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18 October 2023

**Broadwater Public
School**
ADCO
**Transport and Traffic
Assessment**

For: **ADCO**

Site Address: **9 Byrnes Street, Broadwater NSW 2472**

Document reference number: **23-0608**

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1. Introduction

1.1. Background

The existing buildings at Broadwater Public School (the School) were significantly inundated during the February 2022 floods and most of the structures are no longer habitable due to the damage caused by the flood waters. As a result, the NSW Department of Education is proposing to demolish the existing school buildings and construct a new elevated school building. The floor level of the new building will be located above the design flood level to increase flood resistance and create useable undercroft spaces.

A development application (DA) will be submitted to Richmond Valley Council for these works.

ptc. has been engaged by ADCO to provide traffic & parking assistance through the planning and design process, and prepare a traffic and transport assessment to accompany the application for the proposed development.

1.2. School Location

The School is located at 9 Byrnes Street, Broadwater NSW 2472, in the Local Government Area (LGA) of Richmond Valley Council. Broadwater is a small town in the Northern Rivers region of New South Wales, it had a population of 670 people in the 2021 census.

The School is bounded by Black Drive to the west, Byrnes Street to the south, and rural properties and farmland around. The School is solely accessed via Byrnes Street, at the end of the no-through road (Figure 1).



Figure 1: School location

1.3. Project Summary

The proposed development will comprise the following:

- Site preparation including site establishment works, earthworks and relocation of heritage bell.
- Demolition of existing school buildings.
- Construction of a new elevated school building, with at-grade (undercroft) amenities and storage, including:
 - Ground Level:
 - Open undercroft space for covered outdoor learning and play;
 - Male and female amenities and accessible toilet / change room facility;
 - Cleaners Store;
 - Sports Store;
 - Equipment and general store.
 - Elevated Level:
 - New administration comprising interview room, clerical spaces, Principal's office, staff room, sick bay, store and male, female and accessible amenities.
 - School library with computer room, store, main communications room and library office.
 - Three (3) General Learning Spaces (GLS) with learning commons and multi-purpose space.
 - Canteen with open servery space.
 - Store.
 - Male, female and accessible amenities.
 - Mechanical plant.
- New hard and soft landscaping including replacement playing field, playground, half games court and vegetable garden and new yarning circle.

It is not proposed to increase staff or student numbers as a result of these works.

2. Site Context

2.1. School Characteristics

The School is a primary school that accommodates Kinder to Year 6 students and currently has an enrolment of 55 students. It is noted that the School site is currently vacant, school operation is temporarily operating from the Evans River K-12 School.

The School has the following school characteristics:

- Student enrolment capacity: 80
- Staff capacity: 12
- Bell times: 9:15am - 3:30pm

The current student enrolment catchment area involves a few the suburbs / villages such as Broadwater, Rileys Hill, Dungarubba and Green Forest, as shown in Figure 2.

The development proposal does not involve any changes to the existing enrolment catchment or school population capacity.

