

asongroup



# **Narrabeen Education Precinct – Narrabeen North Public School**

Transport Assessment

6 Namona St, North Narrabeen

19/09/2022

Ref: P2008r02

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## Document Control

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### Appendix A. Swept Path Assessment

# 1 Introduction

## 1.1 Overview

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Ason Group has been engaged by School Infrastructure NSW to prepare a Transport Assessment (TA) in relation to a Development Application (DA) for proposed upgrades (the Proposal) at Narrabeen North Public School (NNPS) located at 6 Namona Street, North Narrabeen.

The subject sites are located at 6 and 10 Namona Street, North Narrabeen (referred to as the Narrabeen Education Precinct) and fall within the local government area of Northern Beaches Council. The Narrabeen Education Precinct has a total area of 9.84 hectares.

Narrabeen North Public School (NNPS) is located on the northern side of Namona Street, North Narrabeen and is legally described as Lot 3 Deposited Plan (DP) 1018621. NNPS is surrounded by residential dwellings to the east, grassed sporting fields (Warriewood Valley Sportsground) to the north and Northern Beaches Indoor Sports Centre to the west. NNPS contains two (2) Binishell domes (Block A and Block B) which are identified as a local heritage item under the Pittwater Local Environmental Plan 2014. The two (2) Binishell Domes are listed as State significant on DoE's Section 170 Heritage and Conservation Register. The Double Binishell Dome (Block B) is listed on the State Heritage Register (SHR).

Narrabeen Sports High School (NSHS) is located on the southern side of Namona Street and is legally described as Lot 12 DP 1119562. NSHS is surrounded by Pittwater Road to the east, Pittwater Sports Centre to the south and Mullet Creek to the west.

## 1.2 Site Description

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The subject sites are located at 6 and 10 Namona Street, North Narrabeen (referred to as the Narrabeen Education Precinct) and falls within the local government area of Northern Beaches Council. The Narrabeen Education Precinct has a total area of 9.84 hectares.

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Narrabeen Sports High School (NSHS) is located on the southern side of Namona Street and is legally described as Lot 12 DP 1119562. NSHS is surrounded by Pittwater Road to the east, Pittwater Sports Centre to the south and Mullet Creek to the west. See site aerial map in **Figure 1**.



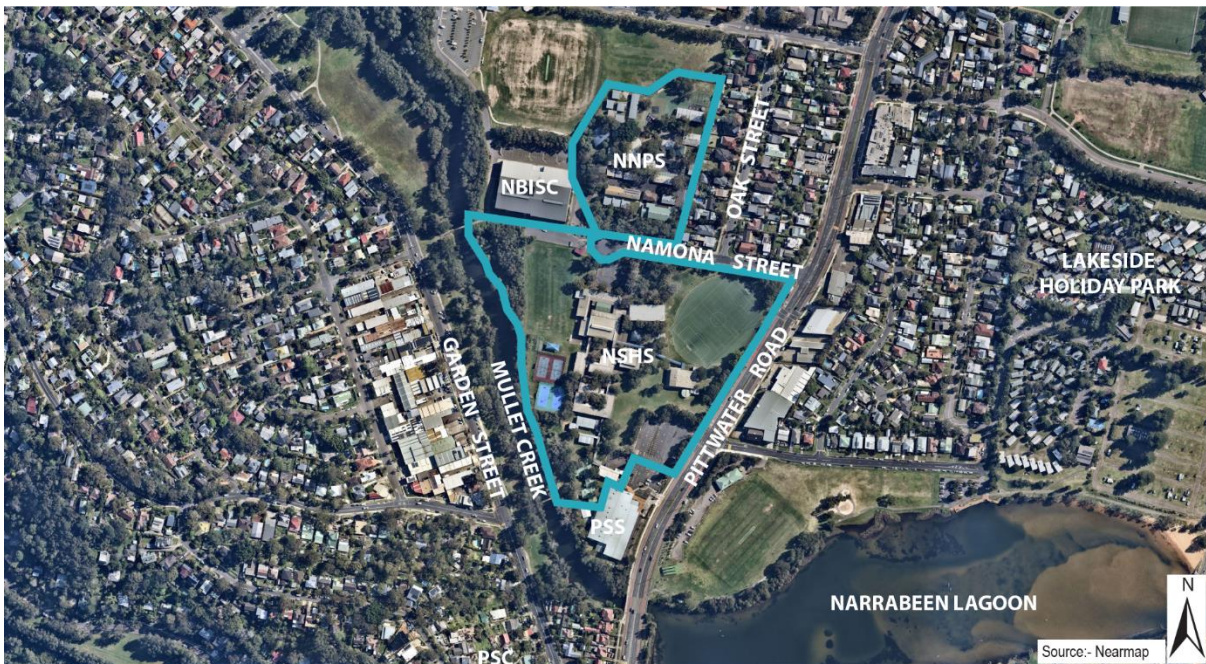


Figure 1: Site Aerial Map (Source: Nearmap)

### 1.3 The School

The proposed Narrabeen Education Precinct development includes the redevelopment of Narrabeen North Public School (NNPS) and Narrabeen Sports High School (NSHS). The Public School and High School have been identified by the NSW Department of Education (DoE) as requiring upgrade works.

The works at NNPS upgrade the school includes the demolition of existing buildings (Blocks H and J), and the construction of three (3) new buildings with the refurbishment of three (3) existing buildings (Blocks B, K and V).

This Development Application (DA) will seek consent for the following works at NNPS:

- Construction of a new two (2) storey building containing administration facilities, multi-purpose hall and out-of-school-hours care (OSHC) facility on the ground floor with staff facilities and amenities on the first floor; and New Covered Outdoor Learning Area (COLA).

Other development works are occurring on the site under separate planning pathways including:

- Development without consent (REF); and Exempt development

The proposed development does not seek to increase staff or student numbers.

Reference should be made to the reduced plans for NNPS provided in **Figure 2**.

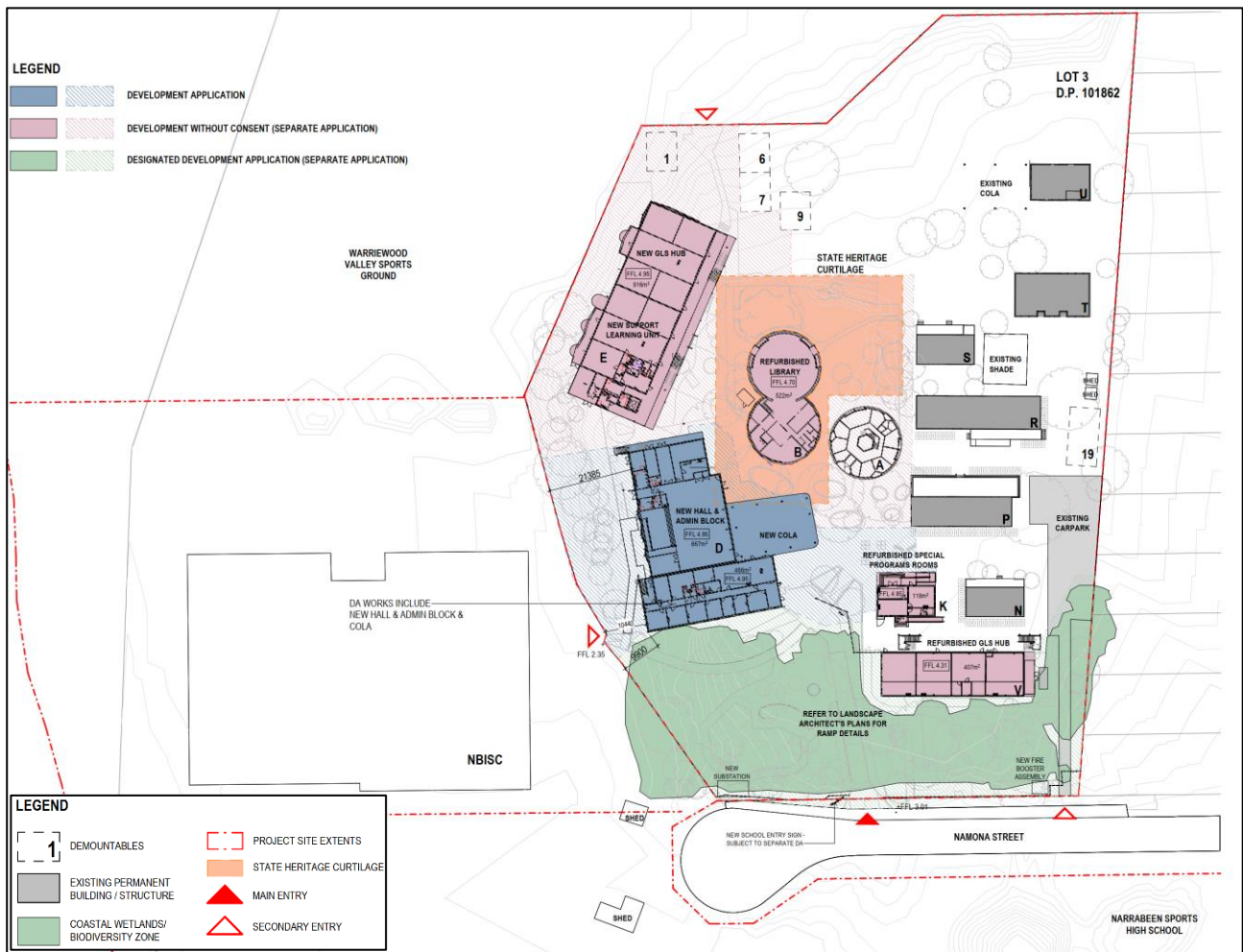


Figure 2: Site Plan (received 23 August 2022)

## 1.4 Transport Assessment Objectives & Methodology

This TA provides an overview assessment of the relevant access, traffic and parking characteristics of the Site. In determining the potential 'impacts' of this development, Ason Group has specifically:

- Establish that the proposed development of the Site is compliant and consistent with the relevant transport planning guidelines.
- Establish that the trip generation of the Site can be accommodated by the local road network.
- Demonstrate that there will be an appropriate and sustainable allocation of car parking across the Site.
- Demonstrate that proposed Site access driveways, drive-through, car parking and service facilities can appropriately accommodate peak demands and be designed to provide compliance with the relevant Australian Guidelines.

To achieve these objectives, this TA provides an assessment of the existing and future operation of the nearby road network, as well as other traffic and transport-related issues including access to and from the Site; public and active transport accessibility; car parking requirements; and service vehicle access. This has included:

- A review of the road network providing access to/from the Site, including a Site visit and review of key intersection operations.



- An assessment of the traffic generation and distribution characteristics of the Proposal to the local road network, and the potential impact of those additional trips on key roads and intersections.
- An assessment of internal access, parking and servicing provisions with reference to the appropriate Australian Standards.

## 1.5 Key References

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The TA references several key strategic, design and planning documents in the assessment of the traffic and transport-related elements of the project. These documents include:

- Pittwater Development Control Plan 2004, amended 18 January 2021;
- Pittwater Local Environmental Plan 2014
- Move – Northern Beaches Transport Strategy 2038, adopted November 2018;
- Northern Beaches Walking Plan, Draft
- Northern Beaches Bike Plan adopted July 2020;
- NSW Department of Education, Master planning guidelines for schools, October 2020
- NSW Department of Education, SINSW Community of Practice Architects + Transport Planners, 29th October 2020
- NSW Department of Education, Educational Facilities Standards and Guidelines (EFSG Guide)
- NSW Government, Planning Guidelines for Walking and Cycling, November 2019;
- Transport for NSW, NSW Movement and Place Framework
- NSW Government, Practitioner’s Guide to Movement and Place, March 2020
- NSW Planning Guidelines for Walking and Cycling (December 2004);
- Pittwater 21 Development Control Plan 2004 (Pittwater DCP)
- Pittwater Local Environmental Plan 2014 (Pittwater LEP)

This TA also references general access, traffic and parking guidelines, including:

- Roads and Maritime Services, Guide to Traffic Generating Developments, v2.02, 2002 (RMS Guide)
- Roads and Maritime Services, Trip Generation Surveys Schools Analysis Report (Prepared by GTA for RMS, Issue A dated 25/08/2014);
- Australian Standard 2890.1:2004 Parking Facilities – Off-Street Car Parking (AS 2890.1: 2004)
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018)
- Australian Standard 2890.3:2015 Parking Facilities – Bicycle Parking (AS 2890.3:2015)
- Australian Standard 2890.5:2020 Parking Facilities – On-Street Parking (AS 2890.5:2020)
- Australian Standard 2890.6:2009 Parking Facilities – Off-Street Parking for People with Disabilities (AS 2890.6:2009)
- Transport for NSW, Supplement to Australian Standard AS 1742.10-2009, Manual of Uniform Traffic Control Devices – Part 10: Pedestrian Control and Protection Version 3.1 March 2021
- EIS Guidelines – Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996)
- Cycling Aspects of Austroads Guides
- Guide to Traffic Management Part 12: Integrated Transport Assessments for Development (Austroads, 2020)

## 1.6 Detailed Stakeholder Engagement

### 1.6.1 Council & TfNSW Joint Project Working Group

**TABLE 1: ENGAGEMENT 1**

TRANSPORT WORKING GROUP MEETING 01	
<b>Date</b>	03/12/2021
<b>Time</b>	09:00
<b>Location</b>	MS Teams
<b>Purpose</b>	To form the Transport Working Group and to discuss the transport-related elements relating to the proposed upgrades to the Narrabeen North Public School.
<b>Attendance</b>	<ul style="list-style-type: none"> <li>• Northern Beaches Council               <ul style="list-style-type: none"> <li>– Phillip Devon (PD)</li> <li>– Michelle Carter (MC)</li> <li>– Robynann Dixon (RD)</li> </ul> </li> <li>• TfNSW               <ul style="list-style-type: none"> <li>– Natalie Gulliver (NG)</li> <li>– Peter Carruthers (PC)</li> <li>– David Surplice (DS)</li> <li>–</li> </ul> </li> <li>• SINSW               <ul style="list-style-type: none"> <li>– Jonathan Darwen (JD)</li> <li>– Joel Linden (JL)</li> <li>– Richard Moyle (RM)</li> <li>– Rebecca Lehman (RL)</li> </ul> </li> <li>• Frank Turquoise Group               <ul style="list-style-type: none"> <li>– Kira Evans (KE)</li> <li>– Noah Burke (NB)</li> </ul> </li> <li>• Minutes               <ul style="list-style-type: none"> <li>– Noah Burke (NB)</li> </ul> </li> </ul>
ACTIONS	
<b>01</b>	SINSW to update the Narrabeen Education Precinct concept design
<b>02</b>	SINSW to bring to subsequent Transport Working Group in 2022
<b>03</b>	PD to send Keoride contact
<b>04</b>	RD to confirm Narrabeen Education Precinct could be scheduled for the 2022 Road Safety Review program
<b>05</b>	KE to speak with TfNSW bus service planning and bus operators
<b>06</b>	KE to speak with Keoride regarding student access arrangements
NOTES	
<p>TRANSPORT WORKING GROUP MINUTES</p> <p>Introductions:</p> <p>RL SINSW transport advisor</p> <p>PC representing the northern part of the Greater Sydney Division (TfNSW)</p> <p>DS TfNSW Travel Demand Management team briefly outlined the role of reviewing Green Plan / School Transport Plans</p> <p>PD Director, Council's Traffic and Transport team</p> <p>MC PM, Council's Transport Planning</p> <p>RD Council's Road Safety Officer</p> <p>KE Frank Turquoise Group, transport planner for SINSW Narrabeen Education Precinct Project</p> <p>JD introduced the Narrabeen Education Precinct project</p> <p>JL SINSW project team</p> <p>RM SINSW project team</p> <p>NARRABEEN EDUCATION PRECINCT TRANSPORT ASSESSMENT</p> <p>KE shared the analysis of the Narrabeen Education Precinct transport infrastructure, network and operations</p> <p>Public transport and school buses access and use</p>	

Good access to public transport for the schools, 61% of the secondary school have access to a bus 84% of primary students have a bus option but live too close for a free SSTS pass

- no major changes in bus routes or services since the introduction of the B-Line
- In the questionnaire, a trend identified is that students tend to be dropped at school but will catch the bus home
- Unsafe crossing observed on Pittwater Road, trying to access buses in the afternoon

Public transport and school bus discussion:

- DS noted TfNSW policy is for East-West travel demand to transfer to North-South routes, like the strong North-South B line connection. The new operator started in October.
- PD will send the Keoride contact for the Northern Beaches link pilot Kiss-and-drop
- parents still undertaking kiss-and-drop in unmanaged or unsafe areas
- informal kiss-and-drop occurs on the south side of Jacksons Road
- o this is hampered by wet weather when the field floods
- o there is no footpath on the south side of Jacksons Road

Pedestrian access and use

Many primary students within the "15-minute walk" as the crow flies, though this is constrained due to terrain

As a selective school, students travel further to Narrabeen so only 11% of secondary students are within a 15-minute walk

Observations:

- Existing footpaths (e.g. Namona St) are narrow or disconnected PM bell time pedestrian demand overwhelms the footpath network and road network

Discussion included:

MC noted council is undertaking upgrades to the footpaths around the school

- Namona St footpath widening 2021 school holidays
- Jacksons Road southern footpath
- Council proposes to double active transport by 2036
- a new Shared User Path is proposed for Boondah road, TBC would be delivered by the developer
- a council project for the community centre on the NW corner of Pittwater / Jackson Road is slated for 2022, a Shared User Path will be installed from the Pittwater Road bus stop to the north side of Jackson Road

## SINSW TRANSPORT CONSIDERATIONS

SINSW project transport operations

- Review bus timetables and options to further offset bell times (currently 2 minutes)
- Meet with Keoride to understand potential student transport access
- Review Mullet Creek gate operations and upgrade for remote access
- Prepare a Travel Access Guide to target both AM and PM bus trips, especially those using public and school buses in the PM could do so in the morning
- Raise reports of inappropriate high school student behaviour on buses, primary school parental discomfort for primary students using buses – seek to improve secondary bus user behaviour

SINSW project transport infrastructure

- Address stairs at the main entry for DDA-compliant access and bicycle access
- Flood-proof footpath from Jacksons Road
- Formalise kiss-and-drop
- Evaluate staff car parking location and school bus stop(s)

DISCUSSION:

MC noted a block of units was proposed for Boondah road, this was rejected

JD Narrabeen Sports High will continue to be a selective sports high school and bring up to 250 out of area students

DS noted council's active transport plan is well structured and will improve travel for high school students

SINSW questions:

Road safety review:

- RL query for RD, is the Narrabeen Education precinct on the list for a Road Safety Review?
- RD, not yet, can be

DISCUSSION (CONTINUED)

Pittwater / Jacksons Road signals:

- RL query for PD, are there any proposals to add a pedestrian leg to Pittwater Road / Jacksons Street intersection (south leg)

- PD it was investigated and not pursued as part of the Pittwater / Jacksons signal upgrade that would be looked at when the plans are in, but it would be difficult to do that without disturbing Pittwater
- PC noted a School Crossing Supervisors is unlikely at Pittwater Road – the intersection is already signalised

School Street:

- RL query, could Namona St be considered for closure, if buses could be addressed?
- Cautiously supported by attendees, discussion indicated changes to bus stop and staff car parking need to be addressed

## 2 Strategic Context

### 2.1 Movement and Place Framework

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The Movement and Place is a cross-government framework for planning and managing roads and streets across NSW. The framework delivers on NSW policy and strategy directions to create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places.

The below provides a summary of how Movement and Place are relevant for school development.

#### 2.1.1 Place Analysis

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The place analysis makes reference to the importance of the location in its physical form, the activity and generates and how its meaning is characterised by the community.

With reference to the movement impacts on place, the framework recognises the need to provide safe, direct, and comfortable walking and cycling routes as the backbone of active travel, including to schools and linking local activities to local recreation, giving priority to car-free arrival points and providing minimal parking. Of relevance to the proposal, built environment indicators for Primary Schools extracted from the Practitioner's Guide to Movement and Place are presented in **Figure 3**.


USER OUTCOME	INDICATOR	MEASURE	DESIRED OUTCOME	DATA SOURCE
 <b>Amenity and Uses</b>				
Convenient facilities	Primary schools	Walkable access to primary schools	Positive indicates increase in catchment	GIS network analysis

Figure 3: Built Environment Indicators

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#### 2.1.2 Movement Analysis

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The concept of movement as characterised by the Framework describes the demand to, from and through the activity centres, and describes the series of modal networks interlinking them. With reference to the school's location, it is interlinked by the road network, which is of adequate width to provide for bus services, as well as pedestrian footpaths and dedicated cycling routes.

