

# School Transport Plan

Austral Public School (APS) – Stage 1

# Document control

<b>Consultant</b>	Arup
<b>Project title</b>	Austral Public School
<b>Document title</b>	School Transport Plan
<b>Date</b>	14/02/2025
<b>Revision</b>	3 Update to support REF submission.
<b>Distribution</b>	CTPG: Rocco Bombardiere, Sophia Palmer SINSW: Zeeshan Ijaz Arup: Tessa Knox-Grant, James Turner, Annabel Kerr, Henry Zheng

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# 1. Introduction

# Introduction

## School Transport Plan for Austral Public School

This School Transport Plan has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of Austral Public School (APS) (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 3.37 of the T&I SEPP.

The proposed activity is for the upgrades to the existing APS at 205 Edmondson Avenue, Austral, NSW, 2179 (the site).

The purpose of this report is to review the existing transport modal choice and targets. This School Transport Plan also set out objectives and strategies to assist site-specific measures to promote and maximise the use of sustainable travel modes.

# Site description

APS is located at 205 Edmondson Avenue, Austral on the south-eastern corner of the intersection between Edmondson Avenue and Tenth Avenue. The site has an area of 2.986 ha and comprises of 6 allotments, legally described as:

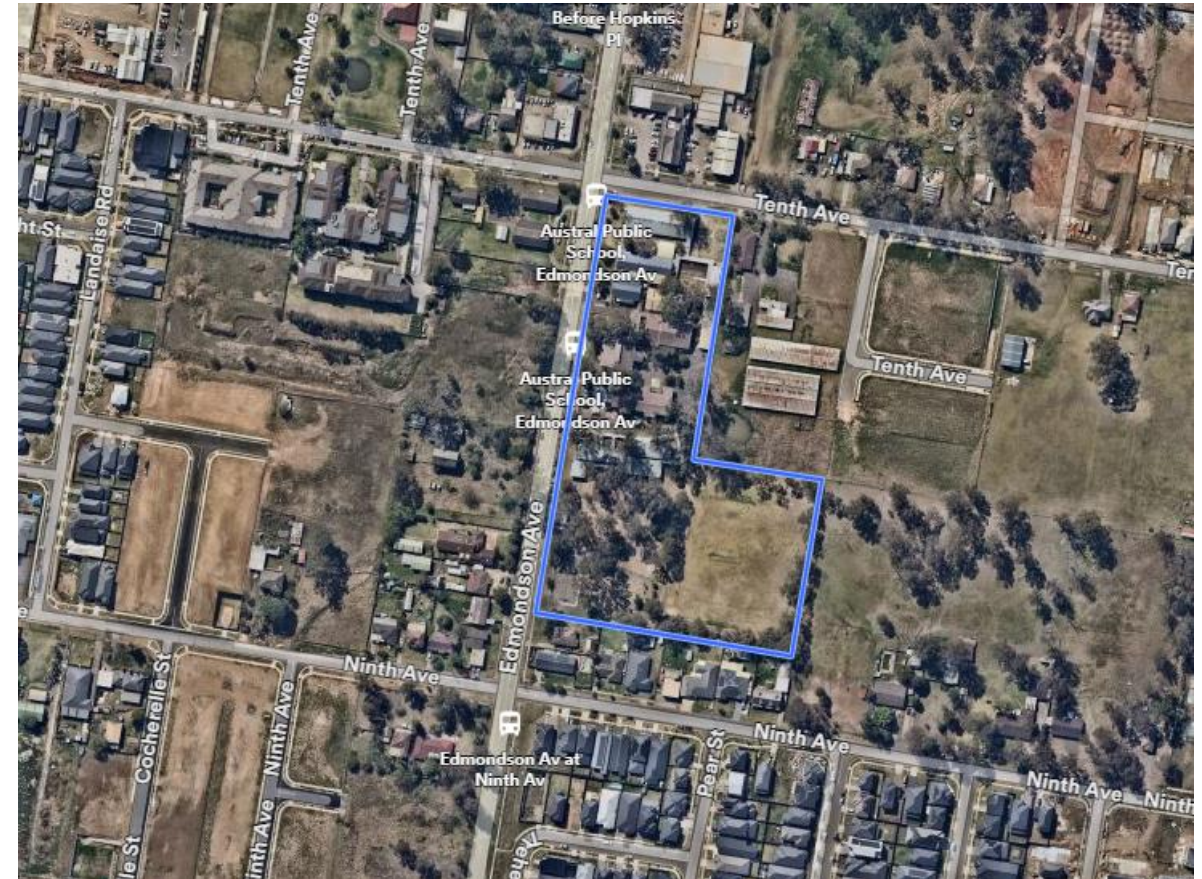
- Lot 1 DP 398105
- Lot 1 DP 398106
- Lot 1 DP 509613
- Lot 1 DP 512119
- Lot 2 DP 509613
- Lot 865 DP2475

The site currently comprises an existing co-educational primary (K-6) public school with:

- 8 permanent buildings;
- 14 demountable structures;
- interconnected paths;
- covered walkways;
- play areas: and
- at-grade parking.

The Austral Community Pre-school is also located within the site.

The existing buildings are clustered in the northern part of the site, ranging between 1 to 2 storeys in height. There is a sports oval in the south-eastern portion of the site, and a densely vegetated informal play area located in the south-western portion of the site.



