that occurs second.
Provision of school buses	Any school bus services provided for students of Leppington HS will also be extended for usage by students at Leppington Public School.

7 School Site Access and Operations

7.1 Pedestrian and Cyclist Access

Pedestrian access is proposed at the following locations (as shown in **Figure 7-1**):

- Main entrance of the school site will be accessed from Rickard Road
- Secondary entrance at the northern end of the school near Leppington PS, accessed from Rickard Road
- Another entrance of the school accessed from the internal driveway on the southern boundary of Leppington HS.

The existing footpath on the eastern side of Rickard Road, connecting between Neptune Road in the south and Leppington Station in the north, will provide access for students walking to school. This footpath additionally allows students of the Leppington HS to ride bicycles. As there is no footpath on the western side of Rickard Road, there is no need for a crossing to be provided, as all walking and riding to school will occur on the eastern side. Furthermore, there are no existing urban residential dwellings on the western side of Rickard Road between Ingleburn Road and Leppington Station, and therefore no active transport demand.

As shown in Figure 7-1, students are expected to walk and ride along Rickard Road to and from the south, meaning that they will need to cross the site driveway. The following measures are proposed to maximise safety of pedestrians and cyclists crossing the driveway:

- Painted line marking treatment and signage across driveway to warn drivers who are exiting or entering the driveway of oncoming pedestrians or cyclists
- Ensuring adequate sight lines are available (to be confirmed during detailed design phase)
- Education of staff, students and kiss and drop drivers to be aware of driveway safety concerns and look out for pedestrians and cyclists. This is to be managed and monitored through the School Transport Plan.

Cycling access to the site is via the main pedestrian entrance on Rickard Road. No cycling will be permitted within the internal site driveway to support road safety outcomes and separation of vehicles from student cyclists.

Only the students being dropped at and picked up from the kiss and drop zone on internal driveway on the southern boundary of Leppington HS should be encouraged to use the pedestrian entrance on that road. Other students who choose to walk to school will use the main entrance on Rickard Road to avoid any conflicts with private vehicles. The students cycling to school will use the main entrance as the bicycle parking is provided at that location (as shown in Figure 7-1).

Low density in surrounding areas means that additional path infrastructure is not required to support the school development prior to the duplication of Rickard Road and development of the town centre.

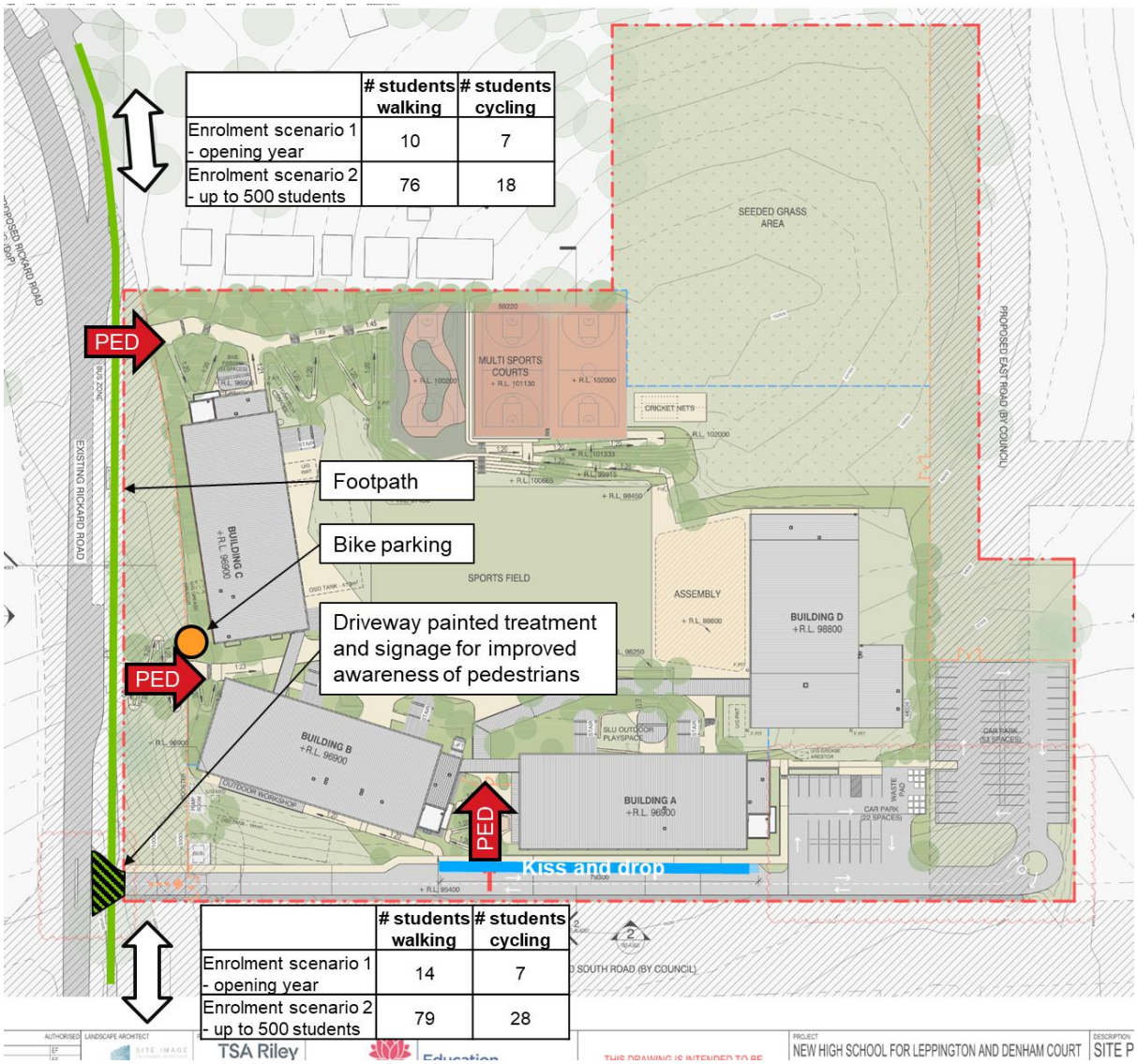


Figure 7-1: Pedestrian and cyclist site access (enrolment scenario 1 and 2)

7.2 Bicycle Parking and End-of-trip facilities

The project is providing 34 bicycle parking spaces. This is enough to cater for the baseline mode share for cycling in the opening year of 14 student riders. The project will provide these bike parking spaces on the ground floor, adjacent to the main entrance gate on Rickard Road. The rationale for this location is that it should be placed in an area that can be expanded upon to cater for potential future expansion as the town centre is developed, close to the Rickard Road entrance point. The Travel Coordinator will be responsible for monitoring the usage of the bike parking and whether more is required through the implementation of the School Transport Plan.

The Draft LTC DCP states that for secondary schools, bicycle parking should be provided at a rate of 1 space per 5 students and 1 space per 20 staff. This provision will be catered for as demand arises with the development of the Leppington Town Centre.

One end-of-trip shower facility is provided for use by staff who cycle to work. It is proposed within the Support Learning unit on the ground floor.

7.3 Train access

A footpath to the train station exists on the eastern side of Rickard Road. No students are expected to arrive at Leppington HS by train as Leppington is the end of the line and the next station (Edmondson Park) is in the intake area of a different high school.

Pick-up and drop-off at any location other than the internal site driveway, such as at Leppington Station, will be discouraged through the School Transport Plan initiatives. As discussed in Section 2.1, a footpath is located on the eastern side of Rickard Road connecting to the station, should this occur.

7.4 Bus Access

Transport for NSW is responsible for the planning and operation of public and school buses in NSW.

As part of the Rickard Road upgrade to a transit boulevard, the carriageway will be duplicated to two lanes in each direction by 2041. But for the purpose of this assessment, it is anticipated that Rickard Road will continue to operate with its current layout in 2027 when the school commences operation.