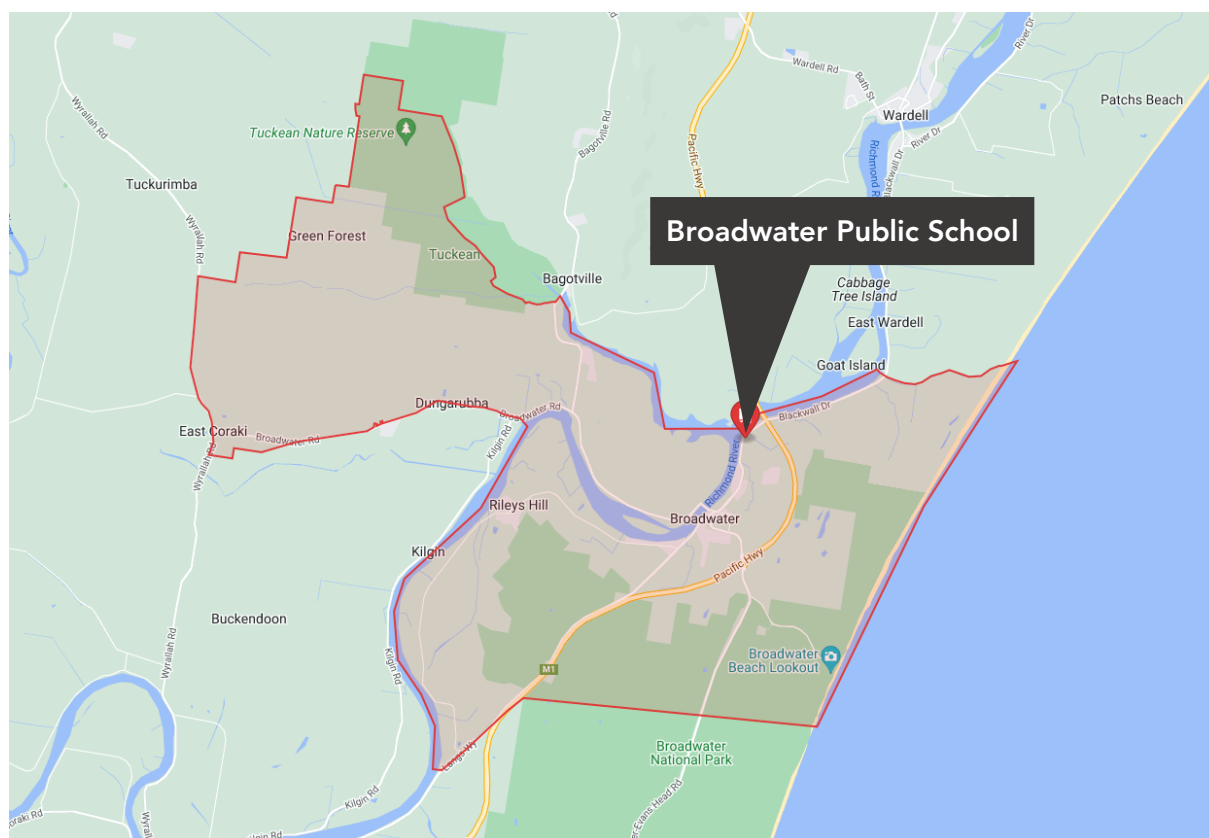


Figure 2: School enrolment catchment area (Source: NSW Public School Finder)

2.2. Land Use

With reference to the NSW Planning Portal Spatial Viewer, the School site sits on land lots 4 and 5 of Deposited Plan (DP) 1043232, and lot 501 of DP 755624.

The land zoning for the School site and most surrounding areas is categorised RU1 Primary production, which allows uses and developments largely focused on the primary industry. The land to the west of the School is zoned SP2 Infrastructure for the road carriageway.

The land use zonings in the vicinity are relatively simple, this determines the existing local traffic generation has the following features:

- Generally associated with the School, surrounding rural residential properties and primary industries;
- Vehicular traffic (private transport) is expected to be the predominant mode share for the transport activities; and
- Low traffic volumes.

