Hunter River High School

Transport Planning Services

Prepared for School Infrastructure NSW | June 2023

We design with community in mind

Stantec

Revision schedule

Rev No	Date	Description	Signature of Typed Name (documentation on file)			
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A	26/04/2023	Draft Report	John Lim	Niranjan Midde	Niranjan Midde	Volker Buhl
B	09/05/2023	Draft Report	John Lim	Volker Buhl	Volker Buhl	Volker Buhl
C	11/05/2023	Draft Report	John Lim	Elizabeth Muscat	Elizabeth Muscat	Elizabeth Muscat
D	19/06/2023	Draft Report	John Lim	Niranjan Midde	Niranjan Midde	Volker Buhl

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Quality statement

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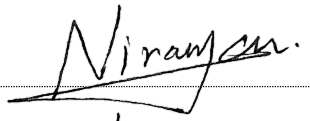
CHECKED BY		
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1 Introduction

This report has been prepared in relation to the proposed development of Hunter River High School located at 36 Elkin Avenue, Heatherbrae. This report has been prepared to support:

a) A development application for the construction of gymnasium (Block Y), consisting of a basketball court, equipment storage, canteen kitchen, staff room, first aid room and change room amenities, construction of hardstand civic space north of the gymnasium, construction of full-size rugby field, the construction of new carpark consisting of sixty-six (66) parking spaces (including 6 accessible parking spaces) and the construction and connection of a reticulated sewer pipe.
b) A Part 5 Activity Approval, development permitted without consent, for the construction of a new administration building, student learning hub and provision of essential services.
c) A Part 5 Activity Approval, development permitted without consent, for the construction of a new linking road and kiss and drop bay between Adelaide Street and Elkin Avenue. The upgrade to Hunter River High School is proposed to include three new buildings (administration, gymnasium, support learning hub), refurbishments to existing buildings, as well as new recreational facilities like cricket nets and long jump zone.

Hunter River High School is located in the suburb of Heatherbrae, within the Port Stephens Local Government Area (LGA). Heatherbrae is categorised in the Draft Hunter Regional Plan 2041 (DPIE, 2021) as a Significant Employment land cluster. The centre is located approximately 15 kilometres north of the Newcastle Metropolitan City (as measured from Newcastle interchange), and 130 kilometres north-east of the Sydney Metropolitan city.

1.1 School context

Hunter River High School is located at 36 Elkin Ave, bounded by the Pacific Highway to the east, Hunter River to its west, Windeyers Creek to the north, and residential land uses to its south. The school services students from the range of years seven to twelve, with a strong focus on quality relationships and quality learning. School bell times are provided in **Figure 1.1**.

Monday to Friday		Alternate Formal Assembly / Year Meeting / Mentoring	
Roll Call	9:00 - 9:20	Roll Call	9:00 - 9:10
Period 1	9:20 - 10:20	Assembly	9:10 - 9:45
Period 2	10:20 - 11:20	Period 1	9:45 - 10:40
Break 1	11:20 - 11:50	Period 2	10:40 - 11:35
Period 3	11:50 - 12:50	Break 1	11:35 - 12:05
Period 4	12:50 - 1:50	Period 3	12:05 - 1:00
Break 2	1:50 - 2:20	Period 4	1:00 - 1:55
Period 5	2:20 - 3:20	Break 2	1:55 - 2:25
		Period 5	2:25 - 3:20

Friday at HRHS is an early day.
School finishes at 1.50pm. Students who have to remain at school will have Break 2 and a supervised Period 5.

Figure 1.1: Hunter River High School bell times
Source: Hunter River High School website, https://hunterriv-h.schools.nsw.gov.au/about-our-school/bell-times.html

The main pedestrian access to the school is located on Elkin Avenue, which also accommodates entry to staff parking. School buses have their own dedicated drop-off/pick-up zones on a one-way loop to Elkin Avenue. Pedestrian access to the bus zone exists through the campus. There is a vehicular exiting gate near the southeast corner which provides direct access to the Pacific Highway. Additional information on school site access is provided in **Section 2.2**.

The suburb of Heatherbrae has a various forms of land use, with primarily industrial land use in the town centre and commercial land use throughout the western side. Residential land use is concentrated on the west of the Pacific Highway, around Hunter River High School. The town centre of Heatherbrae is approximately 3-4 kilometres from the nearest localities of Raymond Terrace and Tomago. Active transport catchments being contained to the suburb, with bus and private vehicle access required for outside connections. The Hunter River High School land uses, and physical constraints are shown in **Figure 1.2**.

There are no train stations located within proximity of Hunter River High School. The nearest train station is Hexham Station and is located about 7 kilometres (about a 13-minute bus ride and 800-meter 700 walk) south-west of the school.

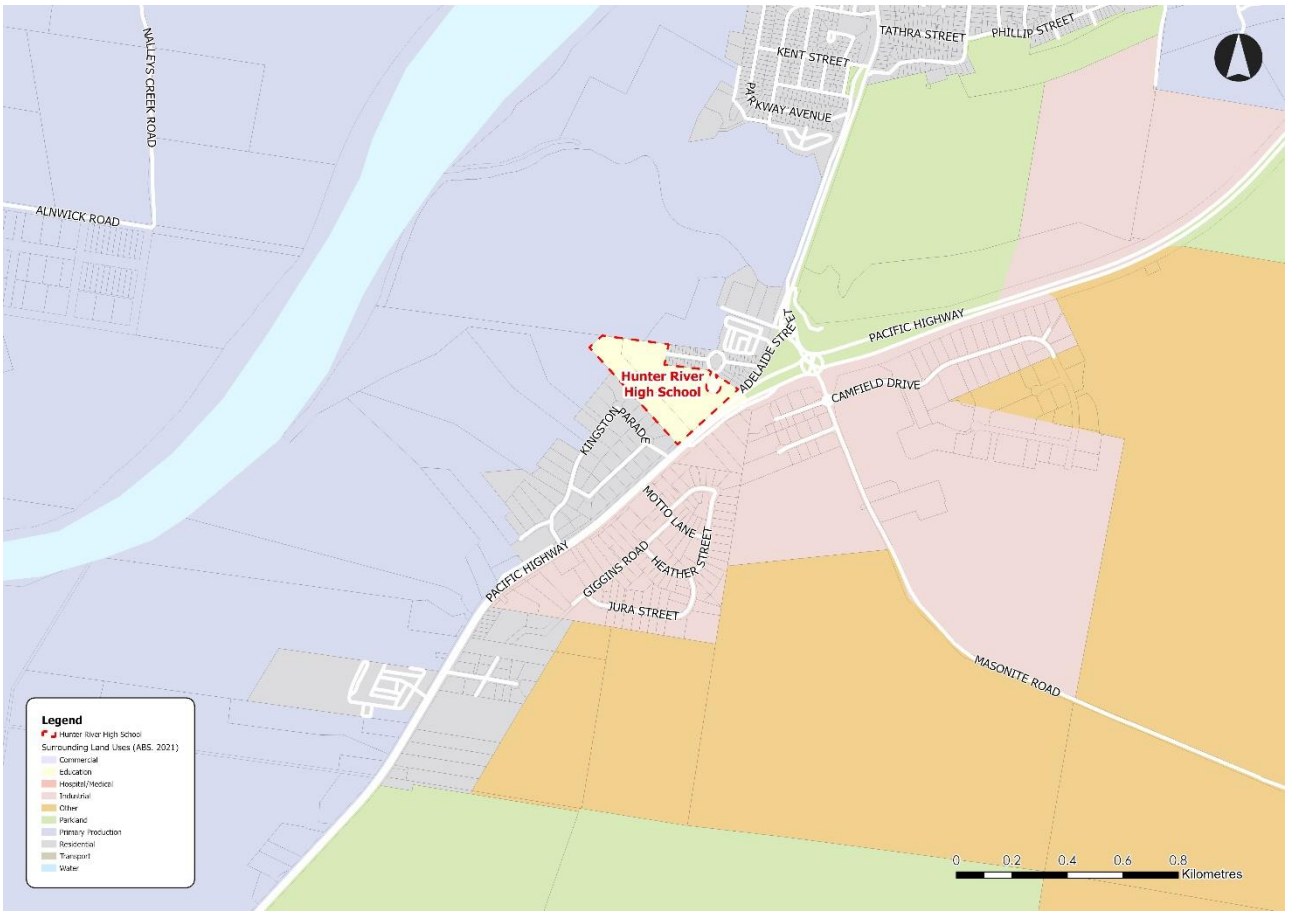

Figure 1.2: Study area

1.1.1 Proposed development

The Development Application includes the following works:

- Construction of new car park for staff and visitor parking
- Extension of internal service road
- Closure of Gate 1 Access to/ from Pacific Highway

The Part 5 Activity Approval includes:

- Improvements to existing bus drop-off bay
- Construction of linking road between Adelaide Street and Elkin Avenue
- Provision of kiss and drop area within linking road
- New covered pedestrian paths, providing link between bus zones and school
- Additional controlled access gates for pedestrians at the school's bus bay area and at Adelaide Street.

The overall proposed development plan is shown in **Figure 1.3** and the layout of the new on-site parking and kiss-and-drop zone is further shown in **Figure 1.4**.

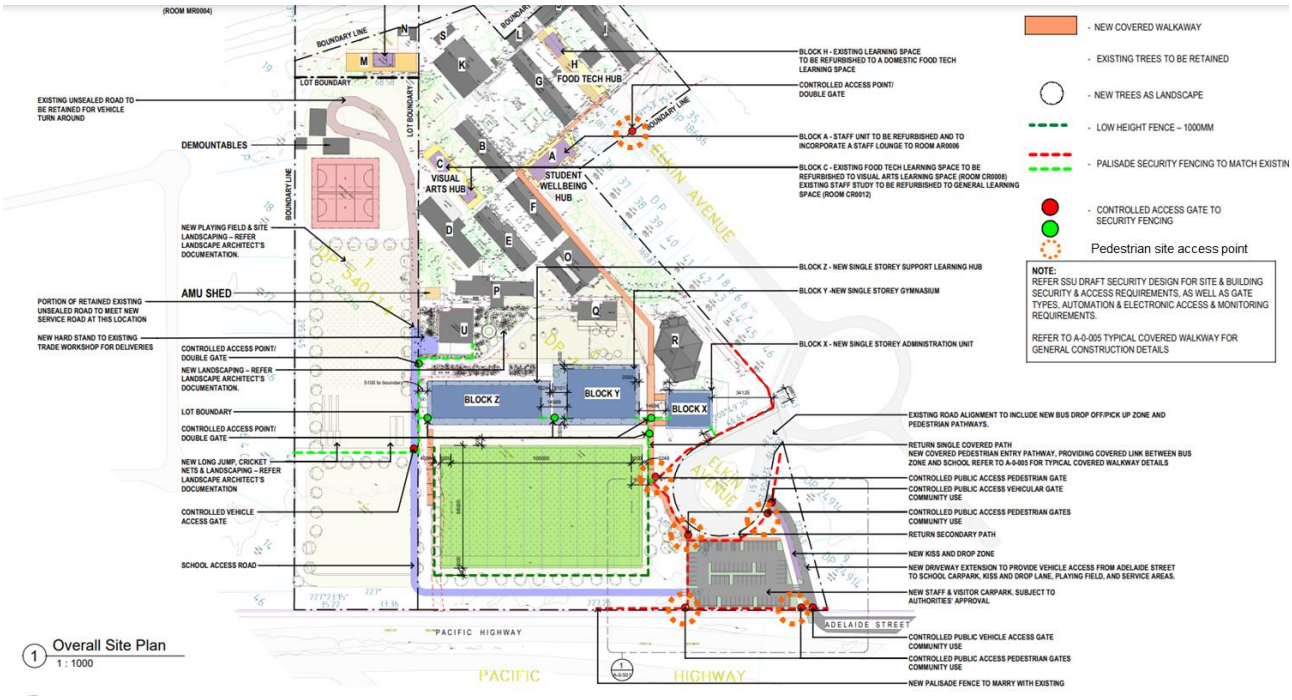

Figure 1.3: Overall proposed development plan

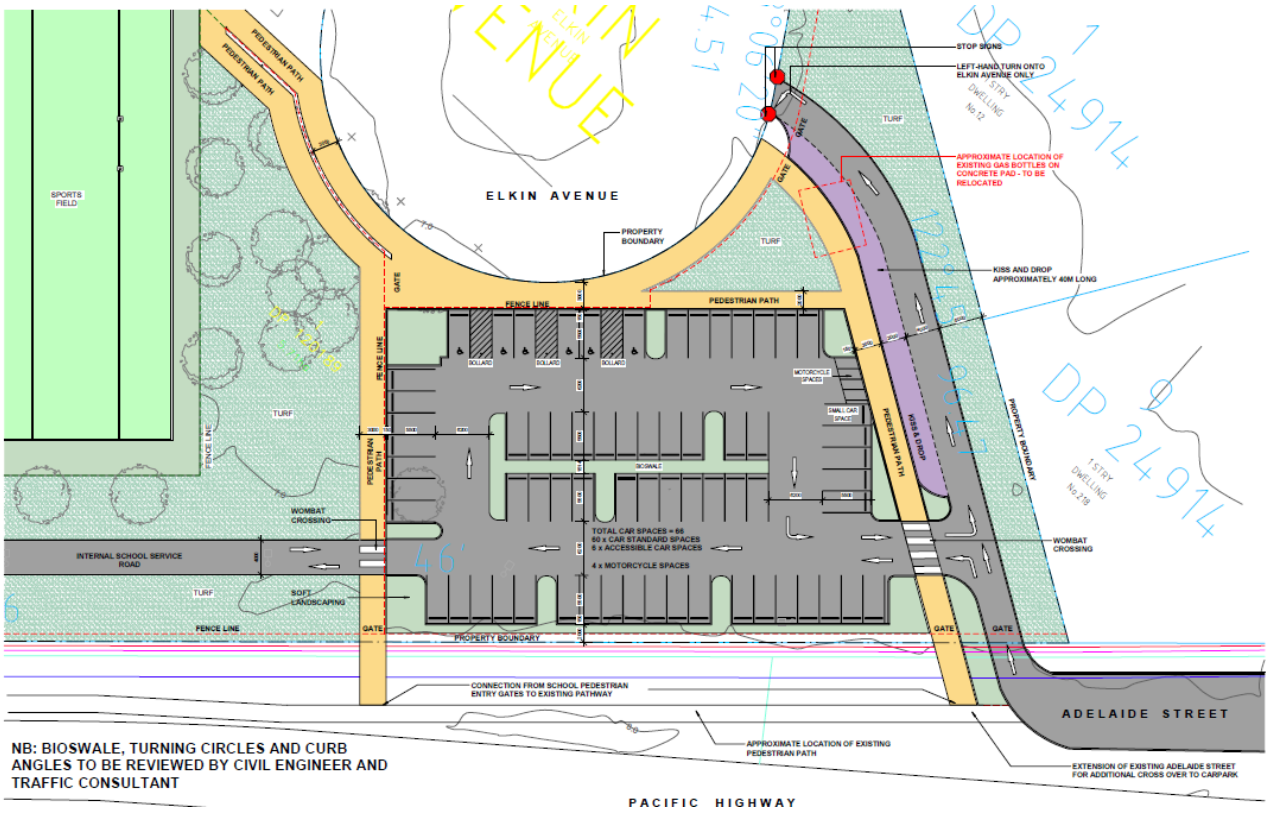

Figure 1.4: Proposed parking and kiss-and-drop zone near Adelaide Street

1.2 Summary of student distribution

Current student population for 2023 is 842 students. Depersonalised students data is available from August 2022, when 871 students were enrolled. A reduction factor of 0.97 was applied to the historic 2022 figure of 871 in order to capture the general distribution of students to reflect the updated enrolment.