In the scenario with up to 500 students enrolled, the baseline mode share outlines that 161 students would be using school bus services, and 5 students would be using existing public bus services. For school bus services, this equates to up to 4 buses required to pick-up and drop-off students at Leppington HS. The school bus stop has been designed to accommodate three buses at one time, with a length of 57m. Bus timetabling needs to account for staggered arrival/ departure times and integrate with the public bus timetable at the bus stop to minimise bus queuing.

The dimensions of 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 as well as width. Additional space between idling buses is also recommended (1 metre between buses). A width of 2.7m is considered adequate for a ‘bus box’ as described by the guide.

This results in a proposed provision of 57m, as shown in Figure 7-8. The 57m is calculated as follows:

11.5m + 12.5m + 1m + 12.5m + 1m + 12.5m + 6m = 57m

The Bus Infrastructure Guide is outlined in Figure 7-2.

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.

4.4 Bus stop painted pavement box marking

Painted boxes can be used at bus stops and bus zones where there is a high incidence of illegal parking. This treatment is only to be used at locations where persistent illegal parking is restricting bus access, as the significance of the treatment will be devalued if it is used at every stop.

Bus boxes should be between 2.7m and 3.0m wide and should cover the full length of the bus zone

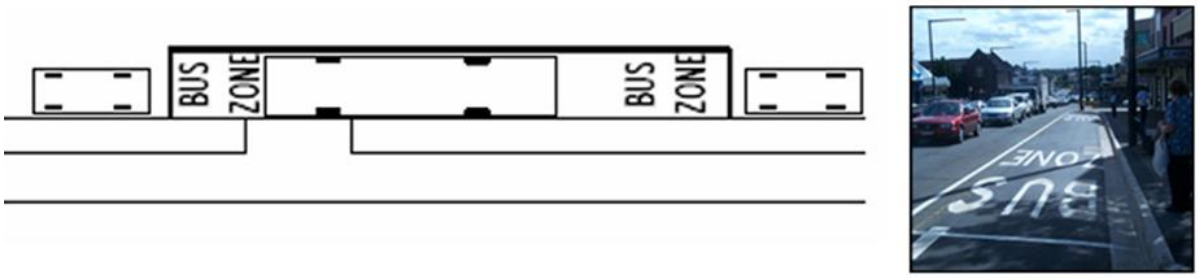


Figure 7-2: Bus Infrastructure Guideline, Transport for NSW

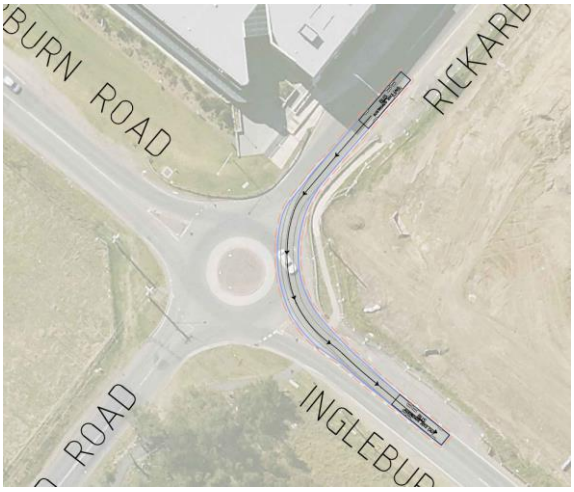
The location of the bus stop is shown on Figure 7-8.

All school bus movements will approach the site from the north in order to pick-up and drop-off students on the eastern side of Rickard Road. The Transport for NSW Bus Planning team is responsible for service route planning and are currently engaged with during the Transport Working Group process.

For buses that approach from the south, they will be able to use Dickson Road and Bringelly Road, or, Camden Valley Way, Cowpasture Road and Bringelly Road to reach the eastern side of Rickard Road. For buses that need to return to the north, they will similarly be able to use Ingleburn Road,

Dickson Road and Bringelly Road, or, Ingleburn Road, Camden Valley Way and Cowpasture Road. Swept path analysis for the intersection of Ingleburn Road and Rickard Road is shown in Figure 7-3.

Note that Camden Valley Way, Bringelly Road, Ingleburn Road and Rickard Road are already functioning bus routes and no upgrades to intersections are required to accommodate proposed bus routes.



Left turn from Rickard Road to Ingleburn Road

Right turn from Rickard Road to Ingleburn Road

Figure 7-3: Bus access – Rickard Road / Ingleburn Road

7.5 Kiss and Drop

The length of the kiss and drop zone is calculated using a first principles approach, in which the demand and processing capacity of the kerb-side space is modelled at a high level.

As the number of vehicles using the kiss and drop zone is capped at 120 vehicles, this has been used to determine the length of kiss and drop zone required to minimise queueing on Rickard Road. Assumptions used to determine the length of kiss and drop zone are shown in Table 7-1.

Table 7-1: Kiss and drop zone length calculations

Number of students	500
Number of students driving	156
Dwell time (min)	2
Period of time for pick up (min)	20
Capacity of one space over pick-up period	10
Number of students per vehicle	1.3
Number of K&D spaces required	12
Length of K&D zone required (m)	72

The vehicle dwell time of 2 minutes (the time it takes for the high school student to locate their vehicle and enter) is considered adequate as high school students are old enough to quickly locate the correct vehicle.

It is determined that 72m of kiss and drop zone will be required to cater for the demand prior to increasing the enrolment above 500 students. The project is providing 76m of kiss and drop zone within the internal driveway. The location of the kiss and drop zone is shown on Figure 7-4. At this point in time, it is anticipated that the road network will be upgraded and that the Eastern Road will become available for use by the school.

The internal driveway kiss and drop zone is provided for the safe pick-up and drop-off of students on the Leppington HS site. Any pick-up or drop-off activities occurring on Rickard Road will be discouraged by the following:

- Providing “No Stopping” kerbside conditions on the western side of Rickard Road
- Discouragement initiatives outlined in the School Transport Plan.

7.6 School zone

A school zone exists around the public school site, to be extended to include the high school site, which limits the speed to 40 kilometres per hour from its otherwise posted speed limit of 60 kilometres per hour.

7.7 Site driveway and vehicle access

An internal driveway is proposed on the southern side of the site in order to provide vehicle access for staff parking, servicing and loading and kiss and drop, shown in Figure 7-4. The driveway is to be accessed via Rickard Road and is accessed via a left-in and left-out configuration. Kiss and drop vehicles are able to exit the site using the turn around area on the eastern side of the site. “No through-road” signage is to be provided at the entrance to the driveway to warn drivers that the road is to be used by kiss and drop and vehicles associated with the school only. A sliding gate is to be provided along the site fence line to prevent unauthorised vehicles from entering.

The gate will be operated automatically, opening 30 minutes before and after the kiss and drop period, and opened by staff and authorised service vehicles via swipe card function.

A concrete median is proposed as part of the project on Rickard Road to provide a physical barrier for enforcing the left-in and left-out. The median is proposed to be 20 metres long. Driveway access is shown via the swept path analysis in Figure 7-5. Two cars are able to enter and exit the driveway independently.

Painted line markings and warning signge at the driveway and Rickard Road interface are proposed to provide additional warning to drivers of potential pedestrians or cyclists.