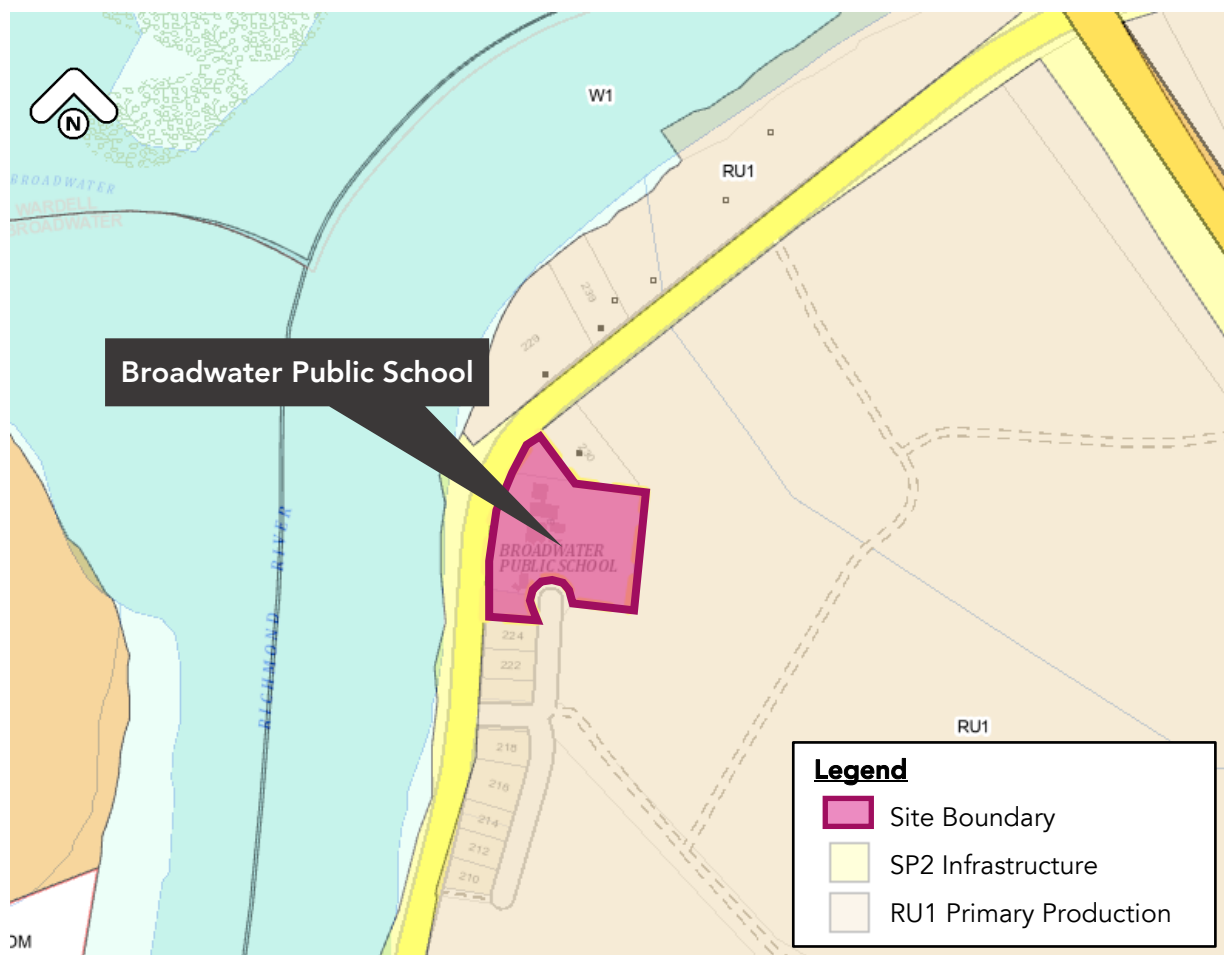


Figure 3: Land use map around the School (Source: NSW Planning Portal Spatial Viewer)

2.3. Development Controls

The School is within the Richmond Valley Council LGA, and the development proposal is subject to the controls stipulated by the Richmond Valley Development Control Plan 2021 (DCP).

The DCP supplements the Richmond Valley Local Environmental Plan 2012 by providing general information, detailed guidelines and controls relating to the design and scale of development, and provides an insight into the decision making process.

For the concern from a transport perspective, it also stipulates detailed requirements for car parking and service vehicle parking provision, which are referred to when assessing the development proposal.

3. Existing Transport Facilities

3.1. Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- **State Roads** Freeways and Primary Arterials (TfNSW managed)
- **Regional Roads** Secondary or sub arterials (Council managed, part funded by State)
- **Local Roads** Collector and local access roads (Council managed)

With reference to the TfNSW Road Network Classification Map, the School's frontage and sole access road Byrnes Street is a Local Road, it further leads to Blackwall Drive which is classified as State Road (Figure 4).

The road classification in the vicinity suggests that low traffic volumes are expected around the School site, and are predominantly associated with local properties and primary industries.