#### 2.1.3 Built Environment Indicators

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Furthermore, the Movement and Place Framework has established a set of 36 Built Environment Performance Indicators to evaluate projects based on qualities that contribute to a well-designed built environment, and are grouped under five themes relating to user outcomes. The user outcomes reflect what a person may reasonably expect as an outcome of good performance related to that theme.

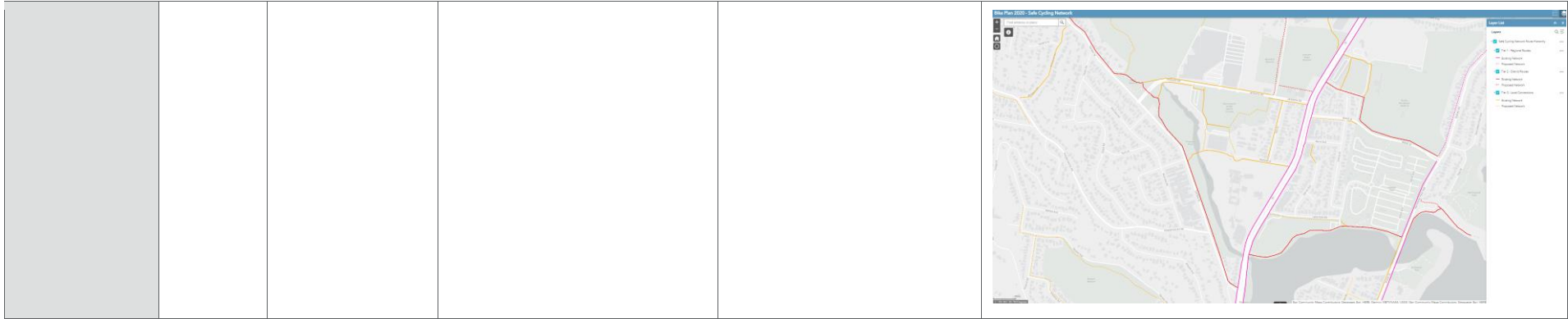
Nine core indicators are analysed as the minimum data inputs for each relevant theme for all projects to report against, ensuring the focus on both movement and place outcomes. Supplementary and project-specific indicators are not required for every project or plan but can be adopted where the context and objectives cannot be addressed using the core indicators.

Table 2 below provides the nine core indicators and three supplementary indicators which are considered relevant for the project.

**TABLE 2 MOVEMENT AND PLACE - PERFORMANCE INDICATOR**

Indicator Name	Indicator Number	Indicator Type	Objective	Classification	Ason Group Notes
Mode share	1	Core	To measure the proportion of sustainable travel mode usage by transport customers.	% of sustainable trips: 13% Category – between 5% and 20%	With reference to Movement and Place Built Environment Indicator Map, 13% of sustainable trips are observed for sustainable trips to work.  Detailed mode share analysis as well as school catchment analysis are conducted in <b>Section 1.2</b> and <b>6</b> of this report.
Public transport accessibility	4	Core	To measure the level of interaction between land use and transport services in terms of how well people are served by public transport.	PTAL – Level 6: very high	Public Transport Accessibility Level has been assessed based on the AM Peak between 6:00 am to 10:00 am and PM Peak between 2:00 pm to 6:00 pm.  Public transport access to primary schools is analysed within <b>Section 6</b> of this report.
Permeability	29	Core	To measure the walking and cycling permeability of the road network, reflecting the walkability and connectivity of an area	Intersection Density: 21-40 intersections per km <sup>2</sup>	With reference to Movement and Place Built Environment Indicator Map, an intersection density of 21 to 40 km <sup>2</sup> is observed within proximity of the school site.
Public space	9	Core	To measure walking access to public spaces and the proportion of land that is reserved for public space	Population within 10min walk to a public space: 0% Proportion of public space: 40%	With reference to Movement and Place Built Environment Indicator Map, the population within a 10min walk to public space is 0% and the proportion of public space is 40% around the school site.
Road safety	23	Core	To measure and identify road safety risks and trends in crashes over time on NSW roads		Refer to <b>Section 4.2</b> for crash stat analysis
Primary School	24	Supplementary	To measure the walkable access to primary schools and nearby public transport	Walkable access to primary school has been assessed for 400m, 800m, 1200m, 1600m, 2000m and 2300m on-path walking distance.	Refer to <b>Section 6.4</b> of this report.
Cycling Accessibility	3	Supplementary	To measure the connectivity, access, and quality of cycling infrastructure across the State	Hierarchy (desirability of cycling facility) – Shared Path – Non-Directional	With reference to Northern Beaches Council Bike Plan 2020, access to a non-directional shared path network is along the site frontage to Namona Street.





## 2.2 Move – Northern Beaches Transport Strategy

The *Move – Northern Beaches Transport Strategy 2038* (NBTS) was prepared by Council to present the vision for ‘a safe, sustainable and smart transport network’. The NBTS outlines the key strategies and direction of the Council to deliver ‘an efficient, innovative and reliable transport network’ by 2038.

The NBTS seeks to increase the modal share of all trips to a quarter for public transport and to double the number of active travel trips in all households with a focus on commuters and students. Furthermore, the NBTS is targeting a reduction in private vehicle trips by 30%, thus also lowering carbon emissions and improving traffic congestion.

Of relevance to the school, the NBTS notes the need to prioritise improvements to the active travel network from homes to work and education facilities; upgrades to footpaths and cycling paths and bike parking facilities are needed to support more active travel.

The NBTS provides the following themes and key directions for Northern Beaches LGA, as shown in **Figure 4**.

Theme	Key Directions
1 Accessible and Liveable Places	<ul style="list-style-type: none"> <li>Create and enhance “Places for People” that are integrated with public transport, creating vibrant, connected places with wide footpaths, safe cycling options and where the car is not the first option.</li> </ul>
2 Active Travel	<ul style="list-style-type: none"> <li>Prioritise smart, active travel network improvements (through technology, end of trip facilities and way-finding signage). Expand footpath and shared path networks to improve connectivity and safety, making walking and cycling attractive alternatives to the car.</li> </ul>
3 Public Transport	<ul style="list-style-type: none"> <li>Partner with the NSW Government to implement a Bus Rapid Transit service by 2020 between Dee Why, Frenchs Forest and Chatswood; followed by services between Mona Vale and Macquarie Park.</li> <li>Plan for a high frequency mass transit service on the Northern Beaches in the longer term.</li> </ul>
4 Efficient Road Network	<ul style="list-style-type: none"> <li>Support the delivery of the Beaches Link Tunnel subject to the inclusion of public transport and minimise overall impact on our local residents.</li> </ul>
5 Smart Parking Management	<ul style="list-style-type: none"> <li>Develop local parking management plans for town and village centres including higher turnover parking in areas of high demand.</li> </ul>

Figure 4: Key themes and directions for Northern Beaches Council<sup>1</sup>

## 2.3 Northern Beaches Bike Plan

The Northern Beaches Bike Plan (NBBP) was adopted in July 2020 by Council to assist with increasing the number of cyclists in the Northern Beaches LGA for both recreational and travel purposes.

The NBBP outlines the following key objectives:

- Safe cycling network – to provide a safe and well-connected cycling network which is separated from traffic for the purpose of short trips

<sup>1</sup> Northern Beaches Transport Strategy

- Road cycling network – to provide a safe on-road cycling network which provides excellent connectivity for long-distance commuting

As part of the plan, community feedback showed that many people are not cycling due to concerns with safety and connectivity. It is intended to promote and increase numbers of cycling by providing end-of-trip facilities and a safe and well-connected network which *'focuses on providing better connection for short trips to destinations such as shops, public transport, beaches, sports fields, schools and workplaces as well as connections between strategic and local centres.'*

Council also intends to provide mapping, programs and events to further encourage cycling, such as Ride to Work Day, Ride to School Day and NSW Bike Week.

## 2.4 Draft Northern Beaches Walking Plan

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The Northern Beaches Walking Plan (NBWP) is currently in draft and is being prepared by Council to create and maintain a safe and well-connected walking network for all pedestrians, including for walking, running and mobility impaired. Ultimately, the plan is to achieve an uptake in active travel in line with the NBTS.

The NBWP provides the following 5 key directions:

- Connecting the network
- Delivering the network
- Making walking safe
- Creating walking neighbourhoods
- Encourage walking

Council will also work closely with the NSW Government to promote walking programs and initiatives, such as 'Walk Safely to School Day', Safe Routes TO School Programs, Active to Schools Program and support for local walking groups.

## 2.5 Road Safety Education Program

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The Road Safety Education Program is a long-term integrated education initiative funded by the Centre for Road Safety in government and non-government schools. The aim of the program is to increase road safety knowledge, understanding and skills.

Road safety education specialists in the government, Catholic and independent school sectors provide professional learning and advice to teachers and schools about teaching road safety and how to address road safety issues through the curriculum.

The teaching and learning focus is on pedestrian, passenger and wheels safety, as well as on future drivers. The Centre for Road Safety leads the development of quality teaching and learning resources for teachers to use in schools.

The education sectors provide professional learning to teachers to equip them with the knowledge and skills to teach quality road safety education. Teachers are also shown how to use the resources in the classroom to create effective teaching and learning programs.

## 2.6 Safety Around Schools Program

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TfNSW continues to have a strong focus on improving the visibility of school zones to increase driver awareness and compliance. Schools aim to address road safety issues around their school to create a safer environment for the whole school community by:

- Teaching students about the local road safety conditions contribute significantly to improving their own safety.
- Reminding parents and carers about safe road user behaviours outside the school also contributes significantly to the safety of our students
- Working with agencies to improve local safety issues in the school zone through planning, enforcement, engineering, or environmental changes.

## 2.7 Community Profile

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### 2.7.1 Population

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A review of Profile ID was undertaken to establish population contexts for the North Narrabeen community profile. Profile ID sources data from the Australian Bureau of Statistics (ABS) Census - accordingly, it should be noted that this data includes the wider extents of the LGA. Interpretation should account for minor variance in available statistical information.

The estimated Resident Population (ERP) in 2021 was 6,441 which was an increase of approximately 0.56% from the previous year. Figure 5 presents the data from 2012 to 2021 to highlight the growth over trend over the seven years.

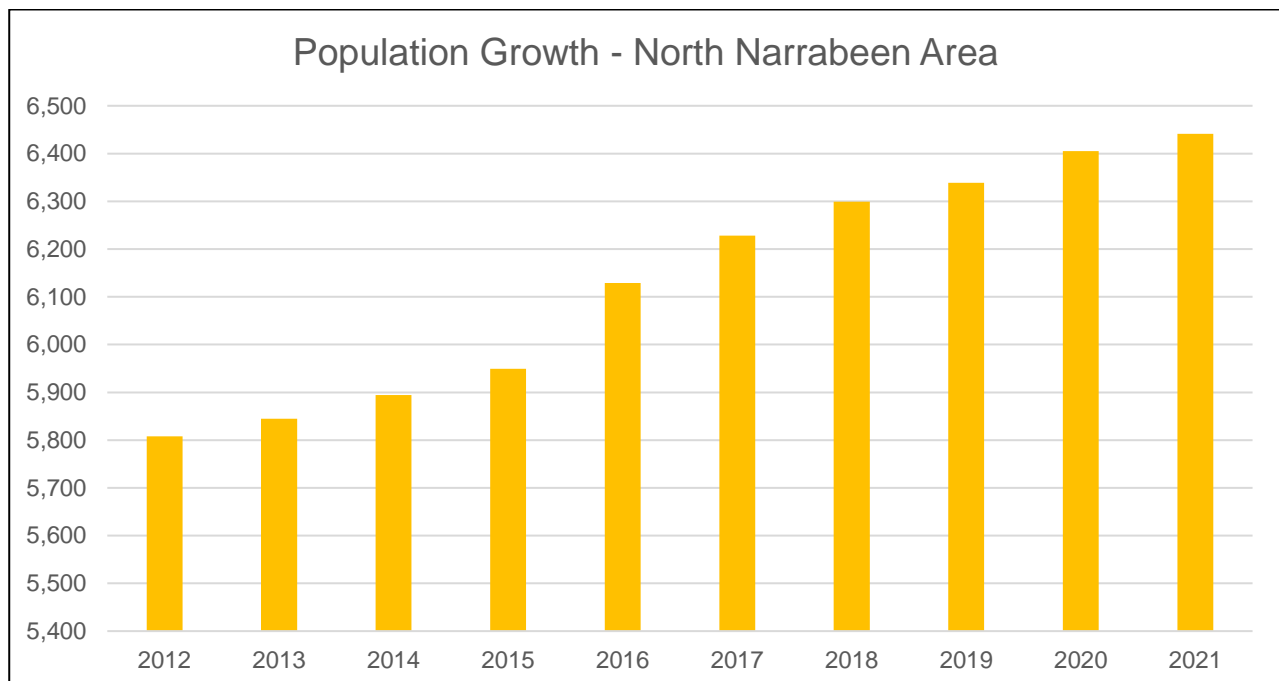


Figure 5: Estimated Resident Population<sup>2</sup>

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<sup>2</sup> Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0). Compiled and presented by .id (informed decisions)

## 2.7.2 Travel Mode Share

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An analysis of the ABS 2016 Census Data was undertaken to determine the existing travel mode share of residents residing in Destination Zone (DZN) 114232773, where the School is located. The results are presented in **Table 3**.

**TABLE 3 EXISTING MODE SHARE**

Travel Mode <sup>1</sup>	% of total trips
Car (as driver)	76%
Car (as a passenger)	9%
Train	2%
Bus	10%
Truck	1%
Motorbike / Scooter	1%
Cycling	2%
Walked only	3%
Other	0%

*Note: 1. Excludes people who worked from home or do not work*

The above table demonstrates a predominant modal dependency on private vehicle usage of 85%, comprising 76% as a driver and 9% as a passenger. Notably, there are lower dependencies on public transport modes being approximately 2% for cycling and 3% for walking.

It is considered that this data is also representative of the general travel mode choice such as shopping and recreational trips.

At the time of preparation of this report, the ABS 2021 Census Data has not been released. The ABS 2021 Census Data will be released in a staged approach between 28 June 2022 and early to mid-2023.

# 3 Existing Conditions

## 3.1 Site & Location

The subject site, Narrabeen North Public School (NNPS) is located at 6 Namona Street, North Narrabeen and falls within the local government area of Northern Beaches Council. A description of the School is provided below:

TABLE 4: SITE DESCRIPTION		
School	Title	Approximate Area (Ha)
NNPS	Lot 3 / DP 1018621	2.4

The school is located approximately 21km to the northeast of the Sydney CBD, surrounded by local businesses and low-density residential dwellings. The Warriewood Square Shopping Centre is located within 750m walking distance of north of the School.

Narrabeen North Public School is currently a primary school and includes the following building and facilities:

- Two (2) binidomes;
- Six (6) Homebase buildings;
- Fourteen (14) demountable Homebase buildings;
- One (1) library;
- One (1) staff building;
- One (1) programs / craft building;
- One (1) Covered Outdoor Learning Area (COLA);
- A number of outdoor spaces;
- At-grade car parking accommodating 20 formal car parking spaces, inclusive of 1 accessible car space and 16 informal car spaces accessed via Namona Street;
- Three (3) pedestrian accesses are as follows:
  - One (1) pedestrian access point from Warriewood Valley Sportsground
  - One (1) pedestrian access point from Namona Street; and
  - One (1) pedestrian access point from the Northern Beaches Indoor Sports Centre (NBISC) car park.
- 94 on-site bicycle parking spaces.

The Site and surrounding context are demonstrated in **Figure 6** below.



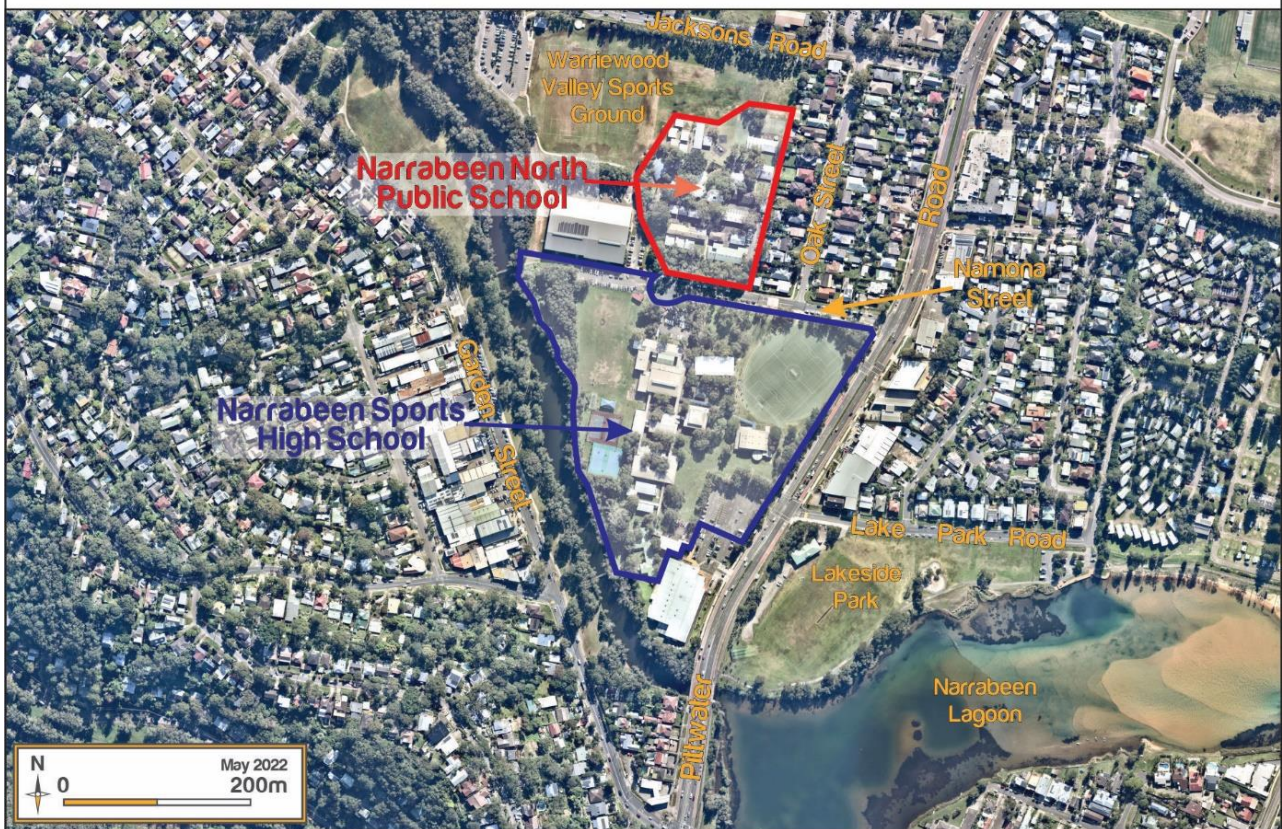
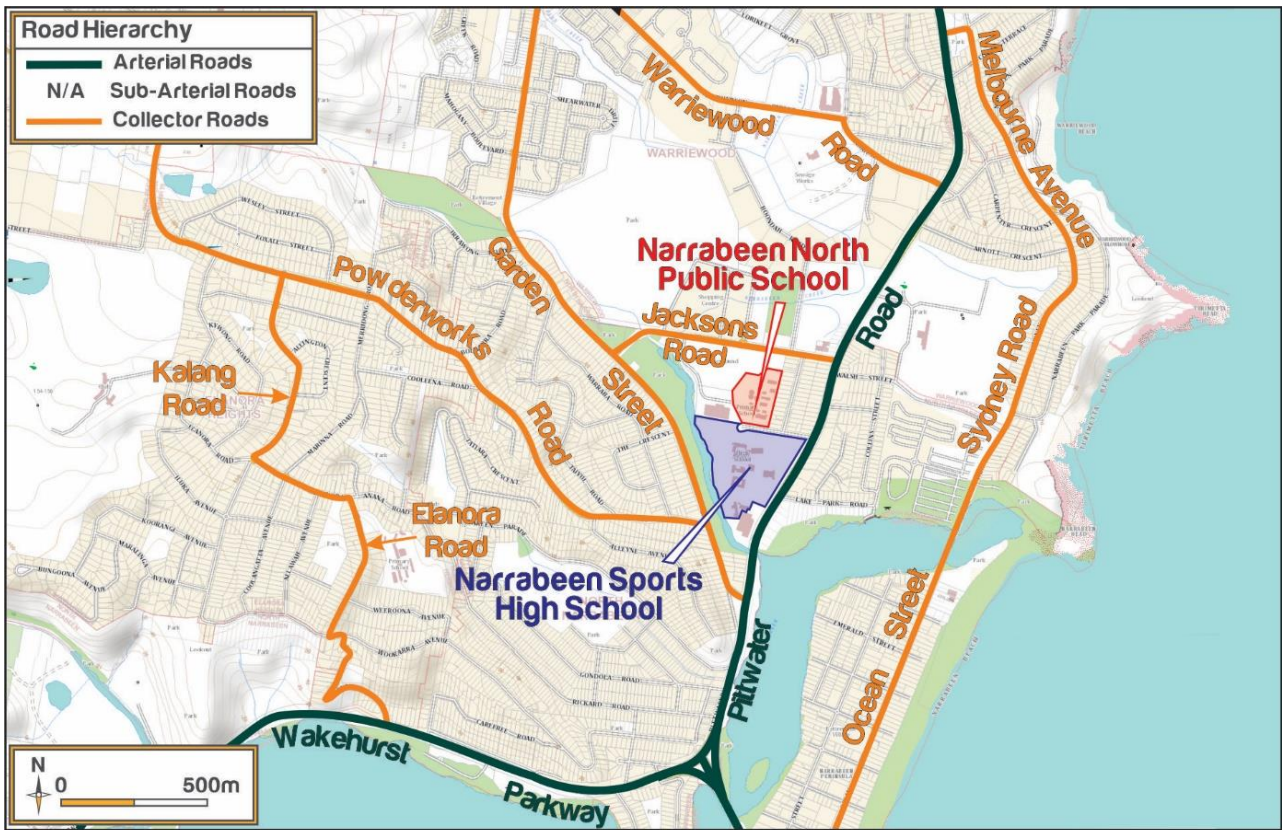


Figure 6: Site Location, Context and Road Hierarchy



### 3.1.1 Existing Site Transport Facilities

As it relates to travel planning, the Schools and immediate surroundings of the schools provide the following transport facilities:

- On-site bicycle parking rails (94 spaces);
- On-site car parking spaces for staff (20 formal spaces and 16 informal spaces);
- Constructed concrete footpaths along the Namona Street frontage
- A bus zone on either side of Namona Street fronting both schools (approximately 35m along the northern side and 55m along the southern side).
- Existing school crossing on Namona Street

The existing arrangements are presented in **Figure 7**, **Figure 8** and **Figure 9**.