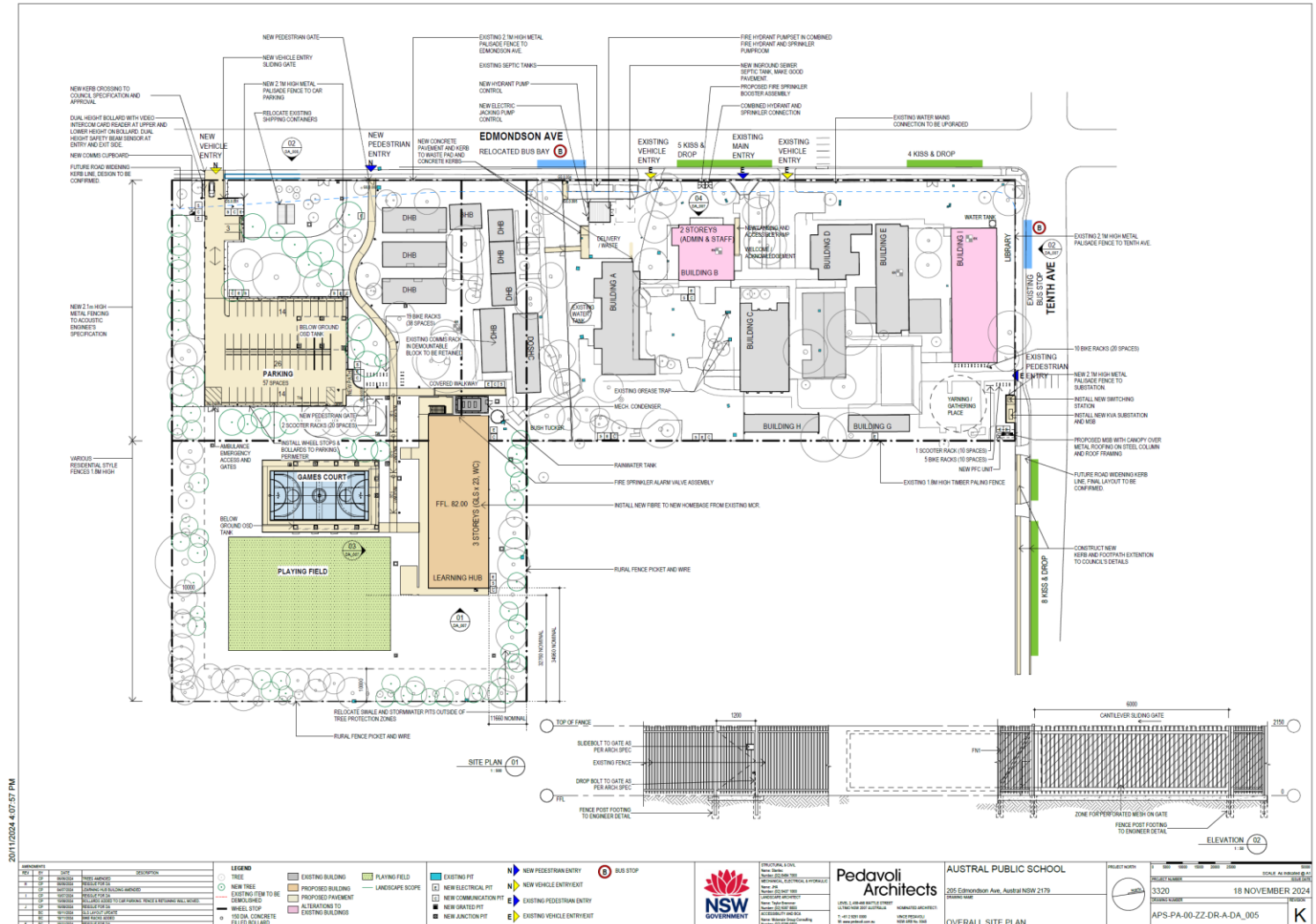
*Aerial image of site (source: NearMap, taken 7 Sept 2023)*

# Proposed activity description

The proposed activity involves alterations and additions to the existing APS, including the following:

- Demolition of existing structures and removal of trees, as well as other site preparation works;
- The erection of a new 3-storey building comprising teaching spaces that includes 20 permanent teaching spaces and 3 support teaching spaces;
- Conversion of the first floor of Building B from a Library to staff annex (staff room) and minor modifications on the ground floor;
- Refurbishment and change of school function of Building I from classrooms to a Library;
- At-grade parking (57 new spaces, including 1 accessible space);
- New driveway and access gate from Edmondson Road;
- Erection of a substation within the site on the northern boundary;
- Upgrade of the sports field;
- Internal pathways, fencing, utility upgrades and associated works; and
- Off-site public domain improvements including retention and upgrading of the Kiss & Drop area and a temporary pedestrian road crossing on Tenth Avenue.

The intent of the activity is to allow for upgrades to APS that will provide a CORE 35 primary school compliant with the EFSG. The works will increase the capacity of the school from 681 students and 40 FTE teachers to 734 students and 64 FTE teachers, respectively. Furthermore, provision within the expanded 734 student capacity will be made for the creation of 30 support class students places.



Proposed Site Plan (Source: Pedavoli Architects, Overall Site Plan (Rev K)

## 2. Transport goals



# Transport goals

## School Transport Plan vision and objectives

A School Transport Plan aims to manage travel demand during construction and to govern travel to school throughout post-occupancy. The following objectives have been developed in order to support this overarching aim:



### Meet school travel demand

To proactively identify and meet school travel demand safely, efficiently and sustainably deliver transport infrastructure to meet school travel demand.



### Maximise active and public transport modes

To maximise the use of active and public transport modes in a safe transport environment to reduce car traffic before and after school start and end times.



### Safe travel

To enhance connectedness to neighbourhood and community through safe travel to and from school to reduce risk of injury or harm to students as they travel to and from school.



### Education

To empower children and young people to be safe road users now and into the future.



### Road networks

To decongest the road networks around schools and reduce local traffic congestion and parking impacts, outline required infrastructure and operations to be delivered prior to occupancy, and resolve issues early in the school master planning, schematic design and business case stages.



### Collaborative

Identify opportunities to work with state or local government authorities, share travel demand and transport initiatives, and engage transport agencies to seek or improve existing transport networks.

# Mode share targets

## Mode share scenarios

	student	Staff	Total
<b>Pre-school</b>	30	7	37
<b>Support Learning Unit</b>	30	6	36
<b>Primary School</b>	734	51	785
<b>Total</b>	<b>794</b>	<b>64</b>	<b>858</b>

Transport facilities will be provided according to the worst-case scenario (base case). The moderate and reach scenarios are based on improvements from new developments and the Edmondson Avenue upgrade, as well as improvements to bus services as detailed within the catchment analysis.

Student enrollment target and staffing requirement are provided by SINSW.