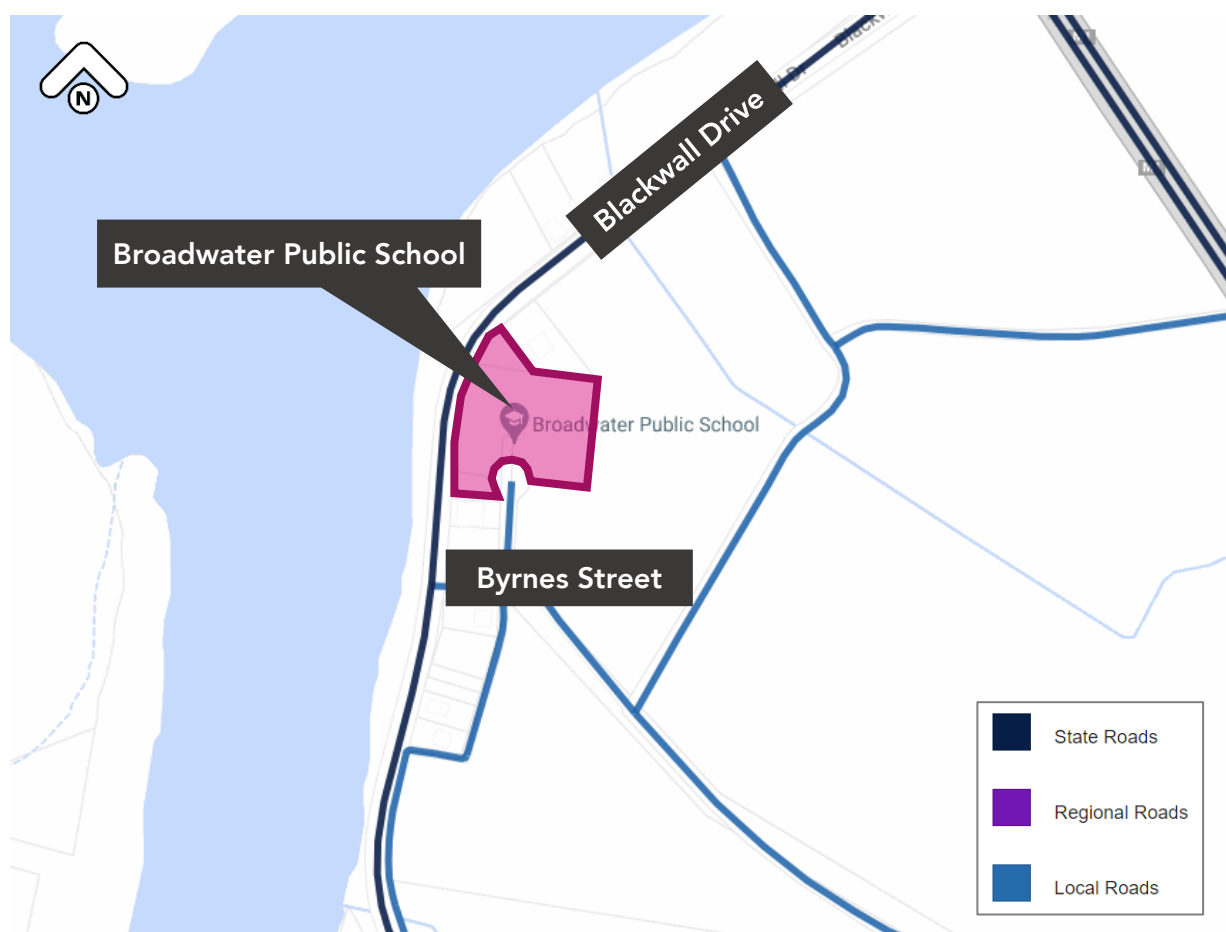


Figure 4: Road classification around the School (Source: TfNSW Road Network Classification Map)

The details of the existing immediate road network servicing the School are analysed and summarised overleaf.

Table 1: Road network characteristics - Byrnes Street

Byrnes Street	
Road Classification	Local Road
Alignment	Partially north - south and partially east - west
Number of Lanes	1 lane in each direction
Carriageway Type	Undivided
Carriageway Width	6 metres
Speed Limit	50km/h
School Zone	Yes
Parking Controls	No parking, bus zone 8:30-9am and 2:30-3:30pm school days
Forms Site Frontage	Yes



Figure 5: Byrnes Street (Source: Google Map)

Table 2: Road network characteristics - Blackwall Drive

Blackwall Drive	
Road Classification	State Road
Alignment	Generally northeast - southwest
Number of Lanes	1 lane in each direction
Carriageway Type	Undivided
Carriageway Width	7.5 metres
Speed Limit	50km/h
School Zone	Yes
Parking Controls	Nil
Forms Site Frontage	Yes



Figure 6: Blackwall Drive (Source: Google Map)

3.2. Public Transport

The NSW Planning Guidelines for Walking and Cycling (2004) suggests that an 800m (10 minutes' walk) catchment is an acceptable walkable distance for accessing public transport. Furthermore, the document also suggests a distance of 1500m is a suitable catchment for cycling to public transport facilities and local amenities.

A review of the public transport options around the School shows two bus stops are available within 800m (10 minutes' walk) catchment, being the Broadwater Public School stop and Broadwater Coach stop. The bus stops are currently serviced by one public bus route and one school bus route, as illustrated in Figure 7. The operation timetables for the stops on school days are summarised in Table 3, it is noted that the route 660 timetable does not appear to be fully aligned with bell times.

The public transport options available in the locality is in single mode (bus), it is considered adequate based on the area characteristics and enrolled student numbers. With consideration to the coverage area and operation frequency, public transport is expected to be a small proportion in the student and staff travel mode share.

