

Review of Environmental Factors

The Ponds High School Upgrade

Document version: Rev 4.0

Date: 22/09/2025

Acknowledgement of Country

The NSW Department of Education acknowledges the traditional custodians of the land on which The Ponds High School upgrade is proposed.

We pay our respects to their Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of Australia.

The NSW Department of Education is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

The NSW Department of Education recognises that by acknowledging our past, we are laying the groundwork for a future that embraces all Australians; a future based on mutual respect and shared responsibility.

Declaration

This Review of Environmental Factors (REF) has been prepared by Mecone Group Pty Ltd on behalf of the NSW Department of Education (the department) and assesses the potential environmental impacts which could arise from the upgrades to The Ponds High School at 180 Riverbank Drive, The Ponds NSW.

This REF has been prepared in accordance with the *Guidelines for Division 5.1 Assessments* and any relevant addendum (the Guidelines), and the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP).

This REF provides a true and fair review of the activity in relation to its likely impact on the environment and the information it contains is neither false nor misleading. It addresses to the fullest extent possible all the factors listed in Section 3 of the Guidelines, the EP&A Regulation and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In preparing the REF I have declared any possible conflict of interests (real, potential or perceived) and I do not consider I have any personal interests that would affect my professional judgement.

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Document Control

Document version: Rev 4.0

Date: 22/09/2025

Version history

Version	Date	Description	Prepared by	Approved by
1	25/08/2025	Draft to SI	Ben Frasco Andy Lau	Alistair Smith
2	15/09/2025	Final to SI	Ben Frasco Andy Lau	Alistair Smith
3	19/09/2025	Final to SI	Ben Frasco Andy Lau	Alistair Smith
4	22/09/2025	For Approval	Ben Frasco Andy Lau	Alistair Smith

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Appendices

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2	Transport and Accessibility Impact Assessment	4	19/09/2025
3	Flood Impact and Risk Assessment	2	17/09/2025
4	Flood Emergency Response Plan	2	17/09/2025

Abbreviations

Abbreviation	Description
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIA	Arboricultural Impact Assessment
APZ	Asset Protection Zone
BAL	Bushfire Attack Level
BC Act 2016	<i>Biodiversity Conservation Act 2016</i>
CBD	Central Business District
CC	Construction Certificate
CD	Campus Distributor
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CoPC	Contaminants of Potential Concern
CwC	Connecting with Country
DD	Due Diligence
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPHI	Department of Planning, Housing and Infrastructure
DSI	Detailed Site Investigation
DTS	Demountable Teaching Spaces
EFSG	Educational Facilities Standards and Guidelines
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instruments
ESD	Ecological Sustainable Development

Abbreviation	Description
FERP	Flood Emergency Response Plan
FFL	Finished Floor Level
GIPA Act	<i>Government Information (Public Access) Act 2009</i>
GLS	General Learning Spaces
LGA	Local Government Area
LSPS	Local Strategic Planning Statement
MNES	Matters of National Environmental Significance
NOR	Notice of Requirements
OC	Occupation Certificate
OSD	On-site Stormwater Detention
OWMP	Operational Waste Management Plan
PA	Public Address
PBP 2019	Planning for Bushfire Protection 2019
PMF	Probable Maximum Flood
PSI	Preliminary Site Investigation
PTS	Permanent Teaching Spaces
RAP	Remediation Action Plan
REF	Review of Environmental Factors
RPS	Riverbank Public School
SCPP DoE	<i>Stakeholder and community participation plan</i> , published by the NSW Department of Education October 2024
SCPP DPHI	<i>Stakeholder and community participation for new health services facilities and schools</i> published by the Department of Planning, Housing and Infrastructure October 2024
SDRP	School Design Review Panel
SEPP	State Environmental Planning Policy
STP	School Transport Plan
TAIA	Transport and Accessibility Impact Assessment
TI SEPP	<i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i>
TPHS	The Ponds High School
WSUD	Water Sensitive Urban Design

Executive Summary

The Proposal

The proposal relates to The Ponds High School (TPHS) upgrade (the activity). The works include partial demolition, construction of new buildings and structures, landscaping, sports and play spaces, associated supporting infrastructure, tree removal and earthworks. The proposed activity will not result in an increase to the existing student population of the school.

The proposed activity is located at 180 Riverbank Drive, The Ponds (the site) within The Ponds suburb, on a site with street frontages to Hambledon Road, Riverbank Drive and Wentworth Street and adjacent to the Council Reserve (Lot 11 in Deposited Plan 1200915).