### Scenario 0

Baseline (do nothing)

- Using catchment analysis mode share,



### Scenario 1/3/5

“Moderate” active/ public transport mode share

- Inclusion of active transport programmes to achieve lower kiss-and-ride utilisation
- Improvement of walking environment, including improved footpaths and crossing to provide a safe environment for active travel



### Scenario 2/4/6

“Reach” active/ public transport mode share

- Encourage parenting community that support children walk and scoot to school
- Provision of enhanced bus services to further reduce the kiss-and-drop demand
- Behavioral change measures to encourage active transport



# Baseline travel survey

## Hands-up survey result



**Survey period**  
9 – 13 February 2024



**Class involved**  
20 classes from K -Year 6

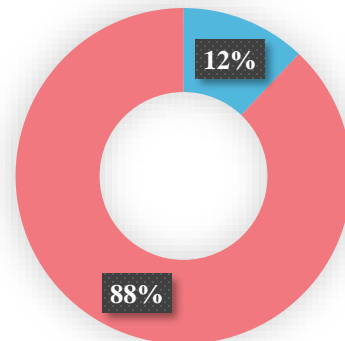


**students participated**  
430

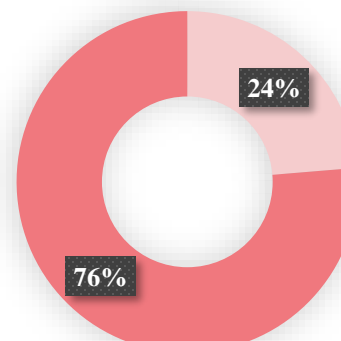


**Staff participated**  
20 Class teachers &  
18 Admin staff

Pre-school student mode share

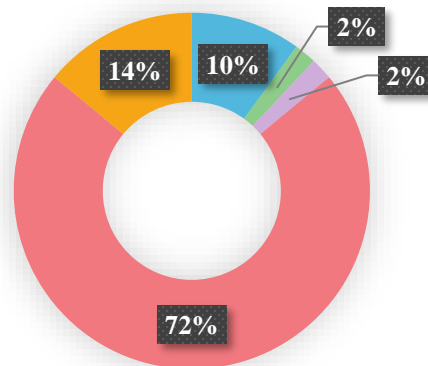


Staff mode share

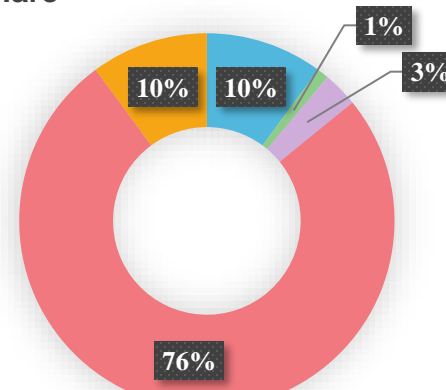


*\*Travel mode share of pre-school students and staff are consistent in AM and PM*

Primary school student mode share



AM



PM

■ Walk ■ Cycle or other rideable ■ Bus ■ Car (parked on-site) ■ Car (parked nearby) ■ Carpool

## Key observations

### Pre-school

The travel demand for the pre-school is **88% driver mode share**. 6% of pre-school students attend OOSH during AM and PM.

### Staff

The travel demand for the staff is **100% car mode share**. With insufficient ing on-site (14 spaces), 76% (29) of them parked their cars nearby.

### Primary School

Approx. 15% of primary students travel by active travel and public transport. 6% and 9% of primary school students attend OOSH during AM and PM respectively.

# Mode share targets

## Baseline transport mode share target

Mode	Pre-school and support learning unit students		Primary school students		Staff	
	Usage #	Mode share %	Usage #	Mode share %	Usage #	Mode share %
Active Transport	5	8% <sup>(2)</sup>	59	8% <sup>(2)</sup>	0	0%
Public Transport	0	0%	22	3%	0	0%
Car <sup>(1)</sup>	55	92%	653	89%	64	100%

Notes:

- 1) Car passengers, not cars
- 2) According to the catchment analysis, currently only 8% of existing students can safely walk to school within 15 minutes on existing footpaths, despite existing hands-up survey data showing 12%. Remaining 4% from active travel has been redistributed onto car.
- 3) Existing Travel demand for pre-school and support learning group (60 students) is assumed to remain unchanged across the three scenarios with 92% car mode share and 8% active transport mode share.

# Mode share targets

**“Moderate” and “Reach” active/ public transport mode share target**

Primary student mode share	Scenario 1: Moderate AT		Scenario 2: Reach AT		Scenario 3: Moderate PT		Scenario 4: Reach PT		Scenario 5: Moderate AT and PT		Scenario 6: Reach AT and PT	
	Usage #	Mode share %	Usage #	Mode share %	Usage #	Mode share %	Usage #	Mode share %	Usage #	Mode share %	Usage #	Mode share %
Active Transport	73	10%	117	16%	59	8%	59	8%	73	10%	117	16%
Public Transport	22	3%	22	3%	117	16%	235	32%	117	16%	235	32%
Car^	639	87%	595	81%	558	76%	440	60%	543	74%	382	52%

*^car passengers, not cars*

Staff mode share	Moderate (Scenario 1/3/5)		Reach target (Scenario 2/4/6)	
	Usage #	Mode share %	Usage #	Mode share %
Active Transport	1	2%	2	3%
Public Transport	3	4%	5	8%
Car^	60	94%	57	89%

*^car passengers, not cars*

# Transport goals

## Links to other application documentation

Item	Links to other application document
Green Star achievement	Section 6 of Transport Assessment
Consultation Plan	This School Travel Plan has been prepared and includes consultation with Transport Working Group. Refer to Appendix A for minutes of TWG meeting.

### 3. Policies and procedures

# Policies

## Strategic context summary

Document	Document Purpose	Relevance to project	
Liverpool Bike Plan 2018-2023	<ul style="list-style-type: none"> <li>• Outlines the provision of bicycle-related infrastructure</li> <li>• Promote and increase the rates of cycling in Liverpool</li> </ul>	<ul style="list-style-type: none"> <li>• Bike paths to Leppington Station from Austral and surrounds will be critical to encouraging active transport and alternative modes of commuting</li> <li>• Future developments incorporating cycling facilities into plans</li> <li>• Low density, semi-rural area in Austral provides opportunity for recreational cycle paths</li> </ul>	
Liverpool Growth Centre Precincts Development Control Plan (DCP) Schedule 1	<ul style="list-style-type: none"> <li>• Provides guidance and regulations for planning and design</li> <li>• Establishes an overall vision and Indicative Layout Plan for the Austral and Leppington North Precincts.</li> </ul>	<ul style="list-style-type: none"> <li>• Residential structure in Austral</li> <li>• Precinct road hierarchy</li> <li>• Pedestrian and cycle network</li> <li>• Centre development control</li> <li>• Edmonson Avenue and Tenth Avenue design</li> </ul>	
Liverpool DCP 2008 Part 1 (updated on 1 Feb 2021)	<ul style="list-style-type: none"> <li>• Provides general controls for development</li> </ul>	<u>School car parking:</u> <ul style="list-style-type: none"> <li>• 1 space per staff member</li> <li>• Loading facilities for a coach</li> </ul>	<u>Disabled car parking:</u> <ul style="list-style-type: none"> <li>• 2 per 100 spaces</li> </ul> <u>Bicycle parking:</u> <ul style="list-style-type: none"> <li>• 1 per 10 staff</li> <li>• 1 per 10 students</li> </ul>
Liverpool Growth Centre Precincts DCP (18 June 2021)	<ul style="list-style-type: none"> <li>• Provides general controls for development</li> </ul>	<u>School car parking:</u> <ul style="list-style-type: none"> <li>• 1 space per staff member</li> <li>• 1 space per 100 students</li> </ul>	