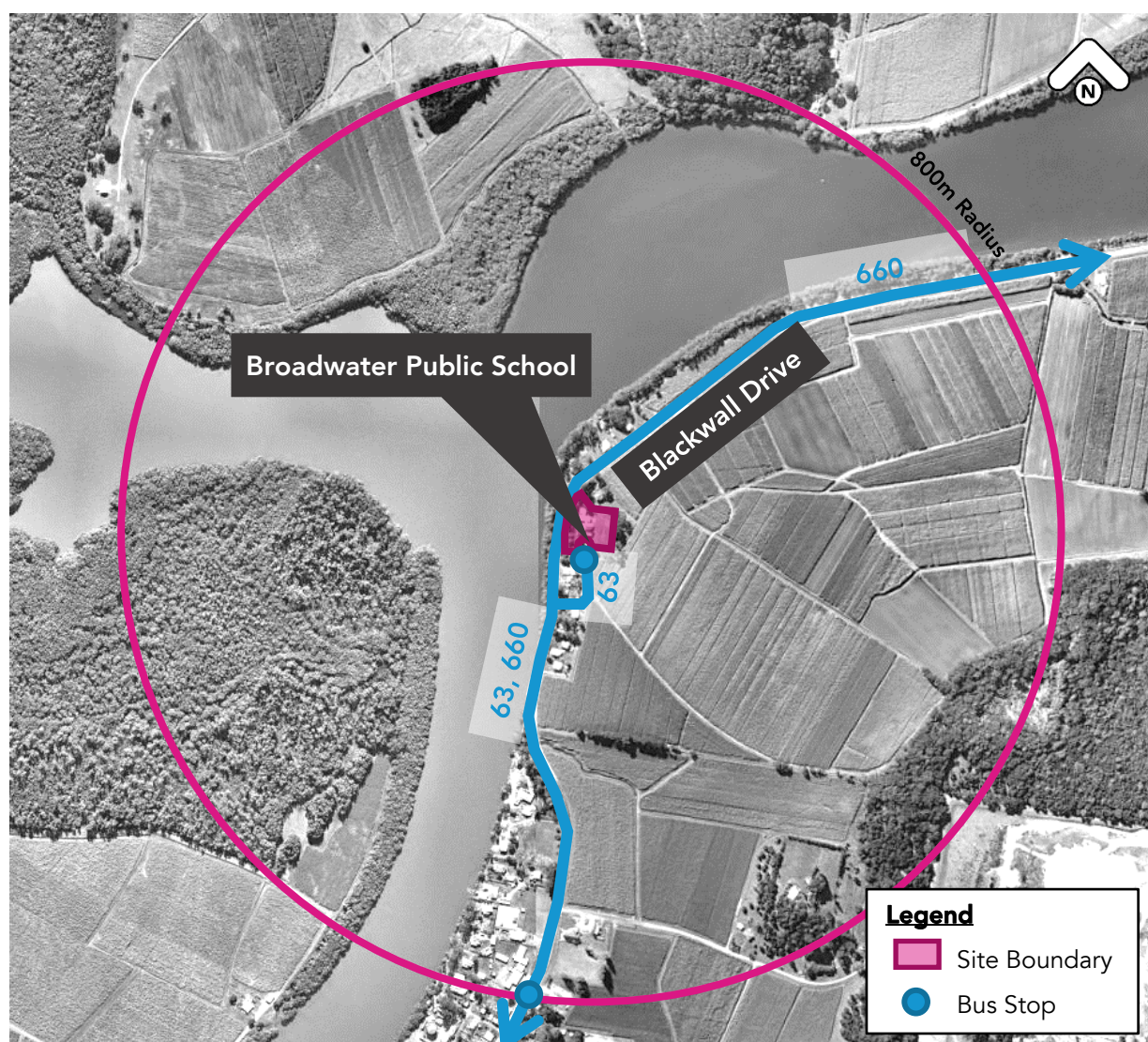


Figure 7: Public transport options around the School (Source: Northern Rivers Buslines and TfNSW)

Table 3: Bus operation timetables (Source: Northern Rivers Buslines and TfNSW)

Routes	Direction	School Days Operation timetable
63	Evans Head to Broadwater Public School via Evans River K12 School	8:45am
63	Broadwater Public School to Evens Head via Evans River K12 School and Woodburn Public School	2:50pm
660	Evens Head to Ballina (northbound)	7:50am, 11:23am
660	Ballina to Evens Head (southbound)	10:07am, 4:13pm

3.3. Active Transport

Figure 8 shows the existing active transport infrastructure in the vicinity of the School, they are summarised in the following:

- **To south:** a shared path is available along Blackwall Drive between the School and the Broadwater town centre. The shared path is separated from the road by barriers and grass berms, can service as a good connection between the Broadwater Coach Stop and the School.
- **To east and north:** no footpath or shared path are currently available, where mostly consists of rural farmland and properties.