A summary of the suburb of residence for current Hunter River High School students is shown in **Figure 1.5**. Only 15 of the total 842 students live within Heatherbrae, with the remainder coming from neighbouring regions. Raymond Terrace and Tanilba Bay are the two largest enrolment areas, accounting for 31% and 15% respectively of the total enrolled students.

The School Student Transport Scheme (SSTS) allows free travel for students between years 7 to 12 if they live outside of a straight-line distance of 2.0 kilometers from the school, or the walking distance from home to school is 2.9 kilometres or further. This scheme is therefore eligible to most students, as the majority of students (86%) live outside of the 2.9-kilometre SSTS catchment.

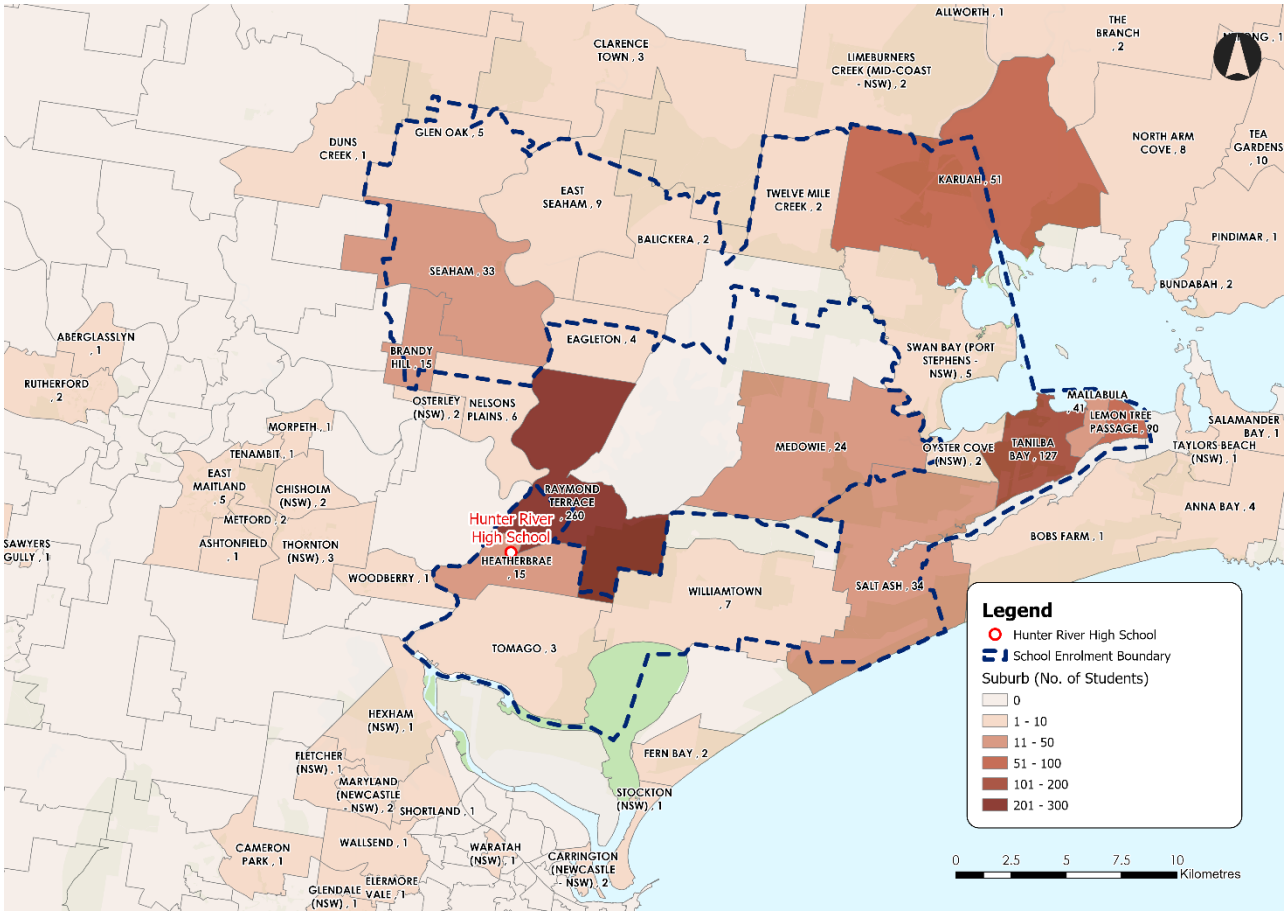

Figure 1.5: Suburb of residence for current Hunter River High School students

1.3 Purpose of the report

The purpose of the Transport Assessment is to:

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

The School Transport Plan is undertaken separately throughout the school project phases and guides the day-to-day operation of the school after project completion.

The Hunter River High School Sustainable Development Plan (SDP), developed by JHA Consulting Engineers in 2022 states the proposed ESD initiatives to achieve compliance with Educational Facilities Standard Guidelines (EFSG) DG02 requirements and 4 Star Green Star Design & As-Built (GS DAB) v1.3 certification. All school projects in Planning phases must develop a Sustainable Development Plan including sustainability targets, initiatives and an ESD schedule detailing the relevant Green Star/EFSG pathway adopted by the project.

The SDP Report identifies a possible 10 points for transport under the Green Start rating scale for buildings in Australia. The project can achieve the ten points through following the SINSW School transport assessment process. The process generally rewards projects that implement design and operational measures that reduce the carbon emissions arising from occupant travel to and from the project, when compared to a reference building. This also promotes the health and fitness of commuters, and the increased livability of the location.

The EFSG outlines the following transport related sustainability initiatives/ requirements:

- Bicycle storage – Provide 1 space for every 20 students to AS2890.3 standard.
- Transport planning must prioritise the delivery of feasible, connected networks and rectify transport deficiencies.
- The School Transport Assessment process must prioritise critical transport infrastructure to satisfy community expectations and statutory planning obligations. The assessment seeks to address school travel demand efficiently, safely and sustainably by maximising the most active and sustainable transport modes and reducing car parking capital expenditure and car travel demand.
- The School Travel Plan must be developed to inform the design response, construction traffic management, travel plan and post-occupancy operations to meet daily travel demand to school.

2 Transport assessment

2.1 Transport network

2.1.1 Walking

A number of pedestrian infrastructure facilities connect the school to the surrounding residential areas within the school's walking catchment and nearby bus stops, including:

- A sealed shared path that runs adjacent to Adelaide Street providing connection to residential area of Raymond Terrace to the north
- Sealed shared path to nearby bus stops on Adelaide Street and Pacific Highway
- Unsealed shared path that runs adjacent to Pacific Highway towards residential area to immediate south of the school. It should be noted that unsealed surfaces can result in accessibility issues.
- Within the vicinity of Hunter River High School, there is a lack of formal pedestrian footpaths that provide connections from the surrounding pedestrian network to the current school site access points at the western end of Elkin Avenue and the school's bus drop-off/pick-up zone, as well as a lack of formal crossing facilities. Currently, formal pedestrian footpaths are only available on the northern side of the Elkin Avenue from Adelaide Street and through the open space area to the west, and only a short section of sealed footpath is provided on Adelaide Street fronting the school. **Figure 2.1** shows the existing pedestrian infrastructure within the vicinity of the school.

The Port Stephens Pathways Plan (2016) shows the existing pedestrian infrastructure throughout Heatherbrae, as shown in **Figure 2.2**. Additionally, it indicates proposed future pathways. Proposed infrastructure that would benefit students at Hunter River High School includes a shared path adjacent to Pacific Highway that runs from Elkin Avenue to the residential area immediate south of the school.

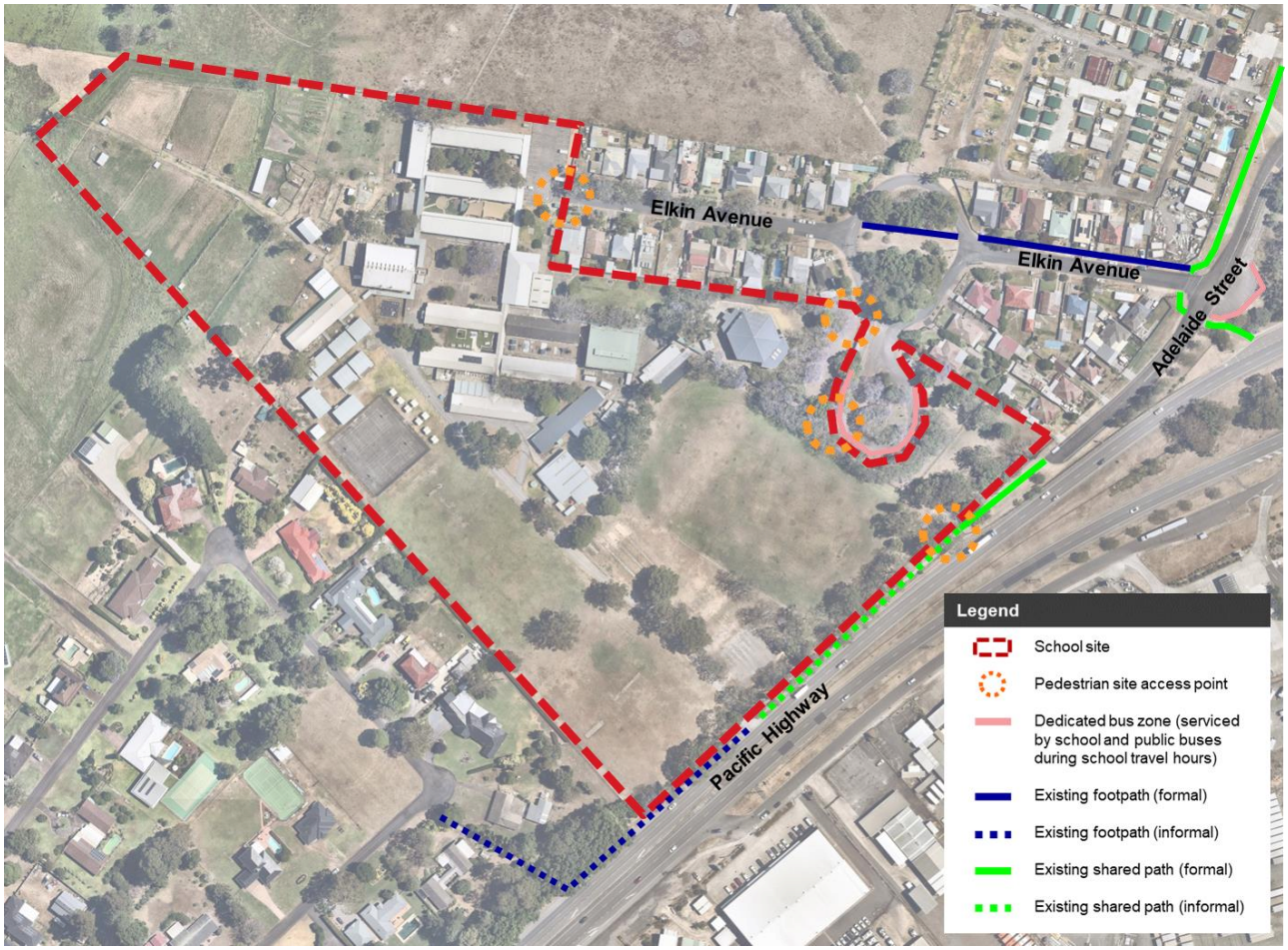

Figure 2.1: Existing pedestrian network
Basemap source: Nearmap imagery dated 5 Dec 2022

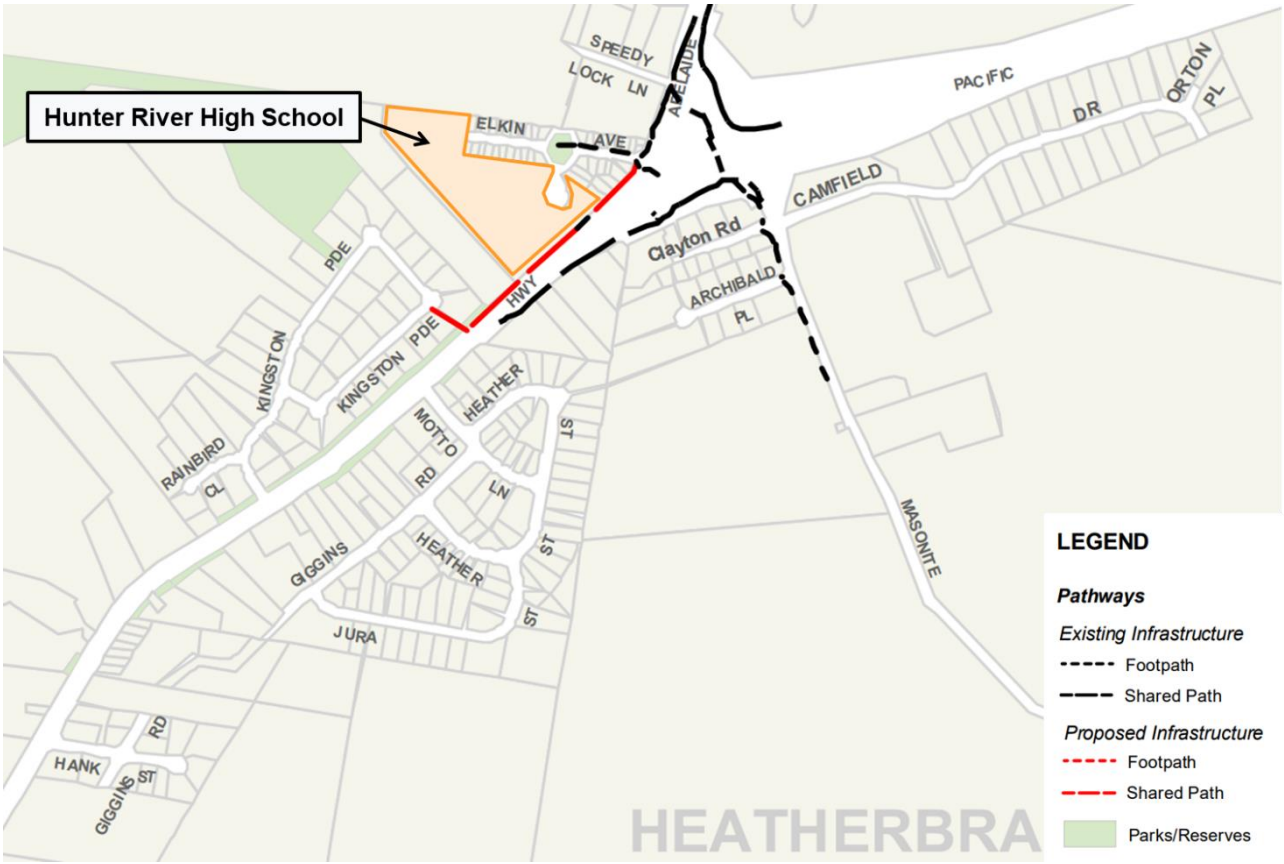

Figure 2.2: Port Stephens Council Pathway Plan – Heatherbrae
Source: Pathway plans | Port Stephens Council (nsw.gov.au) – Sheet 5

2.1.1.1 Walking catchments

Walking catchments are calculated for both on-path routes and straight-line distances as per **Figure 2.3** and are based on current location of students based on de-personalised data provided by the Department of Education in August 2022. For current students, around 2% live within a 1,200 metre on-path walk of the school site, representing an approximate 15-minute walk. A summary of current student walking catchments is shown in **Table 2.1**.