\*Note the DCP is used as a planning control, any deviation is provided through justification of mode share analysis. Car and cycle parking has been determined based on future modal split

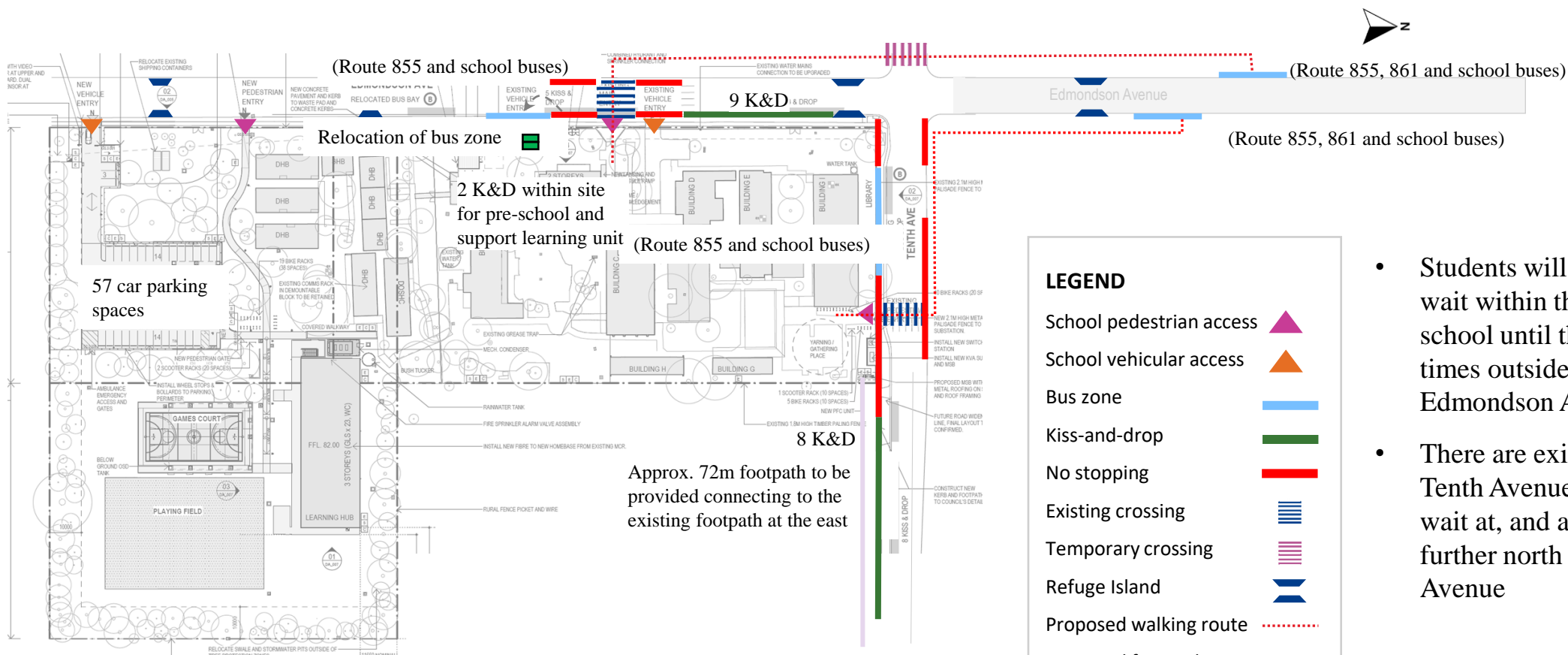


## 4. School transport operations

# School transport operations

## Proposed site transport

- 2 bays within site + 9 bays on Edmondson Avenue + 8 bays on Tenth Avenue (construction date dependent)



- Students will be expected to wait within the confines of the school until the proposed bus times outside the school on Edmondson Avenue
- There are existing shelters on Tenth Avenue for students to wait at, and at the 861 bus stops further north on Edmondson Avenue

\*Kiss and drop demand is calculated based on the car mode share under baseline scenario