The available active transport infrastructure in the locality is considered adequate and suitable for walking and cycling. Given the regional context of the School location and the general young age of students, it is expected that the proportion of students and staff travel by active transport would be small.

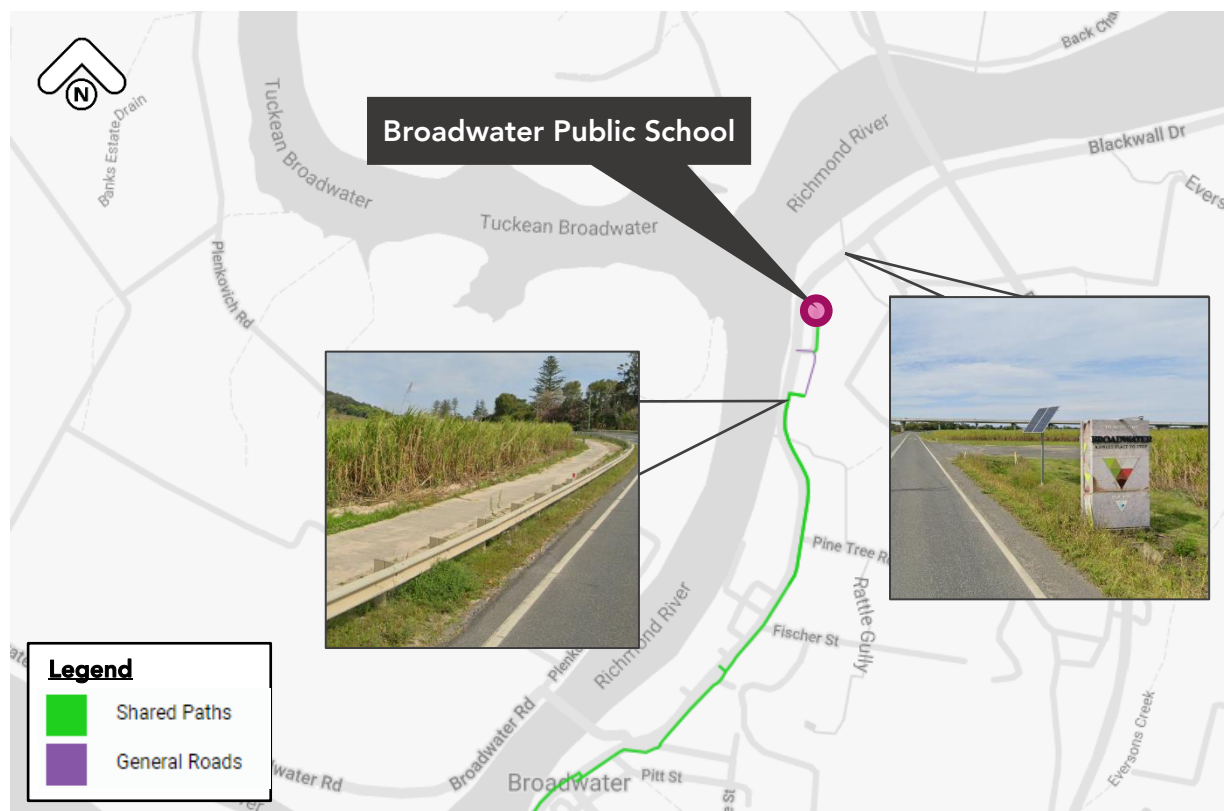


Figure 8: Active transport infrastructure around the School (Source: TfNSW Cycleway Finder)

4. Parking Demand and Design Assessment

The parking provision proposed by the development has been assessed with reference to the requirements stipulated by the following:

- Richmond Valley Development Control Plan 2021 (DCP);
- NSW Department of Education (DoE) Educational Facilities Standards and Guidelines (EFSG); and
- National Construction Code (NCC).

4.1. Bicycle Parking

The DCP does not stipulate any requirements for bicycle parking provisions, EFSG stipulates that the number of bicycle parking spaces can be site specifically variable.