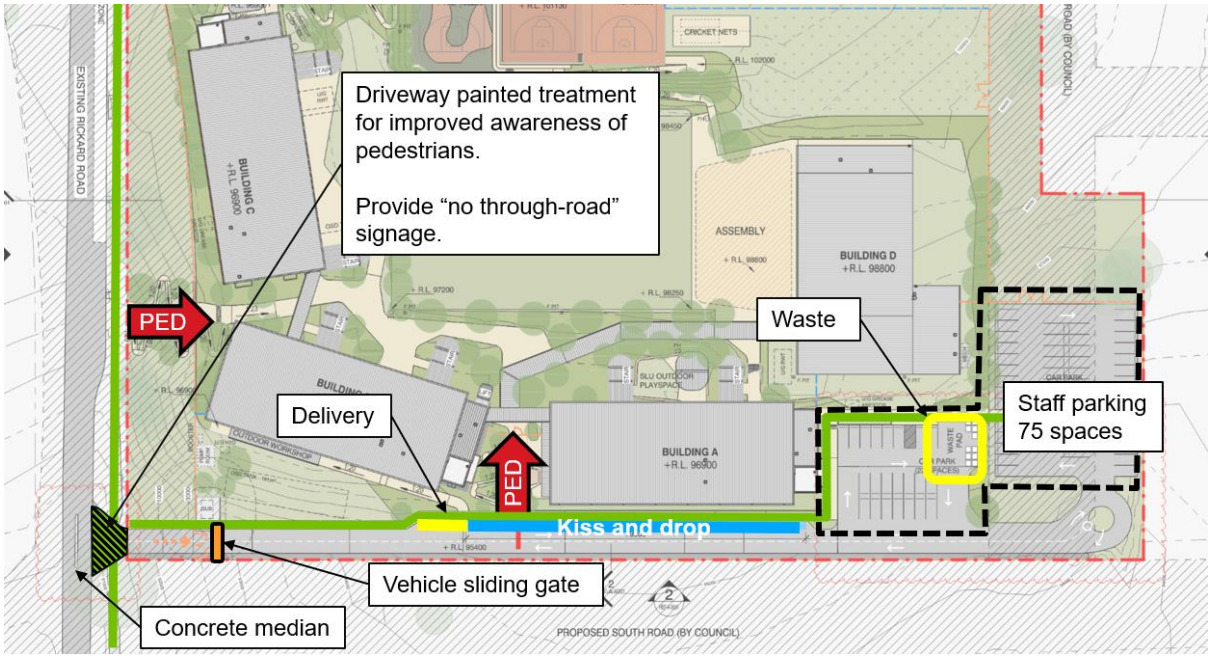
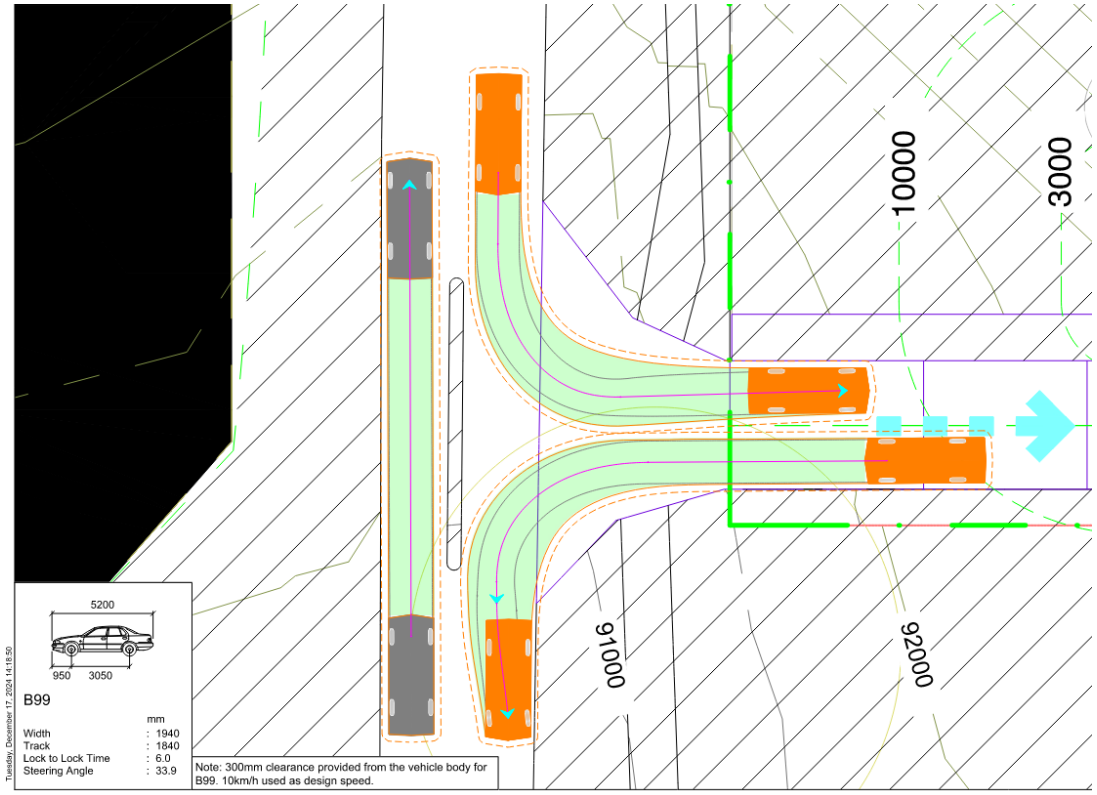


Figure 7-4: Internal driveway and parking



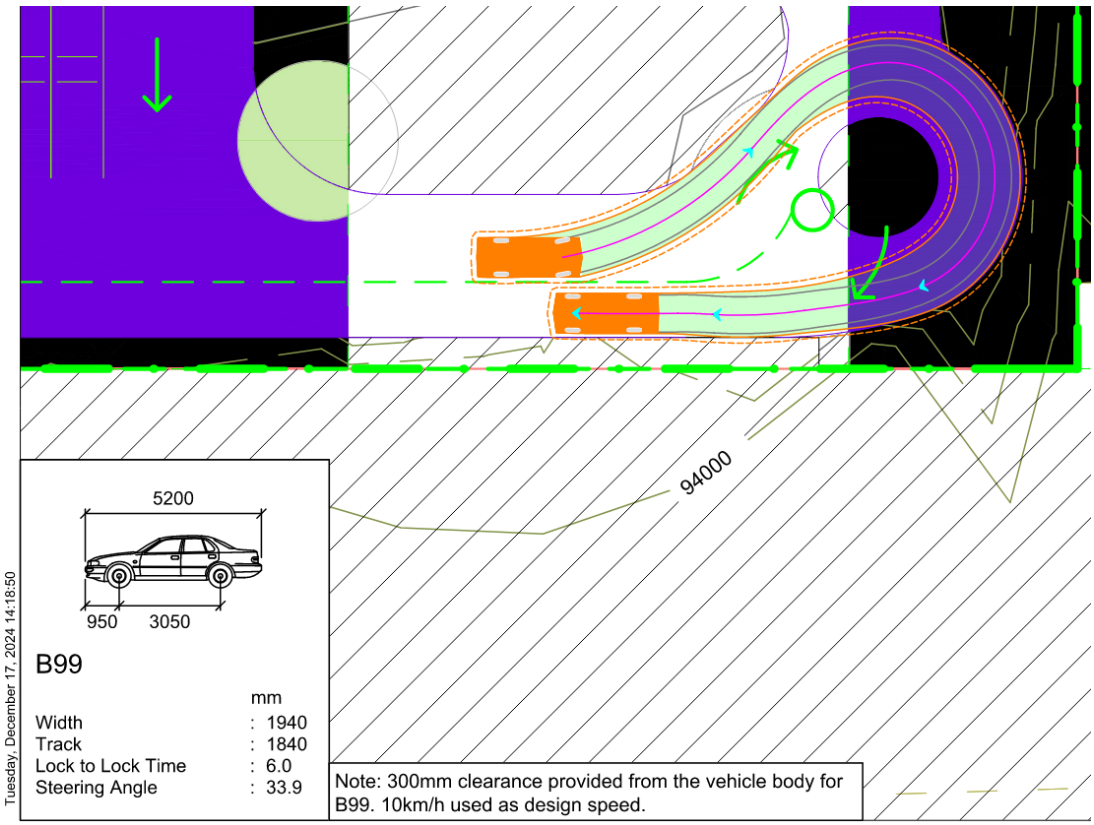


Figure 7-5: Driveway access swept path – light vehicle

7.8 Delivery and Waste Vehicle Access

Deliveries and waste management is proposed to be accommodated on site within the internal driveway area on the southern side of the site.