Table 2.1: Summary of walking catchments of residence for current students

On-path Walking Catchment	Students	%	Cumulative %	Notional walking catchment	Students	%	Cumulative %
1-400m	7	1%	1%	0-400m	4	0%	0%
401-800m	4	0%	1%	401-800m	6	1%	1%
801-1,200m	4	0%	2%	801-1,200m	16	2%	3%
1,201-1,600m	25	3%	5%	1,201-1,600m	27	3%	6%
1,601-2,000m	29	3%	8%	1,601-2,000m	32	4%	10%
2,001m-2,900m	46	6%	14%	Over 2,000m	757	90%	100%
Over 2,900m	727	86%	100%				
Total students	**842**	-	-	**Total students**	**842**	**-**	**-**

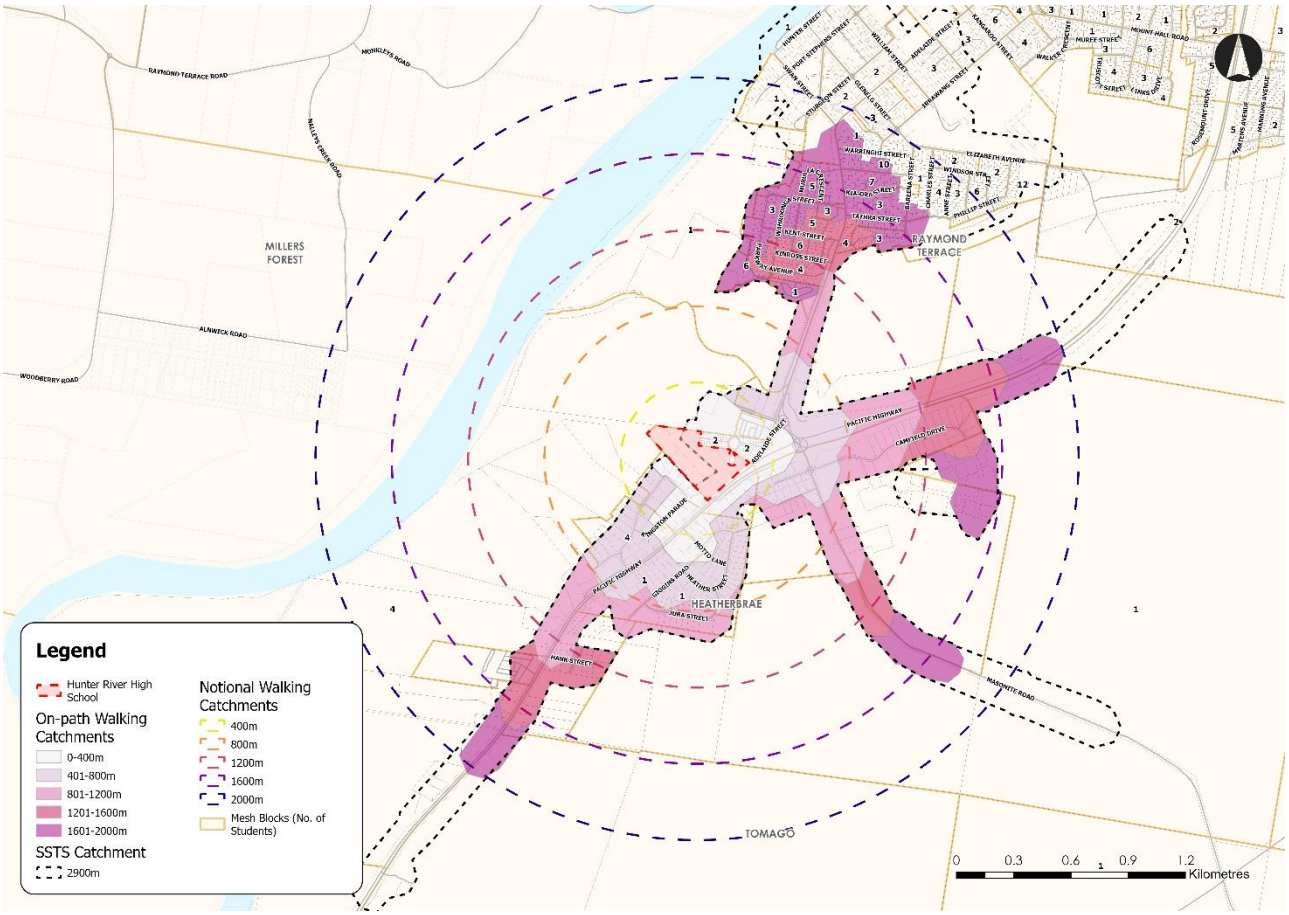

Figure 2.3: Walking catchments

2.1.2 Cycling

Figure 2.4 and **Figure 2.5** are cycleway maps obtained from TfNSW Cycleway Finder and Port Stephens Council (2013) respectively and show the availability of cycleway infrastructure near the site. **Figure 2.4** shows a north-south off-road cycling path along Pacific Highway and Adelaide Street connecting the school to the surrounding dwellings, and to the neighbouring suburb at Raymond Terrace along Adelaide Street.

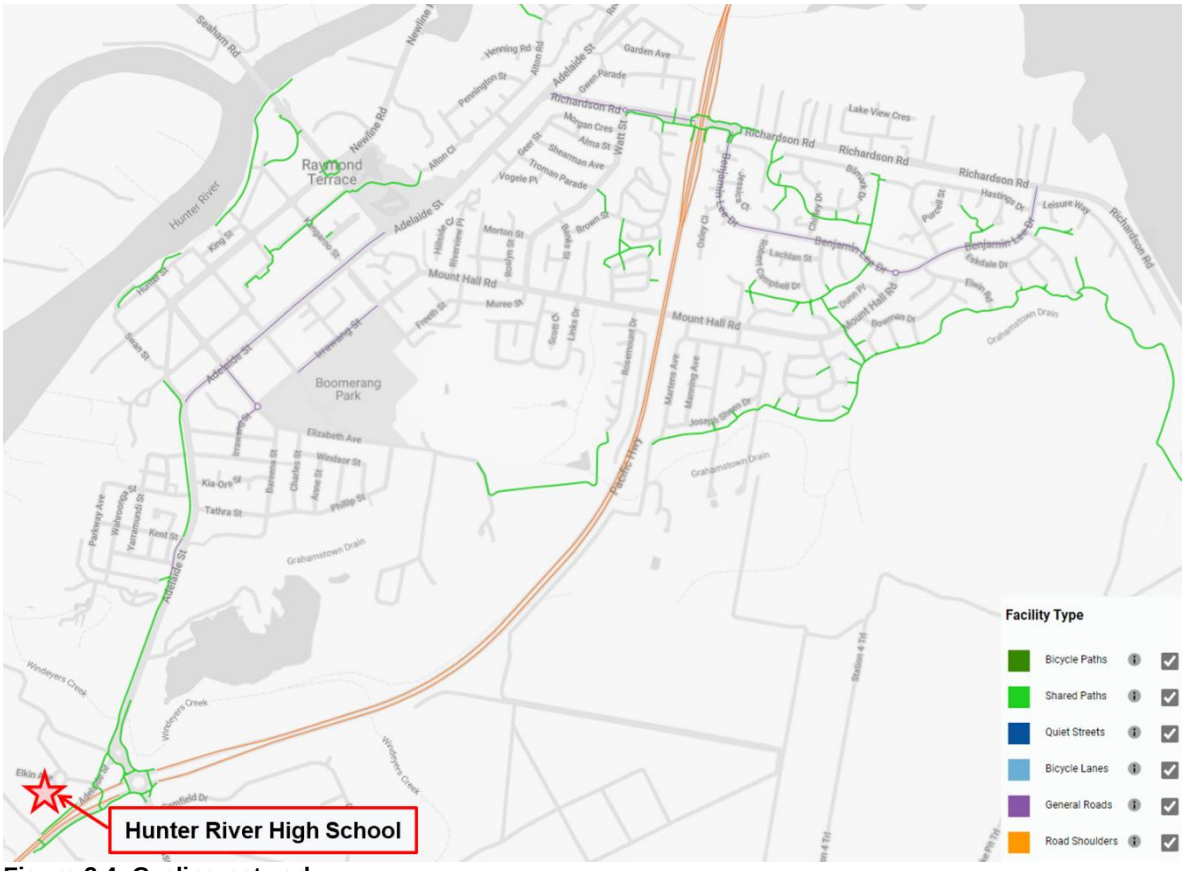

Figure 2.4: Cycling network
Source: Data provided by TfNSW Cycleway Finder

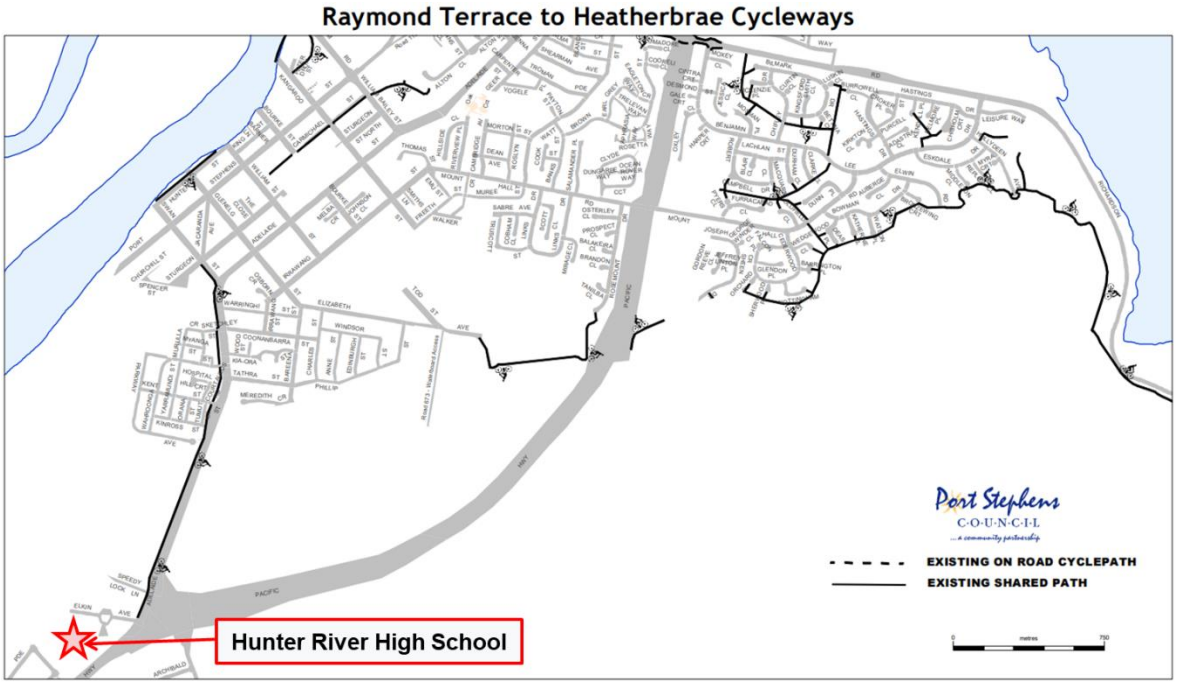

Figure 2.5: Port Stephens Council Cycle Plan
Source: [Raymond Terrace – Heatherbrae A (nsw.gov.au)]

2.1.2.1 Cycling catchment

Cycling catchments to Hunter River High School generally cover the suburb of Heatherbrae and the southern portion of Raymond Terrance, with up to 16% of students currently residing in locations within the 3,600 metres on-path cycling catchment. Cycling catchments for current students for both on-path and straight line are shown in **Figure 2.6** and outlined in **Table 2.2**.