# School transport operations

## Day-to-day operations (stage 1)

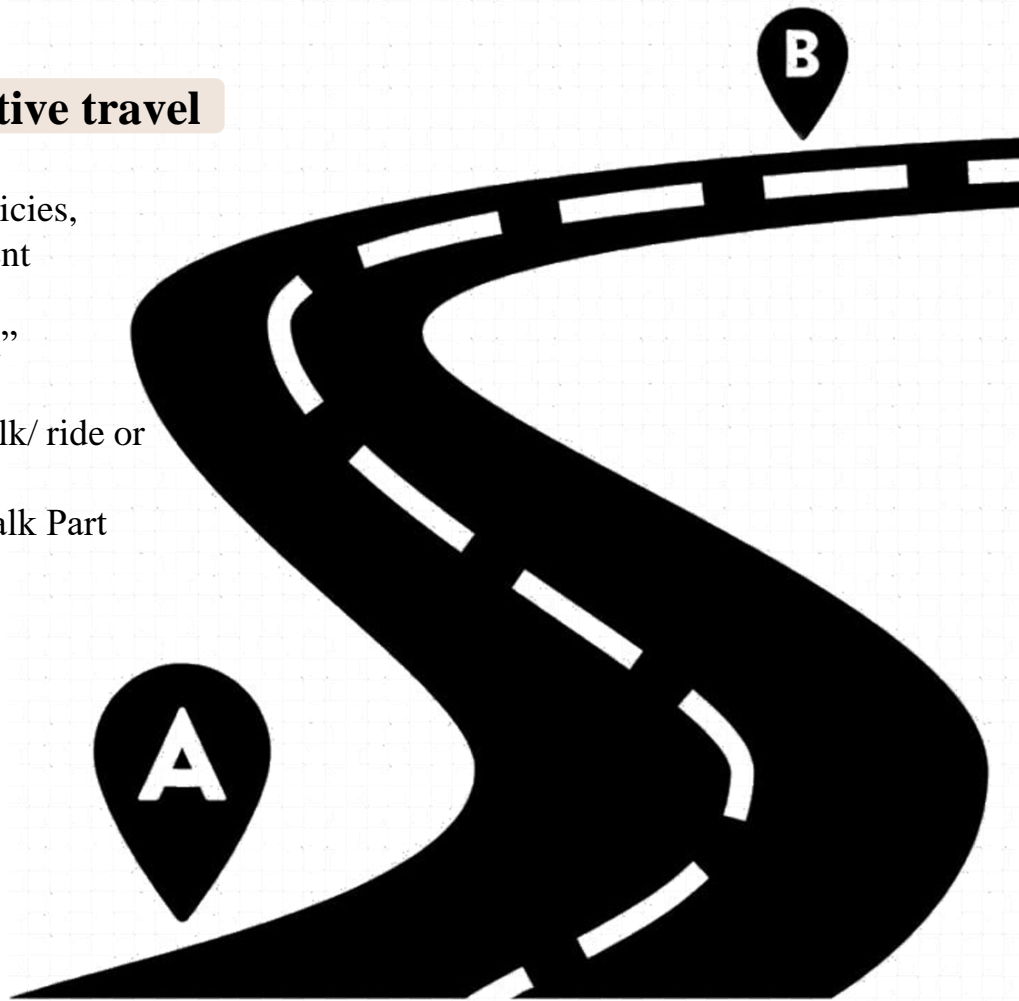
Transport Infrastructure	On-site	Adjacent to site	Management measures
Site entries, pedestrian and vehicle	<u>Edmondson Avenue:</u> <ul style="list-style-type: none"> <li>2 pedestrian accesses</li> <li>2 vehicular accesses (separated for staff parking and service vehicles)</li> </ul> <u>Tenth Avenue:</u> <ul style="list-style-type: none"> <li>1 pedestrian access</li> </ul>	N	<p>Staff monitoring during bell time, including staggering for the bus stops.</p> <p>Cycle parking within the confines of the site, in line with 'reach' scenario mode share</p>
Kiss-and-drop including Assisted School Transport Program	N	9 kiss-and-drop bays will be provided on Edmondson Avenue and 8 kiss-and-drop bays will be provided on Tenth Avenue along the school frontage. 2 childcare spaces will also be accessed from Edmondson Avenue	Parents will be informed to remain within their vehicles in the kiss and ride area at all times and they may stop for up to a maximum of 2 mins
Buses	N	Regular bus (routes 855 and 861) and school bus stops on Edmondson Avenue and Tenth Avenue within 2-minute walk of APS	Staff monitoring during bell time
Parking including carpool, carshare pod	57 car parking for staff	N	N
Delivers and service vehicles	Loading bay and service vehicle access serving high school is accessed from Edmondson Avenue	N	N

# School transport operations

## Transport encouragement programs

### Strategies to promote active travel

- New starter kit with transport policies, transport access options for student induction
- In-class “Active Travel to School” education
- Independent travel training to walk/ ride or travel with a buddy
- Walk/Ride to school day and “Walk Part Way to School” programme
- Walking school bus/ bike bus
- STEPtember
- Walk Safety to School Day
- Gamification
- Cycle parking



### Strategies to promote public transport

- SSTS “tap on”
- School bus enhancement by providing additional stops and potential tweaking timings of existing bus services
- New starter kit with bus schedule

### Strategies to reduce driving

- Carpool matching / incentives
- Remote car parking
- Remote kiss-and-drop

## 5. Communication plan

# Communication plan

## Channels

Communications will be developed, and information sessions will be made available on top of information packs being issued to the families and covering access. There will be information packs going out addressing how students can travel to school through the various modes.



Onboarding letters to parents



Reporting mechanism  
(non-emergency policy hotline  
131444)



School newsletter



Brochures for Kiss and Ride safety tips



School website's travel page



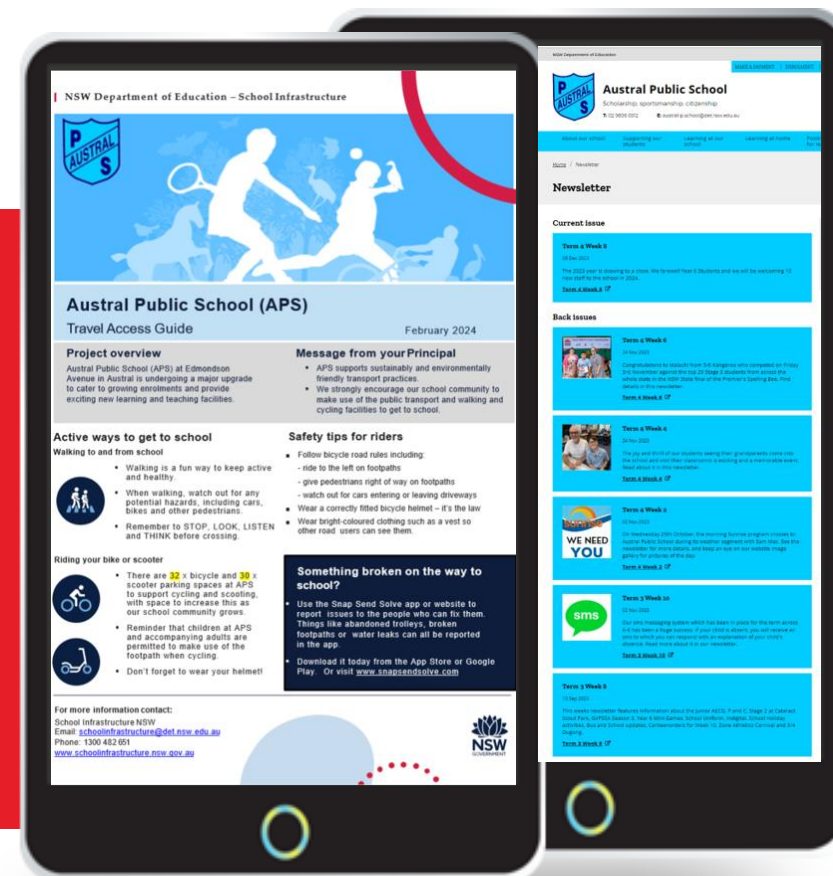
Kiss and Traffic Safety door sticker

# Communication plan

## Messages

### Short content about:

- Principal's message about transport goals and expectations
- List of transport access modes with maps
- Method to report transport issue with links
- Kiss-and-drop arrangement as well as guidance and rules to abide by
- Safety tips for students and parents
- Encourage the use of sustainable transport modes by promoting walking, cycling and utilising public transport and car sharing rather than single occupant car travel
- Useful links including trip planner, SSTS and safe school travel