Figure 7: Existing Transport Facilities

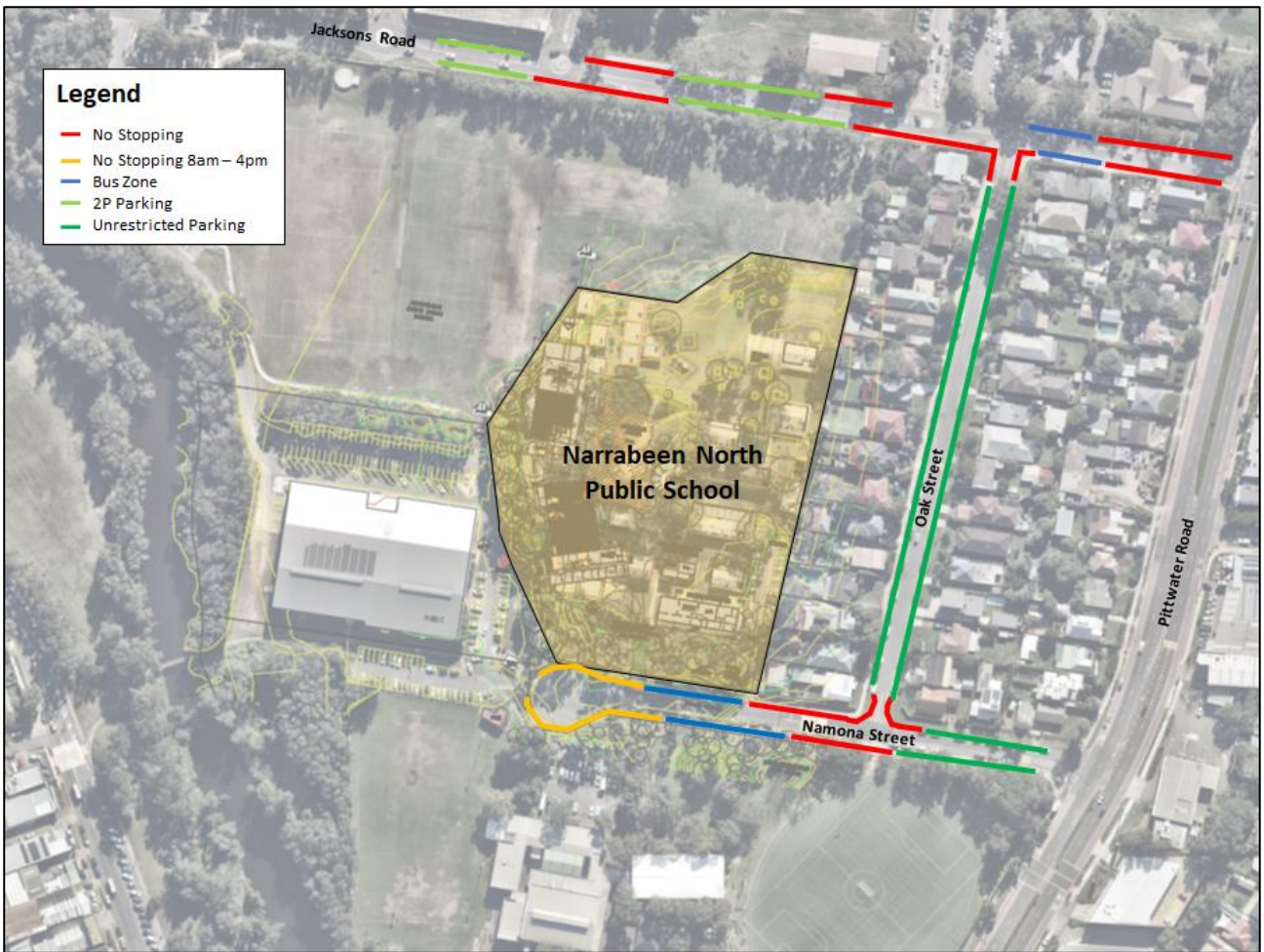


Figure 8: Existing Parking Restrictions





Figure 9: Existing Pedestrian Facilities



# 4 Road Network

## 4.1 Road Hierarchy

The key roads in the proximity of the site are summarised in **Figure 10** with reference to the site plan and road hierarchy in **Table 5**.

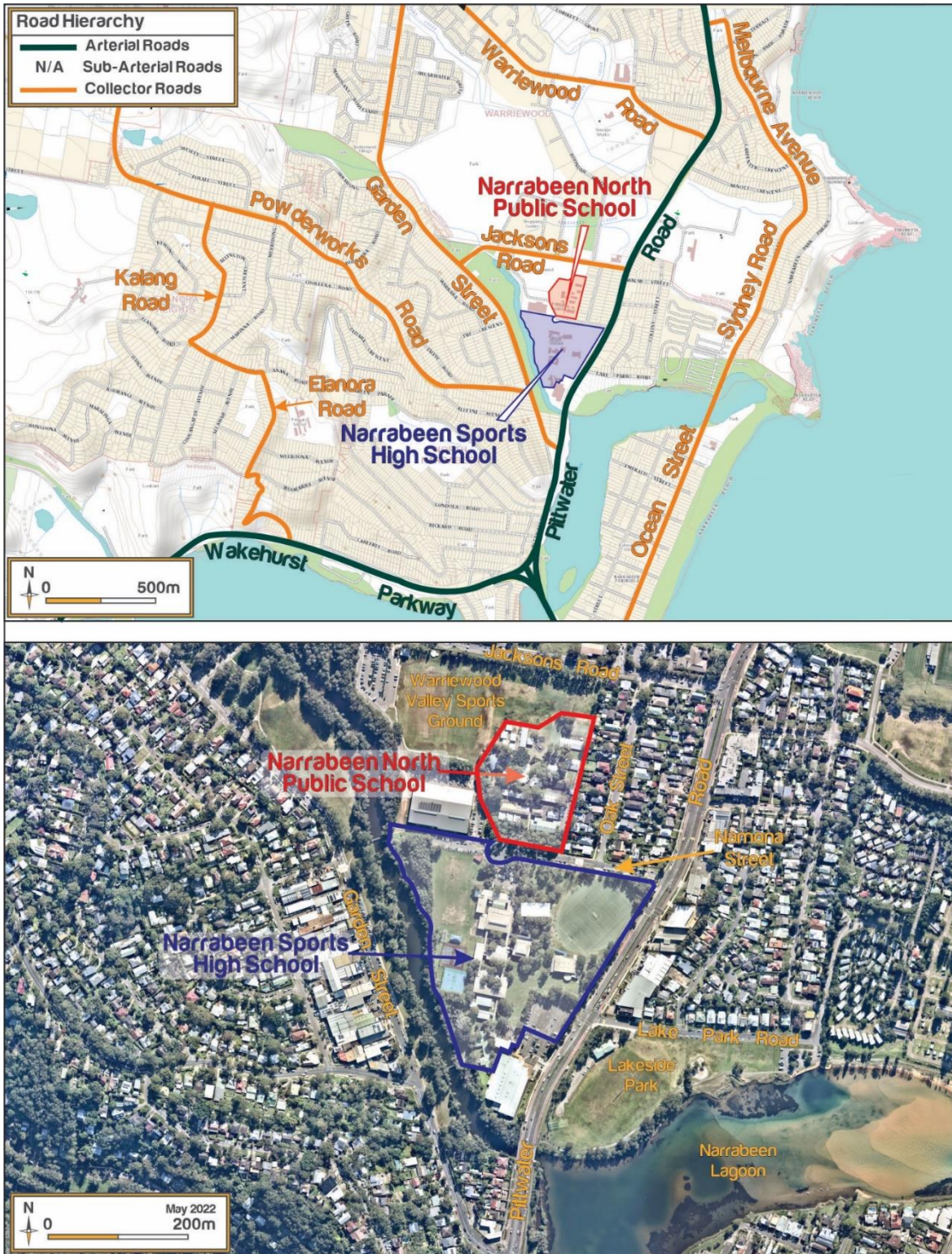


Figure 10: Site Context and Road Hierarchy

**TABLE 5: KEY ROADS**

Road Name	Road Classification	AADT <sup>1</sup> (vpd) <sup>2</sup>	Speed Limit <sup>3</sup>
Pittwater Road	State Road	16,165	70 km/h
Namona Street	Local Road	530	50 km/h
Jacksons Road	Local Road	5,355	50 km/h
Oak Street	Local Road	TBC	50 km/h
Garden Street	Regional Road	TBC	50 km/h

### 4.1.1 Traffic Volumes

Ason Group commissioned traffic volume movement counts which were conducted at the above intersections on Thursday 02 June 2022 between the hours of 6:30 am to 10:30 am and 2:00 pm to 6:00 pm.

The traffic count data has been assessed to define natural peak periods associated with the schools' bell times, specifically during the AM and PM Peaks. Accordingly, background peaks formed during the following hours and thus form the basis of assessment:

- AM School Peak: 8:00am to 9:00am
- PM School Peak: 2:30pm to 3:30pm
- PM Network Peak: 4:00pm to 5:00pm

The figure below captures background movements for the critical intersections in the proximity of the Site.

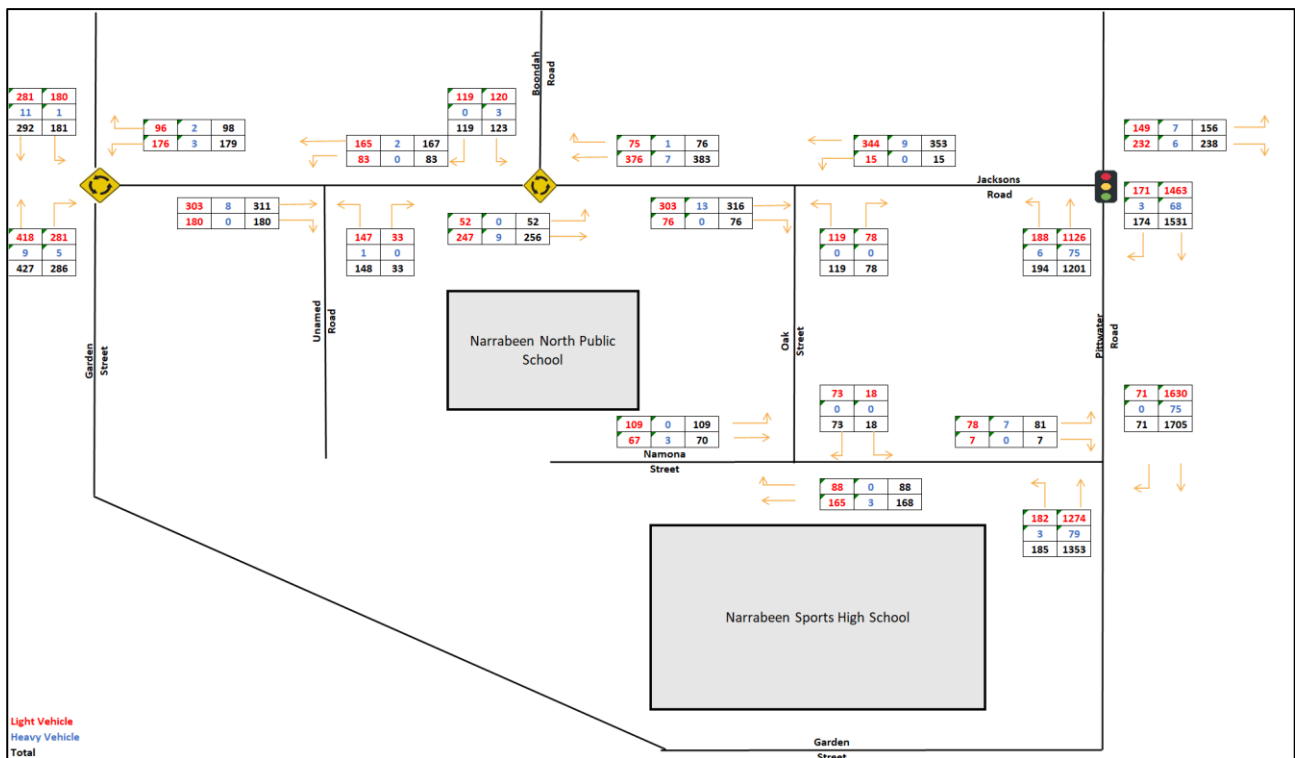


Figure 11: Existing AM School Traffic Volumes – June 2022



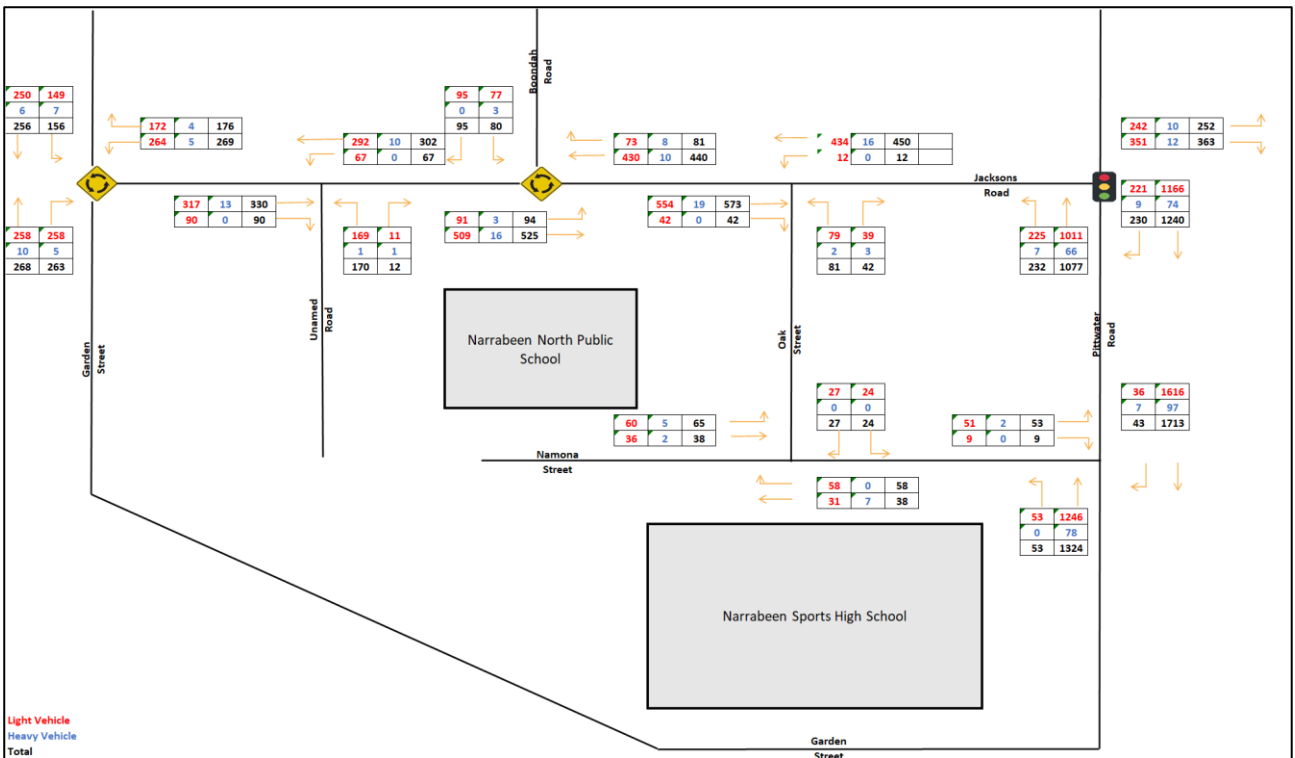


Figure 12: Existing PM School Traffic Volumes – June 2022

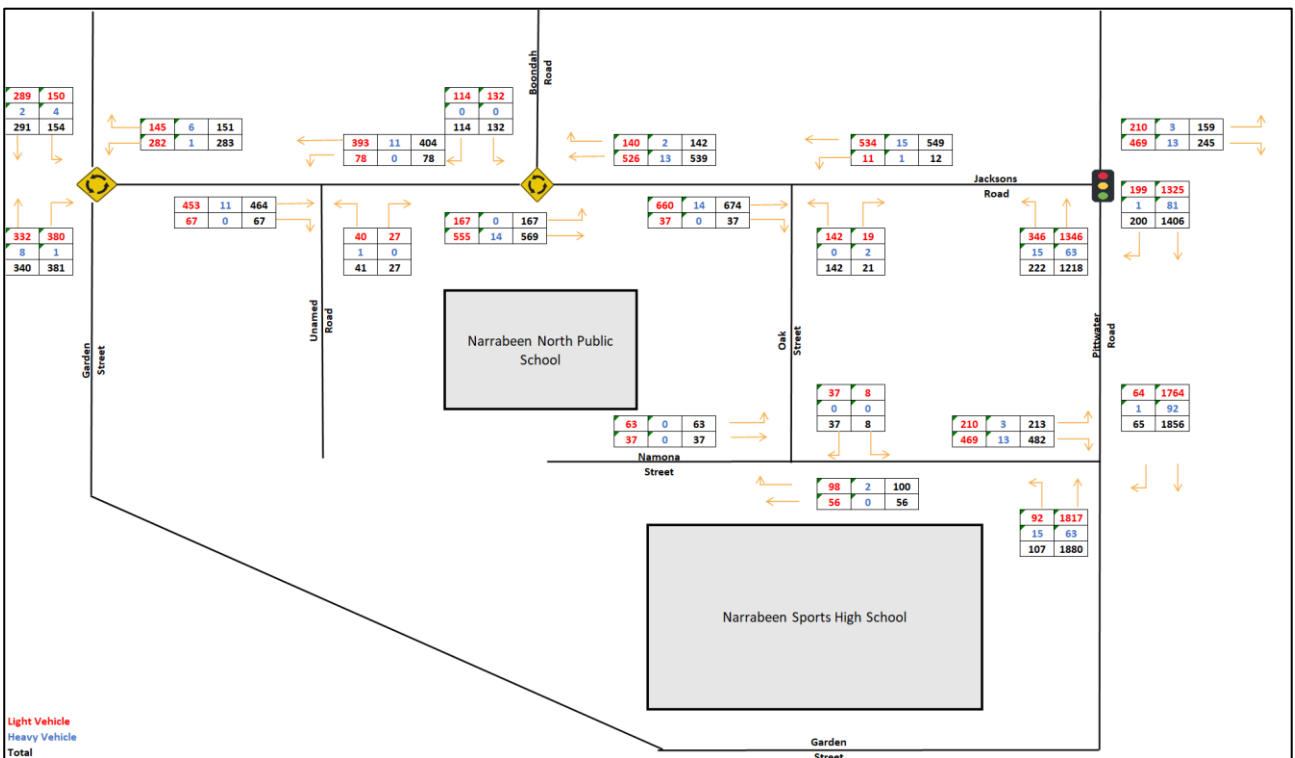


Figure 13: Existing PM Network Traffic Volumes – June 2022

## 4.2 Road Safety

A review of the TfNSW *Centre for Road Safety* database has been undertaken to establish the crash history within the immediate vicinity of the Site. The results are based on crashes over a five-year period between 2016 and 2020. Locations of recorded crashes are shown in **Figure 14** and details summarised in **Table 6**.