The development proposal involves the restoration of any pre-existing bicycle parking spaces before the flooding events, the number of bicycle parking spaces are yet to be confirmed, however will likely be between 10-14 spaces and will be located within the site boundary.

Although the number of bicycle parking spaces are yet to be confirmed, given the area context and school population, the bicycle parking provision is anticipated to adequately service the cycling demand. The School ground also has room to provide more bicycle parking spaces should the demand increases.

The proposed bicycle spaces shall be provided in line with AS2890.3 prior to occupation, which involves the following typical design requirements:

- Bicycle parking space envelope: 1.8m x 0.5m; and
- Aisle of 1.5m.

4.2. Car parking

Section I-4.2 of the DCP stipulates the requirement of on-site car parking to be provided at specific rates for new developments. The DCP sets out the following car parking provision for educational establishment (primary):

- 1 per teacher, plus
- 1 per 12 students

Based on the above, the potential car parking space may be required, and the proposed car parking provision by the development are presented in Table 4.

Table 4: Car parking provision

Components	Minimum provision rates	Minimum spaces required	Project provision
12 Teachers	1 per teacher	12	9 (existing)
80 Students	1 per 12 students	7	

The development is proposing to retain the existing car park provision and arrangements, the proposal does not involve any additional car parking provision or changes to the current arrangement. The existing car park has a provision of 9 car parking spaces (including 1 accessible parking space), this is short of the DCP requirement.

However, with consideration to no additional staff or student enrolment capacity is proposed, the context of the area and the size of the development, the existing car parking provision is adequate for accommodating the demand. Should the parking demand increase in the future, it can be accommodated by on-street parking in the locality and further car park development at the School.

4.2.1. Accessible Parking

The DCP does not stipulate any parking provision requirements for accessible parking spaces in a development, therefore, the assessment of accessible parking provision is assessed against the requirements stipulated by the NCC.

The School can be classified as a Class 9b building, which has the definition of an assembly building including a trade workshop or laboratory in a primary or secondary school. The applicable NCC accessible parking provision rate and the development proposed provision is presented in Table 5.

Table 5: Accessible parking provision

Car parking spaces on site	NCC provision rates	Spaces required by NCC	Project provision
9	1 accessible space for every 100 parking spaces or part thereof	1	1

The proposed accessible parking provision is in line with the NCC requirement and is expected to adequately service the School.

4.2.2. Design Assessment

As the development proposal is retaining the existing car parking provision and design, no changes are proposed to the current arrangements, therefore the car parking design is not assessed against AS2890 standards for compliance.

4.3. Service Vehicle Parking

Section I-4.6 of the DCP sets the objective to ensure that car parks, manoeuvring areas, loading bays, and road access is functional and safe for car parking construction and design. However, the DCP does not stipulate any detailed provision rate for service vehicle parking spaces.

The development proposal does not involve any provision or changes to the current arrangements for service vehicle parking, given the context of the area and the size of the development, service vehicle parking demand is expected to be low and easily accommodated by on-street parking.

5. Transport Impact Assessment

5.1. Traffic Generation Rates

In assessing the transport implications of the proposed development, reference is made to Transport for NSW TTR-002 Guide to Traffic Generating Developments (Guide) for childcare centres long-day care. The Guide provides the rates of 0.8 vehicle trips / student in the morning peak and 0.3 vehicle trips / student in the afternoon peak (Figure 9).

Given the regional context and the limited availability of alternative transport options, the traffic generation rate of 0.8 vehicle trips / student is adopted for both the morning and afternoon peak hour for the assessment.

Table 3.6 Traffic generation rates			
Centre Type	Peak Vehicle Trips / Child		
	7.00-9.00am	2.30-4.00pm	4.00-6.00pm
Pre-school	1.4	0.8	-
Long-day care	0.8	0.3	0.7
Before/after care	0.5	0.2	0.7

Figure 9: Childcare centre traffic generation rates (Source: Guide to Traffic Generating Developments)

5.2. Net Traffic Generation and Impact

The School currently has the enrolment capacity of 80 students, the proposed development does not involve any changes to the school population capacity. Therefore, the traffic generation of the proposed development is the same as the pre-development conditions, resulting in zero (0) net traffic generation as shown in Table 6.

Table 6: Net traffic generation

Scenarios	Students	Trip generation rate	Trips
Existing	80	0.8 vehicle trips / student	64
Proposed development	80		64
Net generation:			0

Based on the above, the proposed development is not expected to generate additional traffic onto the existing road network or have an adverse impact on the current transport network operations.