Table 2.2: Summary of cycling catchment (current enrolment)

On-path Cycling Catchment	Students	%	Cumulative %	Notional Cycling Catchment	Students	%	Cumulative %
0-1,200m	15	2%	2%	0-1,200m	23	3%	3%
1,201-2,400m	90	11%	12%	1,201-2,400m	84	10%	13%
2,401-3,600m	34	4%	16%	2,401-3,600m	57	7%	20%
>3,600m	704	84%	100%	>3,600m	678	80%	100%
Total students	**842**			**Total students**	**842**		

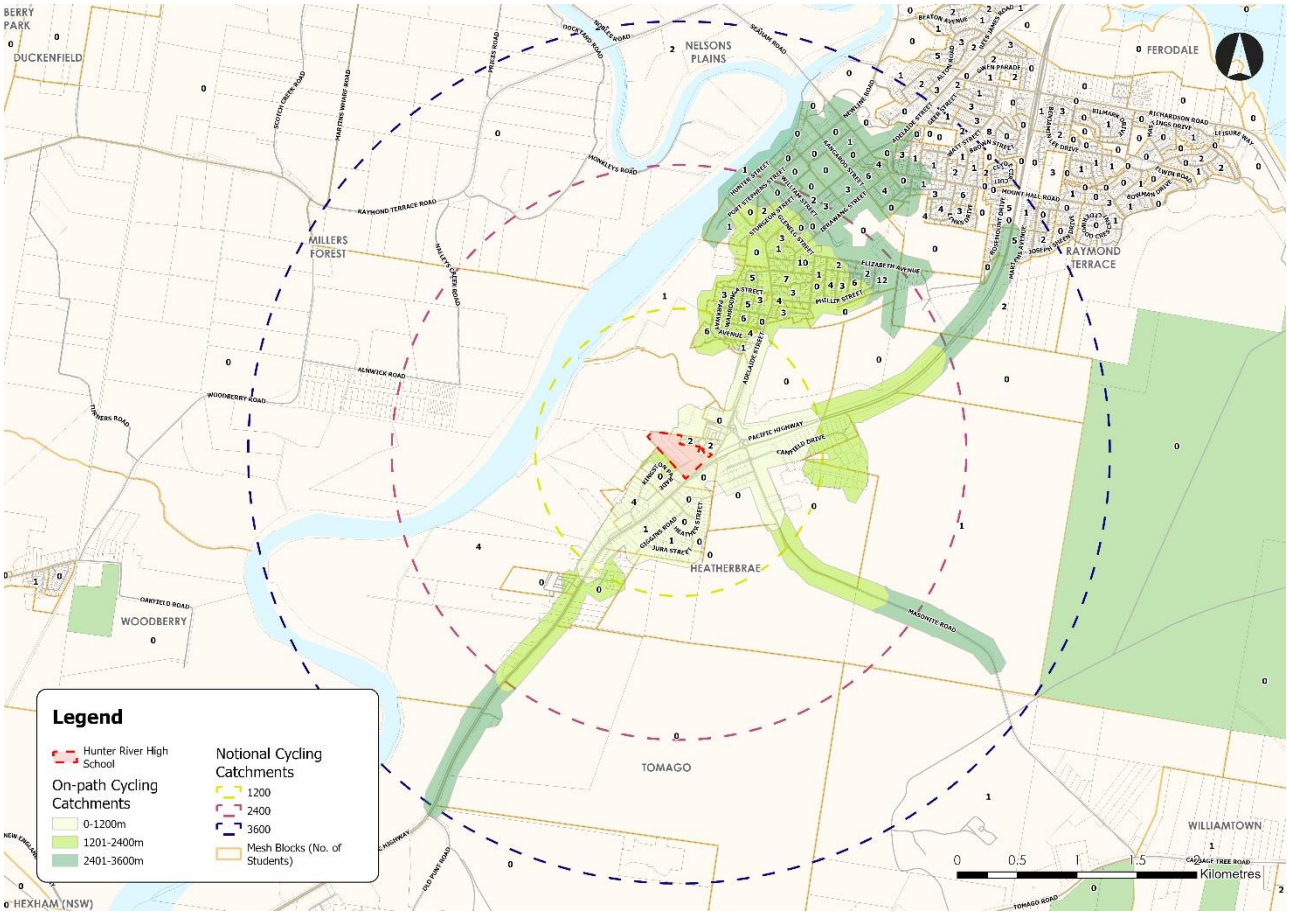

Figure 2.6: Cycling catchments

2.1.3 Public transport

Bus services captured within this study board and alight within an 800-metre walk of the school site entrances. The closest bus stop to the site is located at the school's dedicated bus bay on Elkin Avenue fronting the school. **Figure 2.7** shows the locations of existing bus stops and the bus routes that service each bus stop.

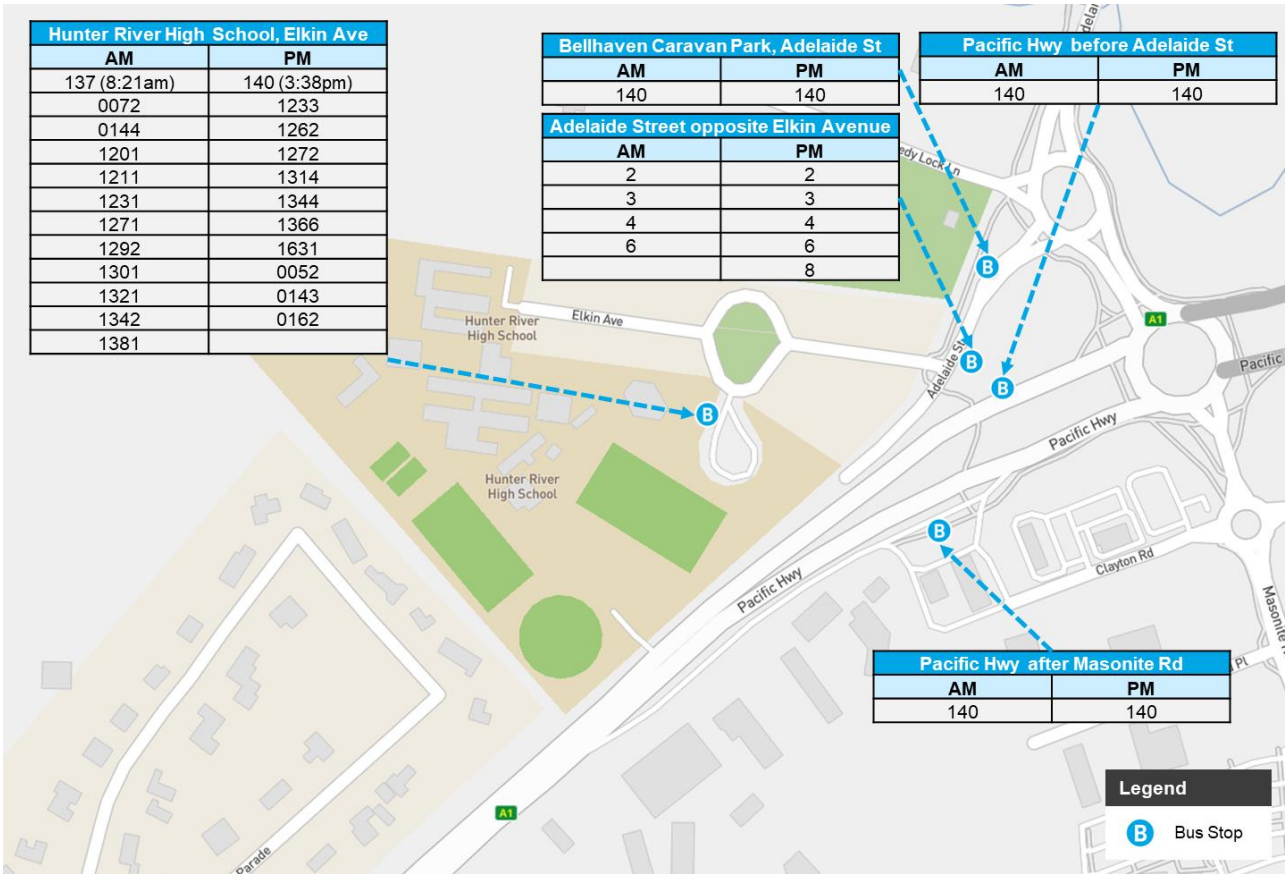

Figure 2.7: Location of Bus stops

The public bus routes with route description and service frequency are shown in **Table 2.3**.

Table 2.3: Public Bus Services

Bus service	Operator	Route description	Service frequency
135	CDC NSW	Lemon Tree Passage to Raymond Terrace via Medowie	1 service at 8:21am
140	CDC NSW	Newcastle Interchange to/from Raymond Terrace	Arriving from Raymond Terrace: • 1 service at 8:43am • 1 service at 3:38pm Arriving from Newcastle Interchange: • 1 service at 8:13am • 1 service at 8:47am Departing to Raymond Terrace • 1 service at 3:45pm Departing to Newcastle Interchange • 1 service at 3:38pm

17 and 18 school bus services operate during the AM and PM school peak period respectively. These school bus services are operated by CDC NSW and Busways. School bus services stop at the dedicated bus bay fronting the school, as well as Adelaide Street (for out-of-town buses). School bus route destinations and the frequency of services are summarised in **Table 2.4**.

Table 2.4: School bus services

Bus operator	Bus number	Time	Locations serviced
Morning			
CDC NSW	0072	8:31am	Raymond Terrace
	0144	8:35am	Seaham, Brandy Hill, Osterley, Nelsons Plains, Raymond Terrace, Millers Forest, Thornton

Bus operator	Bus number	Time	Locations serviced
	1201	8:50am	Lemon Tree Passage, Tanilba Bay, Salt Ash, Campvale, Raymond Terrace
	1211	8:30am	Mallabula, Tanilba Bay, Salt Ash, Williamtown, Heatherbrae
	1231	8:10am	Oyster Cove, Salt Ash, Williamtown, Heatherbrae, Raymond Terrace
	1271	8:25am	Clarence Town, Seaham, Brandy Hill, Raymond Terrace
	1292	8:36am	Mayfield, Mayfield West, Warabrook, Sandgate, Hexham, Tomago, Heatherbrae, Raymond Terrace
	1301	8:41am	Lemon Tree Passage, Mallabulla, Tanilba Bay, Salt Ash, Campvale, Raymond Terrace
	1321	8:20am	Tanilba Bay, Salt Ash, Williamtown, Heatherbrae
	1342	8:30am	Raymond Terrace
	1381	8:50am	Williamtown, Campvale, Medowie, Raymond Terrace
Busways **(out-of-town buses)**	2	8:22am	Hawks Nest, Tea Gardens, Karuah
	3	8:35am	Booral, Allworth, Limeburners Creek
	4	8:23am	Swan Bay, Twelve Mile Creek, Limeburners Creek, Clarence Town, East Seaham, Eagleton
	6	8:29am	Karuah, Balickera, East Seaham, Eagleton
	11*	-	Tahlee, Carrington, North Arm Cove
	24*	-	Bulahdelah, Crawford River, Girvan, Booral, Stroud
	26*	-	Bundabah, Pindimar
Afternoon			
CDC NSW	0052	3:28pm	Raymond Terrace
	0143	3:40pm	Raymond Terrace
	0162	3:36pm	Mallabula, Salt Ash, Williamtown, Heatherbrae
	1233	3:43pm	Tanilba Bay, Oyster Cove, Salt Ash, Williamtown, Heatherbrae
	1262	3:25pm	Williamtown, Tomago, Heatherbrae, Raymond Terrace
	1272	3:30pm	Clarence Town, Seaham, Brandy Hill, Raymond Terrace, Heatherbrae, Tomago, Hexham, Sandgate, Mayfield East, Mayfield, Waratah
	1314	3:40pm	Lemon Tree Passage, Mallabula, Tanilba Bay, Salt Ash, Williamtown, Heatherbrae, Raymond Terrace
	1344	3:30pm	Lemon Tree Passage, Mallabula, Tanilba Bay, Salt Ash, Williamtown, Heatherbrae
	1366	3:35pm	Raymond Terrace
	1631	3:30pm	Seaham, Brandy Hill, Osterley, Nelsons Plains, Raymond Terrace
Busways (out-of-town buses)	2	3:35pm	Hawks Nest, Tea Gardens, Karuah
	3	3:35pm	Booral, Allworth, Limeburners Creek
	4	3:35pm	Swan Bay, Twelve Mile Creek, Limeburners Creek, Clarence Town, East Seaham, Eagleton
	6	3:35pm	Karuah, Balickera, East Seaham, Eagleton
	11*	-	Tahlee, Carrington, North Arm Cove
	24*	-	Bulahdelah, Crawford River, Girvan, Booral, Stroud
	26*	-	Bundabah, Pindimar
	8	3:35pm	Karuah

Source: Busways (2022), Hunter_River_High_School.pdf (busways.com.au)
Source: CDC NSW (2022), *Hunter-River-High-School.pdf (cdcbus.com.au)*

* Students must transfer to additional bus service.

Bus routes servicing the school in both the AM and PM periods are shown in shown in **Figure 2.8** and **Figure 2.9**.

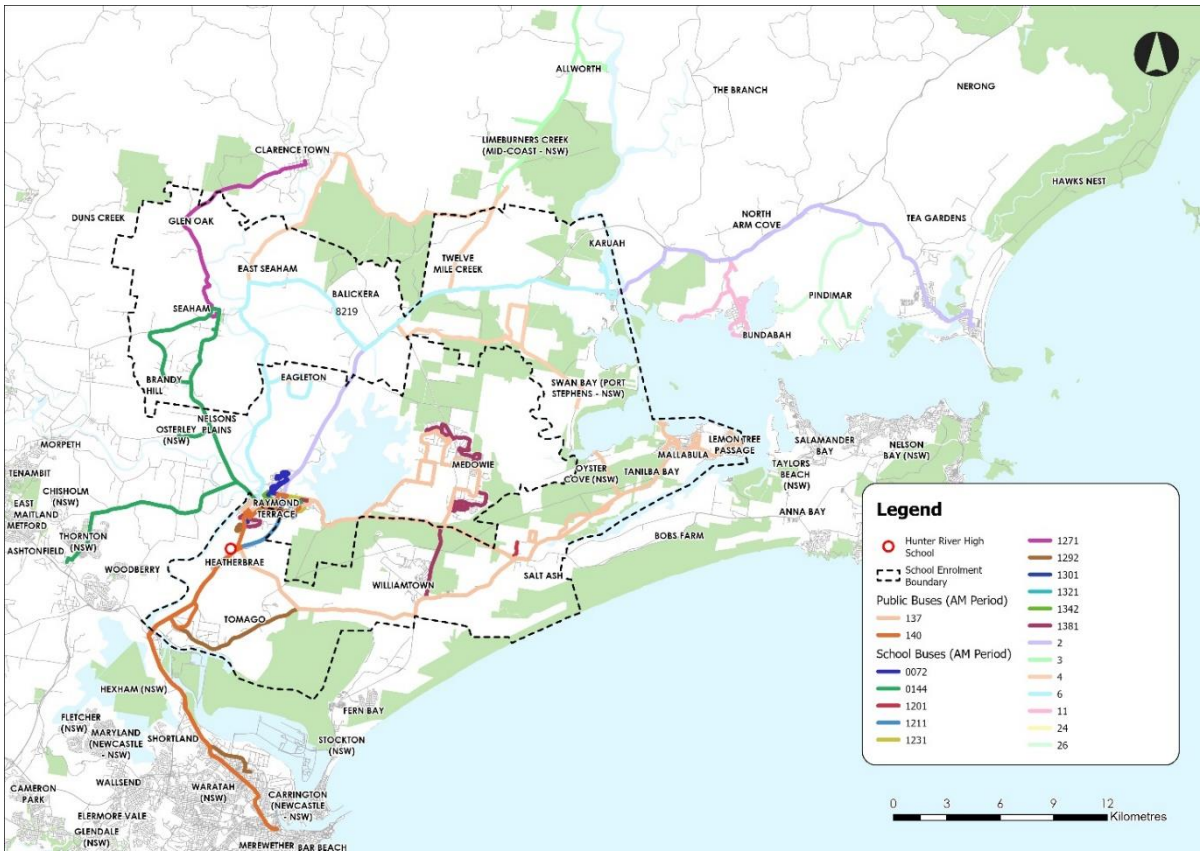

Figure 2.8: Public and school bus network (AM)