### 3 key elements:



Promotion of active travel and public transport



School operation, arrangement and safety tips



List of transport access modes with maps

## 6. Data collection and monitoring



# Data collection and monitoring

## Data collection

### Data

### Method

#### Transport catchment access

To understand the travel demand of different modes

#### GIS

With the use of depersonalised residential data

#### Staff and student travel demand and transport use

To understand preferred mode of transportation

#### Annual journey to school questionnaires

Monitoring active travel uptake and obtain feedback

#### Pedestrian and vehicle count at school entries

To obtain data on pedestrian, scooter, cycling and car arrivals to school

#### Traffic survey (Video camera surveys)

Provide insight on how school facilities are being used during peak times and the performance of transport access

# Data collection and monitoring

## Program evaluation

Strategy	Target mode	Phase 1	Phase 2	Responsibility
Encourage new students to use active/public transport when travelling to/from school during orientation periods.	Active transport, Bus	Organising material outlining active transport routes to school and provide relevant resources from TfNSW	Review material and uptake of active transport for new students after one term	APS
Promote Walk Safely to School day and Ride2School day	Active transport	Raise awareness of the events and potential health and wellbeing benefits leading up to the day	Review student participation in the events annually	APS
Carpooling where the school raises awareness of reputable services for parents to organise	Car	Carpooling occurs organically over time between parents	Carpooling occurs organically over time between parents	Parents
Bus pooling to pair students for bus travel, where the parents are able to facilitate these connections	Bus	To occur organically over time between parents	To occur organically over time between parents	Parents
Students buddy up to travel sustainably	Active transport, Bus	To occur organically over time between parents	To occur organically over time between parents	Parents
Walking school bus that runs along planned walking routes at set times	Walk	To occur organically over time between parents	To occur organically over time between parents	Parents
Articles on school Enews app to include travel tips for students	Active transport, Bus	Organise transport information to be included on the app	Review relevance of information and determine additional information students and parents may want to be informed on	APS
Staff organised carpooling system	Car	To occur organically over time between staff	To occur organically over time between staff	Staff
Staff recognition programs	Active transport, Bus	Keep staff members informed about transportation-related initiatives, updates on public transportation routes or schedules, and success stories of colleagues who have adopted alternative modes of travel.	Implement recognition programs to acknowledge and celebrate staff members who consistently use active or public transportation. This can help foster a sense of community and camaraderie among staff members who share similar transportation choices.	Staff

# Data collection and monitoring

## Reporting findings

Reporting	Responsibility
<ul style="list-style-type: none"> <li>Conduct questionnaires and surveys annually and compare results to determine the proportion of persons travelling to/from the Site by each transport mode twice yearly in the first year as far as practicable.</li> <li>Analysis and assessment of monitoring data collected to identify challenges preventing the school from achieving their targets and prepare strategies to address these challenges.</li> <li>Review information regarding participation in active travel programs to increase sustainable transport use.</li> <li>Undertake community consultation to gauge feedback regarding implemented strategies and areas for improvement to further encourage the use of alternative modes of transport.</li> <li>Document progress or deficiencies during Action Plan delivery</li> <li>Review updated depersonalised data from the Department of Education with GIS analysis to decide any additional improvement measures needed to accommodate the change to catchment analysis</li> <li>Periodic on-site review of facilities such as the short stay parking area, and bicycle racks.</li> </ul>	Travel Plan coordinator (TPC)
<ul style="list-style-type: none"> <li>Report transport issues / missing links via web tools or apps</li> </ul>	Students / parents
<ul style="list-style-type: none"> <li>Install (additional) infrastructure (i.e. bus shelters) to accommodate sustainable transport demand</li> </ul>	TfNSW

## 7. Governance framework

# Governance framework

## Travel plan coordinator (TPC)

A dedicated TPC will coordinate and monitor all travel plan activities to ensure the targets and objectives specified within the STP are met. The school will assign an administrative staff member to this role. External support will be sought as required to assist this role.

Monitoring strategy	Monitoring activity	Timeframe
Travel survey	TPC to coordinate and review all required steps to undertake surveys for staff and students (parents) to fill out on their travel patterns.  Surveys, at discretion of TPC, can be ‘hands up’ printing copies or suitable online base; e-correspondence (Email), Survey Monkey®, Microsoft Forms®, etc.	Twice yearly for the first year of operation
Walking, cycling and scooting arrival data	TPC to undertake an observational survey to obtain data on pedestrian, cycling and scooting use to support the travel survey.	Annually
Observations and notes	TPC to conduct site visits of the school’s transport systems and report on operations of buses and other issues	Once mid-term after opening and annually thereafter
Consultation with TfNSW and Council	Using the travel coordination meetings, the TPC should discuss any issues that have been raised to these bodies such as bus demand, parking issues or pedestrian path concerns.	Two occasions after the start of the Stage 1, then as required
Consultation with the Parents and Citizens (P&C) group	TPC to organise question and answer (Q&A) events with the P&C to broadcast travel issues and obtain feedback.	Twice yearly
Identify any school parking demand that spills out beyond the Kiss and Ride area	Car parking demand surveys (undertaken during and after school hours).	Twice yearly
Records, data collation, evaluation	Performance report including outcomes and analysis of conducted surveys, on-site observations and monitoring mode of transportation (mode share targets).	Annually

# Governance framework

## Internal school working group

The internal stakeholder group is formed with the school community prior to construction commencement and initially formed during the Consultation Stream 3 during the transport options development.



# Governance framework

## External transport working group

For the external stakeholder group, the Transport Working Group is initially formed during the Consultation Stream 2, during the transport options development to govern transport issues and opportunities during the implementation of the Travel Plan.