6. Conclusion

The School is a primary school that has the enrolment capacity of 80 students and staff capacity of 12 employees, the proposed development does not involve any changes to the existing enrolment catchment area or school population capacity.

The land use and road hierarchy in the locality determine that the traffic activity is low and largely associated with the local rural residential properties, primary industries and the School.

Public transport options and active transport infrastructure in the locality are adequate, public and active transport will form a proportion in the school travel mode share.

The bicycle parking provision is yet to be finalised by the development, however is expected to adequately service the cycling demand and be provided in line with AS2890.3 prior to occupation.

The development is proposing to retain the existing car park provision of 9 car parking spaces (including 1 accessible space), this is short of the DCP requirement whilst the accessible parking provision is in line with the NCC requirements. With consideration to no additional staff or students are proposed and the local transport conditions, the retained existing car parking provision is adequate for accommodating the demand. As no changes are proposed to the existing car park, the car park design is not assessed against AS2890 standards for compliance.

As the proposed development does not involve any changes to the school population capacity, the net traffic generation of the proposed development is zero, which is not expected to generate additional traffic onto the existing road network or have an adverse impact on the current transport network operations.

Appendix 1. Architectural Drawings

LEGEND

- EXISTING BUILDING AND PAVING TO BE RETAINED
- PROPOSED BUILDING
- PROPOSED PAVING REFERR TO LANDSCAPE ARCHITECT'S & CIVIL ENG DRAWINGS
- EXISTING TREES TO BE RETAINED
REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- PROPOSED NEW TREES SHOWN IN BLUE OUTLINE
REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- EXISTING NEIGHBOURING TREES INDICATIVE ONLY

- 1.a RELOCATED RAIN WATER TANK
- 1.b RAIN WATER REUSE FILTRATION AND PUMPING SYSTEM
- 2 FIRE TANKS
- 3 HYDRANT PUMP HOUSE
- 4 PROPOSED HYDRANT BOOSTER ASSEMBLY AND EXTERNAL FIRE HYDRANT
- 5 PROPOSED YARNING CIRCLE. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- 6 PROPOSED SANDED AREA AND PLAY EQUIPMENT, REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- 7 NEW LEVEL TURFED SPORTS FIELD, REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- 8 RELOCATED HERITAGE BELL
- 9 PROPOSED GROWING GARDENS, REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
- 10 RE-INSTATED HALF BASKETBALL COURT
- 11 RE-INSTATED HALF NETBALL COURT
- 12 EXISTING GA SHED
- 13 DUAL FIRE HYDRANT
- 14 SEATING SPACE, REFER TP LANDSCAPE ARCHITECT'S DRAWINGS
- 15 IN GROUND SEWER PUMP STATION AS PER HYDRAULIC DRAWINGS
- 16 WASTE MANAGEMENT AREA

GFA CALCULATION	
NAME	AREA
UNDERCROFT LEVEL	
AMENITIES / STORE BLOCK	81.03 m²
	81.03 m²
RAISED LEVEL	
GLS BLOCK GFA	405.00 m²
ADMIN / LIBRARY BLOCK GFA	270.00 m²
	675.00 m²
	756.03 m²



AMENDMENTS			
REV	BY	DATE	DESCRIPTION
A	SG	14/07/2023	PRELIMINARY ISSUE
	SG	14/07/2023	ITEMS UNDER COORDINATION
B	SG	01/08/2023	ISSUE FOR COORDINATION
C	ML	10/09/2023	90% REF ISSUE



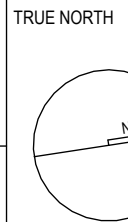
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Modscape
0393 166 020
STRUCTURAL & CIVIL
H&H Engineers
0423 222 338
SERVICES
J&H Consulting
0404 552 673
FIRE ENGINEERING AND ESD
E-Lab
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ARCHITECTS

BROADWATER PUBLIC SCHOOL
9 BYRNES STREET BROADWATER NSW 2472
DRAWING NAME
PROPOSED SITE PLAN



0 2500 5000 7500 10000 12500 25000					SCALE 1: 250 @ A1
AUGUST 2023					
DRAWING NUMBER	PROJECT	DISCIPLINE	PHASE	TYPE	SERIES NUMBER
	BRO - ARC - PP - DWG - 010				
C					REVISION