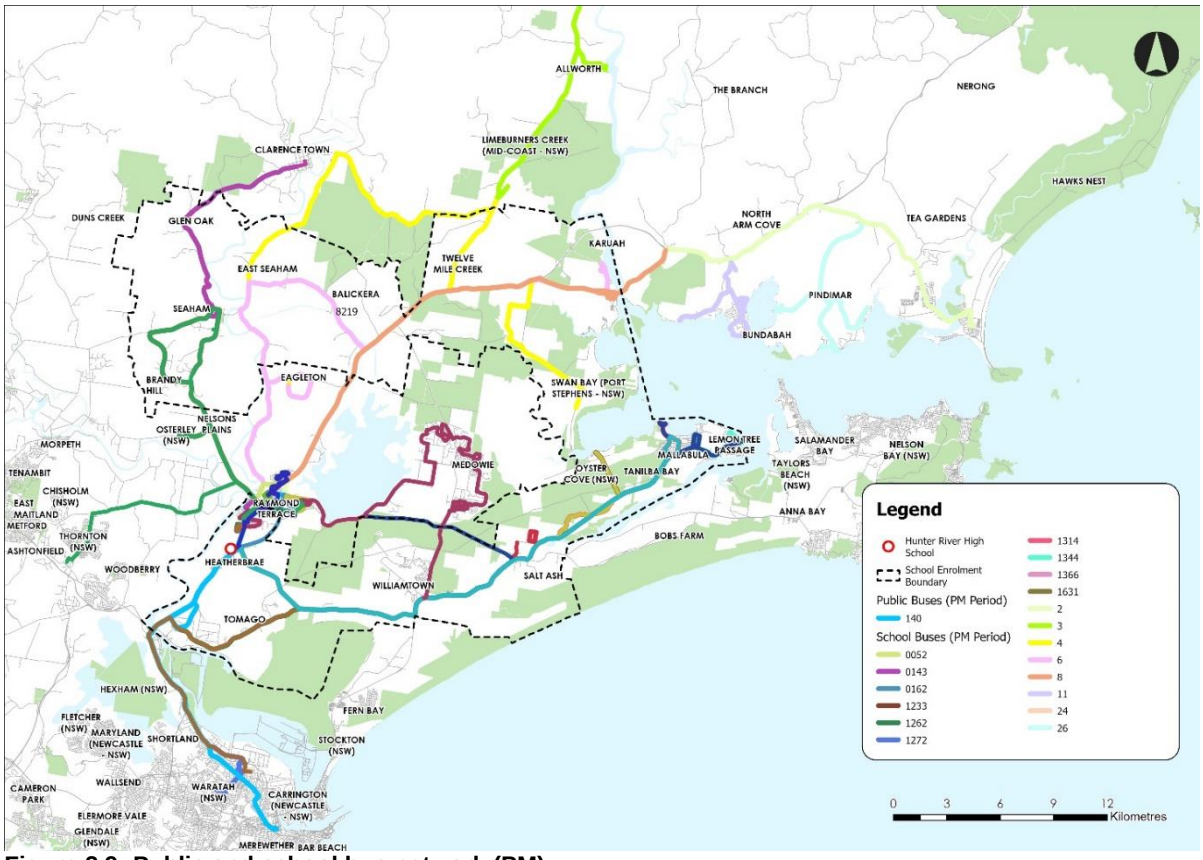

Figure 2.9: Public and school bus network (PM)

2.1.3.1 Bus capacity assessment

Current student residences within the Hunter River High School enrolment catchment reveal that Raymond Terrace and Tanilba Bay account for the highest number of students enrolled at Hunter River High School at 31% and 15% respectively. An assessment of bus services to Raymond Terrace and Tanilba Bay was completed to determine future capacity and expected travel demand.

Using mode share targets derived from bus usage capability, and a number of other assumptions, the shortfall of existing bus services compared to the number of expected student bus passengers (for future enrolment of 800 students[1]) in Raymond Terrace and Tanilba Bay is calculated. Assumptions used in this calculation include:

- Bus capacity is calculated for single seat services only (i.e. students do not require a service transfer)
- Bus capacity of 60 passengers
- Available bus capacity is reduced for services that also cater for other high schools in addition to Hunter River High School.

The results of this calculation for the PM period, whereby a higher mode share for bus uptake is expected than during the AM period, are shown in **Table 2.5** and **Table 2.6** for Raymond Terrace and Tanilba Bay respectively. It was found that no additional bus services are required to meet the moderate and reach mode targets in the PM period for buses.

Table 2.5: Additional buses required to cater for Raymond Terrace students (PM period)

	Raymond Terrace bus demand (future students)	Existing Raymond Terrace bus capacity*	Shortfall	# Additional buses required
Moderate target bus mode share (68%)	142	225	83	0
Reach target bus mode share (70%)	152	225	73	0

Table 2.6: Additional buses required to cater for Tanilba Bay students (PM period)

	Tanilba Bay bus demand (future students)	Existing Tanilba Bay bus capacity*	Shortfall	# Additional buses required
Moderate target bus mode share (68%)	91	100	9	0
Reach target bus mode share (70%)	94	100	6	0

2.1.3.2 Bus stop walking catchments

Analysis of de-personalised data provided by the Department of Education in August 2022 for student enrolments at Hunter River High School based on proximity to bus stops utilised by bus routes that service the site is provided in **Table 2.7** and **Table 2.8**. The catchment analysis was determined by selecting all bus routes that are accessible within a 800-metre walking distance of the school site entrance. A 400- and 800-metre buffer were then applied to each bus stop servicing these routes to determine the proportion of students with access to public transport.

A summary of the bus stop walking catchments are shown in **Table 2.7** and **Table 2.8**, and shown in **Figure 2.10** and **Figure 2.11**. The majority of current students live within an 800-metre walking catchment of a bus stop, with 87% for the AM period and 84% for the PM period.

Information is provided for students who are eligible for SSTS bus travel (those who live outside of 2.9-kilometre walking catchment or 2-kilometre straight-line distance of school). The number of students who live within an 800 metre walk of a bus stop and are eligible for SSTS is 622 in the AM period (74%) and 594 in the PM period (71%).

[1] Source: Enrolment projections from Eagle Eye

Table 2.7: Summary of bus stop walking catchments (AM period)

	# Students (current enrolment – 842)	%
Within 400m walk	662	**79%**
Within 800m walk	734	**87%**
Within 400m walk and beyond 2.9km on-path (SSTS eligible)	561	**67%**
Within 800m walk and beyond 2.9km on-path and 2km straight line walking catchment (SSTS eligible)	622	**74%**
Within 400m walk and within 2.9km on-path	102	**12%**
Within 800m walk and within 2.9km on-path	112	**13%**

Table 2.8: Summary of bus stop walking catchments (PM period)

	# Students (current enrolment – 842)	%
Within 400m walk	638	**76%**
Within 800m walk	706	**84%**
Within 400m walk and beyond 2.9km on-path (SSTS eligible)	537	**64%**
Within 800m walk and beyond 2.9km on-path and 2km straight line walking catchment (SSTS eligible)	594	**71%**
Within 400m walk and within 2.9km on-path	102	**12%**
Within 800m walk and within 2.9km on-path	112	**13%**

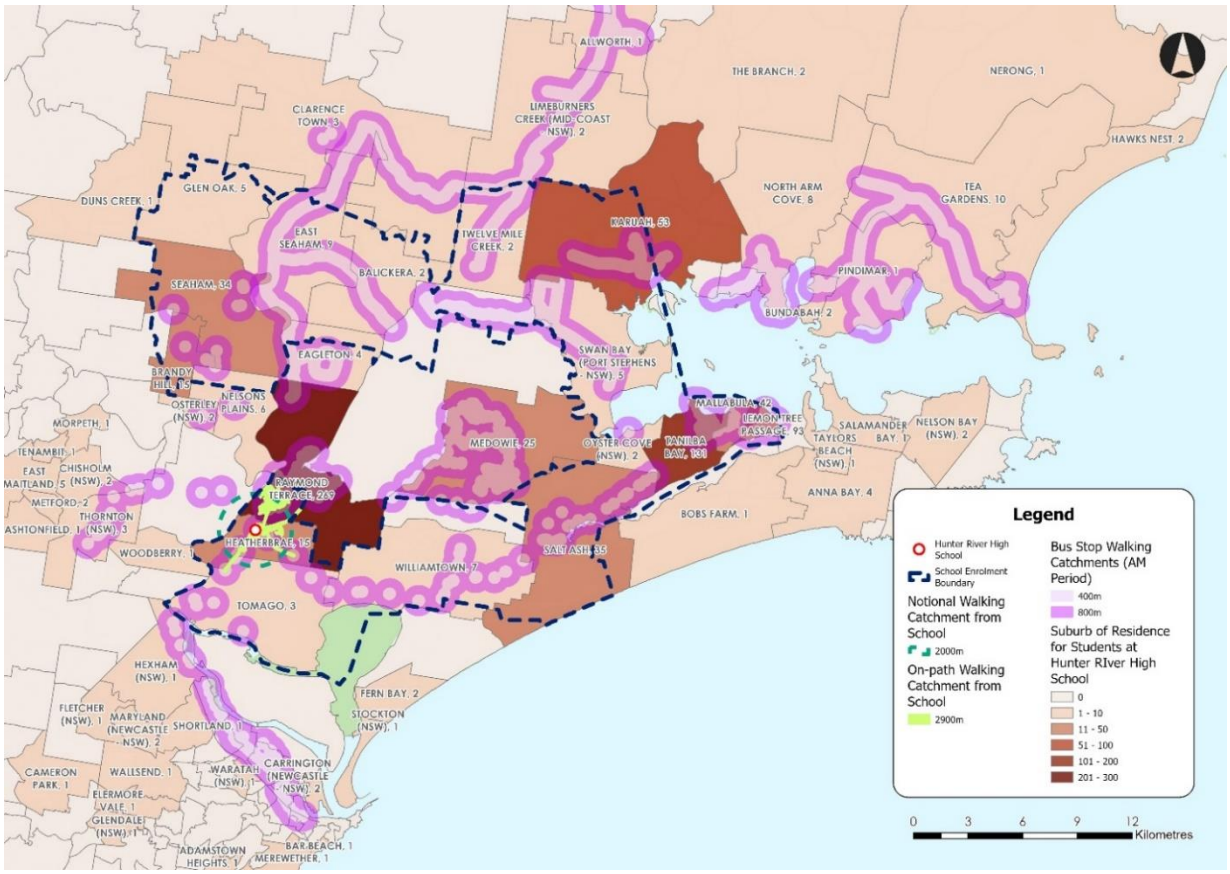

Figure 2.10: Bus stop walking catchment – AM period

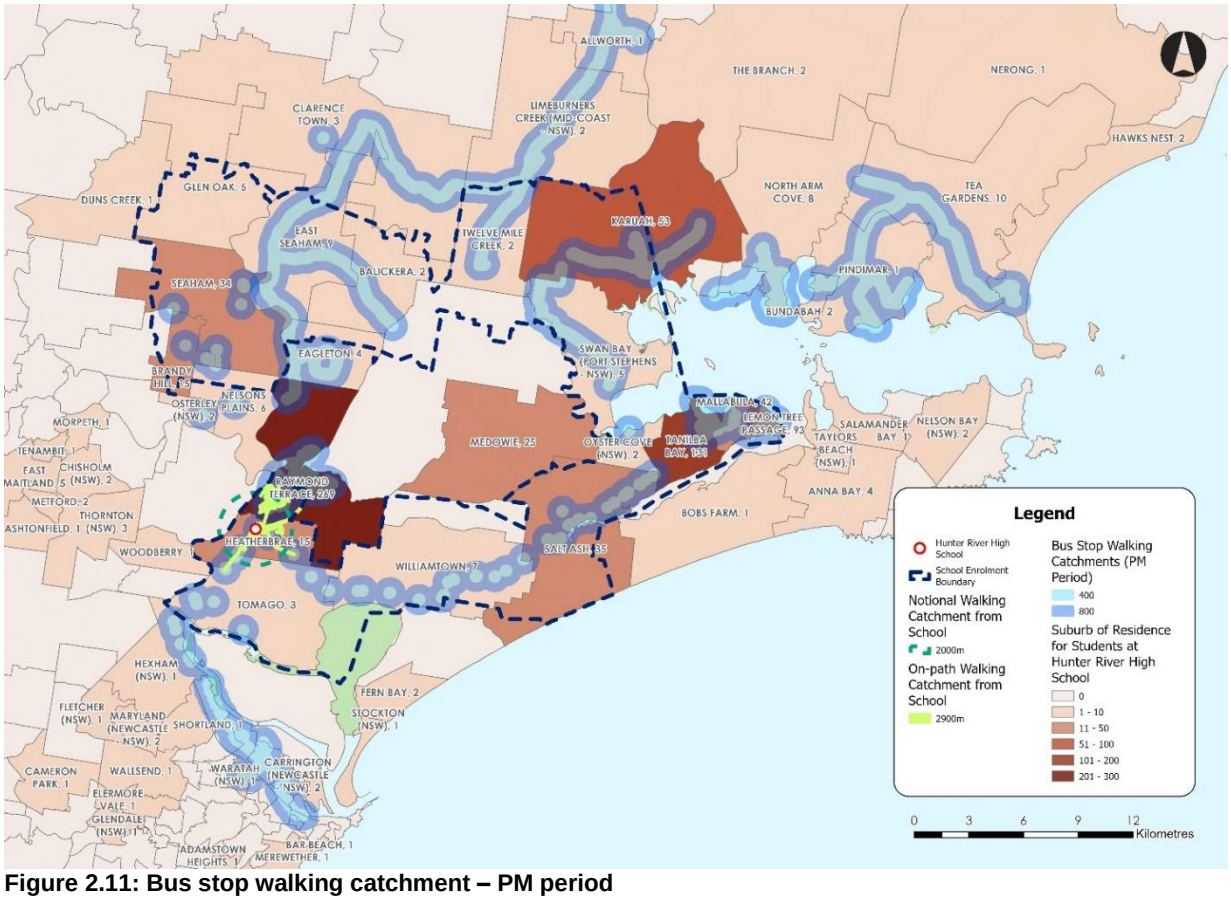

Figure 2.11: Bus stop walking catchment – PM period

2.1.4 Road network

Figure 2.12 shows the location of Hunter River High School in relation to the surrounding road network, which is described in **Table 2.9**.