Delivery vehicle parking is provided immediately west of the kiss and drop zone in the internal driveway, as shown in Figure 7-4. Swept path analysis for an 8.8m delivery truck is shown in Figure 7-6. The vehicle is able to enter and exit the site in a forward direction.

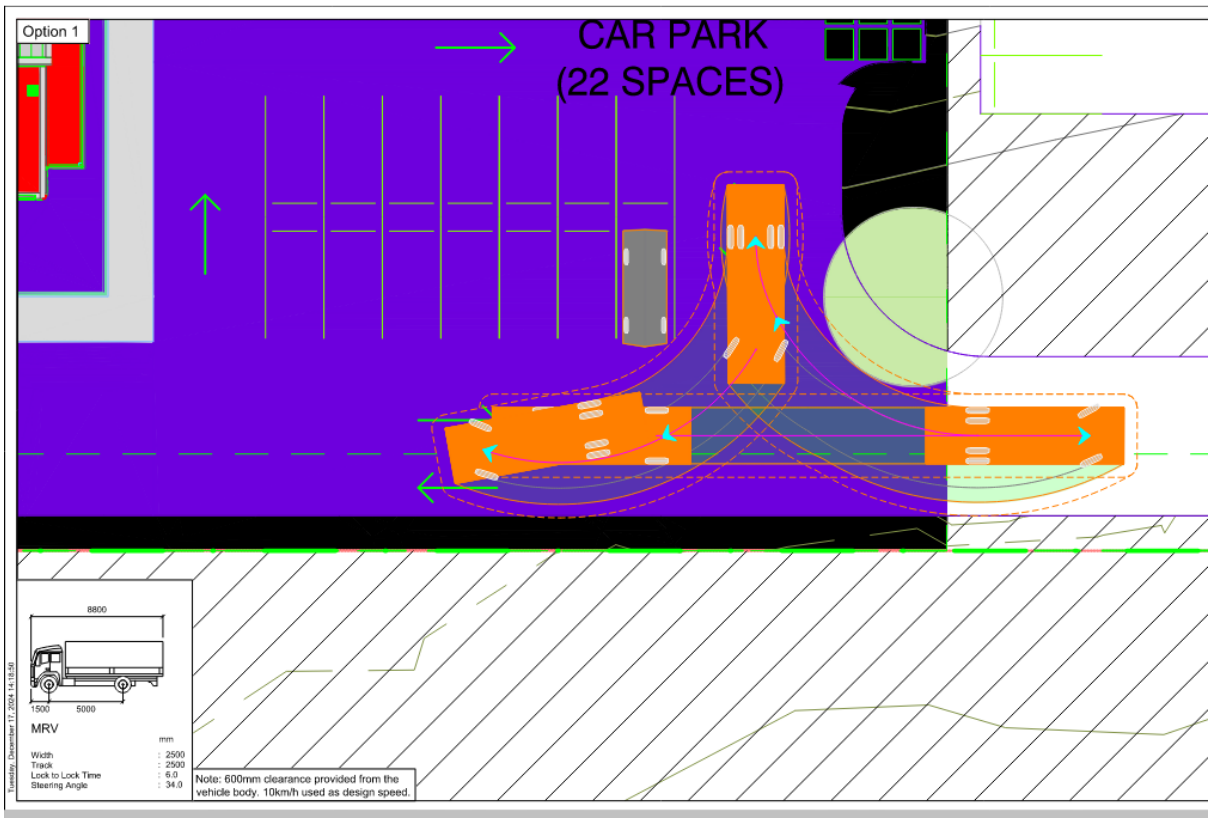
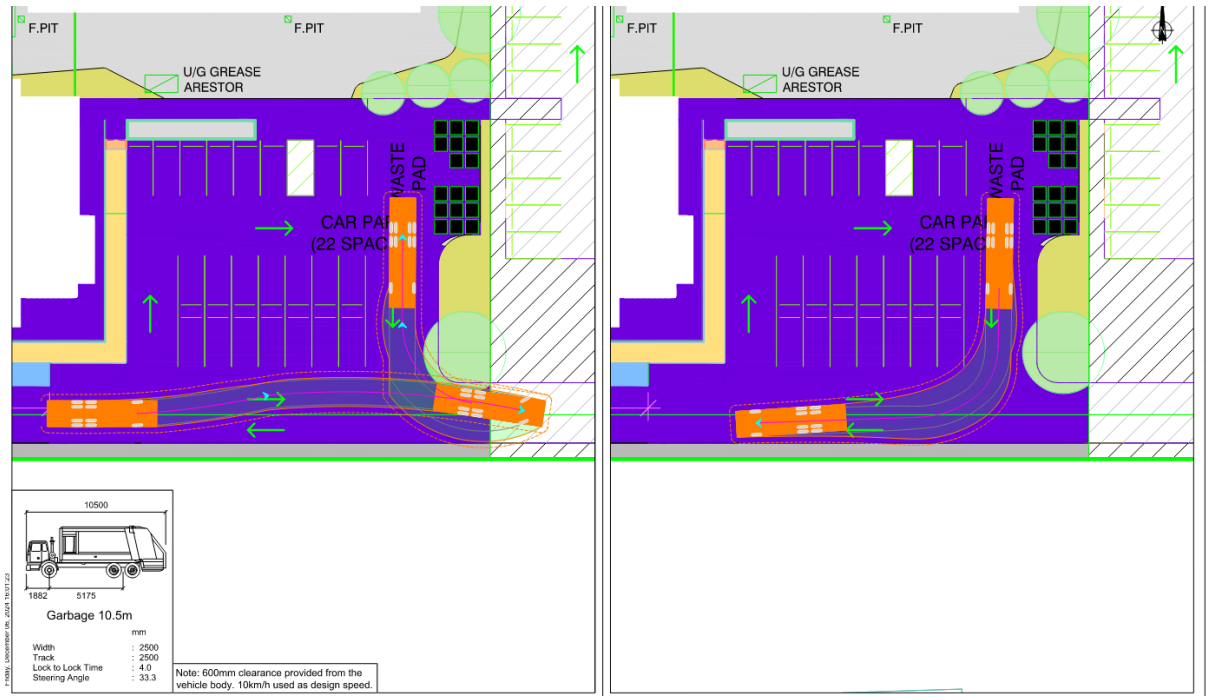


Figure 7-6: Delivery vehicle access

The waste collection area is located within the car parking area for the site, as depicted in Figure 7-4. Swept path assessment for a 10.5m waste vehicle with rear-loading capability is shown in Figure 7-7. The vehicle is able to enter and exit the site in a forward direction.