A review of the crashes indicates that the majority of crashes occurred along Pittwater Road, with three crashes occurring at the Pittwater Road/Berry Avenue intersection, five crashes occurring at the Pittwater Road/Namona Street intersection, two crashes occurring at the Pittwater Road/Lake Park Road signalised intersection and three crashes occurring at the Pittwater Road/Garden Street signalised intersection. The data indicates a majority of the crashes were attributed to “Right Through” RUM Descriptions, comprising approximately 62% of all recorded crashes.

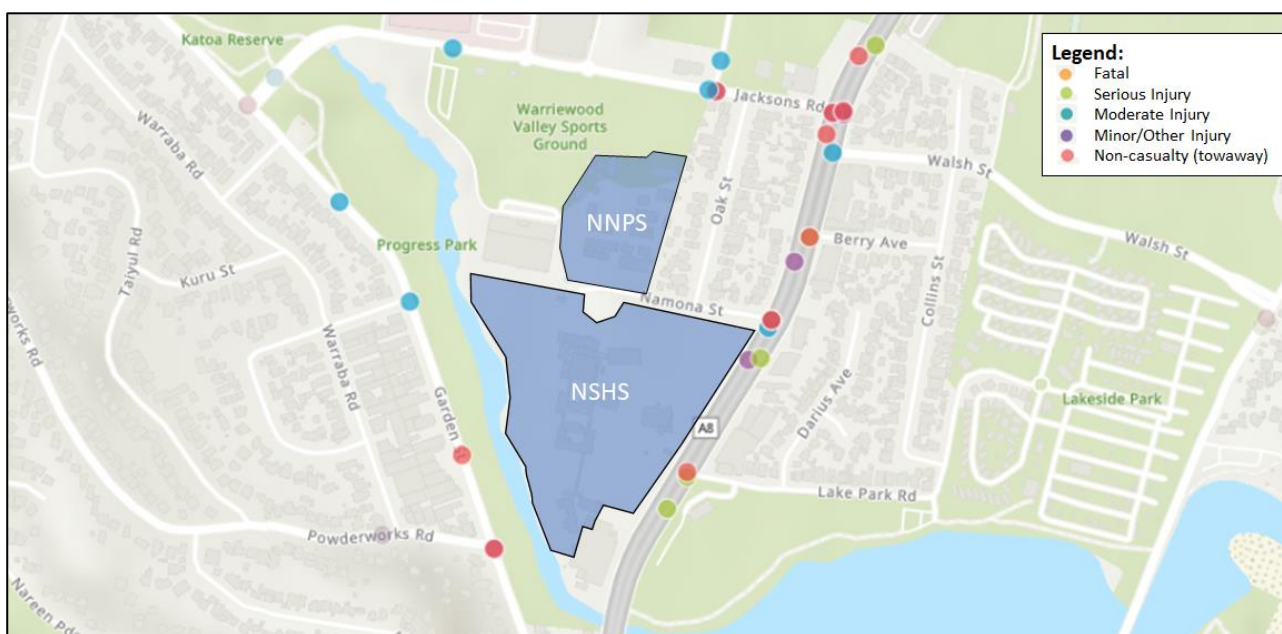


Figure 14: Crash Locations<sup>3</sup>

TABLE 6: CRASH TYPOLOGY				
Reporting Year	Lighting	RUM Description	Location	Injury
2016	Daylight	21-Right through	Pittwater Road/Berry Avenue	Non-Casualty
	Daylight	21-Right through	Pittwater Road/Garden Road	Minor/Other Injury
2017	Daylight	21-Right through	Pittwater Road/Berry Avenue	Non-Casualty
	Daylight	21-Right through	Pittwater Road/Namona Street	Minor/Other Injury
	Daylight	21-Right through	Pittwater Road/Namona Street	Serious Injury

<sup>3</sup> [https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga\\_stats.html?tblga=4](https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tblga=4)

	Daylight	21-Right through	Pittwater Road/Namona Street	Minor/Other Injury
	Daylight	21-Right through	Pittwater Road/Namona Street	Non-Casualty
	Darkness	0-Ped nearside	Pittwater Road/Garden Road	Serious Injury
	Daylight	30-Rear end	Pittwater Road/Lake Park Road	Serious Injury
2018	Daylight	30-Rear end	Pittwater Road/Lake Park Road	Non-Casualty
2019	Daylight	37-Left turn sideswipe	Pittwater Road/Berry Avenue	Serious Injury
2020	Daylight	30-Rear end	Pittwater Road/Namona Street	Moderate Injury
	Darkness	21-Right through	Pittwater Road/Garden Road	Moderate Injury

With consideration to the table above, it is noted that there were 4 x 'right through' crashes (RUM code 21) which occurred at the intersection of Pittwater Road and Namona Street in 2017, indicating that this intersection is a 'black spot.' A rear end (RUM code 30) incident also occurred at this intersection in 2020.

Furthermore, the crash data shows that there were 3 crashes at the intersection of Pittwater Road and Garden Road with 2 x 'right through' (RUM code 21) crashes and 1 x 'left turn sideswipe' (RUM code 37) crash.

There were also 3 accidents at the Pittwater Road / Berry Avenue, being 2 x 'right through' (RUM code 21) crashes and 1 x 'pedestrian nearside' (RUM code 0) crash.

# 5 Public and Active Transport

## 5.1 Public Transport

The school is currently serviced by bus services which operate along Pittwater Road, Namona Street and Jacksons Road, which provide transport links between the Northern Beaches and Chatswood or Sydney CBD.

### 5.1.1 Bus Connectivity

The bus stops servicing school bus and public routes in closest proximity to the school are located to the immediate east and northeast, along Pittwater Road, to the immediate north of NNPS, along Jacksons Road, and along Namona Street. Route details for the bus routes are provided below in **Table 7**, **Table 8** and **Figure 15**.

TABLE 7: EXISTING PUBLIC BUS CONNECTIVITY			
ROUTE	DESCRIPTION	BUS STOP LOCATION	SERVICE FREQUENCY
182	Mona Vale to Narrabeen	<ul style="list-style-type: none"> <li>Pittwater Road</li> <li>Jacksons Road</li> <li>Namona Street</li> </ul>	AM Peak = 2 services PM Peak = 2 services Off Peak = 1 service
185	Mona Vale to Narrabeen via Warriewood Valle	<ul style="list-style-type: none"> <li>Pittwater Road</li> <li>Jacksons Road</li> </ul>	AM Peak = 2 services PM Peak = 2 services Off Peak = 2 services
190X	Avalon Beach to City Wynyard (Express Service)	<ul style="list-style-type: none"> <li>Pittwater Road</li> </ul>	AM Peak = 3 services PM Peak = 0 services Off Peak = 6 services
199	Palm Beach to Manly via Mona Vale & Dee Why	<ul style="list-style-type: none"> <li>Pittwater Road</li> </ul>	AM Peak = 6 services PM Peak = 7 services Off Peak = 6 services
B1	B-Line Mona Vale to City Wynyard	<ul style="list-style-type: none"> <li>Pittwater Road</li> </ul>	AM Peak = 5 services PM Peak = 6 services Off Peak = 6 services
BN1	B-Line Mona Vale to City QVB (Night Service)	<ul style="list-style-type: none"> <li>Pittwater Road</li> </ul>	Off Peak = 2 services

TABLE 8: EXISTING SCHOOL BUS CONNECTIVITY			
ROUTE	DESCRIPTION	BUS STOP LOCATION	SERVICE
630N	Narrabeen North Public School to Mater Maria Warriewood	<ul style="list-style-type: none"> <li>Namona Street</li> <li>Pittwater Road</li> </ul>	After School Service (Single service at 3:12 pm)
738N	South Creek & Pittwater Rd to Narrabeen North Public School	<ul style="list-style-type: none"> <li>Namona Street</li> <li>Pittwater Road</li> </ul>	Before School Service (Single service at 8:49 am)

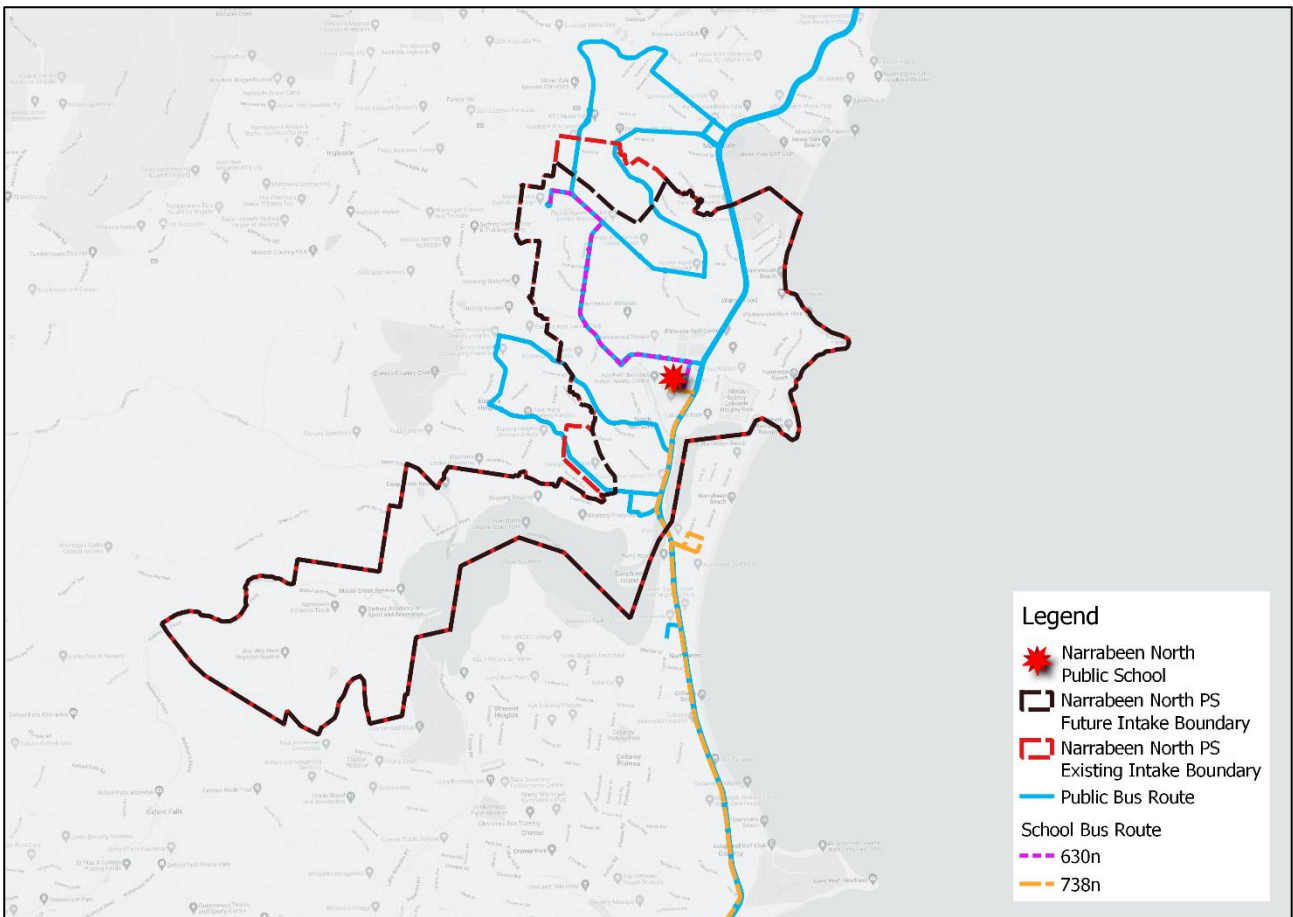


Figure 15: Bus Routes

### 5.1.2 Future Opportunities for Services

As demonstrated above, the Site demonstrates adequate and broad serviceability by public transport and accordingly, is not anticipated to require the identification of additional bus services.

## 5.2 Active Transport

### 5.2.1 Pedestrian Network & Connectivity

The Site is situated within a suburb with an established pedestrian network, desktop studies confirm that the broader road network is accompanied by pedestrian footpaths, either on one or both sides of all streets.

It is noted the school is surrounded by a number of major roads, which need to be crossed by school pedestrian and cycle movements. As such, pedestrian crossings located within the vicinity of the school are provided at the following locations:

- Pittwater Road:
  - Traffic signals at Jackson Road with pedestrian crossing on the northern side and western approaches at the intersection

- Mid-block signalised pedestrian crossing south of Namona Street
- Traffic signals at Lake Park Road with pedestrian crossing on all approaches
- Traffic signal at Garden Street with pedestrian crossing on the northern side and western approaches at the intersection
- Garden Street
  - Traffic signals at Powderworks Road with pedestrian crossing on the northern side and western approaches at the intersection - this crossing links to a pedestrian crossing of Mullet Creek and the NSHS campus
  - Marked pedestrian crossing with refuges south of The Crescent - this crossing links to a pedestrian crossing of Mullet Creek and the NSHS campus
  - Central road pedestrian refuge to the south of Natuna Street – this links to pedestrian/cycle paths through Progress Park and linkages across Mullet Creek
- Jacksons Street
  - Marked pedestrian crossing with refuges east of Garden Road
  - Marked pedestrian crossing with refuges east of the Warriewood Valley Sportsground and Northern Beaches Indoor Sports Centre car parks access.
  - Marked pedestrian crossings on the western and northern approaches to the Boondah Road roundabout.

### 5.2.2 Cycling Network

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**Figure 16** below captures the extent of the cycling network in the proximity of the schools using the Service NSW Cycleway Finder Map. There are off-road shared paths along Pittwater Road, Namona Street, Oak Street, Jacksons Road and Garden Street.



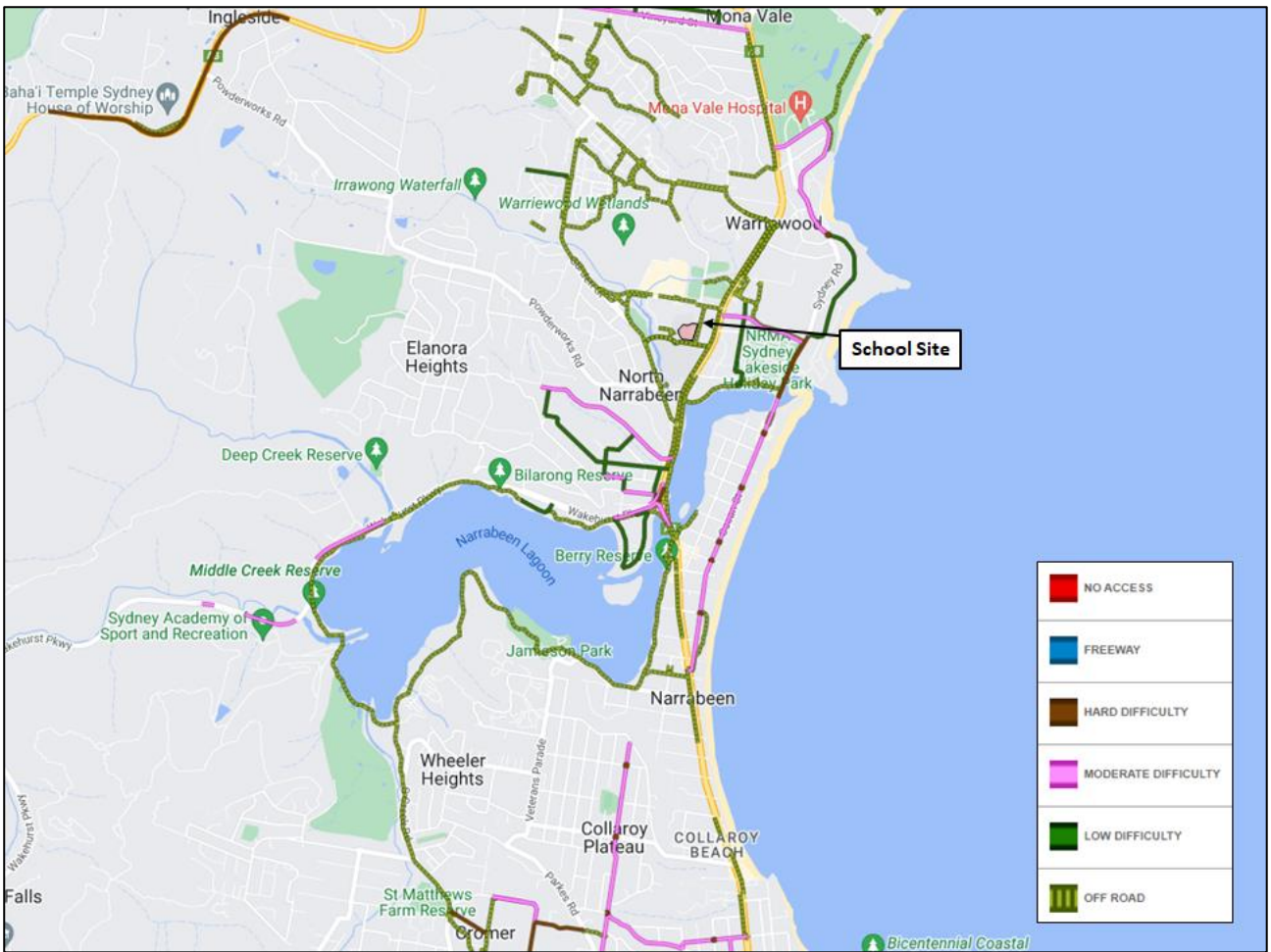


Figure 16: North Narrabeen Cycleway Finder Map



# 6 Existing School Travel Characteristics

## 6.1 Catchment Analysis

The map below illustrates the existing and future Narrabeen North Public School student enrolment intake catchment area, which shares catchment borders with Mona Vale Public School, Elanora Heights Public School, and Belrose Public School, amongst more distant catchment zones.