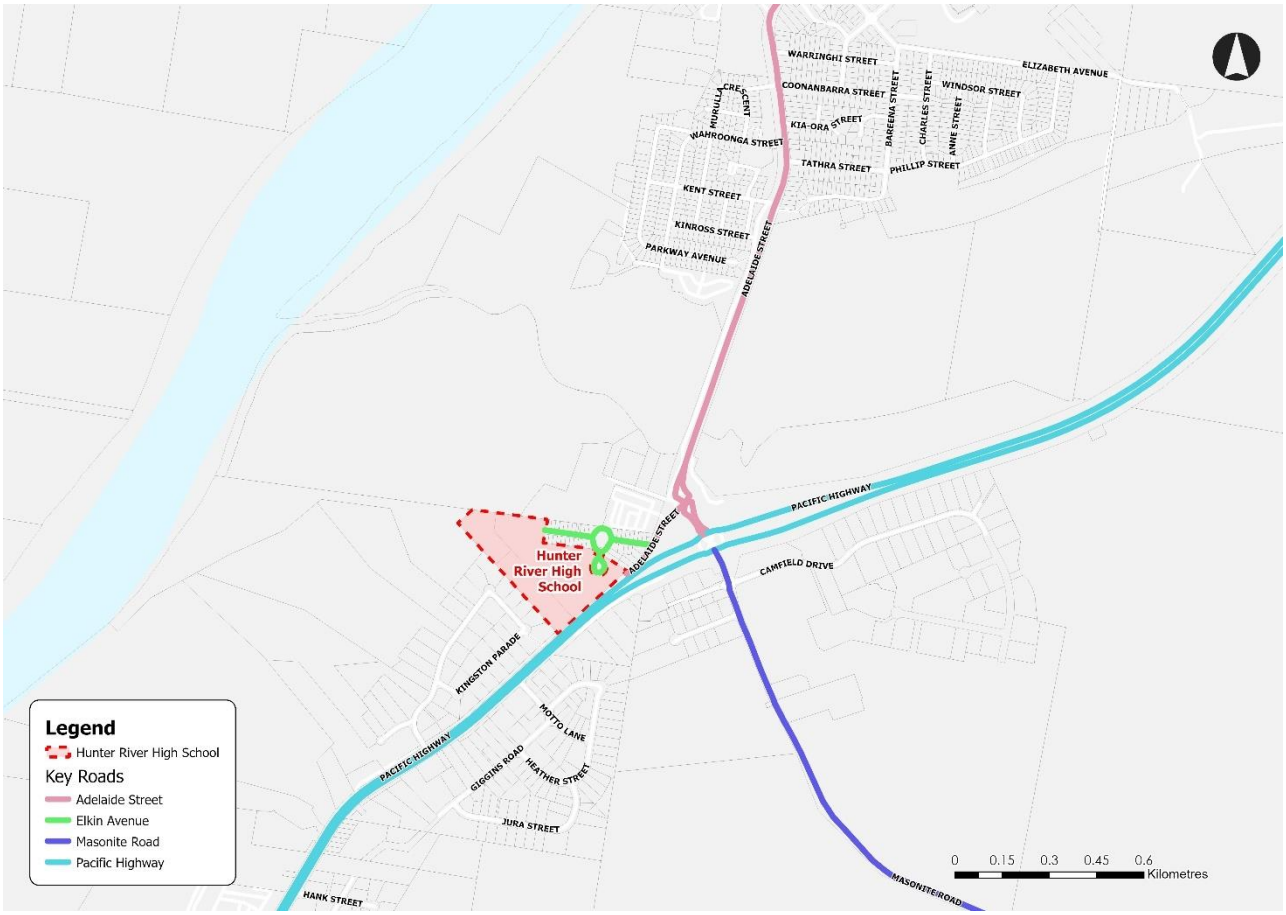

Figure 2.12: Site location and the surrounding road network

Table 2.9: Road Network surrounding Hunter River High School

Road Name	Road Type	Details
Elkin Avenue	Local access road	Elkin Avenue is a local road running east to west to the north of the site. It provides access to school's dedicated bus zone in a one-way loop configuration. It connects with Adelaide Street to the east. Elkin Avenue has a speed limit of 50km/h and school zone applies on the entire road segment on school days. It has one lane of traffic in each direction with unrestricted kerbside parking.
Adelaide Street	Local collector road	Adelaide Street is a local road that is generally aligned in a north-south direction and stretches from Bellevue Street to the north in Raymond Terrace and ends at a cul-de-sac to the south in Heatherbrae. It acts as entry to local streets of Heatherbrae residential areas north of the school site. Further to the north, it provides connections for residents in western portion of Raymond Terrace and to the local centre of Raymond Terrace. Near the site, there is one lane of traffic on each side.
Masonite Road	Local collector road	Masonite Road is a local road that extends between Pacific Highway and Cabbage Tree Road. It provides access to commercial precinct of Heartherbrae and serves as a connection to Williamtown and suburbs further west via Cabbage Tree Road. It has one lanes of traffic in each direction and speed limit ranging from 70 km/hr to 100 km/hr.

Road Name	Road Type	Details
Pacific Highway (A1)	State road	Pacific Highway is classified as a state road that is generally aligned in a north-east to south-west direction and has speed limits ranging from 80 km/h to 110 km/h. Currently, the A1 Pacific Motorway provides connection to key employment areas in Tomago, Newcastle Airport and the Williamtown Royal Australia Air Force (RAAF) Base. It is understood that planning works are in progress for a future extension of the M1 Pacific Motorway to the Masonite Road in Heatherbrae and Pacific Highway in Raymond Terrace.

2.2 School site access

2.2.1 Pedestrian access

Current pedestrian access to the school is available via four access points on Elkin Avenue as shown in **Figure 2.1**. As part of the proposed school upgrade works, the access point to the immediate north of the existing dedicated bus zone on Elkin Avenue would be removed and **Figure 1.3** shows the locations of controlled access pedestrian gates providing access to the school. Four access points are located on Elkin Avenue with one at the western end of the road, two at the school's dedicated bus zone and one near the proposed kiss-and-drop and school car parking areas. On Adelaide Street, two access points are available at the south-eastern corner of the school site boundary.

As the proposed playing field and the adjacent car park are to be made available for community use during the after-school hours and the weekends, internal security fencing and gate are provided to control access to the school.

2.2.2 Cycling access and on-site parking

As children under the age of 16 are allowed to ride bikes on the footpath on NSW roads, they can access the school from all sides using the footpath and shared path network detailed earlier in **Section 2.1.2**. A total of 12 bicycle parking spaces are currently located at the Elkin Avenue western entrance near the school administration building. Cycling access to school is therefore primarily via the western end of Elkin Avenue where bicycle racks are provided on site.

Bike parking space requirements as per the Port Stephens DCP, along with the recommended provision of additional bike parking spaces, are detailed in **Section 2.2.4**.

2.2.3 Bus access

Hunter River High School is serviced by a range of public and school bus routes. Refer to **Figure 2.7** for information on locations of existing bus stops for the bus routes that provide services to the site. For students and staff travelling to the school, the closest bus stop to the school is located at the school's bus zone area on Elkin Avenue close to the site entrances. The current dedicated bus zone provides spaces for up to 6 buses directly outside the site entry point and is serviced by school bus routes (excluding out-of-town buses) and public bus routes during the school drop-off and pick-up period.

The school upgrade works include a new bus drop-off/pick-up zone at the Elkin Avenue one-way loop with provision of up to 6 bus spaces and new pedestrian pathways as shown in **Figure 1.3** and all school buses (including out-of-town buses) are to stop at the new bus zone.

2.2.3.1 Bus bay analysis

Bus arrival and departure times at the school's dedicated bus bay at Elkin Avenue according to each provider's published timetables are provided in **Table 2.10** for the AM period and **Table 2.11** for the PM period respectively. Timetable information shows potential for bus bay queueing in both the AM and PM periods, however, due to the longer time taken to fill a bus rather than exit a bus, the PM period presents greater issues for queueing. Headways between six or more bus services within five minutes of each other (allowing for potential delays in the service in other parts of the road network) are identified as potential for queueing. Within the PM period, ten buses are scheduled to arrive at the bus bay within a period of five minutes between 3:35pm and 3:40pm (indicated in red).

It should be noted that the first bell of the school is timed at 9:00am and the finish times are 3:20pm (Monday to Thursday) and 1.50pm (Friday).

Table 2.10: AM period bus arrivals at site

Bus route	Operator	Arrival time	Headway between buses	Potential for queueing
1231	CDC NSW	8:10am		
1321	CDC NSW	8:20am	0:10	
137	CDC NSW	8:21am	0:01	
2*	Busways	8:22am	0:01	
4*	Busways	8:23am	0:01	
1271	CDC NSW	8:25am	0:02	Yes
6*	Busways	8:29am	0:04	Yes
1211	CDC NSW	8:30am	0:01	Yes
1342	CDC NSW	8:30am	0:00	Yes
0072	CDC NSW	8:31am	0:01	Yes
0144	CDC NSW	8:35am	0:04	Yes

Bus route	Operator	Arrival time	Headway between buses	Potential for queueing
3*	Busways	8:35am	0:00	
1292	CDC NSW	8:36am	0:01	
1301	CDC NSW	8:41am	0:05	
1201	CDC NSW	8:50am	0:09	
1381	CDC NSW	8:50am	0:00	

Table 2.11: PM period bus arrivals at site

Bus route	Operator	Arrival time	Headway between buses	Potential for queueing
1262	CDC NSW	3:25pm		
0052	CDC NSW	3:28pm	0:03	
1272	CDC NSW	3:30pm	0:02	
1344	CDC NSW	3:30pm	0:00	
1631	CDC NSW	3:30pm	0:00	
8*	Busways	3:35pm	0:05	Yes
1366	CDC NSW	3:35pm	0:00	Yes
2*	Busways	3:35pm	0:00	Yes
3*	Busways	3:35pm	0:00	Yes
4*	Busways	3:35pm	0:00	Yes
6*	Busways	3:35pm	0:00	Yes
0162	CDC NSW	3:36pm	0:01	Yes
140	CDC NSW	3:38pm	0:02	Yes
1314	CDC NSW	3:40pm	0:02	Yes
0143	CDC NSW	3:40pm	0:00	Yes
1233	CDC NSW	3:43pm	0:03	Yes

*Out-of-town school buses

Using mode share targets, a bus zone analysis was undertaken to determine the number of bus pick-up/drop-off spaces required to accommodate the future enrolments of 800 students[2] and outlined in **Table 2.12**. Assumptions used in this calculation include:

- Dwell Time per each bus is assumed as 5 minutes
- Each bus bay can service six buses over a 30-minute period
- School bus services are expected to serve other public schools as well. Therefore only 40% of the total bus capacity is assumed to be allocated for students from Hunter River High School.

The results of this calculation for the PM period are shown in **Table 2.12**. It was found that to meet the moderate mode share targets in the PM period for buses, 5 bus pick-up/drop-off spaces are required for the expected future student enrolments of 800 students[3].

Table 2.12: Bus zone analysis

Description	Existing Conditions	Anticipated Future Enrolment (Moderate Mode Share Target Scenario)
No. of Student enrolments	842	800
Bus mode share	66%	70%
No. of Students expected to serve in the PM Peak (66% mode share)	556 Students, 575	560 Student

[2] Source: Enrolment projections from Eagle Eye
[3] Source: Enrolment projections from Eagle Eye

Description	Existing Conditions	Anticipated Future Enrolment (Moderate Mode Share Target Scenario)
Dwell time per pick-up/drop-off bus	5 minutes	5 minutes
Pick-up/drop-off period length of time	30 minutes	30 minutes
30-minute capacity per pick-up/drop-off bus bay	6 services	6 services
Assumption of Students from Hunter River HS per Bus (40% of the total bus capacity (60) is allocated for Hunter River HS)	20 Student per bus	20 Student per bus
Estimated number of pick-up/drop-off spaces required	5 Bus bays	5 Bus bays

2.2.4 Vehicle access and car parking

Hunter River High School is currently vehicular accessible by the school's street frontage along Elkin Avenue and along Pacific Highway. At Elkin Avenue, vehicular access points to the school are available at the northern on-site carpark entrance and near the dedicated bus drop-off and pick-up area. Proposed school upgrade works involve the closure of existing access point at Pacific Highway and a new entry point from Adelaide Street to provide access to the new kiss-and-drop area and school carpark as shown in **Figure 1.3**. Emergency vehicular access is currently provided from Elkin Avenue near the bus zone. An additional access for emergency vehicles servicing the southern portion of the school is to be provided from Adelaide Street as part of the school upgrade works.

The school currently provides 31 off-street parking spaces (including 2 accessible parking spaces) and 24 off-street parking spaces at the northern and southern formal car parks respectively within the school grounds, totaling 55 carparks. These car parks are accessed via Elkin Avenue and are dedicated to school staff and visitors (during out-of-school hours).

As part of the proposed school upgrade works, the existing formal parking area located within the southern portion of the school would be removed and a new staff and visitor parking (65 parking spaces including 6 accessible) is to be provided with access via a new driveway extension from Adelaide Street as shown in **Figure 1.4**.

The locations of the existing and proposed car parks are shown in **Figure 2.13** and a summary of the parking capacity (excluding the existing spaces to be removed) is shown in **Table 2.13**.

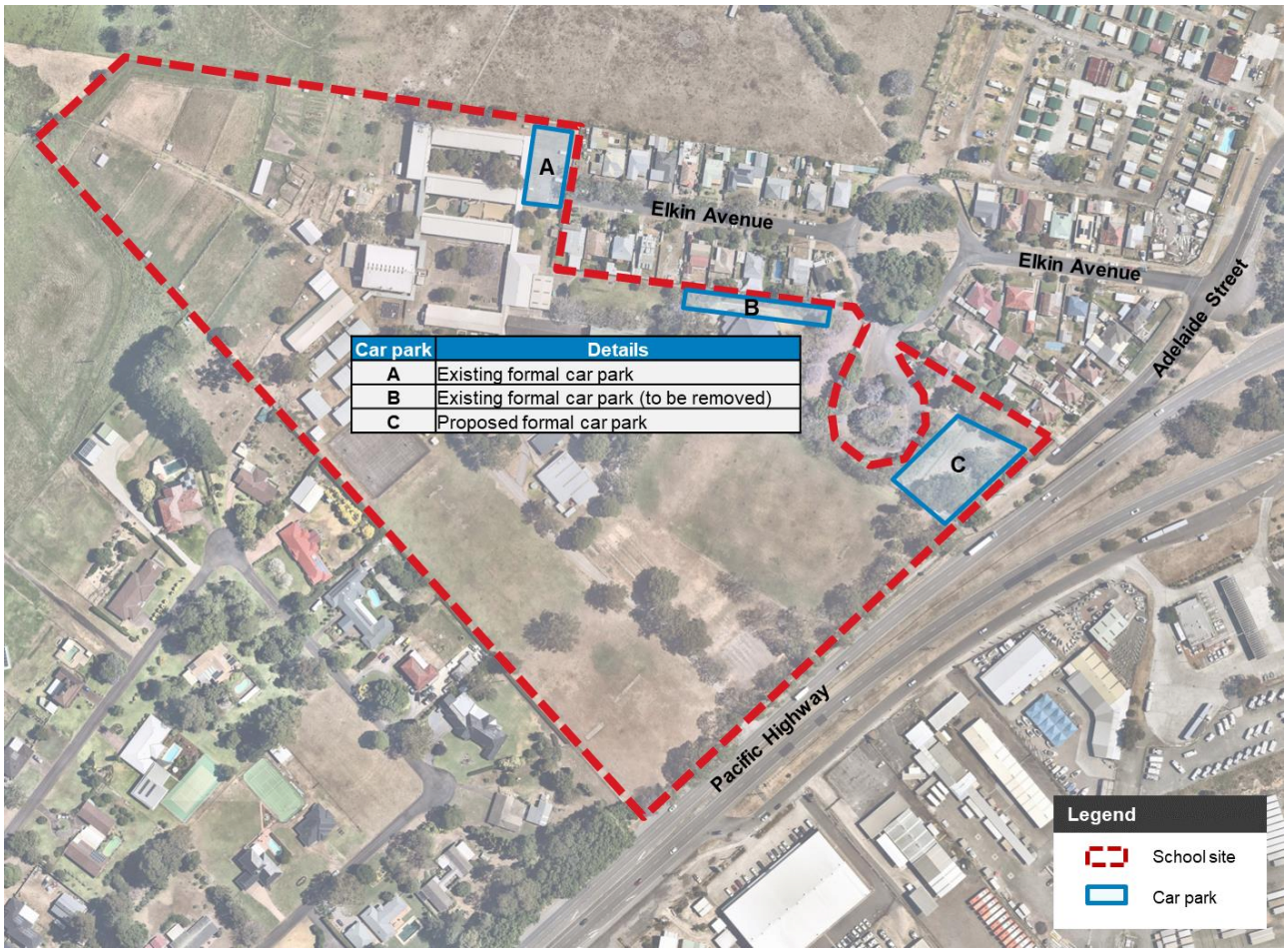

Figure 2.13: Location of Car parks for Hunter River High School
Basemap source: Nearmap imagery dated 5 December 2022