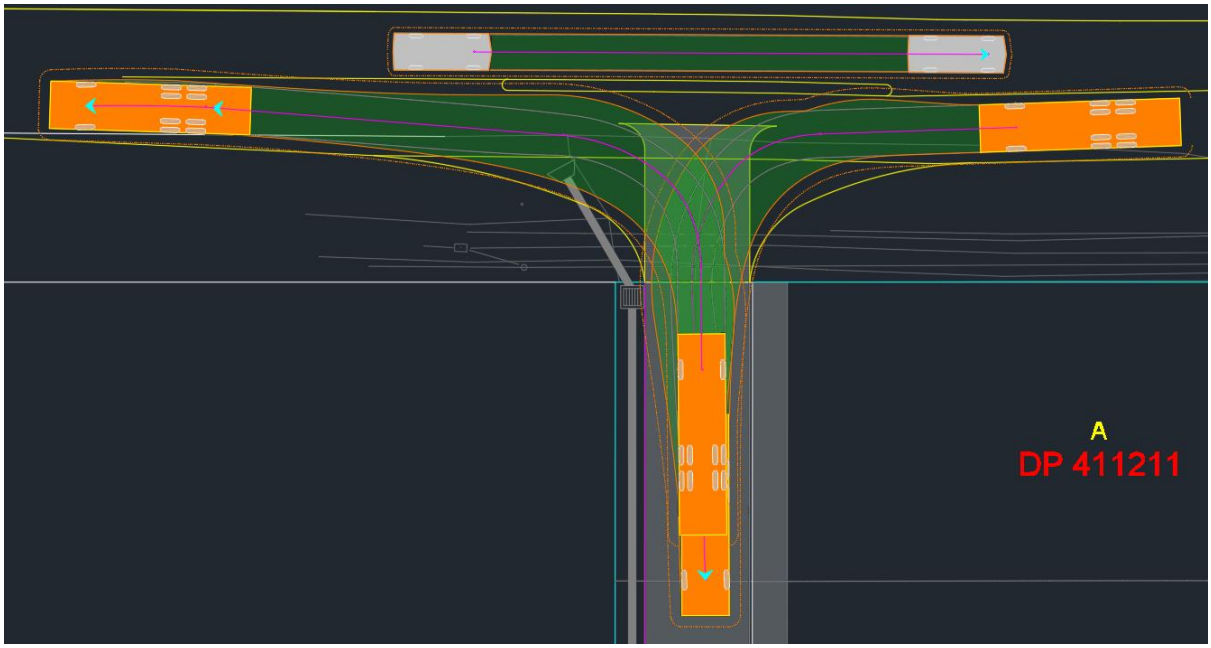


Figure 7-7: Waste vehicle access (turnaround within site and at the site driveway)

7.9 Car Parking

On-site carparking is located on the south-eastern side of the site, accessed via the internal driveway located at the southern boundary of Leppington HS. 75 spaces are provided for staff members, including two accessible spaces, the locations of which are shown in Figure 7-4.

The Camden Growth Centre Development Control Plan (DCP) 2024 requires the following rates for off-street parking for educational establishments:

- 1 space / 1 full-time employees, plus
- 1 space / 100 students, plus
- 1 space / 5 students in Year 12 where appropriate.

A total of 75 full time equivalent staff are forecast to be employed at Leppington HS at full capacity of 1,000 students, resulting in a total of 75 staff parking spaces being required as per the DCP. DoE does not provide on-site parking for students as they are encouraged to use sustainable methods of transport to and from school.

Visitor parking will be permissible within the internal driveway kiss and drop zone outside of pick up and drop off periods.

7.10 Kerb-side signage

No stopping signage is recommended on the western side of Rickard Road as shown in Figure 7-8, to disallow and discourage vehicles from dropping off or picking up students on the western side of the road, and encourage all activities to occur within the designated kiss and drop zone. This is also reflected in the no stopping signage that is recommended on the eastern side of Rickard Road, outside of the proposed school bus zone.

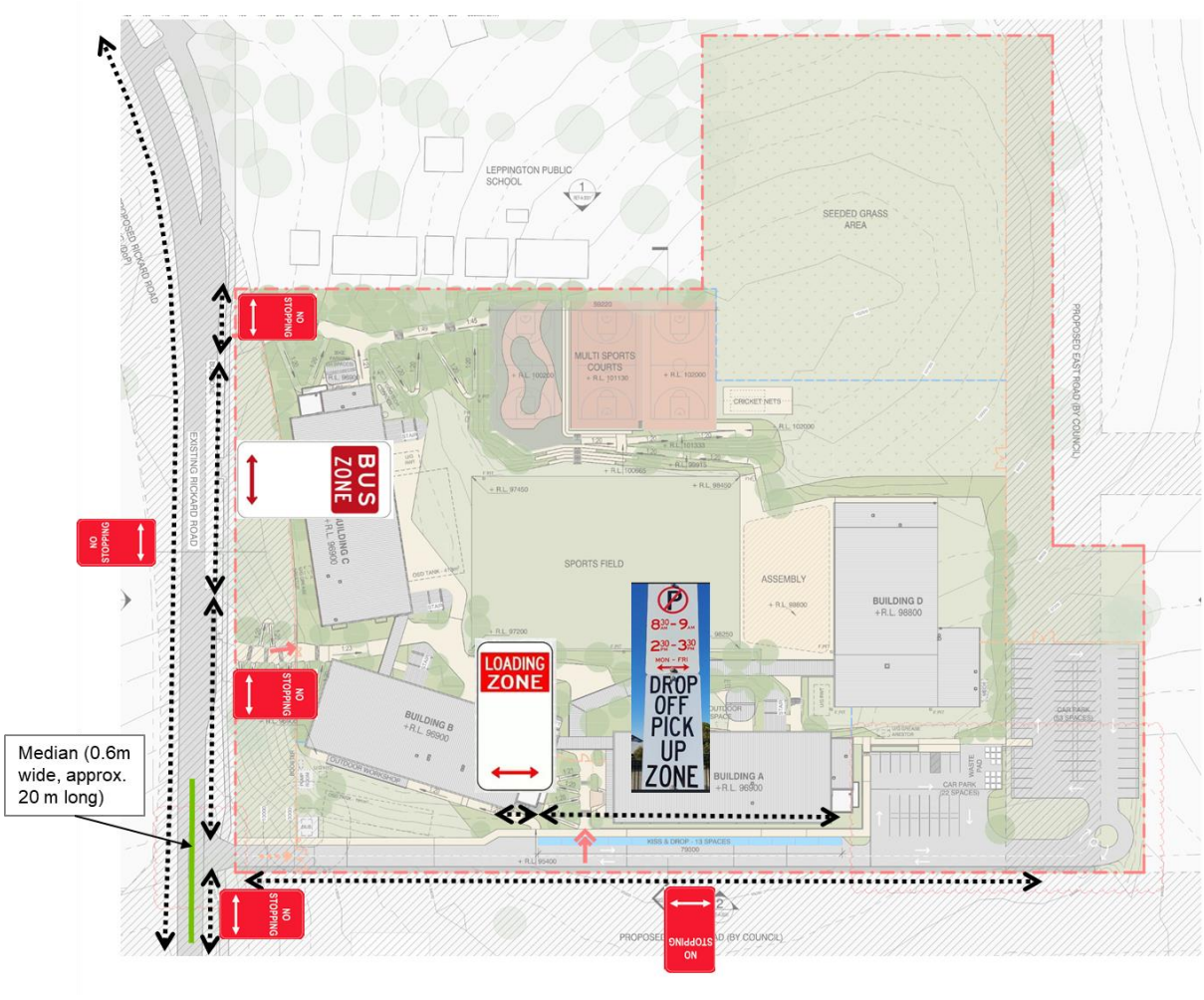


Figure 7-8: Kerbside signage plan

8 Mitigation measures

The recommendations outlined in below are based on the assumption that Rickard Road will continue to operate under its current functionality as a two-way undivided carriageway with one lane in each direction. **Table 8-1** outlines the safety and network efficiency benefits of each project mitigation measure (outside of necessary provisions such as kiss and drop facilities).

Table 8-1: Leppington HS project mitigation measures

Mitigation Number	Aspect	Mitigation Measure	Reason for Mitigation Measure	Responsibility	Timing
1	Operations	A School Transport Plan is to be prepared prior to the operation of the School. The Plan is to be reviewed annually for the following, with the final review undertaken once the maximum capacity of the school has been reached: • Review student enrolment numbers and distribution across the intake catchment • Identify whether the new Austral HS affects the Leppington HS enrolment and intake catchment, and the effects on mode share and requirements for buses • Assessment of the potential need for remote bus pick-up and drop-off and suitable locations • Whether additional road network capacity is provided by	The timing of the proposed Leppington Town Centre residential densification and road network infrastructure upgrades is unknown. It is therefore necessary to annually reassess travel demands of the school and the surrounding road network capacity.	DoE	Annually