Task	Responsibility
<ul style="list-style-type: none"> <li>Reviewing bus operation efficiency including service catchment, route planning, occupancy, scheduling to provide sufficient and reliable service to people attending to school</li> <li>Collaborate with the working group and provide feedback on operational challenges, suggest improvements and strategies to maximise the efficiency of services</li> </ul>	Bus operators/ TfNSW
<ul style="list-style-type: none"> <li>Collaborate with the working group to establish budgets, allocate funding to upgrade transport services and infrastructure</li> </ul>	TfNSW
<ul style="list-style-type: none"> <li>Collaborate with the working group to enhance safety of travel</li> <li>Plan and develop infrastructure related to school transportation, such as bus stops, dedicated school bus lanes, and safe pedestrian pathways around schools.</li> <li>Potentially introduce and enforce parking restrictions around the school, although noting the proposed parking restrictions on Edmondson Avenue following the upgrades.</li> </ul>	Council
<ul style="list-style-type: none"> <li>Share project information with TWG in order to increase awareness of upcoming projects in the planning phase to minimise surprises when planning applications are made.</li> <li>Work through solutions to risks and problems raised in the TWG forum to enable improved planning applications that respond to the needs of all parties in a transparent and positive way.</li> </ul>	SINSW

## 8. Implementation checklist



# Implementation checklist

Item no.	Action/ description	Responsibility
<b>1. General</b>		
1.1	Establish a centralised TPC who is to take responsibility for the ongoing review and monitoring of this Plan. This person(s) shall also provide direction to staff/parents in relation to specific requirements arising from the Plan.	Department of Education
1.2	Provide ‘Travel Welcome Pack’ for newly employed staff, highlighting alternate modes of transport other than the use of a private vehicle.	TPC
1.3	Review of School Travel Plan as a regular item on the agenda of staff/management meetings.	Staff
1.4	Preparation of a Transport Access Guide (TAG) and review following changes stipulated by the TPC.	TPC
<b>2. Active travel</b>		
2.1	Promote Walk to Work Day and coincide with participation in “Walk Safely to School” Day. It would encourage alternative modes of transport. Older students can be paired with younger students who live close together to walk to school as a pair or group	TPC
2.3	Develop further school-specific activities designed to get people moving with reward participation. For example, a competition to see which staff and/or students in each year can get the most ‘steps’ in a given time period; similar to Steptember activities.	TPC
2.4	Encourage volunteers to organise a ‘walking school bus’. This allows for students to travel to school in an organised group guided by two (2) adults. This would require liaising with the TPC.	TPC/ parents
<b>3. Education initiatives</b>		
3.1	For Year K-2 students include education programs teaching road awareness using play-based learning.	TPC
3.2	For Year 3-4 students include education programs teaching road safety with a focus on walking independently to school.	TPC
3.3	For Year 5-6 students include education programs to teach how to travel independently on the public bus system in preparation for travelling to high school and other destinations.	TPC

# Implementation checklist

Item no.	Action/ description	Responsibility
<b>4. Public transport</b>		
4.1	Display route maps and timetables (for services within 5 minutes walking distance) in high trafficable areas within the school.	TPC/ DoE
4.2	Advocate for TfNSW to improve public transport services in response to increased development within the surrounding area.	TPC/ DoE
4.3	Update this Plan and TAG to reflect changes to any bus routes and service times.	TPC
4.4	Undertake a review to promote initiatives for staff using public transport. This may include a review of potential tax incentives for Government employees that use public transport.	TPC
4.5	Promote the use of public transport for students with a rewards scheme. i.e., students are provided incentives to travel to and from the school.	TPC
4.6	Liaise and discuss with TfNSW the feasibility of providing bus services for students outside of the 2.3km driving distance from the School.	TfNSW
<b>5. Reducing car travel</b>		
5.1	Review initiatives for staff and parents to promote carpooling. This may include (but not limited to) the provision of online services or forums to facilitate ease of finding carpooling scheme participants.	TPC
5.2	Potentially introduce and enforce parking restrictions around the school. This is to be discussed and implemented in collaboration with Council's Road Safety Officer.	TPC
5.3	Liaise with staff to discuss the feasibility of a parking management scheme which would discourage the use of single occupant car travel to the site while incentivising employees to travel by alternative modes of transport.	TPC

## 9. Cumulative Impact Assessment

# Cumulative Impact Assessment

## Cumulative Impact Assessment

Located in the South-West Growth Area (SWGA), the site and surrounding areas are poised for substantial growth and densification. Austral is undergoing significant change and transition following recent rezoning by the NSW Government. Numerous residential subdivisions in both the immediate and broader vicinity are set to reshape the area, further contributing to the evolving landscape. The impact of this population uplift on the surrounding transport and traffic network is considered in combination to the operation of the school.

Impact	Description
Queuing from high peak hour traffic volume.	Very high car use creating strain on completed Kiss and Drop bays during peak hours.
Road network performance at critical intersections reaching capacity.	Population growth expected in Austral will increase traffic growth at a rate of 1.45% compounded annually until the forecasted year 2036. This will strain the performance of the Edmondson Avenue and Tenth Avenue intersection which currently is operating at a PM peak Level of Service F. Edmondson Avenue is planned for road widening and installation of signalisation in 2026.
High accident frequency on Edmondson Avenue.	High vehicle based crash occurrence rate on Edmondson Avenue was recorded between 2018 and 2022. These safety issues demonstrate the need to improve crossing facilities and make efforts to reduce vehicle use and provide improved pedestrian safety and promote the visibility of pedestrians to vehicles.

# Cumulative Impact Assessment

Impact	Description
Kiss and Drop bay congestion causing visibility issues.	Kiss and Drop bay is positioned close to the bus stop and too many vehicles parking can obstruct driver sight lines, causing traffic congestion and presenting as a hazard.
Walking catchment coverage is small relative to SSTS boundary.	SSTS boundary encompasses a significant area that is beyond a 1200m or 15-minute walking accessibility range. A large number of students are located beyond a 15-minute walking range from the school but also do not qualify for subsidised travel. Estimated only 8% of existing students and 10% of total future students live within a 15-minute walk of school.
Enrolment boundary covers significant reaches with limited public transport access.	Enrolment boundary reaches over 2km from the school in most directions and relatively limited public transport options exist for students who are eligible for subsidised travel. It is expected that number of students living in the catchment will increase by 70% with future developed subdivisions. Only 32% of future students eligible for subsidised travel are within 800m walk of existing bus stops and services.

# 10. Mitigation Measures

# Mitigation Measures

## Mitigation measures

We recommend that these mitigation measures be evaluated and carried out by Austral Public School.

Mitigation	Aspect	Mitigation measure	Reason for mitigation measure
Dedicated Transport Plan Coordinator (TPC)	Post completion	TPC to undertake observational surveys to obtain data on pedestrian, cycling and scooting use to support the travel survey. They are to conduct site visits to evaluate the school's transport system and flag issues. Surveys should be conducted at least once every year and utilise the hands-up survey method. TPC will be able to engage with TfNSW and Council.	Travel plan activities can be monitored by TPCs to ensure that targets and objectives specified within the STP are met
Travel welcome pack for staff	Post completion	Provide new staff with information on alternate modes of transport to reduce use of private vehicle.	Reduce traffic on road network and parking demand.
Creation and update of a Transport Access Guide (TAG)	Post completion	TAG to track changes to bus routes and service times. Information used to maintain awareness of public transport options and operations. Awareness of availability could influence mode share changes towards using public transport where available.	Promoting the use of public transport options and as alternative to active transport.
Programs to promote active travel	Post completion	Hosting programs such as 'Walk to Work Day', 'Walk Safely to School', 'Walking School Bus', and 'September'.	Advocate active transport by educating younger students on how to safely navigate walk to school routes.