Table 2.13: Car park summary

Car park	Spaces	User(s)	Access
A (Existing)	31 (including 2 accessible)	Staff	Gated. Vehicular access via Elkin Avenue.
C (Proposed)	65 (including 6 accessible)	Staff and Visitors	Gated. Vehicular access via Adelaide Street.
TOTAL	96 (including 8 accessible)		

Section B8.B of Port Stephens Council's Development Control Plan (DCP) (2014) outlines the requirements for on-site parking provisions. **Table 2.14** outlines the parking requirements for "*Education Establishment*", which under the current staffing and expected enrolment conditions require 89 car parking spaces, 89 bike parking spaces and five accessible car parking spaces.

Table 2.14: Car parking DCP requirement analysis

DCP requirements	No.	Requirement	Current and proposed provision (excl. current car park to be removed)	Current shortfall
1 Car space per employee	89 full time equivalent staff (sourced from Eagle Eye)	89 spaces	96 spaces	5 spaces
1 Car space per 8 senior high school students	97 senior students (Yr 11 and 12) (sourced from Eagle Eye)	12 spaces		
1 accessible car space per 20 car spaces	Provision of 96 car spaces	5 spaces	8 spaces	No shortfall
2 bike spaces per 20 employees and students	800 future students 89 staff	89 bike spaces for students and staff 7 spaces for staff	Approx. 12 spaces (current provision)	77 spaces

Noting that student population is forecasted to not increase, no additional bike spaces are required. However, to encourage bike use and accommodate higher bike demand within the cycling catchment for the moderate mode share target scenario, it is recommended to provide an additional 13 bike parking spaces (totalling 25 spaces including existing 12 spaces). It should be noted that the additional bike spaces can be provided under exempt development. As such, the recommendation made for additional bike spaces should be for information only and does not form part of the DA.

Clause 3.36 of Transport and Infrastructure State Environmental Planning Policy (TISEPP) outlines that the DCP provisions requiring standards/ controls for schools are not applicable. Accordingly, no student car parking is required as per SINSW guideline and therefore the proposed carparks as part of the school upgrade works are adequate.

2.2.5 Deliveries and waste management functions

Current access for delivery services and waste collection vehicles is via the access road from Elkin Avenue near the existing bus zone. As part of the proposed school upgrade works, access to the school for these vehicles will be provided from Adelaide Street instead. Once within the site boundary, access to the school is achieved via a new school internal access road along the southern boundary of the school as shown in **Figure 1.3.**

2.2.6 Kiss and drop

There are currently no formal kiss-and-drop spaces available within the vicinity of the site for school drop-off and pick-up activity. As part of the school upgrade works, a short-stay drop-off/pick-up zone with capacity of 6 car spaces is provided within the school grounds and accessible via new driveway extension from Adelaide Street as shown in **Figure 1.4.**

An analysis of the requirements for the proposed kiss-and-drop zone has been undertaken as per future student enrolments. The current mode share for students being picked up by a private vehicle in the PM peak was assessed as this period is generally considered to be when there is a larger congregation of vehicles waiting for students. The moderate and reach mode share targets discussed were also assessed to demonstrate how encouraging more students to walk, cycle and take public transport can reduce the number of cars descending on the school.

The kiss-and-drop analysis was undertaken by assuming the mode share for private vehicles applied to future 800 student enrolments[4], the average number of students sharing a vehicle, the assumed dwell time of a vehicle within a kiss-and-drop space and the capacity that provides over a 30-minute period. The summary of findings is shown below in **Table 2.15**.

[4] Source: Enrolment projections from Eagle Eye

Table 2.15: Kiss and drop analysis

Description	Base line	Moderate target scenario	Reach target scenario
No. of student enrolments (anticipated future)	800	800	800
Existing baseline car mode share	26%	23%	19%
Baseline car mode share applied to student capacity	208 Students	184 Students	152 Students
Dwell time per pick-up/drop-off car	2 minutes	2 minutes	2 minutes
Pick-up/drop-off period length of time	30 minutes	30 minutes	30 minutes
30-minute capacity per pick-up/drop-off car space	15 vehicles	15 vehicles	15 vehicles
Proposed number of pick-up/drop-off spaces	6 spaces	6 spaces	6 spaces
Proposed pick-up/drop-off capacity	90 vehicles	90 vehicles	90 vehicles
Assumption of Student per vehicle	1.5 Students per vehicle	1.5 Students per vehicle	1.5 Students per vehicle
Pick-up/drop-off spaces required	9 spaces	8 spaces	7 spaces
Length of Pick-Up/Drop-Off (m)	54 m	48 m	42 m

2.2.7 Travel subsidies

Transport for NSW (TfNSW) provides subsidies to assist school students. The School Student Transport Scheme (SSTS) provides eligible students with free or subsidised travel on public transport between home and school.

- For free school travel eligibility, the following outlines the minimum distance criteria:
    - **Year 3 to Year 6**: The straight-line distance from the student's home address to school is more than 1.6km. The walking distance from home to school is 2.3km or further.
    - **Year 7 to Year 12**: The straight-line distance from the student's home address to school is more than 2km, or the walking distance from home to school is 2.9km or further.
- Should they not qualify for free school travel, students might be able to buy a **School Term Bus Pass** for discounted travel on buses between home and school. The following outlines the minimum distance criteria for School term bus pass:
    - **Year 3 to Year 6** student if the straight-line distance from their home address to school is less than 1.6 kilometres.
    - **Year 7 to Year 12** student if the straight-line distance from their home address to school is less than 2 kilometres.
- **School Drive Subsidy** is also available to students who live in areas with no public transport available. This subsidy partly offsets the cost of driving students to school or to the nearest transport pick up point. The following outlines the minimum distance criteria for school Drive Subsidy:
    - Kindergarten to Year 6:
    - The distance to school exceeds 1.6 km (straight line distance) or is at least 2.3 km walking distance, and
    - The distance to the nearest transport pick-up point (where available) exceeds 1.6 km (straight line distance) or is at least 2.3 km walking distance.
    - Year 7 to Year 12:
    - The distance to school exceeds 2 km (straight line distance) or 2.9 km walking distance, and

- The distance to the nearest transport pick-up point (where available) exceeds 2 km (straight line distance) or is at least 2.9 km walking distance.

2.2.8 Movements on Adelaide Street

Passenger vehicles are only allowed to access the on-site kiss-and-drop and parking on Adelaide Street, during the school peak hours. Adelaide Street will see an increase in inbound traffic volumes (102 vehicles in peak hour) due to kiss-and-drop activity over a 30-minute period. Conflict or safety concern between bus movement along Elkin Ave turning circle and left hand vehicle movements into Elkin Avenue will be minimised with the introduction of traffic calming measures such as stop sign, speed humps, and change in posted speed at entry of the bus zone as described in **Section 2.6**. Posted speed at the school on-site drop-off/pick-up zone to be reduced to 10km/h. Footpaths to be provided on Adelaide Street to facilitate pedestrian connections to bus stops and to the proposed additional kiss and drop zone on Adelaide Street.

2.2.9 Road safety impact assessment

The proposed works result in the following impacts to road safety:

- Provision of one-way directional linking road which improves traffic efficiency and safety for kiss and drop vehicles entering and leaving the site.
- Provision of consolidated and formalised kiss and drop zone connected to school entrance with separated pedestrian path.
- Provision of two safe wombat crossings across driveways to on-site parking area, facilitating safe access of students walking to or from the south.
- The existing pedestrian pathway on the northern side of the Pacific Highway provides access for students walking from the south, who can use the proposed wombat crossing to access the site.
- The movement of vehicles from the linking road to Elkin Avenue is left-turn only with stop sign control into the clockwise movement of Elkin Avenue. No pedestrians are expected to cross this intersection because the main access to the school is located on the western side of Elkin Avenue, and alternate pedestrian access is provided.

2.3 Assessment summary

Based on the analysis and discussions presented in **Section 2.1** and **Section 2.2**, the following conclusions are made:

- The school upgrade development does not lead to an increase of the student capacity, and the projected student population does not increase[5]. Therefore, the overall number of car trips associated with the school is not expected to increase. The addition of a new kiss and drop zone within the southern portion of the school will alter vehicular movements during school peak periods, whereby Elkin Avenue will see a decrease in inbound traffic volumes and Adelaide Street (south of Elkin Avenue) will see an increase in inbound traffic volumes.
- Proposal upgrade works within the southern portion of the school involve the removal of the existing formal car parking area and a new carpark with capacity for 66 on-site parking spaces accessible via Adelaide Street. Noting that no student car parking is required as per SINSW guidelines, current and proposed carpark provisions (excluding carpark to be removed) which total 97 spaces are adequate to meet demand.
- The addition of the linking road provides a safer road environment for students accessing the site because of the separation of kiss and drop vehicles from pedestrian paths and the provision of two wombat crossings facilitating safe walking from the south.
- Implementation of 10km/h posted speed limit at the school on-site kiss and drop zone and other traffic calming measures at the new bus zone are required to minimise impacts due to the new connection from kiss and drop facility.

[5] Source: Enrolment projections from Eagle Eye

2.4 Preliminary transport assessment

A Rapid Transport Assessment and Traffic Impact Assessment for Hunter River High School was developed by Seca Solutions in 2020. This assessment identified the following issues associated with access and transport:

- Existing bus access is via a narrow roadway creating safety and congestion issues
- Insufficient designated staff parking
- Only one designated disabled parking space
- No dedicated pedestrian crossings
- Insufficient visitor parking
- Safety and delays at site exit onto the Pacific Highway

2.5 Travel patterns and demand

2.5.1 Hands up survey

A hands-up survey conducted by teachers in classrooms on Friday, 9 September 2022 was held to determine approximate mode share for students travelling to school in the morning and from school in the afternoon. The survey yielded a response rate of 525 students responding to morning mode share and 522 responding to afternoon mode share. The results of the hands up survey are shown in **Figure 2.14** and **Figure 2.15**.

For both travel times, bus was found to be the highest proportion of mode share with 61% and 66% in the morning and afternoon respectively. The morning period was found to have a higher mode share for private vehicles than the afternoon, suggesting student drop off is more common than student pick up as often parents/ guardians use the trip for additional purposes. Around 5% of all travel to and from school was found to be via walking the entire trip and this is attributable to majority of students living outside of the school's walkable catchment.

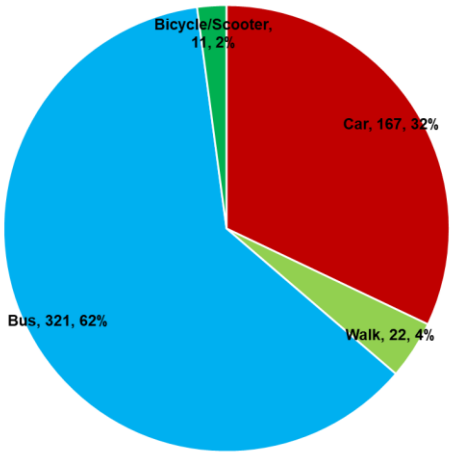

Figure 2.14: Hands up survey – morning travel to school

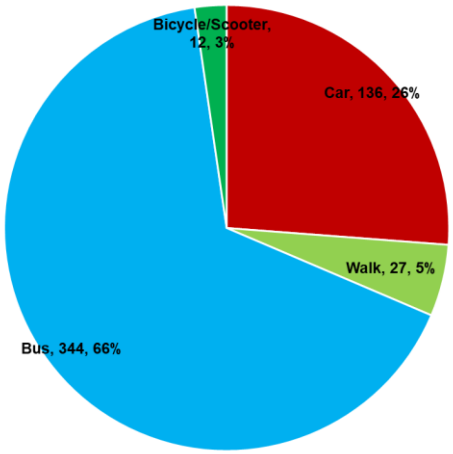

Figure 2.15: Hands up survey – afternoon travel from school

2.5.2 Online community survey

An online community survey was undertaken to understand travel patterns and behaviors of users of the sites. A total of 54 participants completed the survey. This included 5 staff, 16 students, 33 parents / carers. A summary of the survey is as follows:

- Mode of Travel to school:
    - About 19% of the participants travel to the school by car, with 11% parked on-site, 8% parked nearby and 28% being dropped off. It is noted all staff that participated in this survey travelled to school by car. They either parked on-site or parked nearby.
    - About 53% of the participants travel to school by taking the bus. Majority of these participants travelled from Medowie.
    - None of the participants travel to school by walking or cycling.
- For those who drop off a student to school:
    - About 29% of them return home.
    - About 57% of them drive to work
    - About 7% of them drive to public transport.
    - About 7% of them drive to do errands.
- The primary reasons for the participants to drive to the school include:

    - Dropping off / picking up children (47%)
    - Need the car to drive elsewhere before school (i.e. sport, work or an appointment) (16%)

- About 89% of the participants arrive at the school between 8:15am to 9:00am, with majority of about 33% and 31% arriving between 8:45am to 9:00am and 8:30am to 8:45am respectively.
- About 85% of the participants depart the school between 3:15pm to 3:45pm, with majority of about 44% and 41% arriving between 3:30pm to 3:45pm and 3:15pm to 3:30pm respectively.
- Potential measures that would encourage the participants to use the bicycle or walk more:
    - Safe bicycle parking
    - Increased weather protection (e.g. covered walkway)
    - End of trip facilities
    - Information on safe routes
    - Walking and cycling groups
- Potential measures that would encourage the participants to walk or cycle more (in the order of number of votes):
    - Closer walking / cycling distance to school (50%)
    - Walking group so I can walk with others (19%), Information on safe routes (19%)
    - Back up options in case of inclement weather (bus, train or car for rainy days or days when the weather changes) (13%), Shower / change rooms (13%)
    - More weather protection (6%), Bicycle group so I can ride with others (6%), Safe bicycle parking (6%)
- Potential measures that would encourage the participants to carpool (in the order of number of votes):
    - Certainty in finding car space (i.e. dedicated car space for car-poolers) (31%)
    - Knowing the driver personally (25%), Assistance in finding someone to carpool with (25%)
    - A ride home if I needed to assist with a sick child / personal responsibilities (19%)
    - Secure parking (13%), Free parking (13%)
    - Reduced parking cost (6%)

Feedback from the participants were also collated as part of the survey. In general, based on the feedback:

- There is a need to improve the reliability of bus services. It has been noted on several occasions that buses are irregular and do not show up.
- There is a need to increase frequency of bus services. It has been noted that buses are infrequent and some buses are overcrowded.
- Flooding of the shared path across Windeyers Creek towards Raymond Terrace where students are forced to walk on the road during flooding events. This is a safety issues and needs to be addressed.