Mitigation Number	Aspect	Mitigation Measure	Reason for Mitigation Measure	Responsibility	Timing
		the development of the Leppington Town Centre • Whether additional bike parking is required for students.			
2	Operations	Cap student enrolments at 500 students if the surrounding road network is not upgraded	If background traffic growth continues without an upgrade to the intersection of Rickard Road and Ingleburn Road, additional buses provided to manage school traffic generation will be delayed by road network congestion. At this time, an REF Modification inclusive of further transport analysis would be required to address the transport infrastructure shortfall.	DoE	Prior to enrolling more than 501 students
3	Cycling	Provide bicycle parking (34 spaces) with enough space to provide additional parking as needed (to be determined through annual review of School Transport Plan)	To support students who cycle to Leppington HS. Additional space for increasing the amount of bike parking as students shift to be living within the cycling catchment as the Leppington Town Centre is developed has been accounted for.	DoE	Prior to operation
4	Cycling	Provide 1x end-of-trip facility for staff	To support staff who ride to work as the Leppington Town Centre begins to develop and workers are living closer to the site.	DoE	Prior to operation
5	Vehicle access	Provide internal site driveway and turn-around area to support kiss and drop, staff parking and service vehicle access	To provide safe access for kiss and drop, parking and service vehicles prior to the duplication of Rickard Road and the provision of the new South Road.	D&C Contractor	Prior to operation
6	Vehicle access	Design and construct the internal site driveway and turn-around area in accordance with the most recent versions of AS2890.1 and AS2890.2.	To provide compliant facilities that are functional for all required design vehicles and consistent with user expectations.	D&C Contractor	Prior to operation

Mitigation Number	Aspect	Mitigation Measure	Reason for Mitigation Measure	Responsibility	Timing
7	Public transport	Provide bus bay (57m) on Rickard Road	To support target mode shares for public transport and reduce reliance on private vehicles.	DoE	Prior to operation
8	Public transport	School bus optimisation and route planning to suit the needs of Leppington HS students (reassessed annually in the School Transport Plan review)	To reduce reliance on private vehicles.	Transport for NSW, with assistance from DoE	Prior to operation
9	Public transport	Consider remote bus pick-up and drop-off locations within the intake catchment. Bus services are required in year 1 and should be provided by Transport for NSW.	To consider opportunities for more efficient bus services if the Leppington Town Centre road network upgrades have not been implemented, in order to reduce the physical number of buses required to transport students to/from the school and reduce student travel times.	Transport for NSW	During operation
10	Road safety	Provide “No Stopping” signage on the western side of Rickard Road	To discourage any pick-up or drop-off activities occurring on the western side of Rickard Road	DoE	Prior to operation
11	Road safety	LTC meetings are required during detailed design to finalise the western side of Rickard Road signage and line marking plan. This is to encourage parents/ guardians not to pick-up or drop-off students on the western side of Rickard Road.	To prevent students from crossing east-west on Rickard Road without a formal crossing facility.	DoE	During operation
12	Road safety	Provide concrete median (20m) on Rickard Road at internal driveway	To prevent any right hand turns into the internal site driveway or vehicles driving on the wrong side of the road to bypass the queue for the internal driveway, reducing vehicle conflicts and improving road safety	DoE	Prior to operation, to be finalised during detail design phase and through LTC meetings
13	Road safety	Provide painted line markings at internal site driveway	To provide additional warning for drivers to look out for pedestrians at the driveway	DoE	Prior to operation

Mitigation Number	Aspect	Mitigation Measure	Reason for Mitigation Measure	Responsibility	Timing
14	Road safety	Ensure adequate sight lines are provided at the internal site driveway	To ensure that drivers will be able to clearly see any pedestrians walking across the driveway when entering or exiting	DoE	During detailed design phase
15	Parking	Provide on-site parking for staff	To prevent any staff relying on parking on local streets	DoE	Prior to operation
16	Private vehicles	Off-setting school bell times with the Leppington Public School by at least 30 minutes	To reduce congestion in the road network during pick-up and drop-off times.	DoE	During operation
17	Private vehicles	Provide staff supervision for at least 30 minutes after the bell time to students who may be waiting for their sibling to be picked up from Leppington PS by the same vehicle.	Given that the bell times of Leppington PS and Leppington HS are proposed to be offset by at least 30 minutes to reduce congestion on the road network, students in the same family/ who require carpooling whose bell time occurs first in the afternoon pick-up period may need to wait for the second bell time to be picked up.	DoE	During operation
18	Vehicle access	Limit the size of the vehicles entering the site to 10.5m waste truck and 8.8m delivery truck	To enable turnaround of vehicles and forward exit of vehicles from the site	DoE	During operation
19	Private vehicle	Implement School Transport Plan measures, messages, initiatives and programs outlines in **Appendix C**. This includes adopting a carpooling scheme for students.	To reduce reliance on private vehicles, support sustainable travel modes and support students' safety	DoE	During operation
20	Construction	Implement Preliminary Construction Traffic Management Plan mitigation measures as outlined in **Appendix B**.	To reduce the impact of construction related vehicles on the road network and improve safety during construction	D&C Contractor	During construction
21	Private vehicle	Provide gate at internal road driveway	To prevent unauthorised vehicles from entering the site	DoE	Prior to operation

Mitigation Number	Aspect	Mitigation Measure	Reason for Mitigation Measure	Responsibility	Timing
22	Private vehicle	“No through-road” signage is to be provided at the entrance to the driveway	To warn drivers that the road is to be used by kiss and drop and vehicles associated with the school only	DoE	Prior to operation

Appendix A Transport Working Group meeting minutes

Meeting Notes

Transport Working Group 1

Project/File:	Leppington High School – School Transport Plan 300305561
Date/Time:	11 September 2024
Location:	Online
Next Meeting:	TBA
Attendees:	Kamoru Adetunmbi, SINSW Santi Botros, SINSW Mardi Christian, TSA Riley Michelle Kramer, Camden Council Tom Allen, Camden Council Roy El Kazzi, Camden Council John Broady, Transport for NSW Mathilde Ho, Transport for NSW James Douglas, Transport for NSW Volker Buhl, Stantec Elizabeth Muscat, Stantec Preet Desai, Stantec Emily French, DJRD Architects
Absentees:	Andrew Kyriacou, SINSW
Distribution:	All attendees

Item	Action
Swept path assessment for any roads that would provide access for buses (stage 1 and stage 2) is needed. Splays at intersections may be needed to enable bus turning movements.	• Stantec to include swept-path assessment for bus access in the School Transport Plan (STP) report.
Council raised concern for student drop-offs/ pick-ups occurring on the western side of Rickard Road, causing students to cross the road during the stage 1 2029 scenario.	• Stantec to investigate potential crossing options on Rickard Road and ways to prevent drop-offs/ pick-ups occurring on the western side.
John Broady (Transport for NSW) provided information on future public bus services for 2029 and 2041 time periods. This covered the 840, 841, 861 services, frequencies and route alignment.	• Stantec to discuss further with Transport for NSW Bus Planning team offline to determine how the buses can service the Education Campus.
Camden Council mentioned the following concerns provided by the Leppington Public School Principal: • Current queues lining up to the Leppington train station during pick-up/ drop-off times. • Limited school bus services allocated to the school.	• Stantec to include modelling for kiss and drop queueing in the School Transport Plan (STP) report. • Stantec to investigate how the future public bus services (provided by John Broady) may be used by future students.

Item	Action
Transport for NSW responded that there is limited budget for additional buses. Only shifting of existing bus services can be accommodated.	
TfNSW bus service planning team shared a list of existing services which are planned to be amended before the school opening in 2029 and by 2041.	• Stantec to assess usage of future public bus services in the STP report.

The meeting adjourned at 2pm.

The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

Best regards,

STANTEC AUSTRALIA PTY LTD

Elizabeth Muscat
Senior Transport Planner
Phone: +61 2 626 39477
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Appendix B Preliminary Construction Traffic Management Plan

B.1 Overview

This overview of construction traffic impacts aims to ensure the safety of workers and road users in the vicinity of the construction site. The primary objectives of the Construction Traffic Management Plan (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.

B.2 Consideration of Cumulative Impacts

Leppington HS and the existing Leppington Public School form the Leppington Education Campus, the construction of which must carefully be managed to reduce safety concerns and maintain current and proposed operations at Leppington Public School during construction. The Contractor is therefore required to consider the safety of students attending Leppington Public School during any construction activities and not interrupt established processes such as the kiss and drop activities occurring on Rickard Road.