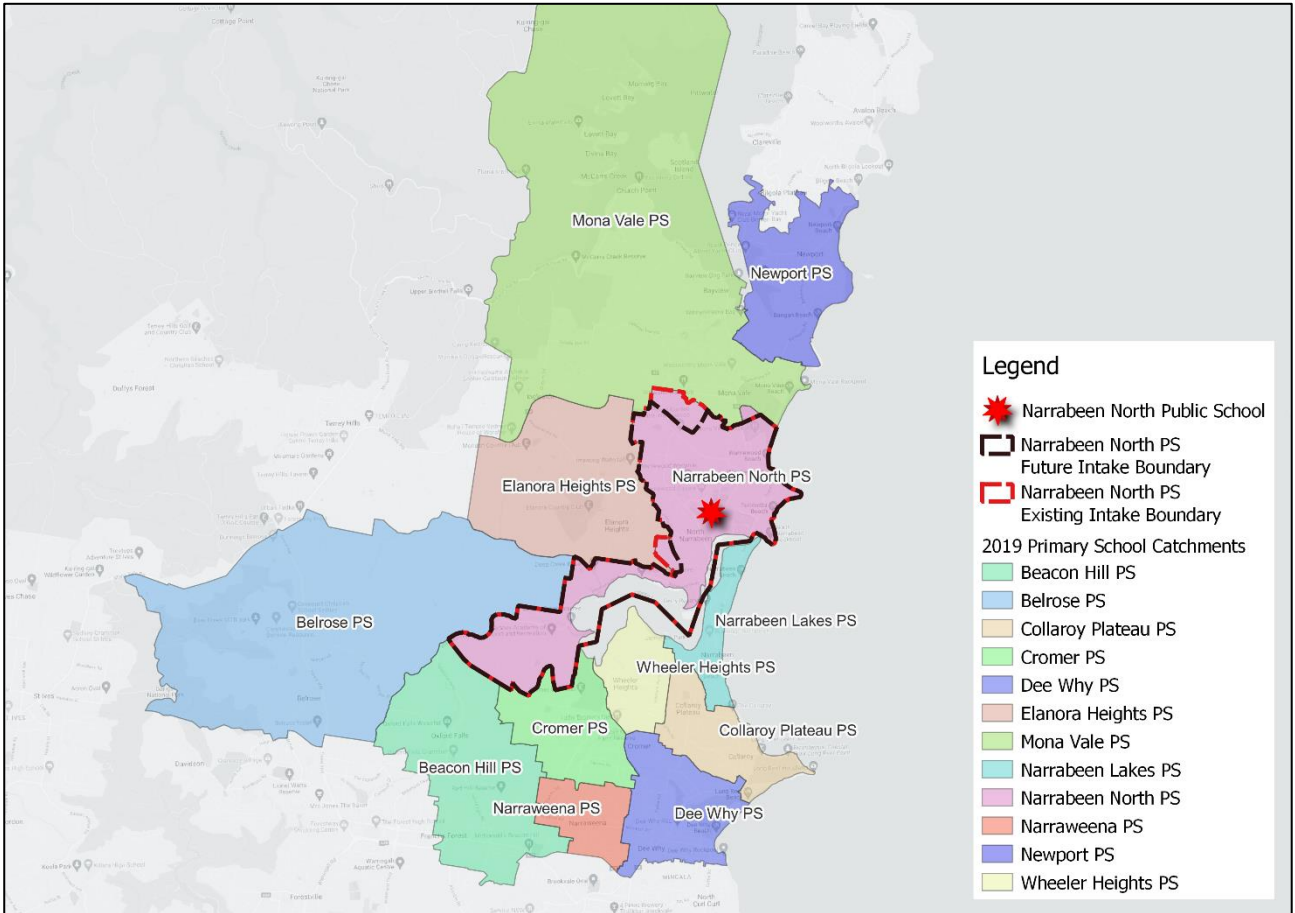


Figure 17: Public School Catchment Areas

It is anticipated that there will be some minor increase in demand for student capacity for Narrabeen North Public School.

Accordingly, SINSW has provided student location data based on the above catchment areas, which in turn provide a spatial indication for where additional growth to the public school may be originating from.

## 6.2 Student Enrolment Map

The following figure demonstrates an anonymised distribution for the existing student population of Narrabeen North Public School in its current form. Whilst additional students are anticipated to come from adjacent catchments, it is anticipated that the school still will consolidate the locality of its existing population, predominantly within the areas west of the school as demonstrated below.

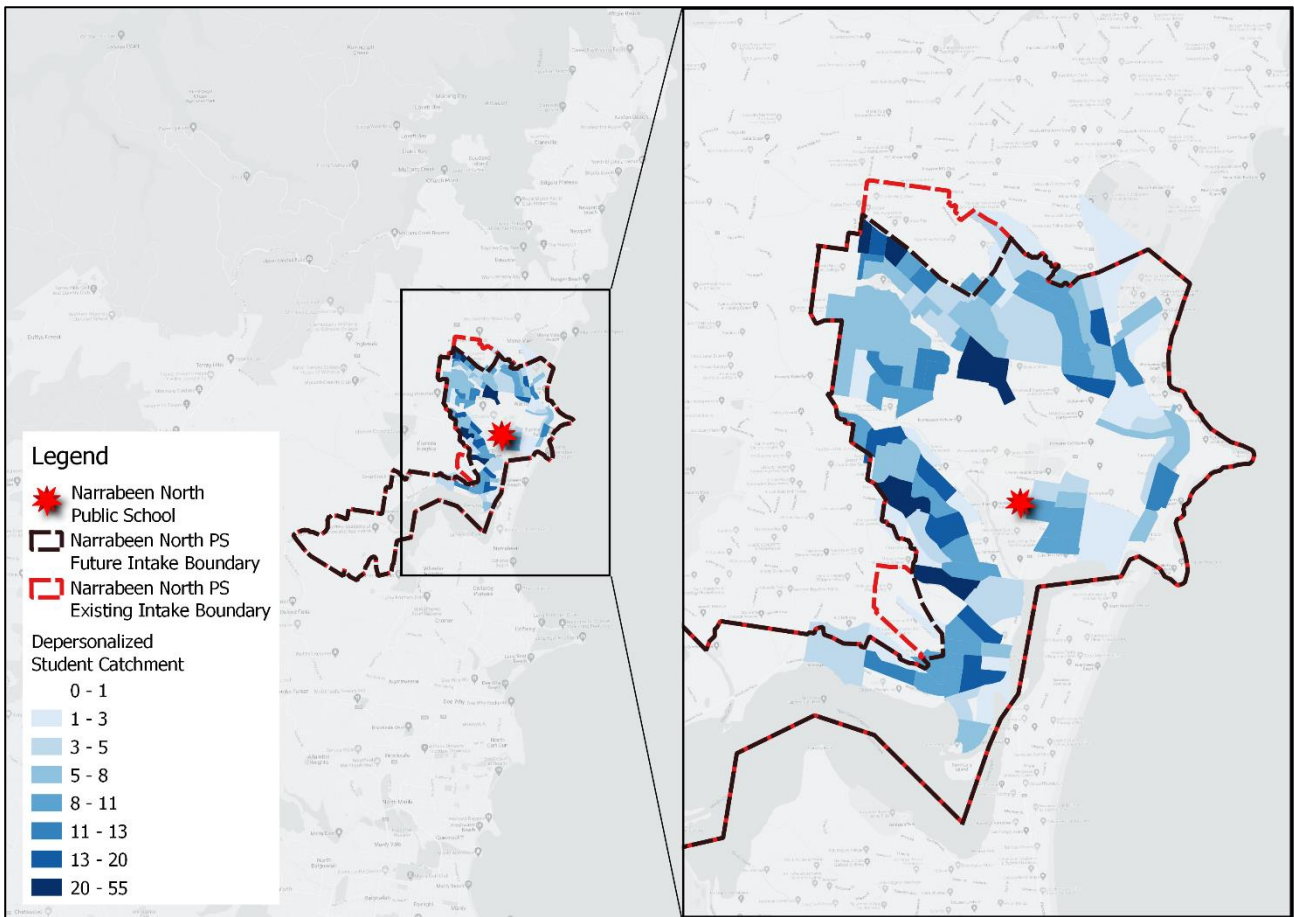


Figure 18: Narrabeen North Public School (Grade K – 6)

The figure above demonstrates the following:

- There is a low degree of student density residing to the south and east of the school.
- There is a moderate degree of students to the north and north-west of the school living in Warriewood.
- There is a high concentration of students to the west and south-west of the school living within North Narrabeen.

When considered in conjunction with the catchment map in **Figure 17** above, it can be deduced that potential growth centres for the Narrabeen North Public School are likely to originate from the suburbs of North Narrabeen and Warriewood.

### 6.3 Public Transport Catchment

In line with guidelines outlined by the NSW Government and TfNSW, the School Student Transport Scheme (SSTS) provides catchment guidelines to provide eligibility for school public transport.

For grades K-2, the following eligibility criteria apply:

- They are a resident of NSW, or an overseas student eligible for free government education.
- Aged 4 years 6 months, or older.
- No minimum walking distance criteria apply to these students.

For grades 3 – 6, the following eligibility criteria apply:

- They are a resident of NSW, or an overseas student eligible for free government education.
- The straight line distance from their home address to school is more than 1.6 km.
- The walking distance from home to school is 2.3 km or further.

As defined above, **Figure 19** below demonstrates the catchment exclusion zones for Grades 3-6 with reference to the Public Schools' location.

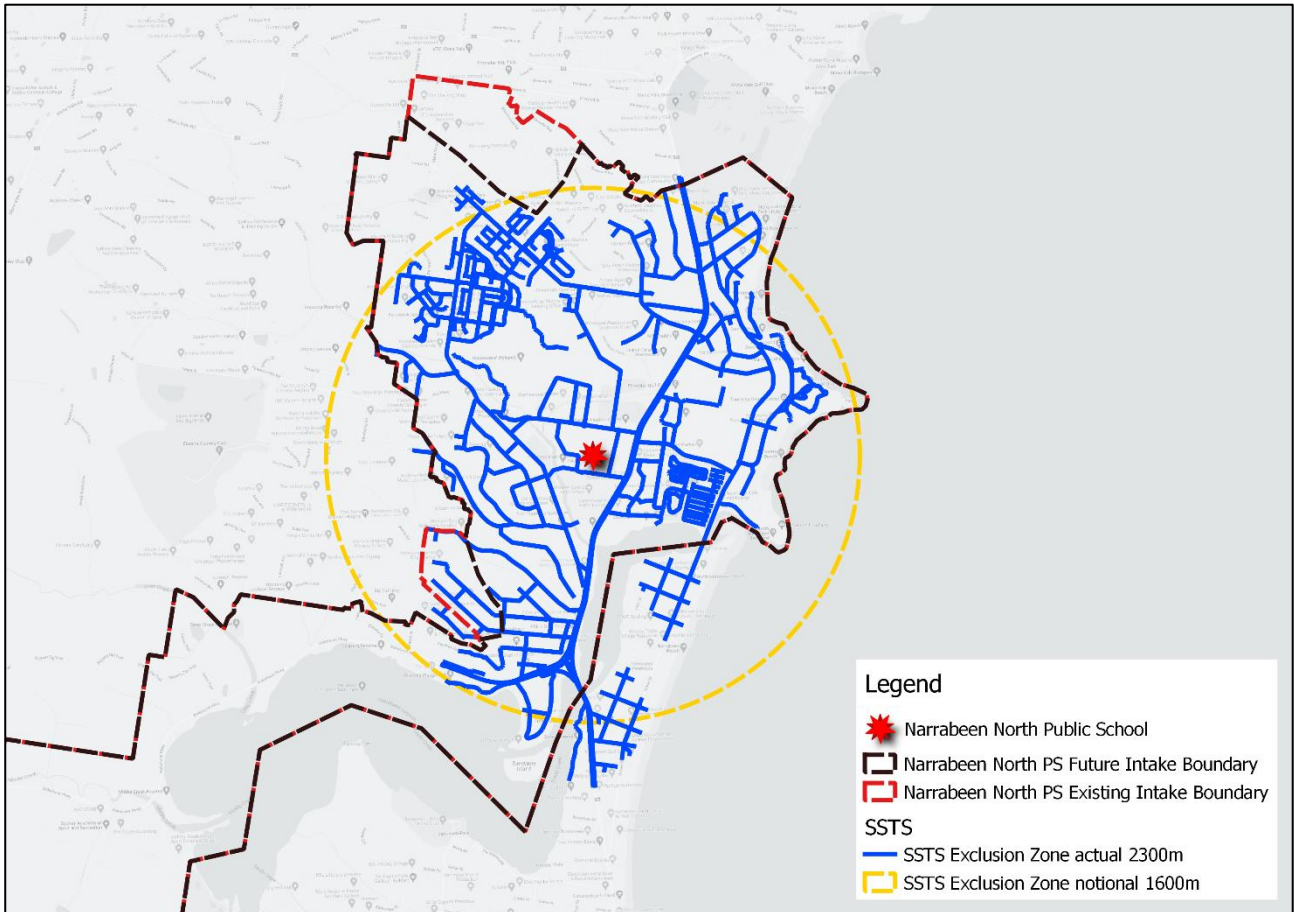


Figure 19: SSTS Exclusion Zones

The exclusion zones above demonstrate that both the 1.6km radius and 2.3km distance capture the wider proportion of the local area in which the majority of the student population is currently residing.

## 6.4 Active Transport Catchment

### 6.4.1 Pedestrian Catchment

SINSW has characterised the walking catchment of a school within 5, 10 and 15-minute walking distance increments (approximately 400m increments) of the school, representing desirability for the catchment area. **Figure 20** demonstrates the walking distances relative to the Site.

In its existing form, the pedestrian network for the North Narrabeen area exhibits a good degree of pedestrian connectivity, with adequate provision of footpaths on either one or both sides of all roads. The span of Pittwater Road additionally provides adequate and safe crossing opportunities for pedestrians, approximately every 200m-300m.

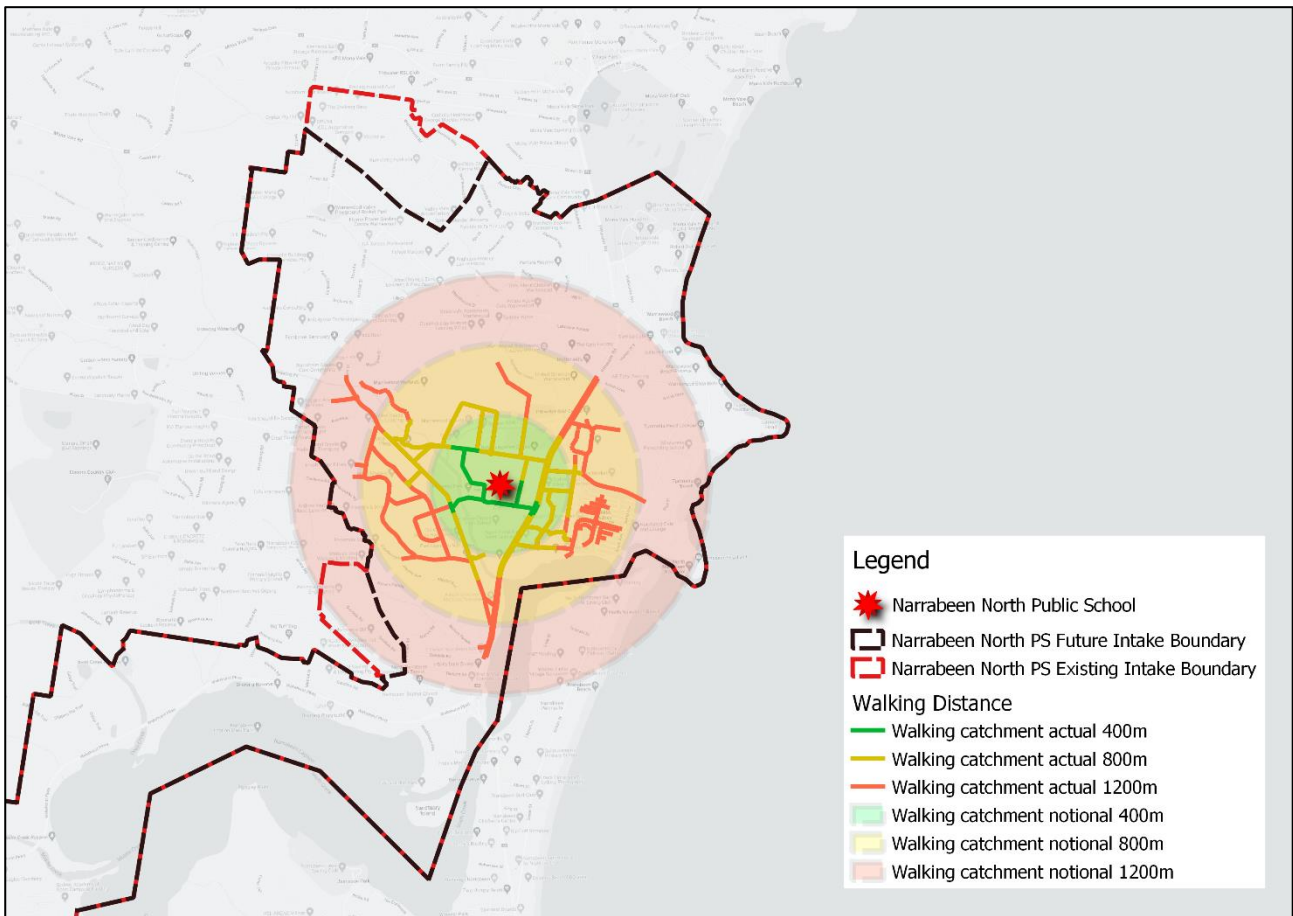


Figure 20: Pedestrian Catchment Zone

### 6.4.2 Cycling Catchment

In addition to the pedestrian catchment guidelines described by SINSW, the catchment areas for cycling are defined in a similar format based on 5-minute increments (approximately 1.2km increments). **Figure 21** illustrates the maximum extent of the cycling catchment zone.

While the catchment map exhibits further extents, particularly towards the north and south, it should be broadly noted that certain elements of cycling infrastructure – specifically relating to on-road cycling lanes - may not be applicable, particularly for younger students (i.e., students below 10 years old) with consideration to safety and bicycle riding skills.

Accordingly, the extent of the catchment captures cycling movements as applicable to the usage of pedestrian and shared pathways.



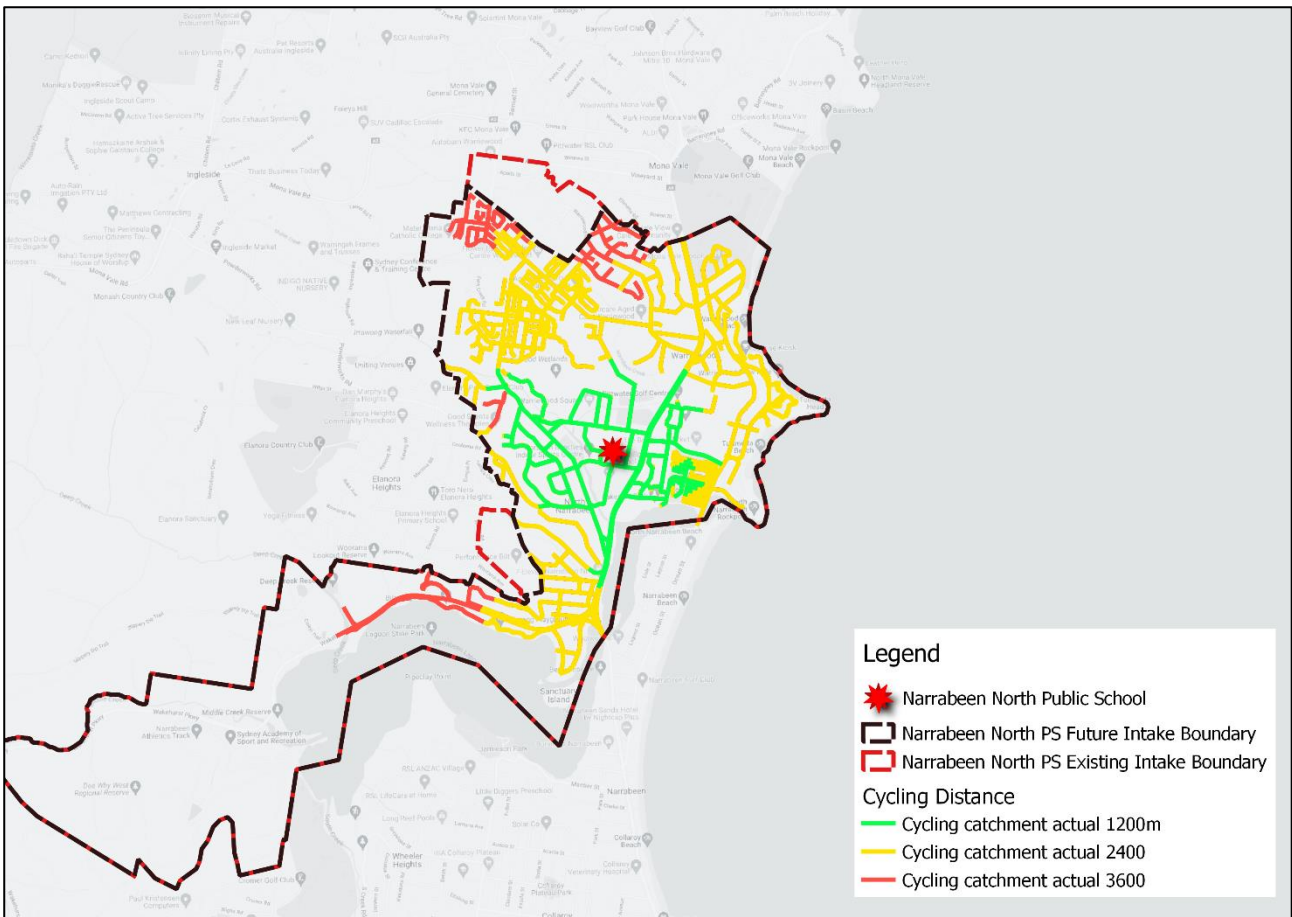


Figure 21: Cycling Catchment Zones

### 6.4.3 Active Travel Market Catchment Summary

An assessment of the student catchment information provided by SINSW in the context of public and active transport catchment areas has been conducted, with the assessment results summarised in **Table 9**. As with the above assessments, the below information captures information of students located within the indicative enrolment intake boundary. As such, the results of the table can be considered 'indicative' of the School catchment.