2.6 Summary of transport recommendations

As a result of the transport assessment undertaken for this study, a number of issues have been discussed in **Section 2.1** and **Section 2.2** regarding the proposed concept design for the school's upgrade and existing transport conditions. This section summarises a series of recommended mitigation measures that promote sustainable transport growth and provide safe access to students, staff and visitors as outlined in **Table 2.16** and referenced in **Figure 2.16**.

Table 2.16: Recommendations

Mode	Opportunity	Responsible parties
Walking	1. Provide footpath on Adelaide Street south of Elkin Avenue to facilitate pedestrian connections to bus stops on Adelaide Street and Pacific Highway and to the proposed additional kiss and drop zone on Adelaide Street opposite Elkin Avenue as shown in **Figure 2.17** 2. Improve student waiting areas in the Elkin Avenue dedicated bus zone with amenities such as footpaths and seating 3. Introduce traffic calming measures for the new bus zone	Council
Walking	4. Provide 4m wide footpaths (Type 4 - based on Transport for NSW Walking Space Guide 2020) at the student access gates. This will satisfy a LOS "C", which is the minimum design target for pedestrian comfort.	SINSW
Cycling	5. Provide additional 13 bike parking spaces near the administrative building	SINSW
Cycling	6. Investigate opportunities to improve cycle path parallel to Adelaide Street crossing Windeyers Creek, which has flooding issues	Council
Bus	7. Investigate opportunities of improving crossing facilities to access bus stops on the Pacific Highway	Council
Bus	8. It is recommended to amend bus timetable to allow only 5 services to depart over a 5 min period in PM peak, to avoid queueing in the Elkin Ave bus zone	TfNSW
Bus	9. Provide at least five bus bays to cater the needs of existing and future public transport demand	Council
Private vehicle	10. Reduce posted speeds to 10km/h at the school's on-site drop-off/pick-up zone 11. It has been proposed that vehicle access gates and new student access gates are to be provided to control entry and exit into the school site and playing fields	SINSW
Private Vehicle	12. Provide minimum two additional kiss and drop spaces on the southern end of the Adelaide Street. Bus zone on Adelaide Street currently used by out-of-town buses cab be utilised for kiss and drop purposes as all school buses are expected to service the new Elkin Avenue bus zone	Council
Private vehicle	13. To allow for the increase in kiss and drop demand particularly on Fridays, allow kiss and drop to happen in the new on-site kiss and drop zone and in the school's dedicated bus zone (as there are no buses from 1.50 pm to 3.00pm). Parents could use the designated bus bays for pick up. This needs to be organized and possibly trialled.	SINSW
Private Vehicle	14. Review gate and parking operations to the school site	SINSW
Private Vehicle	15. Review service vehicle operations to the school site	SINSW
Private Vehicle	16. Waste service vehicles to access the school outside of AM and PM peak periods and/or school hours to prevent potential conflicts with school vehicular and pedestrian traffic	SINSW

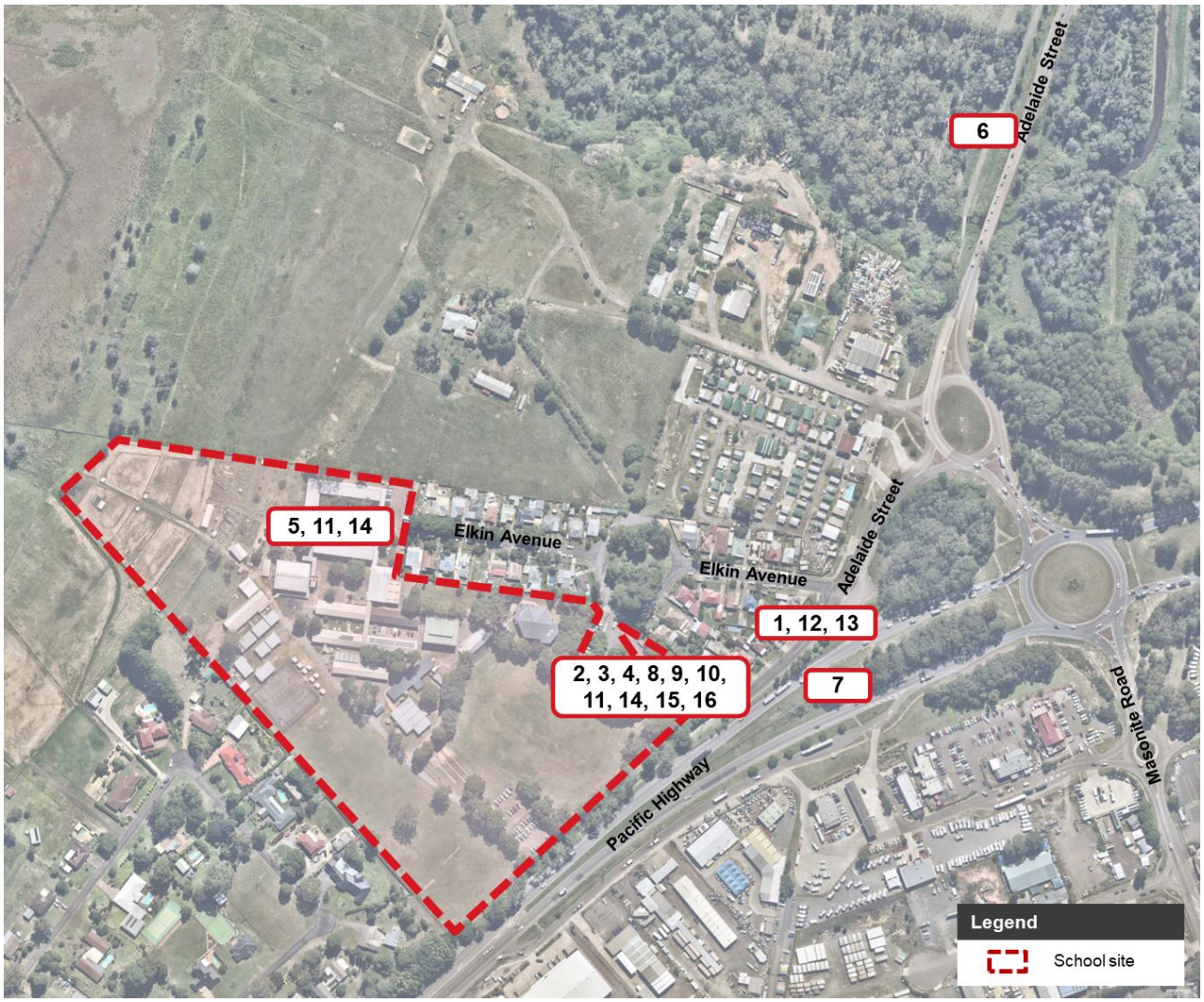

Figure 2.16: Recommended mitigation measures map
Basemap source: Nearmap imagery dated 31 March 2023

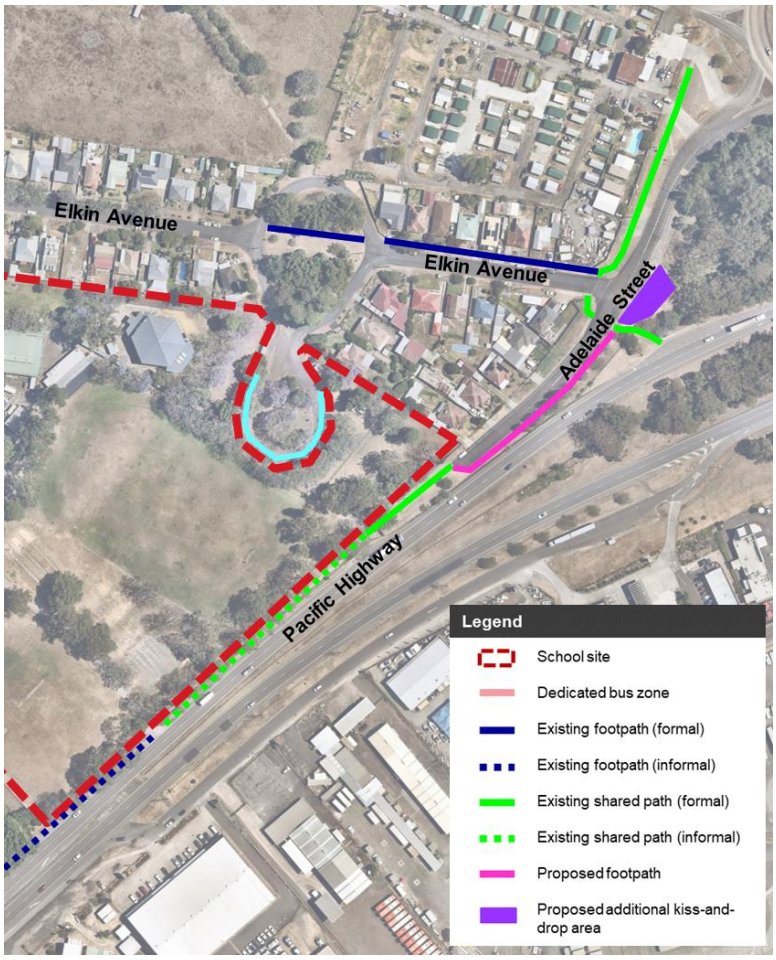

Figure 2.17: Proposed footpaths and additional kiss and drop area
Basemap source: Nearmap imagery dated 5 December 2022

2.7 Objectives and mode share targets

2.7.1 Students

Mode share targets define the desired method of access to the school site given a number of transport infrastructure and service recommendations whilst considering the physical constraints that place limitations on capacity. Transport related recommendations that are required to achieve the target mode shares are provided in **Section 2.6**.

For reference, existing mode share for Hunter River High School captured during the hands up survey (described in **Section 2.5.1**) is provided in **Table 2.17.**

Table 2.17: Existing mode share

	AM period (#)	AM period (%)	PM period (#)	PM period (%)
Walking	22	4%	27	5%
Bicycle and other micromobility	11	2%	12	2%
Public transport	325	62%	347	67%
Private vehicle	167	32%	136	26%
TOTAL	525		522	

A critical first step in developing mode share targets is addressing the discrepancy between the existing AM and PM mode share figures. This discrepancy exists because parents/ guardians may choose to drop students off at school in the morning because this aligns with an existing private vehicle trip that is made ie going to work, running errands etc. Travel to school in the morning using the same mode as in the afternoon can be made more attractive by providing safe, efficient and reliable travel options. It is most desirable that students are able to use one mode in both periods and ultimately reduce reliance on private vehicles. Therefore, mode share targets are not differentiated by time of day. Mode share targets are provided for Hunter River High School for the anticipated future 800[6] student enrolments under the following scenarios:

- Moderate mode share target – transport recommendations enable a shift towards walking, cycling and catching a bus. This represents an achievable outcome.
- Reach mode share target – Sustainable mode share is maximised and students are further shifted from private vehicles to buses. This represents the maximum achievable outcome.

Mode share targets are provided in **Figure 2.18**, and assumptions and considerations adopted to develop the mode share targets are outlined in **Table 2.18**.

[6] Source: Enrolment projections from Eagle Eye

Table 2.18: Mode share targets assumptions

Mode share scenario	Assumptions/ considerations
Current situation	• Majority of people living within the 1,600m catchment are walking to school. • Driving mode share is higher in the morning because parents/ guardians tend to drop off their child on the way to work or other trip purposes. • Assisted school transport is required for some students. Therefore, active transport mode share is unlikely to include all of those within the walking catchments. • Students who do not have access to the SSTS are less likely to use the bus.
Moderate target	• Students travelling via private vehicle in the AM transfer to active or public transport in the afternoon. • Overall, the use of private vehicles will drop due to students shifting to cycling and public transport. • Bus mode share is currently high at 67% (PM period). This places a limit on the bus mode share.
Reach target	• Higher proportions of students choosing to use sustainable modes (cycling and public transport) to access school (within physical capacity and constraints of network).

Figure 2.18: Mode share targets

Moderate target

		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,600 to 2,000m	2,000m to 2,900m	Over 2,900m	Total	
Walking	%	99.0%	96.0%	94.0%	83.0%	29.5%	0.0%	0.0%		
	no. of future students	6	4	3	20	8	0	0	41	5%
Bicycle and other micromobility	%	0.0%	3.0%	5.0%	16.0%	30.0%	20.0%	0.0%		
	no. of future students	0	0	0	4	8	9	0	21	3%
Public transport	%	0.0%	0.0%	0.0%	0.0%	15.0%	32.0%	76.0%		
	no. of future students	0	0	0	0	4	14	525	543	68%
Private vehicle	%	1.0%	1.0%	1.0%	1.0%	25.0%	48.0%	24.0%		
	no. of future students	0	0	0	0	7	21	166	194	24%

Reach target

		0 to 400m	400 to 800m	800 to 1,200m	1,200 to 1,600m	1,200 to 2,300m	2,300m to 2,900m	Over 2,900m	Total	
Walking	%	99.0%	96.0%	94.0%	83.0%	30.0%	0.0%	0.0%		
	no. of future students	6	4	3	20	8	0	0	41	5%
Bicycle and other micromobility	%	0.0%	3.0%	5.0%	16.0%	35.0%	23.0%	0.0%		
	no. of future students	0	0	0	4	10	10	0	24	3%
Public transport	%	0.0%	0.0%	0.0%	0.0%	20.0%	40.0%	78.0%		
	no. of future students	0	0	0	0	6	18	539	562	70%
Private vehicle	%	1.0%	1.0%	1.0%	1.0%	15.0%	37.0%	22.0%		
	no. of future students	0	0	0	0	4	16	152	173	22%

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