B.3 Key Objectives

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.

B.4 Description of Construction Activities

The proposed works includes the construction of a new school for Leppington and Denham Court. The new high school will accommodate up to 1,000 students across 3 new buildings that will comprise 48 permanent teaching spaces (PTS), 3 support teaching spaces (STS), 19 specialist labs/workshops/kitchens and a hall.

B.5 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 7:00 am and 5:00 pm
- Saturday 8:00 am and 1:00 pm
- 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 subcontractors regarding the hours of work. Any work outside conducted outside of the approved construction hours would be subject to specific prior approval.

B.6 Construction Worker Parking and Traffic

The number of construction workers is expected to be up to 40 workers during peak construction.

The ultimate construction traffic management plan developed by the contractor is to allow accommodation of construction worker parking within the site. Construction workers will not be permitted to park on local streets.

Given the site's proximity to the Leppington Train Station, workers would be encouraged to use public transport to access the site where practical. During site induction, workers would be informed of the existing bus and train 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 the high school and 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 such as Leppington Station or designated remote pick-up points as necessary.

B.7 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.

It is expected that for most of the project, no more than 10 heavy vehicles (20 heavy vehicle movements) are expected per day. This is expected to peak at 20 heavy vehicles (40 heavy vehicle movements) during a peak period of two weeks during the delivery of the modular buildings.

B.8 Site Access

Access to the school site during construction will be made at an entry point along Rickard Road, its detailed location is yet to be determined.

To determine the suitability of movement around the vicinity of the site, a swept path assessment will need to be undertaken once the accurate site access point is determined by the contractor. For the purpose of this assessment, it is assumed that vehicles accessing the site will entre via Rickard Road entrance.

As part of the detailed CTMP, a traffic guidance scheme (formerly a traffic control plan) will need to 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.

Figure 8-1: Proposed site access

B.9 On-Street Work Zones

No works zones are proposed at this stage, however, may change subject to the proposed methodology of the appointed contractor.

B.10 Construction vehicle routes

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Greater Sydney. However, all construction vehicles will be restricted to the State and Regional Road network where practicable. It is expected that vehicles would approach the site from the Bringelly Road and require the use of Rickard Road to reach the relevant access point

The construction vehicle routes are detailed in Figure 8-2. No queuing or marshalling of construction vehicles will be permitted on public roads.

Ingress Route

- Bringelly Road; Rickard Road

Egress Route

- Rickard Road, Ingleburn Road, Camden Valley Way

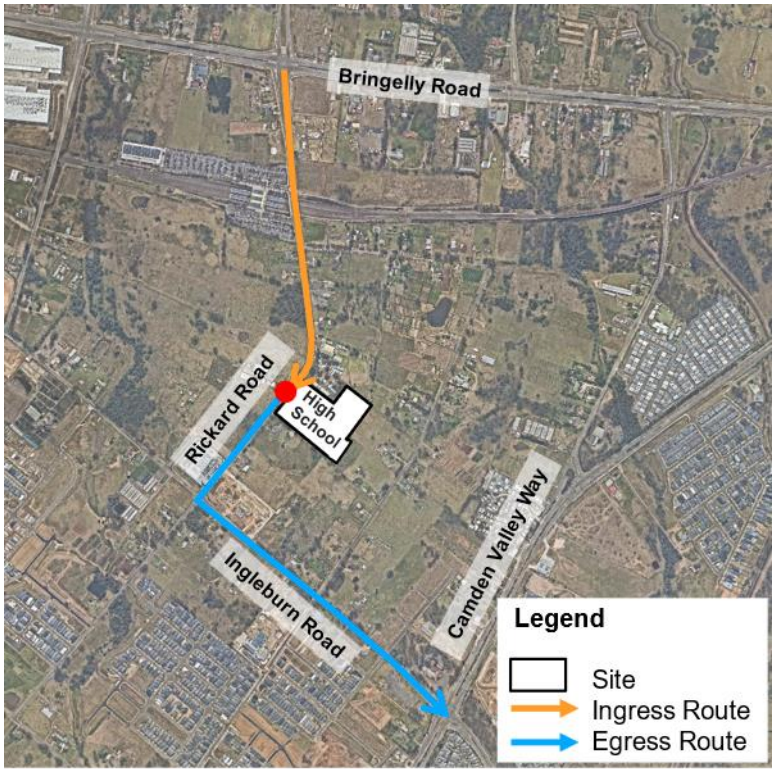

Figure 8-2: Construction vehicle ingress and egress route

B.11 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 a Traffic Guidance Scheme (TGS) 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.

B.12 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 not expected that cyclist routes will be impacted by the proposed construction works.

B.13 Public Transport

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

B.14 Traffic Movements in Adjoining Areas

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

B.15 Mitigation measures

Table 8-2 outlines mitigation measures to potential issues during construction activities.

Table 8-2: Construction traffic management mitigation measures

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

Issue	Mitigation measure
	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 B.5.
Addition of construction related vehicles to the local transport network	Construction vehicles are advised to follow specified routes outlined in section B.8. 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 B10.
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.

Appendix C School Transport Plan

C.1 Introduction

This School Transport Plan has been prepared in conjunction with the NSW Department of Education, The TSA (project managers), Camden 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 student enrolments (2027 enrolment year) 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 Leppington High School. 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 near the school.

C.2 Annual review

The Leppington town centre area is set to evolve over the next 20 years into a high residential density and transit oriented hub. The operations management for Leppington HS therefore needs to be adaptive to changing conditions of student populations within the intake catchment and provision of transport infrastructure upgrades.

The School Transport Plan must be review annually by the Travel Coordinator and DoE and monitor the status of the following student enrolment scenarios:

- **Student enrolment scenario 1** – opening year, 2027. In this scenario, 270 students are expected to be enrolled.
- **Student enrolment scenario 2** – up to 500 students enrolled. An enrolment capacity is set at 500 students in order to mitigate excessive congestion in the road network prior to road network upgrades planned for the Leppington Town Centre. Austral High School is operational.
- **Student enrolment scenario 3** – greater than 500 students enrolled. A Modification to the REF will be required at the point in time when enrolment exceeds 500 students to assess the conditions of the road network, the provision of additional transport infrastructure and the status of development within the Leppington Town Centre.

The annual review needs to cover the following:

- Review student enrolment numbers and distribution across the intake catchment

- Identify whether the new Austral HS affects the Leppington HS enrolment and intake catchment, and the effects on mode share and requirements for buses
- Assessment of the potential need for remote bus pick-up and drop-off and suitable locations
- Whether additional road network capacity is provided by the development of the Leppington Town Centre
- Whether additional bike parking is required for students.

The final review of the School Transport Plan is to be undertaken once the maximum capacity of the school has been reached.

C.3 Transport Goals

This section of the report utilises the understanding of external transport conditions for Leppington High School identified through the preceding transport assessment and defines the vision and objectives for Leppington High School to be achieved through the School Transport Plan. The vision and objectives provided 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.

C.3.1 Active and Public Transport Mode Share Targets

Mode share targets have been set for each of the enrolment scenarios outlined in Section C.2 in the Leppington HS Traffic Impact Assessment. These are shown in Table 8-3, Table 8-4 and Table 8-5.