<b>TABLE 9: CYCLING AND WALKING CATCHMENT SUMMARY</b>				
<b>CATCHMENT ANALYSIS</b>	<b>NOTIONAL (WITHIN CROW FLIES)</b>		<b>ACTUAL (ON PATH / USING ROAD NETWORK AS A PROXY)</b>	
<b>1-400m (5-min walk)</b>	39	4%	4	0.5%
<b>401m-800m (10-min walk)</b>	121	14%	35	4%
<b>801m-120mm (15-min walk)</b>	356	41%	67	8%
<b>Total number of students within walking distance to school</b>	516	59%	106	12%

1201m-1600m crow files / 2300m on path (excl from SSTS Primary)	201	23%	539	62%
Total number of students not eligible for free SSTS	717	83%	645	74%

## 6.5 Travel Mode Surveys

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In consultation with the school, Ason Group has undertaken a travel mode survey for current staff and students of the School. The purpose of the survey is to determine key traffic and parking characteristics of the existing school population, including:

- Travel mode for both the arrival and departure trips;
- Vehicle occupancy;
- Out of Hours School Care;
- Car Pooling, and
- Interest in different green travel strategies and initiatives.

In an operating capacity, the school period and bell times occur between 09:00 and 15:00 during weekdays, with student arrival typically occurring between 08:30 and 08:45.

At this current time, a total 225 responses have been received for the issued student surveys, representing approximately 31% of the 719 enrolled students. It is envisioned as part of the maintenance of the future School Transport Plan as a live document, this student survey information will be appropriately updated as responses to the surveys increase.

### 6.5.1 Student Travel Mode

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As part of the undertaken student surveys, an appreciation for modal travel has been obtained to provide indicators for travel behaviour and interactions with the School. Accordingly, the figure below demonstrates the modal breakdown of student trips to the School.

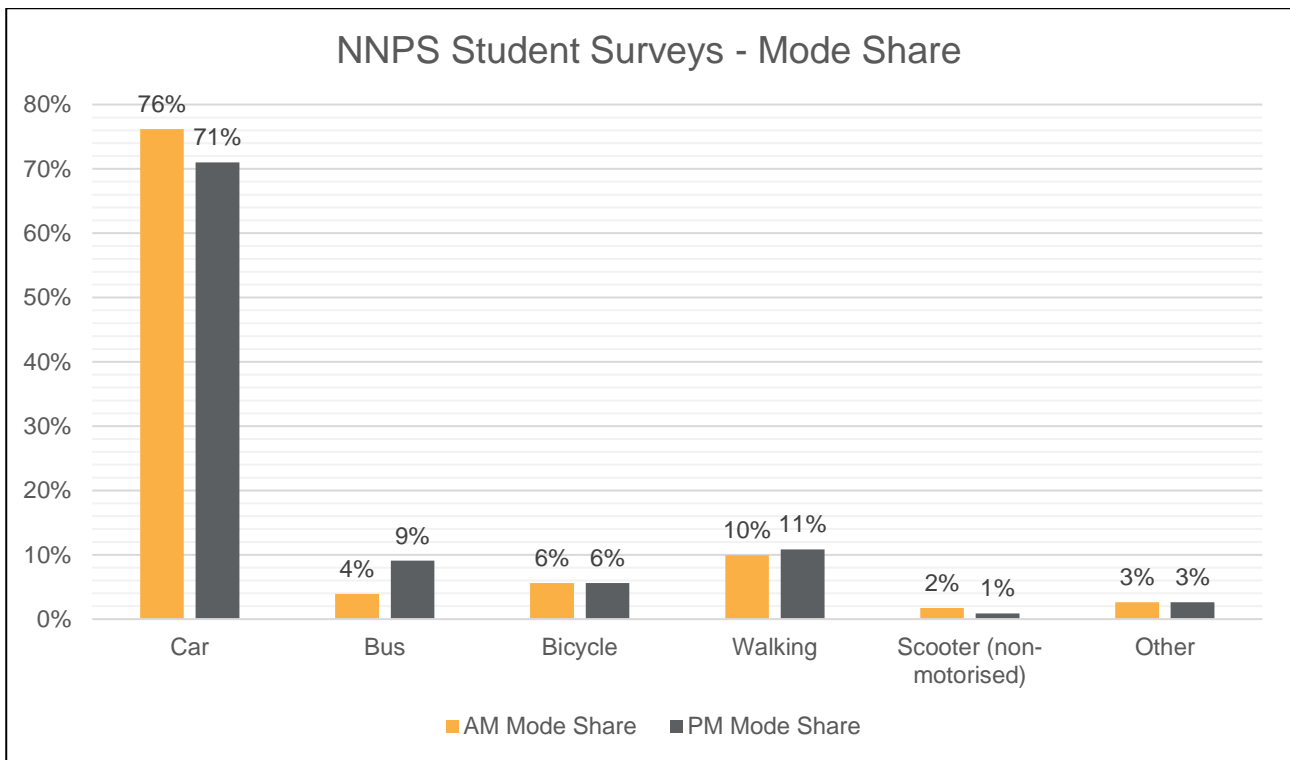


Figure 22: Student Survey Mode Share

It is noted that the 'other' category effectively captures the effects of multi-modal trips, such as being driven to a bus stop before continuing by bus to the School. Accordingly, it is considered that "other" trips would generally not include private vehicle trips directly to the school itself.

Summarising the results, the following key points are deduced:

- The school demonstrates a high dependency on the private vehicle to and from the School both before and after school, capturing between 76% and 71% respectively.
- Active travel modes (accounting for cycling and walking) constitute approximately 16% - 17% of total trips to and from the School.
- Public transport modes (accounting for bus, train, as well as 'other') account for 7% - 12%, with bus usage forming the highest proportion of public transit trips to/from the school.

It is understood that previous travel mode surveys were undertaken in Nov 2021 which indicated 13% of students walked and 12% of students cycled to school. It is Ason Group's opinion that the decrease in walking and cycling relate to the La Niña currently in Australia, which results in increased rainfall and a reduction in active travel modes.



## 6.5.2 Out of School Hours Care

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As part of the student surveys, the proportion of students utilising Out-of-Hours School Care was assessed to gain an appreciation for potential impacts on traffic generation. Based on the results, the following table defines the proportion of students in attendance at OHSC.

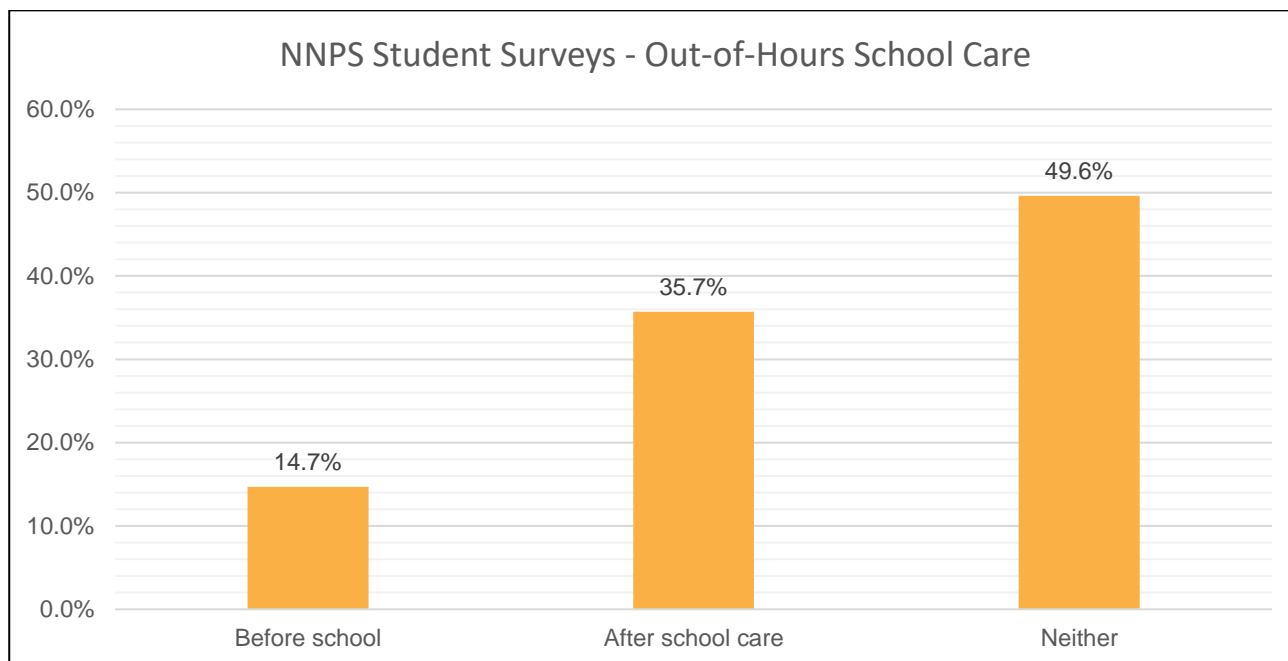


Figure 23: Attendance at Out-of-School Hours Care

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The figure demonstrates that approximately 50.4% of students attend OSHC programs during the AM or the PM session. Of the 50.4%, the vast majority (35.7%) of students indicated attendance of after-hours care. 49.6% of students did not attend before-school or after-school care.

## 6.5.3 Staff Travel Surveys

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At this current time, a total 27 responses have been received from staff, representing approximately 44% of the 62 total staff members (which includes full-time employees, casuals and temporary staff). As the STP is intended to be a live document, this staff survey information will be appropriately updated as responses to the surveys increase.

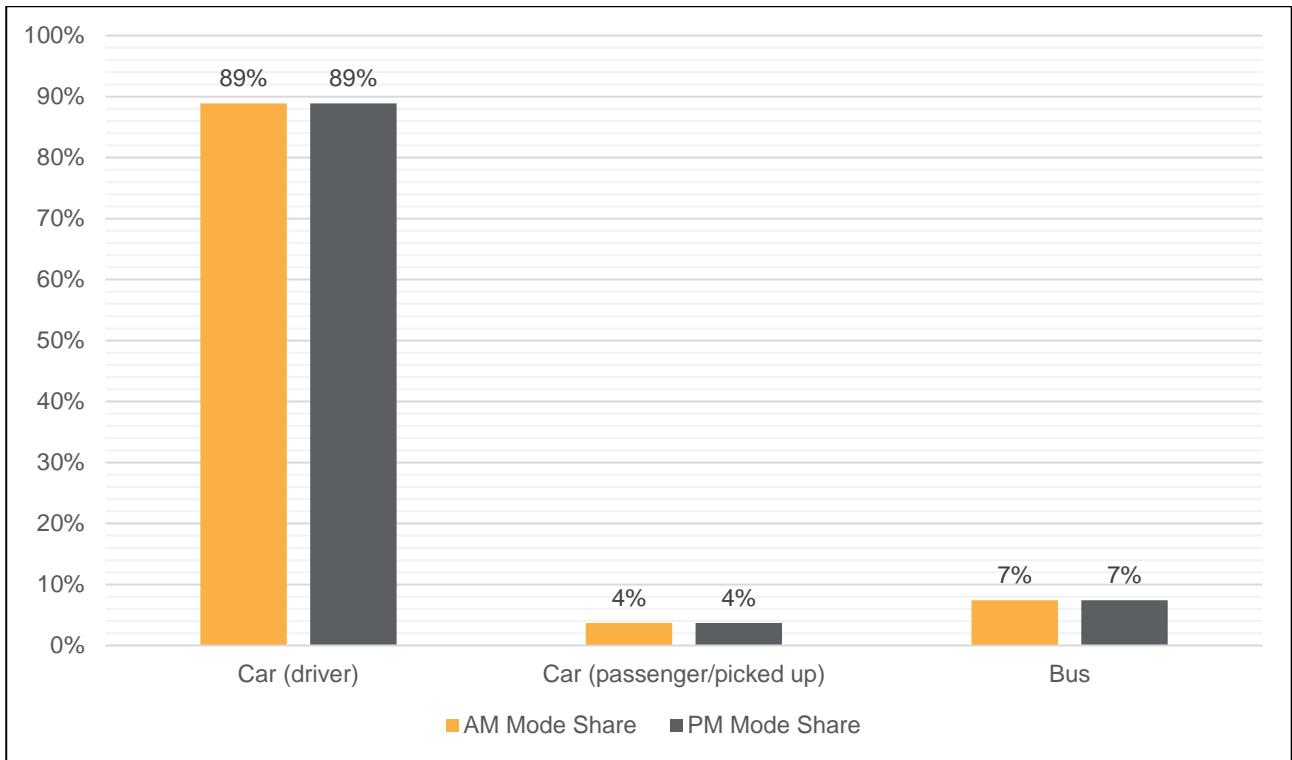


Figure 24: Staff Surveys Mode Share

The above figure demonstrates a very high reliance on car ridership (predominantly as a driver which accounts for 89% of the mode share). In our experience, teachers within NSW exhibit lower dependency on public transport modes and private vehicles (as a passenger) as they are generally required to bring equipment and materials to and from the workplace. As such, these factors are likely to impact the viability of modal shift towards public and active travel modes, which do not necessarily accommodate staff requirements.

The predominant secondary mode of travel is demonstrated to be the bus to the School.

## 6.6 School Traffic Generation

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Ason Group has undertaken a detailed review of the Roads and Maritime Services (now TfNSW) Trip Generation Surveys, Schools (Schools Trip Generation Report) prepared by GTA Consultants on behalf of TfNSW in 2014. The Schools Trip Generation Report determined contemporary trip generation rates for the land use “School” within Metropolitan Sydney and Regional NSW, with the rates determined on the back of surveys conducted in March 2014.

It is noted that as part of the GTA report, the following key characteristics were considered and influenced the overall trip generations:

- Bus services,
- Immediately adjacent residential area such to utilise all of the school's capacity,
- Number of pedestrian access points,
- Number of vehicle access points,
- School type / status (i.e. primary or secondary); and
- On-site car parking provision

Following a review of the above key characteristics against the schools surveyed within the GTA report, the following trip generation for the AM and PM school peak periods have been adopted noting that the trip rates also include staff and visitor trip generation. Given the upgraded school's location, access to sustainable travel modes and existing travel mode patterns, the minimum vehicle trip generation per student from Table 6.2 of the GTA report have been adopted, as follows:

- AM School Peak                      0.63 Trips / Student
- PM School Peak:                      0.52 Trips / Student

Application of the trip rates to the existing student populous (719 students) approximates the following current traffic generation of the School:

- 453 total vehicle trips during the AM Peak; and
- 374 total vehicle trips during the PM Peak.

It should be considered that the outbound trips during the AM accounted for vehicles leaving the Site after dropping off children, and the inbound trips during the PM account for vehicles arriving for pick-up.

# 7 The Proposal

## 7.1 The School

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### 7.1.1 Overall Works

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The upgraded school will seek to significantly improve educational outcomes and support the delivery of modern pedagogical learning by providing the following:

- Construction of a new two (2) storey building containing administration facilities, multi-purpose hall and out-of-school-hours care (OSHC) facility on the ground floor with staff facilities and amenities on the first floor; and
- New Covered Outdoor Learning Area (COLA).

Other development works are occurring on the site under separate planning pathways including:

- Development without consent (REF); and
- Exempt development

The proposed development does not seek to increase staff or student numbers.

The focus of the proposed upgrades is as follows:

- Upgrade the core facilities at both schools to support the delivery of modern pedagogy; and
- Address some of the key asset condition issues of learning spaces to allow for the improved educational outcome

The traffic and transport elements details are provided below:

- On-site at-grade car parking provides 20 car parking spaces including one accessible car space, accessed via Namona Street. However, it is understood that some staff is currently parking on the asphalt and grass landscaping as overflow parking as the car parking demand exceeds the number of formal car spaces provided. See **Figure 25**.



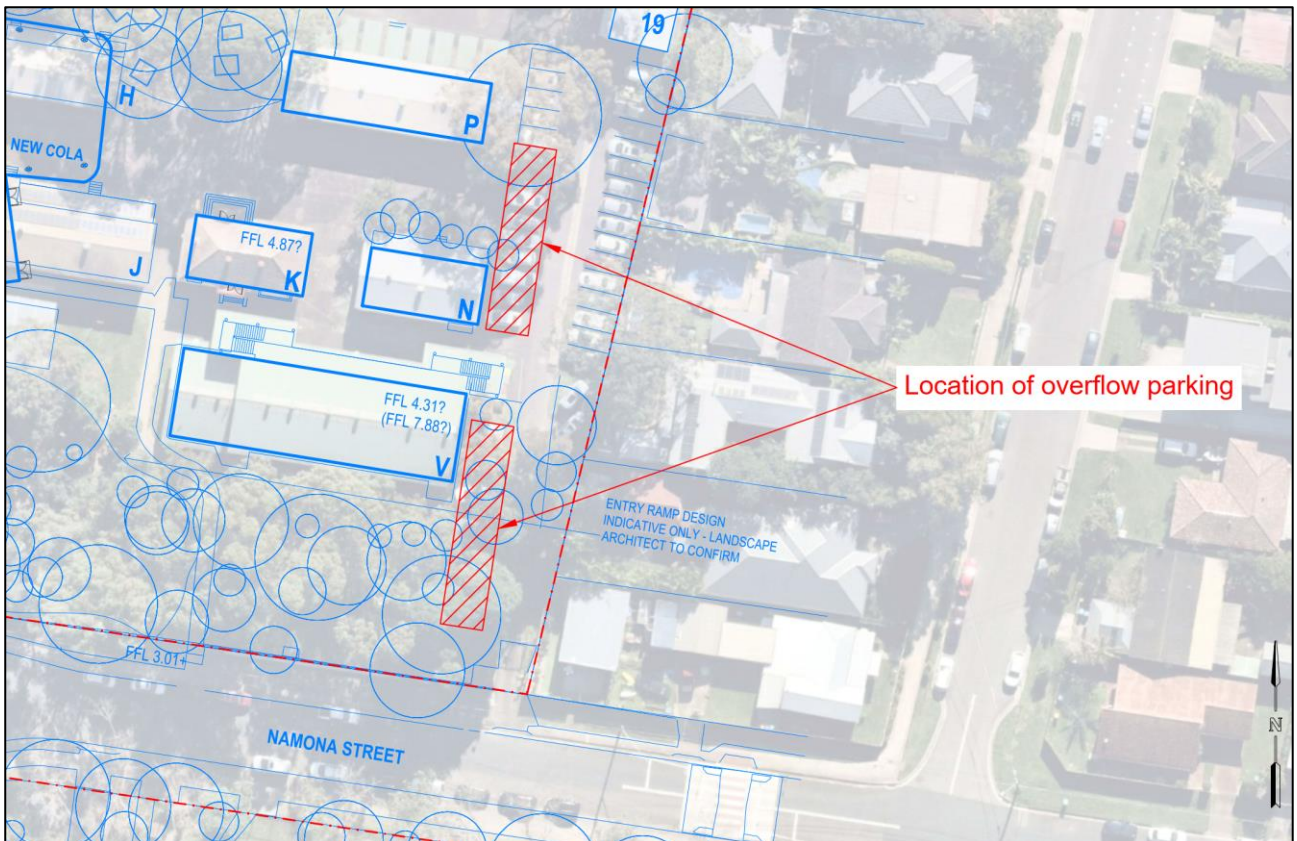


Figure 25: Location of Overflow Parking

- Existing pedestrian access locations are as follows:
  - One (1) pedestrian access point from Warriewood Valley Sportsground
  - One (1) pedestrian access point from Namona Street; and
  - One (1) pedestrian access point from the Northern Beaches Indoor Sports Centre (NBISC) car park.

The proposal does not include any changes to the existing student and staff numbers, meaning the existing travel behaviours and traffic conditions around the site are not expected to be significantly impacted by the development.

### 7.1.2 School Operations

The School is accessible from 7:30 AM – 6:30 PM on weekdays with restricted access outside of these hours. The bell times are as follows:

- Start Time: 9:00 AM
- Finish Time: 3:00 PM

OSHC Operations

The School offers on-site Out of School Hours Care (OSHC) services through Narrabeen North OOSH Centre (NNOOSH) between the following times:

- Before School: 7:00 AM to 8:30 AM
- After School: 3:00 PM to 6:00 PM

Currently, NNOOSH caters to up to 149 children at a ratio of 1 staff member per 15 children.