# Mitigation Measures

Mitigation	Aspect	Mitigation measure	Reason for mitigation measure
Display bus route maps and timetables within school ground	Post completion	Reminders of public transport options and making information available for students to evaluate suitable bus routes and engage with bus timetables in convenient spaces.	Increase public transport use to reduce private vehicle demand on car parking and road network.
Introduce carpooling system and school carpark use restrictions	Review needed 6 months post completion	Create carpooling initiatives such as provision of online services or forums to facilitate ease of finding carpooling scheme participants. Introduce carpark restrictions and liaise with staff to discuss the feasibility of a parking management scheme which would discourage the use of single occupant car travel to the site while incentivising employees to travel by alternative modes of transport.	Reduce vehicle traffic on road network and prevent queuing at access point during morning and afternoon peak hours.



# 11. Consultation with agencies

# Consultation with agencies

Consultation meeting	Agencies involved
Traffic Working Group (TWG) 1	Arup, TfNSW, Liverpool City Council, SINSW, CTPG
Traffic Working Group (TWG) 2	Arup, TfNSW, Liverpool City Council, SINSW, CTPG

Consultation group	Topic	Issue raised	Decision / action
TWG 1	Contingency to include for Opal data	Should Arup include a contingency to capacity in order to more accurately account for students not tapping on or off buses.	TfNSW advised a 10% contingency to capacity should be included in the analysis to accommodate students who do not tap on or off buses when reviewing current bus capacity.
	Bus route updates	Indicative changes to bus services for routes 861, 1052, and 2033. With increased frequency and deviation to routes to include Seventeenth Ave.	TfNSW recommended additional services of bus route 855 (Rutleigh Park to Liverpool via Austral & Leppington Station) in the AM peak.
	Kiss and drop zone allocation	A minimum of 17 vehicle spaces is required for Stage 1 kiss and drop bays. Discussion on where to locate these bay.	TfNSW recommended providing kiss and drop bays on Tenth Avenue instead of Edmondson Avenue as all the on-street activities along the Edmondson Avenue will be ultimately removed due to the upgrade. It is also worth to provide a plan to show kiss and drop bay on Tenth Avenue. TfNSW and Liverpool City Council (LCC) agree that kiss and drop should be provided on Tenth Avenue to minimize conflict to the traffic on the main road. LCC advised that kiss and drop should be continuous where possible.
	Road and intersection upgrades for Edmondson Ave	Understanding that there are planned upgrades to Edmondson Ave. Confirm estimated dates for upgrade commencement and completion and how the improvements impact intersection analysis.	LCC advised that analysis for Austral Primary School Stage 1 should be based on the existing road layout as the Edmondson Avenue upgrade is targeted to complete in 2028.
	Wombat crossing relocation	General consideration for wombat crossing location.	LCC advised the existing wombat crossing on Edmondson Avenue will be relocated further south. The works is expected to be carried out during Christmas holiday 2024. LCC recommended to group the kiss and drop bays in one area, separated to the bus zone. LCC will provide the crossing relocation plan to Arup to consider.

# Consultation with agencies

Consultation group	Topic	Issue raised	Decision / action
TWG 2	Actions from TWG 1	<ul style="list-style-type: none"> <li>Review kiss and drop arrangement on Edmondson Ave and Tenth Ave.</li> <li>Review Edmondson Ave wombat crossing.</li> </ul>	<ul style="list-style-type: none"> <li>LCC confirmed they would send through the latest plans to reflect in Arup drawings. LCC confirmed the kiss and drop bays should be within one location to make management of the bays easier on Edmondson Avenue.</li> <li>LCC confirms the combat crossing will be moving south, closer to the school pedestrian access on Edmondson Ave.</li> </ul>
	Bus route 855	Arup presented modifications to bus route 855 required for new residential areas.	Arup concluded that bus route 855 is an infrequent and long service which is currently underutilised, and changes to the timetable would be required to fit with the start and end times of Austral Public School if it were to be used. TfNSW agreed it was an infrequent service but should still be considered in the analysis.
	Bus route 861	Impacts of changes to bus route 861 on other schools in the area.	TfNSW requested to look at the impact of bus route 861 on St Anthony of Padua Catholic College. Arup to provide bell times as an appendix to Traffic Impact Assessment. TfNSW noted that the frequency of 861 would increase to every 15 minutes if funding was secured. If this is implemented prior to Stage 1 opening of Austral (2026) this would provide more services for the school to use. TfNSW noted if funding was not secured prior to 2026 then alternative arrangements would need to be made, such as a dedicated school bus service for Austral Public School. TfNSW to review funding and bus options prior to 2026.
	Edmondson Ave intersection	Arup queried whether a temporary crossing could be installed as a result during the Edmondson Ave – Tenth Ave intersection upgrade.	LCC confirmed this would need to be discussed at a future traffic committee. SINSW could provide a pedestrian count survey result to Arup to justify a temporary crossing.

ARUP

# Supplementary details

## References

# References

- Liverpool City Council Delivery Program 2022-32 Operational Plan 2023-24 (Liverpool City Council, 2023)
- Austral and Leppington North Contributions Plan 2021 (Liverpool City Council, 2023)
- Liverpool Growth Centre Precincts Development Control Plan Schedule 1 (Liverpool City Council, 2021)
- Liverpool Development Control Plan 2008 (Liverpool City Council, 2021)
- Liverpool Local Environmental Plan 2008 (Liverpool City Council, 2023)
- Austral and Leppington North Precinct Post Exhibition Traffic Report Addendum (AECOM, 2012)
- Guide to South West Growth Area Structure Plan (DPE, 2022)
- Austral and Leppington North Precinct Indicative Layout Plan (Planning & Infrastructure, 2023)
- Green Star Design & As Built Submission Guideline (Greenstar, 2017)
- Population projects Open Data Hub and Development Portal (TfNSW, 2023)
- Liverpool City Council Agenda Ordinary Council Meeting (Liverpool City Council, 2023)