Table 8-3: Baseline mode share– student enrolment scenario 1

Mode of transport	#	%
Walking	23	9%
Cycling	14	5%
Existing public bus	3	1%
School bus	74	27%
Private vehicle	156	58%
TOTAL	**270**	**100%**

Table 8-4: Baseline mode share– student enrolment scenario 2

Mode of transport	#	%
Walking	135	27%
Cycling	44	9%
Existing public bus	5	1%
School bus	161	32%
Private vehicle	156	31%
TOTAL	**500**	**100%**

Table 8-5: Target mode share– student enrolment scenario 2

Mode of transport	#	%
Walking	154	31%
Cycling	46	9%
Existing public bus	5	1%
School bus	140	28%
Private vehicle	156	31%
TOTAL	**500**	**100%**

C.4 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; 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:

- Supporting carpooling amongst students
- 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 include:

- Internal site driveway to accommodate safe pick-up and drop-off within the kiss and drop zone and access to the staff carparking
- Proposed treatments at the intersections of Rickard Road/ Internal Driveway to improve pedestrian/ cyclist awareness for drivers
- Proposed new bus stop on eastern side of Rickard Road to accommodate all school buses
- New on-site bicycle and micromobility parking.

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

C.5 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 school's duty of care is supported by a four-step process, as shown in Figure 8-3.

To support the Duty of Care Process shown in Figure 8-3, Table 8-6 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.

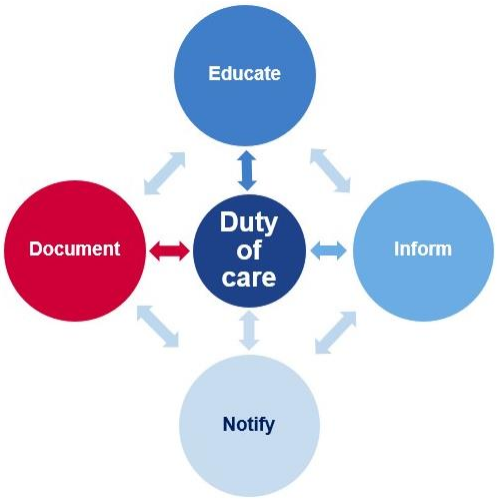

Figure 8-3: Managing a Schools Duty of Care and Road Safety Process

Table 8-6: 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

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:

- Parents/carers
- 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
- 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

C.5.1 Day-to-Day School Operations

Table 8-7 details transport site access that is active during day-to-day school operations. For this, appropriate measures will be considered to support student safety.

Table 8-7: Day-to-day school operations

	On-site	Adjacent-to-site	Management measures
Site entries, pedestrian and vehicle	Y	Y	Y
Kiss-and-drop including Assisted School Transport Program	Y	Y	Y
Buses	N	Y	N
Parking incl carpool, carshare pod	Y	Y	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 will 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.

C.5.2 Event Transport Operations for Share our Space, Hall Hire and Excursions

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

C.5.3 Sample Transport Encouragement Programs

There are a range of measures which can be implemented by the school, to encourage safe and sustainable transport access to and from the school. A summary of the measures which can be implemented at Leppington High School is highlighted below.

C.5.4 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.

C.5.5 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.

C.6 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. Unless explicitly stated as a 'reach' scenario intervention/initiative, all proposals included have been developed to achieve the 'moderate' scenario mode share targets.

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.

C.6.1 Channels

All communications will 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 8-8 below.

C.6.2 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 will communicate to promote the uptake of walking, cycling and public transport to school.

Table 8-8: Sustainable travel 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. Note: Public school websites have standardised transport information available to parents and students.	On the school website at all times	Social Media School website Email newsletters	Staff, parents, and students
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.	Prior to the annual event in May	Social Media	Staff, students and parents (targeted at primary school)

What	When	Which Channel	To Whom
Materials available at www.walk.com.au			
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

C.6.3 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
- Remote kiss-and-drop.

The TAG will 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

C.6.4 Data Collections 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 will be reviewed on an annual basis with staff and student travel surveys. The School Transport Plan will be updated and changed to reflect changing circumstances and local context/ facilities.

C.6.5 Data Collection

To monitor the School Transport Plan, a travel questionnaire will be conducted for all staff and students. An initial survey will be used to provide the baseline for travel planning programs. Subsequent survey results will 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 will then be updated as noted previously.

C.6.6 Ongoing Feedback Framework

The School Principal or staff will manage the ongoing feedback framework to continuously improve the oversight of sustainable travel outcomes for Leppington High School in concert with relevant school stakeholders. This will 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, Camden Council, and the bus operator accordingly.
- Liaising with the Camden Council Road Safety Officer concerning the management of parking behaviours around the school.
- Responding to any other feedback from Transport for NSW, Camden Council, Police, Residents, Teachers, Parents or Students that might arise from time to time.

C.6.7 Program Evaluation

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

- Reviewing the adequacy of bicycle racks required periodically.
- Surveying the uptake of the Travel Access Guide
- 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, Camden Council, and the bus operator accordingly.
- What gaps are present in sharing the knowledge and schemes for encouraging the uptake of sustainable transport.
- Liaising with the Camden Council Road Safety Officer concerning the management of parking behaviour around the school.
- Responding to any other feedback from Transport for NSW, Camden Council, Police, Residents, Teachers, Parents or Students that might arise from time to time.
- Determining whether the mode share targets set are too ambitious and if they should be more specific and targeted.

C.6.8 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 DoE, Camden 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 DoE, 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)

C.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 8-9.

Table 8-9: 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>Camden Council</td><td>DoE / 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>

C.8 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 DoE and TfNSW.

The Department of Education and the School Principal will progress the appointment of a Travel Coordinator for Leppington 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 8-10. The actions provide the means to encourage sustainable transport options at Leppington High 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.

C.8.1 School bus planning

The school travel coordinator is to annually review the requirements of school buses to satisfy the mode share targets set for each student enrolment scenario. Remote bus pick-up and drop-off locations within the intake catchment are to be considered if required.

C.8.2 Behaviour change programs

The behaviour change programs to be undertaken by the travel coordinator are shown in

Table 8-10.

Table 8-10: Transport behaviour change programs

Strategy	Action	Target Audience	Timeframe	Responsibility
Road safety				
Promote safe behaviours at the internal site driveway	Encourage drivers to slow down at the internal site driveway and look out for pedestrians and cyclists. Encourage students to be more aware of vehicles emerging from or entering the driveway.	Students, staff and parents/ carers	Ongoing	Travel Coordinator
Encourage pick-up and drop-off to only occur within the internal driveway K&D zone	Pick-up and drop-off at any location other than the internal site driveway, such as at Leppington Station or on the western side of Rickard Road, will be discouraged	Parents and students	Ongoing	Travel Coordinator
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 2.9 km walking distance from the school), 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
Year 6 transport options promotion	Promote and communicate the range of transport options available to Year 6 students as they progress to Camden High School in the following year	Parents and high school students	Term 4 annually	Travel Coordinator
Reduce car travel				
Communications Plan	Discuss and refine the Communications Plans and key messages with the School Principals and TfNSW to	Staff, parents and students (both schools)	In 2027 and then annually	Travel Coordinator

	encourage a higher usage of non-private vehicle modes from staff, parents and students.			
Student carpooling at Leppington HS and Leppington PS	Establish the behaviour of when students at both schools are getting picked up by the same vehicle, the student at the school with the later bell time will wait on campus under staff supervision to be picked up.	Parents and carers	In 2027 and ongoing	Travel coordinator and staff
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 2027 and ongoing	Travel Coordinator
Parking management plan	Liaise with the Principal and Camden 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 2027 and ongoing	Travel Coordinator and Camden Council

Additional Actions

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.	Staff, students and parents (both schools)	Start in Term1 following occupancy and continue throughout the school year	Travel Coordinator

	• Collaborate with the School Principal on the method and timing to circulate the travel surveys to staff and students as appropriate.

C.9 Internal School Working Group

The Internal School Working Group is to be formed with the school community before construction commencement. This group is to be a sounding board for the Travel Coordinator and school leadership. The Road Safety Education Officer, AMU and WHS are to make up the core participants of this group.

C.10 External Transport Working Group

The external Transport Working Group is to follow on from the Transport Working Group formed in Consultation Stream 2 of this Plan, during the transport options development phase of the Transport Assessment. The Department of Education and the Travel Coordinator will 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 DoE project, amend the Terms of Reference to include this school project. Feedback during the external working group will 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 (year 7 starting, and year 12 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.

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