## 7.2 Vehicle Access

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### 7.2.1 Staff Car Park

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Access to the staff carpark remains unchanged, with access via Namona Street at the southern end of the site. The car park accommodates 20 parking spaces, including 1 accessible space. There are 5 dedicated car spaces, comprising the following allocation:

- 1 x Principal
- 2 x Deputy Principal
- 1 x General Assistant
- 1 x Director

The location of the staff car park and access is shown in **Figure 26**.



Figure 26: Staff Car Park Location

The proposal does not include any changes to the existing student and staff numbers, meaning the existing travel behaviours and traffic conditions around the site are not expected to be significantly impacted by the development. Therefore, parking activities will continue to operate as they currently do.

Similarly, there are no proposed changes to accessible parking availability. The existing accessible parking zones in the carpark will remain in use upon completion of the works.

## 7.2.2 Proposed Kiss & Ride Facility

A Kiss & Ride facility will be provided at the existing high school off-street overflow car park accessed from Namona Street, as shown in **Figure 27**.

The proposed design accommodates 17 car spaces and provides a cul-de-sac to allow vehicles to turn around on-site without the need for reversing manoeuvres, therefore allowing vehicles to enter and exit in a forward direction. The proposed Kiss & Ride design is presented in **Figure 28**.

The Kiss & Ride spaces will be signposted as “No Parking” during School Hours (i.e. 8:00am to 9:30am and 2:30pm to 4:00pm on school days). As required by NSW Road Rules 2014 for ‘No Parking’ restrictions, parents must remain within 3 metres of their vehicle and are unable to stay for longer than 2 minutes.



As part of this Kiss and Ride facility, there will be a proposed footpath extension forming the edges of the Kiss and Ride spaces, which provide improved connectivity to the existing pathway located to the south of the NBISC and connects to Garden Street.

It is noted that the return and earn machine will be removed from the site prior to the start of construction.

Furthermore, it is to be noted that this DA does not seek approval for the Kiss & Ride facility. A separate DA will be lodged to seek approval for the Kiss & Ride facility.



Figure 27: Proposed Kiss & Ride Locations

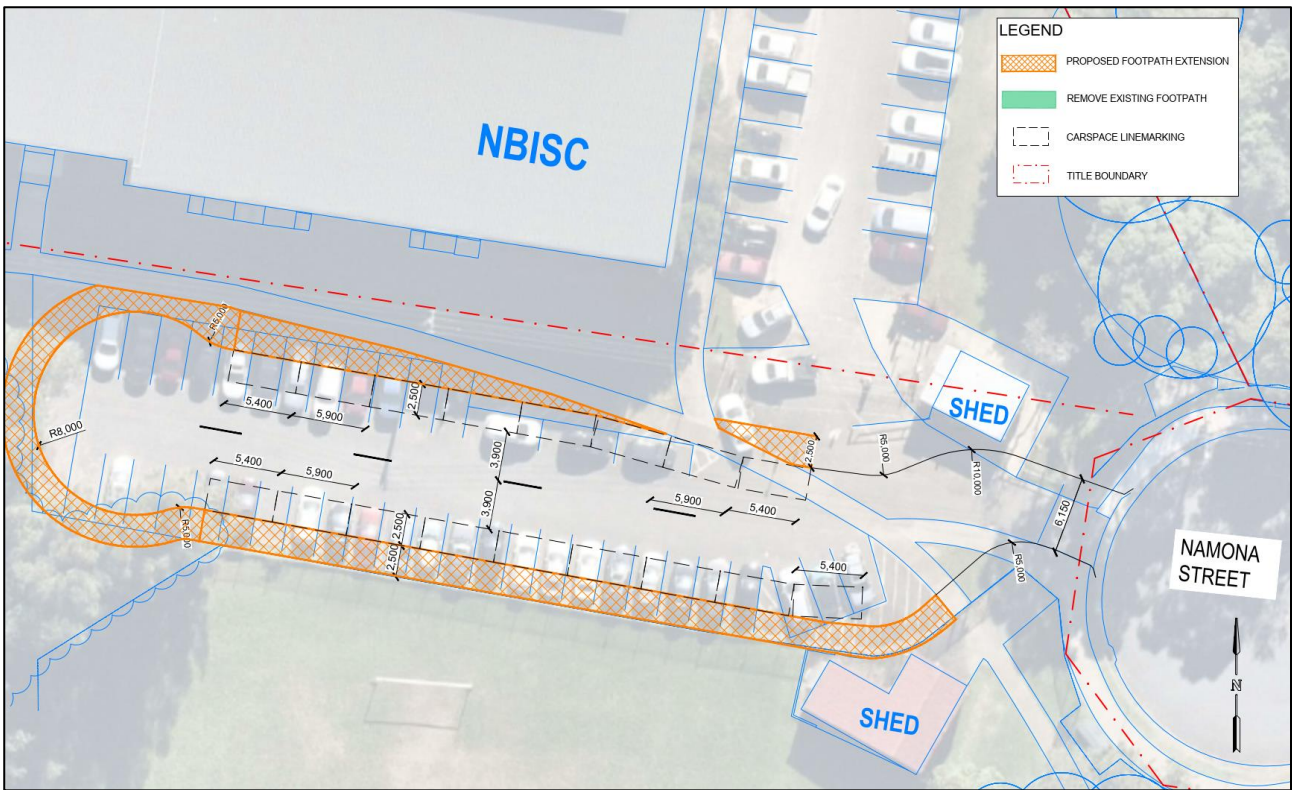


Figure 28: Proposed Kiss & Ride Design

### 7.2.3 Bus Stops

Consistent with the current arrangements, the School shall utilise the existing bus stop along the Namona Street frontage and Jacksons Road for school services and Pittwater Road for express services, as shown in **Figure 29**.



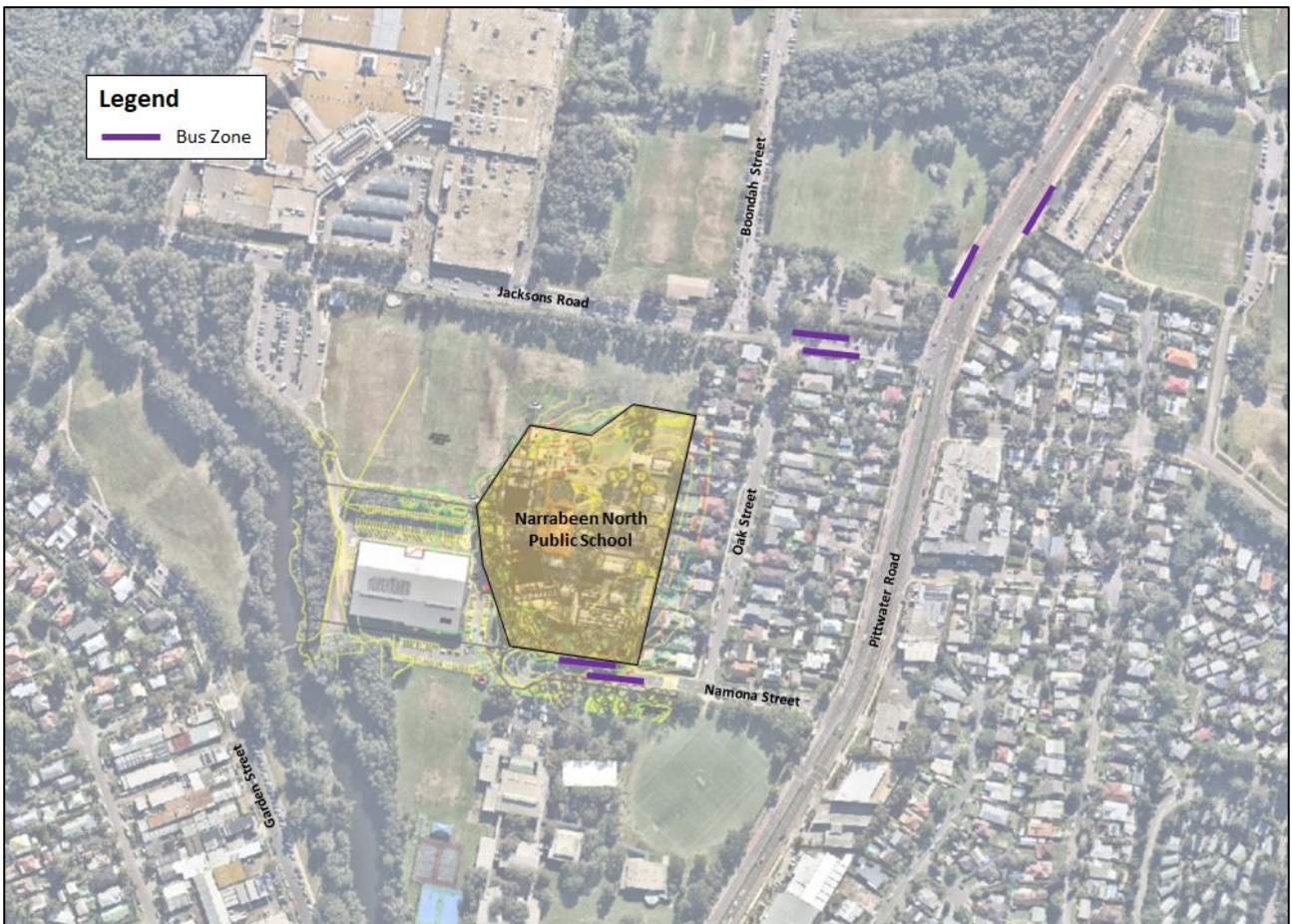


Figure 29: Bus Stop Location

Based on the current discussion between the school and bus operators, the current bus stop design is sufficient to cater to the current and future bus requirements.

#### 7.2.4 Service Vehicles

Consistent with the existing arrangements, servicing (deliveries, waste collection) will continue to occur within the staff car park.

Delivery times would be strictly managed, whereby regular services are subject to strict timelines to ensure the minimum movements possible and these occur outside of the school peak periods.

The private waste collection vehicle (with a maximum travel and operational height of 3.5m) will arrive from Namona Street in a forward direction and reverse onto the waste storage area. Given that the waste collection will occur outside of the school hours, the truck will utilise the vacant carpark to turn around and exit onto Namona Street on departure (see **Figure 30**).

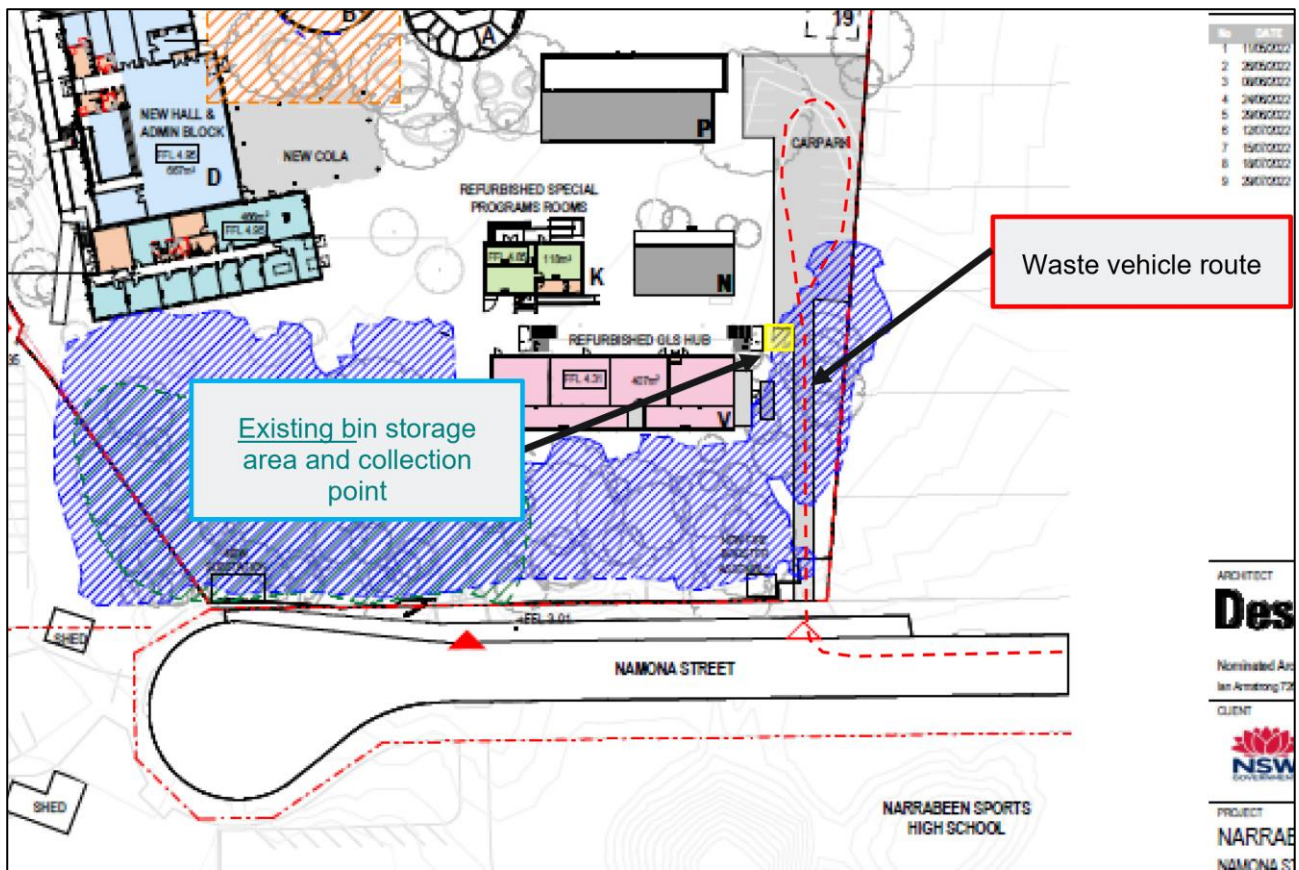


Figure 30: Waste Vehicle Route and Bin Collection Point (Source: Narrabeen Education Precinct- Narrabeen North Public School: Waste Management Plan dated 10 August 2022)

Details of the waste collection arrangement are provided in the Waste Management Plan prepared by MRA Consulting Group (MRA) dated 10 August 2022.

### 7.3 Pedestrian Facilities

As discussed, the School currently provides the following pedestrian access points:

- One (1) pedestrian access point from Warriewood Valley Sportsground
- One (1) pedestrian access point from Namona Street; and
- One (1) pedestrian access point from the NBISC car park.

It is noted that the access to Warriewood Valley Sportsgrounds is generally closed and will only be opened under certain conditions (i.e. weather or COVID-19-related situations).

Traffic, pedestrian and cyclist volume surveys were commissioned by Ason Group and were undertaken on Thursday 02 June 2022. The survey results indicated the following peak hours:

- AM peak hour occurred from 8:00 AM to 9:00 AM
- Afternoon school peak hour occurred from 2:30 PM to 3:30 PM
- PM peak hour occurred from 4:00 PM to 5:00 PM

The pedestrian and cyclist volumes from the surveys are presented in **Table 10**.

<b>TABLE 10: EXISTING PEAK HOUR PEDESTRIAN AND CYCLIST MOVEMENTS</b>				
<b>LOCATION</b>	<b>LOCATION TYPE</b>	<b>PERIOD</b>	<b>PEDESTRIANS</b>	<b>CYCLISTS</b>
Pittwater Rd / Jacksons Rd	Signalised	AM	93	13
		School PM	84	4
		Network PM	111	19
Pittwater Rd / Namona St	Yield / Give Way	AM	8	38
		School PM	34	21
		Network PM	6	17
Namona St / Oak St	Yield / Give Way	AM	169	41
		School PM	150	21
		Network PM	39	8
Garden St / Jacksons Rd	Roundabout	AM	0	5
		School PM	0	1
		Network PM	0	0
Jacksons Rd / Oak St	Yield / Give Way	AM	50	7
		School PM	30	12
		Network PM	6	7
Jacksons Rd / Boondah Rd	Roundabout	AM	72	10
		School PM	72	15
		Network PM	103	14
Jacksons Rd / NBISC access driveway	Yield / Give Way	AM	7	10
		School PM	14	3
		Network PM	15	2
Mullet Creek footbridge	Pedestrian / cyclist footbridge	AM	83	20
		School PM	23	83
		Network PM	6	53
Garden Street pedestrian crossing (just south of The Crescent)	Wombat (raised) pedestrian crossing	AM	6	53
		School PM	10	43
		Network PM	6	10



## 7.4 Overall Transport and Connectivity

The overall transport and connectivity plan of the School, illustrating the existing and proposed traffic and transport elements is shown in **Figure 31**.

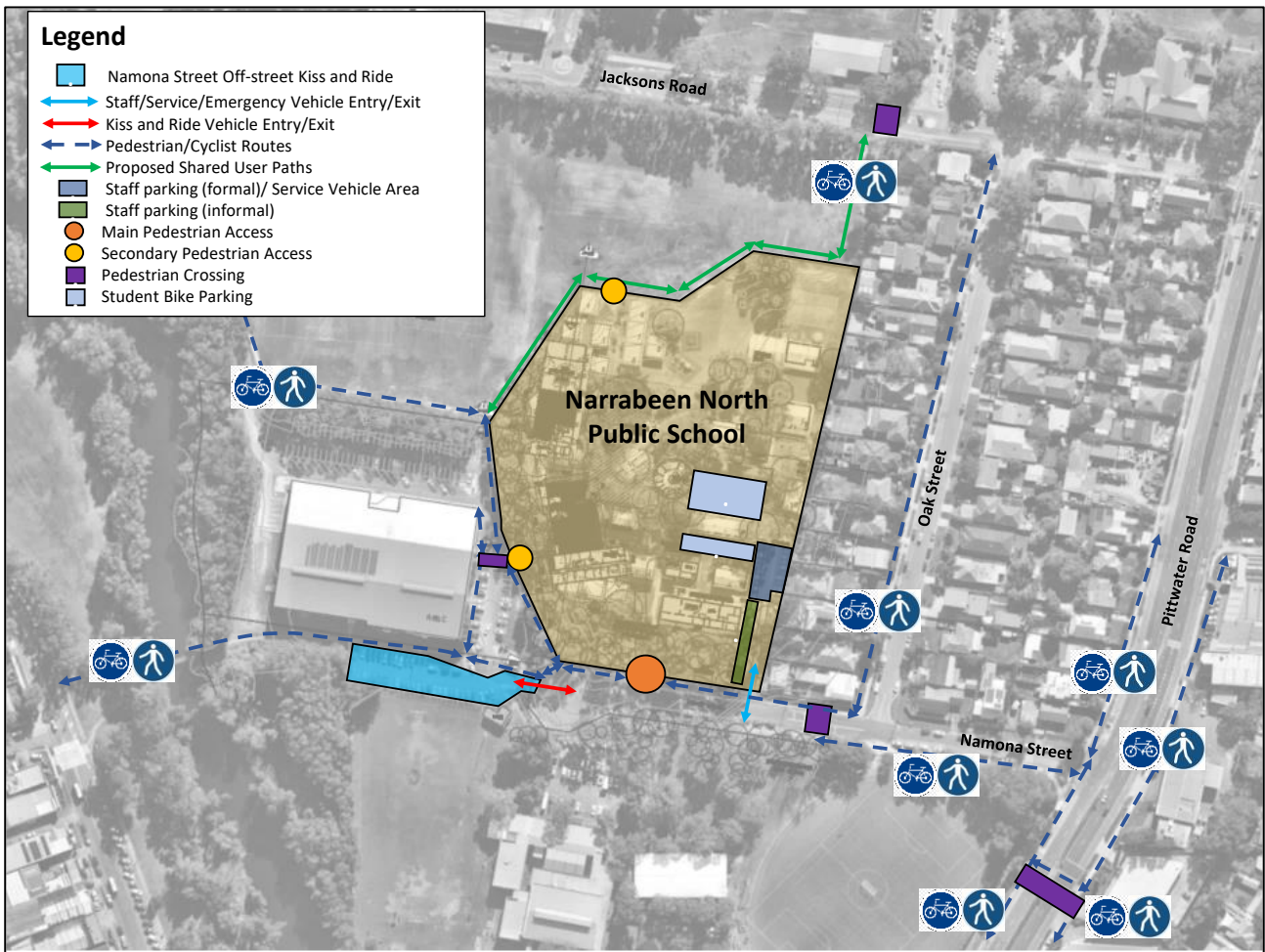


Figure 31: School Site Plan (Traffic and Transport elements)

# 8 Traffic Assessment

## 8.1 Trip Generation

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### 8.1.1 Trip Rates

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As detailed in **Section 6.6**, the Ason Group has adopted the minimum vehicle trip generation per student from Table 6.2 of the GTA report, being:

- AM School Peak                    0.63 Trips / Student
- PM School Peak:                    0.52 Trips / Student

Application of the trip rates to the existing student populous (719 students) results in the existing traffic generation of the School to be:

- 453 total vehicle trips during the AM Peak; and
- 374 total vehicle trips during the PM Peak.

### 8.1.2 Net Traffic Generation

---

The proposal is not seeking to increase the number of staff or students at the School.

As such, it can be expected that the traffic generation of the School, calculated in **Section 8**, will remain consistent upon completion of the proposed upgrade works.

The proposal is therefore supportable on traffic generation grounds.



# 9 Parking Assessment

## 9.1 Car Parking Assessment

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Pittwater DCP Section B6.3 Off-Street Vehicle Parking Requirements do not provide car parking rates for educational establishments. For developments with car parking rates, Pittwater DCP 2000 stipulates that:

*'The minimum number of vehicle parking requirements must be determined using the appropriate guidelines for parking generation and servicing facilities based on development type comparison based on the Roads and Maritime Services Guide to Traffic Generating Development or analysis drawn from surveyed data for similar development uses. Provision must be made within the development site for access and parking of all service vehicles servicing the site, visitor parking and parking for people with disabilities.'*

The proposal does not include any changes to the existing student and staff numbers, meaning the existing travel behaviours and traffic conditions around the site are not expected to be significantly impacted by the proposal.

Therefore, parking activities will continue to operate as they currently do and it can be expected that the existing car park will continue to accommodate staff parking demand.

Furthermore, a Travel Access Guide (TAG) shall be prepared for the School and alternate modes of transport (i.e. active transport and public transport) will be encouraged to decrease private vehicle usership.

### 9.1.1 Accessible Car Parking

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Pittwater DCP Section B6.3 Off-Street Vehicle Parking Requirements do not provide accessible car parking rates for educational establishments.

Reference has therefore been made to the Disability (Access to Premises — Buildings) Standards 2010. Schools are classified as Class 9b buildings which require 1 accessible car space for every 100 car parking spaces or part thereof.

Application of this rate to the existing 20 formal car parking spaces results in a requirement of one space. The existing car park provides one accessible car parking space, thus satisfying this requirement.

### 9.1.2 Motorcycle Parking

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Pittwater DCP requires motorcycle parking to be provided at a minimum rate of 1 motorcycle parking space per 100 motor vehicle spaces.

Given that the proposed upgrades do not propose to provide any additional on-site car parking, there is no strict requirement to provide any motorcycle parking as part of the upgraded school development.

### 9.1.3 Car Parking Summary

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The upgrades to Narrabeen North Public School do not include any changes to the existing on-site car park, which currently accommodates 20 on-site spaces, including one accessible car space.

The overall provision of car parking provision for the site complies with Pittwater DCP.

## 9.2 Bicycle Parking

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### 9.2.1 Pittwater DCP

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Pittwater DCP does not provide a specific rate for bicycle parking for educational establishments (primary schools). As such, reference has been made to the cycling requirements of Austroads and the Educational Facilities Standards and Guidelines (EFSG).

### 9.2.2 Austroads

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Reference is made to the Austroads *Guide to Traffic Management Part 11: Parking Management Techniques* (2020) to establish bicycle parking requirements. In this regard, Clause 2.3, Table 2.6 provides the following rate for School Land Uses:

- 1 per 5 pupils over Year 4

Based on the future total number of students (1,137), it is estimated that the number of students over Year 4 in 2023 would be approximately 488. Application of the above rate would result in a requirement of 98 bicycle spaces.

### 9.2.3 EFSG

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The EFSG provides bicycle parking requirements based on school core size. The upgraded Narrabeen North Public School is categorised as a CORE 35 school, which has a requirement for at least 60 bicycle parking spaces.

### 9.2.4 School Principal Interview

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An interview was conducted with Adam Hughes, Principal of Narrabeen North Public School on 23 June 2022. From the interview, it was recommended to provide at least 1 x end-of-trip facility for staff. This is considered beneficial based on feedback received from the staff.

### 9.2.5 Bicycle Parking Summary

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Based on the bicycle parking requirements above and actively encouraging cycling as a primary mode of transport for students and staff travelling to and from the school, it is considered that the EFSG bicycle parking rates would provide the most appropriate bicycle parking requirements.

However, based on other schools Ason Group have worked on, Core 35 Schools typically generate a combined demand of 100 bicycle/scooter spaces within established residential areas.

The proposal seeks to provide 100 new bicycle parking spaces (designed in accordance with AS 2890.3:2015) and replace the existing 94 spaces on-site.

# 10 Design

## 10.1 Design Commentary

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### 10.1.1 Staff Car park

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The upgrades to the school do not propose any changes to the on-site car parking arrangements for staff, and as such, no assessment has been conducted of the existing access arrangements and car parking layouts.

It is understood that the existing car parking arrangements comply with AS 2890.1:2004 Parking Facilities – Off Street Car Parking (AS 2890.1:2004) and/or the previous version of AS 2890.1. being AS 2890.1:1993.

Consistent with the existing arrangements, servicing (deliveries, waste collection) will continue to occur within the staff car park. Such servicing arrangement has operated safely and is expected to be adequate for the proposed School redevelopment.

### 10.1.2 Kiss and Ride

---

The proposed Kiss and Ride facility has been designed in accordance with AS2890.1:2004 requirements, noting the following:

- The dimensions of all car parking spaces have been designed in Figure 2.5 of AS2890.1:2004
- Aisle width of 3.9m each way has been provided, surpassing the requirements of Figure 2.5 of AS2890.1:2004
- Access driveway width of 6.15m shall be provided to allow for simultaneous entry and exit movements of B99 vehicles, surpassing the requirements for a Category 1 driveway as per Table 3.1 of AS2890.1:2004

The proposed design of the Kiss and Ride facility is provided in **Figure 28** and supporting swept paths and commentary is attached in **Appendix A**.

It is to be noted that this DA does not seek approval for the Kiss & Ride facility. A separate DA will be lodged to seek approval for the Kiss & Ride facility.

## 10.2 Bicycle Parking Provision

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### 10.2.1 Existing Provision

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A total of 94 bicycle parking spaces are to be provided within the school grounds.

Based on photos provided to Ason Group, the design and layout of the bicycle parking spaces do not conform with the requirements of AS 2890.3:2015.

## 10.2.2 Proposed Provision

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With reference to AS 2890.3:2015, bicycle parking associated with Schools is classified as a Class B facility in accordance with Table 1.1, therefore requiring:

- A secure room or structure, protected from weather
- Contains bicycle parking devices that allow users to lock the bicycle frame and both wheels
- Located within areas that are controlled by entrance gates
- Located in a well-lit area
- Situated close to entrance/exits

Ason Group's experience with similar School projects demonstrated a direct connection between active transport usage and weather cover provision for outdoor bicycle/scooter parking facilities. Active transport usage was observed significantly lower when the temperature exceeded 30 degrees for a school bicycle parking facility with no weather protection, as students were unable to ride or push the bicycle due to the excessive heat of the seat and the handles.

As such, it is proposed to provide 100 new bicycle parking spaces in accordance with Class B facilities as per AS 2890.3:2015 and remove the existing 94 non-compliant spaces. The location of the proposed bicycle spaces is shown in **Figure 32**.

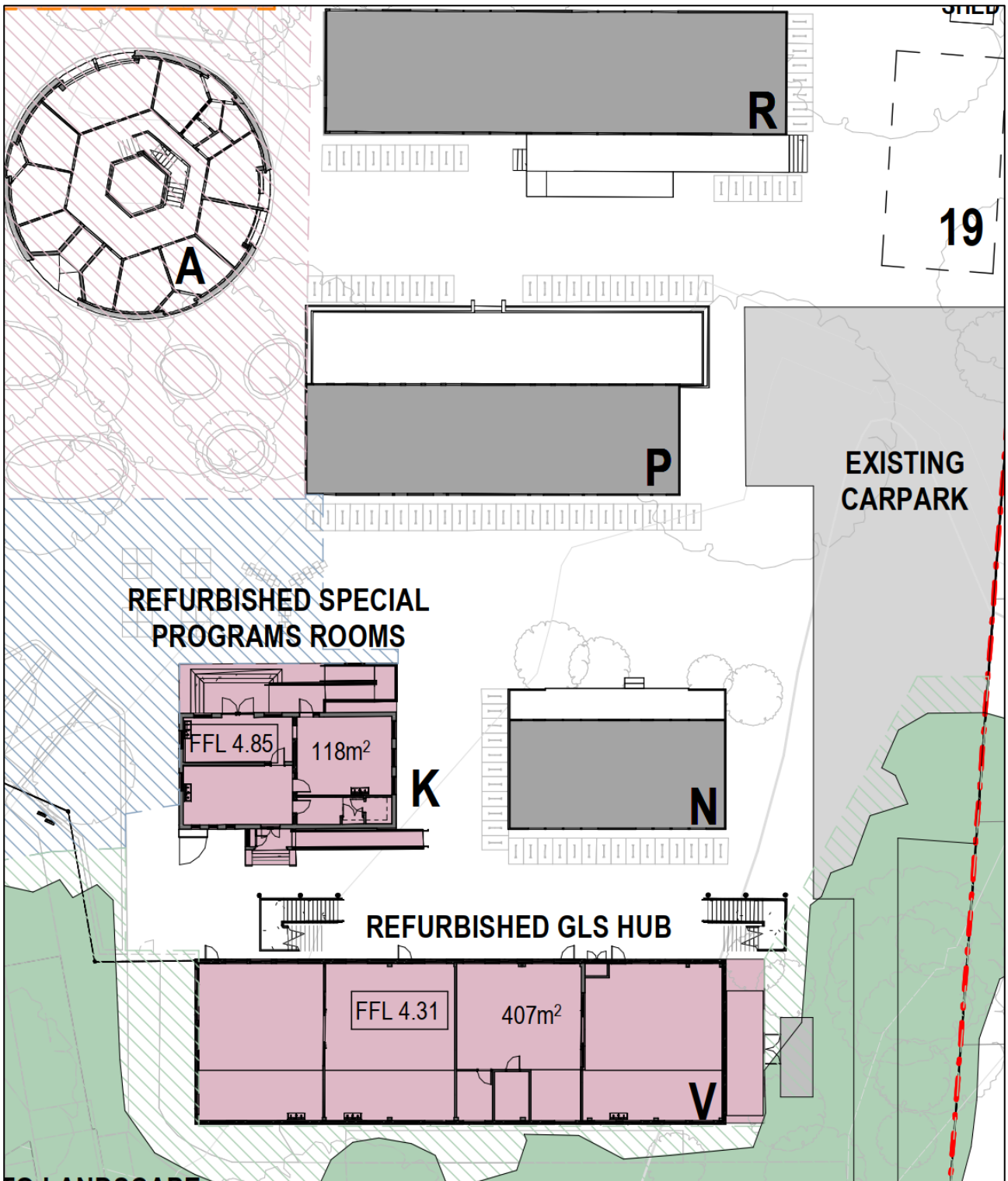


Figure 32: Proposed Bicycle Parking Locations (Source: Overall Plan dated 23 August 2022)



# 11 Summary and Conclusions

## 11.1 Summary

---

Ason Group have been engaged by School Infrastructure NSW to prepare a Transport Assessment (TA) in relation to a Development Application (DA) for proposed upgrades (the Proposal) at Narrabeen North Public School (NNPS) located at 6 Namona Street, North Narrabeen.

## 11.2 Key Findings

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Further to a detailed assessment of the proposed development of the upgrades to Narrabeen North Public School, we provide the following conclusions:

- The Proposal relates to the upgrading and refurbishment works in the Narrabeen North Public School, to significantly improve educational outcomes and support the delivery of modern pedagogical learning. The site is located within the Northern Beaches Council LGA and is therefore subject to that Council's controls.
- Along with this Transport Assessment, a Preliminary Construction Traffic Management Plan and Preliminary School Travel Plan have been prepared which intend to address the traffic matters relating to traffic and transport elements of the proposed works.
- The School is situated within the Narrabeen Education Precinct, with connectivity to the surrounding public transport network via footpaths and/or shared paths within the walking catchment area. An assessment of the school bus network generally indicates adequate servicing availability to the student population.
- The existing school bus stop along the Namona Street frontage of the School will be retained and will continue to service the school.
- A School Travel Mode Survey undertaken by Ason Group via SurveyMonkey indicates that there is an opportunity to cultivate a higher proportion of active travel modes (walking and cycling) for students within appropriate distance by improving or providing additional footpaths and/or shared path facilities.
- An assessment of the surveys indicates a high dependency on private vehicles as the primary mode of transport to and from the school for students, being 76% and 71% in the AM and PM peak hours, respectively.
- Active travel modes (including cycling and walking) constituted approximately 16% - 17% of total trips to and from the School.
- The staff surveys demonstrate a higher dependency on private vehicle (as driver) usage, being 93% of staff trips and is generally in line with observed education staff patterns throughout NSW. This is underpinned by the provision of on-site parking, as well as the requirements of bringing heavy material and equipment to and from the workplace, thus benefitting from private vehicle usage.
- The adopted traffic generation rates have been determined based on the surveyed rates of similar primary schools from the Roads and Maritime Services (now TfNSW) Trip Generation Surveys, Schools (Schools Trip Generation Report).
- Based on these rates and the existing student population of 719, the School currently generates the following during the school peak hours:
  - AM School peak hour: 638 vehicle trips
  - PM School peak hour: 527 vehicle trips
- The proposal does not seek to increase the number of students or staff at the School. Therefore, it can be expected that the traffic generation of the site will remain consistent and would not result in significant changes to the existing operation of the local road network.

The Proposal is therefore supportable on traffic generation grounds.

- As there will be no increase in staff numbers, the existing off-street staff car park is expected to continue to accommodate the staff car parking demand.

The Proposal is therefore supportable on car parking grounds.

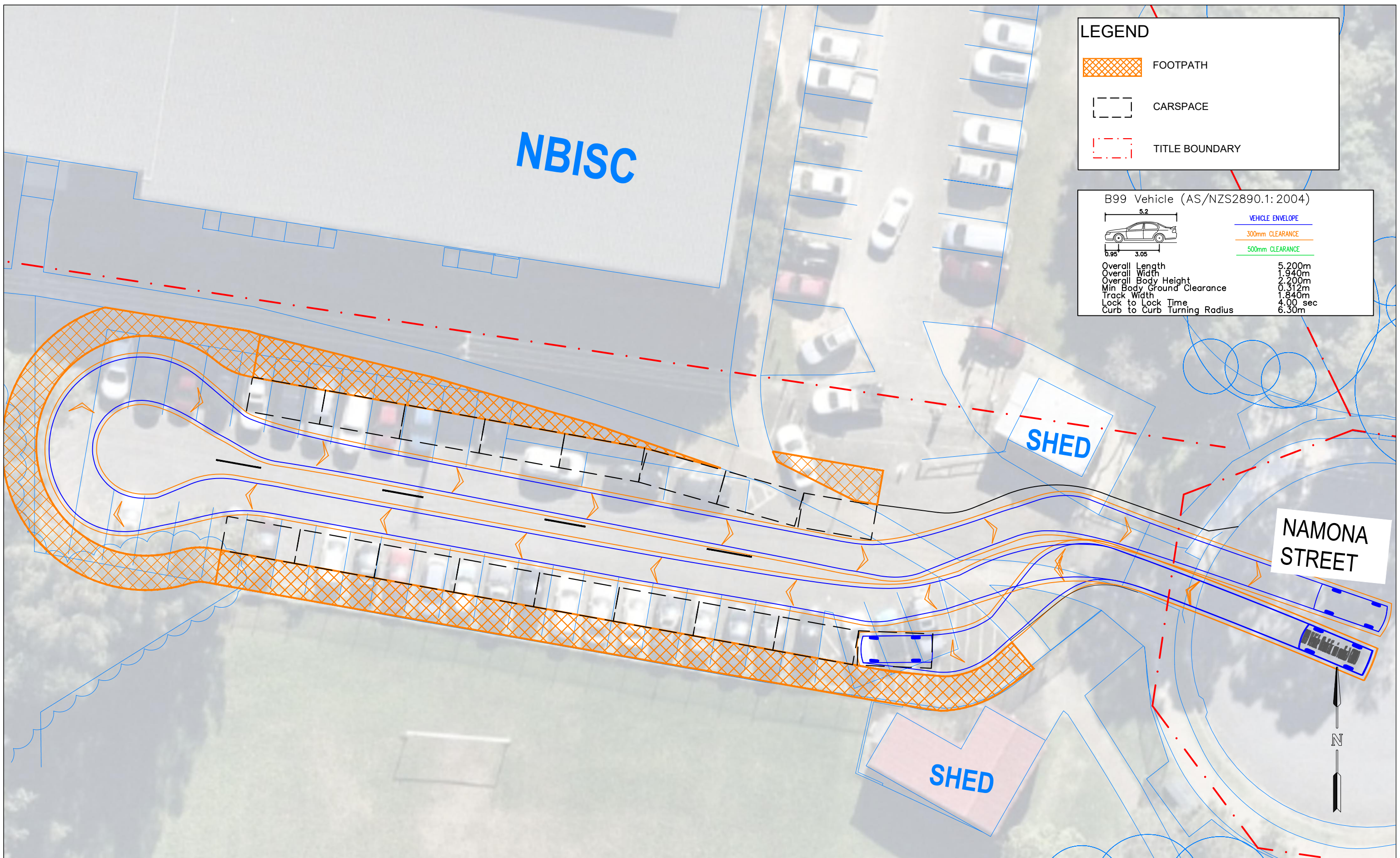
- It is proposed to provide an off-street Kiss & Ride facility with access via Namona Street. The purpose of a Kiss & Ride facility would be to provide a dedicated space for parents to safely drop off or pick up their children. The Kiss and Ride facility provides 17 car spaces, and the car spaces, aisle widths and driveway widths have been designed in accordance with the requirements of AS 2890.1:2004.
- It is to be noted that this DA does not seek approval for the Kiss & Ride facility. A separate DA will be lodged to seek approval for the Kiss & Ride facility.

In summary, the Proposal is supportable on traffic planning grounds and is not anticipated to result in any adverse impacts on the surrounding road network or the availability of on-street parking.

# Appendix A. Swept Path Assessment



ASON ACCEPTS NO RESPONSIBILITY FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA. REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THE WRITTEN PERMISSION OF ASON GROUP SHALL BE PROHIBITED. THE INFORMATION SHOWN ON SUCH REPRODUCTION IS UNWARRANTED AND NOT SUITABLE FOR USE. PLEASE LABEL, CLASSIFY, REVISIONS, DISCREPANCIES, CHANGES, DELETIONS, AND ADDITIONS TO THE PLAN/DATA WITH THE APPROPRIATE INFORMATION. THE INFORMATION SHOWN ON THIS PLAN/DATA IS FOR INFORMATION PURPOSES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION.



**LEGEND**

- FOOTPATH
- CARSPACE
- TITLE BOUNDARY

**B99 Vehicle (AS/NZS2890.1:2004)**

**VEHICLE ENVELOPE**

- 300mm CLEARANCE
- 500mm CLEARANCE

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.312m
Track Width	1.840m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.30m

**GENERAL NOTES**

This drawing is provided for information purposes only and should not be used for construction.

Base Plan prepared by DesignInc, received 27.05.2022.

Aerial image obtained from NearMap, dated 18.05.2022.

Default speed limit of 50km/h for built up area to applies to Namona Street.

Swept path assessments completed at 10 km/h and 300mm clearance.

Design vehicle: B99      Check Vehicle: B99

**PRELIMINARY PLAN**  
 FOR DISCUSSION PURPOSES ONLY  
 SUBJECT TO CHANGE WITHOUT NOTIFICATION  
 DATE OF ISSUE: .....

DESIGNED Alan Tan	PAPER SIZE A3
APPROVED BY X.XXXX	DATE 29.06.2022
SCALE 1:250	

CLIENT SINSW
PROJECT AG 2008 Narrabeen Education Precinct

DOCUMENT INFORMATION	
CONCEPT PLAN	
KISS & RIDE OPTION 1	
FILE NAME AG 2008-01-v01.dwg	SHEET AG02

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