The proposed activity would provide for upgrades to the existing school, including the following:

- Construction of two new permanent school buildings, Building E and F, of three and four storeys, respectively. The buildings comprise classrooms/teaching spaces and amenities.
- Reconfiguration of external areas, including demolition of hardstand and landscaped spaces, construction of fencing, new natural and synthetic turf playing fields, and relocation of cricket nets and outdoor shelters, with ancillary landscaping works including tree removal and planting.
- Removal of demountable buildings following completion of new permanent learning spaces.
- Expansion and reconfiguration of car parking areas to improve circulation, access, and capacity, with ancillary works.
- Upgrades to site infrastructure, including stormwater management, the existing substation, and ancillary works.

All figures and drawings included in this REF are indicative and subject to change as the design is finalised.

The site is located in The Ponds within the Blacktown City Local Government Area (LGA), approximately 2.4 km walking distance from Schofields Station. It is surrounded by low-density residential areas on three sides and bordered by Little Trolley Park to the north.

The site contains multiple structures that comprise both TPHS and the Riverbank Public School (RPS), noting no work is proposed on the areas associated with RPS.

Planning Pathway

The proposal involves works by the Department of Education (the department) (a public authority) within the boundaries of the existing high school. Accordingly, pursuant to Sections 3.37 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP), the proposed works are classified as development which may be carried out without consent.

The proposal is considered an 'activity' for the purposes of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is subject to an environmental assessment. For the purposes of this proposal, the department is the proponent and the determining authority and the required environmental assessment is in the form of a Review of Environmental Factors (REF). The REF has been prepared in the accordance with the *Guidelines for Division 5.1 Assessments*

(DPE, June 2022) and the *Guidelines for Division 5.1 assessments - consideration of environmental factors for hospital and school activities Addendum* (DPHI, October 2024).

Consultation

Consultation will be undertaken in accordance with statutory requirements under the TI SEPP and having regard to the *Stakeholder and community participation plan for new health services facilities and schools* (Department of Planning Housing and Infrastructure (DPHI), October 2024) (SCPP DPHI) and the *Stakeholder and Community participation plan For new schools and major school upgrade projects undertaken under Division 5.1 of the EP&A Act 1979* (Department of Education, October 2024) (SCPP DoE).

Comments received will be carefully considered and responded to.

In addition, non-statutory consultation has been undertaken with a range of community and government stakeholders throughout the design process.

Environmental Impacts

The key environmental impacts identified in the preparation of the REF are as follows:

- **Flood** – A Flood Impact and Risk Assessment (FIRA) (Appendix 3), along with a Flood Emergency Response Plan (FERP) (Appendix 4), was prepared by TTW, as the site is mapped within a flood-prone area. The report identifies a minor increase in flood levels within the regional basins offsite; however, this increase does not affect the hazard category for either pre- or post-activity conditions and adjacent residential properties or roadways. Additional details are provided in Section 6 of this report.
- **Noise and Vibration** – A Noise and Vibration Impact Assessment was undertaken. The assessment included a review of carpark and traffic-related noise, concluding that the proposed works are not expected to result in any noticeable change in ambient noise levels. A preliminary construction noise assessment identified an exceedance of noise limits, which will be addressed through a Construction Noise and Vibration Management Plan to be prepared by a qualified acoustic consultant prior to commencement of construction. Additional details are discussed in Section 6 of this report.
- **Transport** – A Transport and Accessibility Impact Assessment (TAIA) and School Travel Plan were prepared by SCT Consulting (Appendix 2). The proposal does not involve an increase in student or staff numbers, as a result, the proposal is expected to have minimal impacts on transport and accessibility. However, the most noticeable impacts are anticipated during the construction phase. Recommendations for mitigation measures during this period are provided, with further details discussed in Section 6 of this report and in Appendix 2.

Justification and Conclusion

Based on the environmental assessment undertaken as part of this REF, it has been determined that the proposal will not result in any significant or long-term detrimental impacts. The potential impacts identified can be reasonably mitigated and where necessary managed through the adoption of suitable site practices and adherence to accepted industry standards.

The environmental impacts of the proposal are not likely to be significant. Therefore, it is not necessary for an Environmental Impact Statement (EIS) to be prepared nor approval to be sought for the proposal from the Minister for Planning and Public Spaces under Part 5.1 of the EP&A Act.

The proposed activity will not have any effect on Matters of National Environmental Significance and approval of the Activity under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is not required.

On this basis, it is recommended that the department determine the proposed activity in accordance with Part 5 of the EP&A Act and subject to the adoption and implementation of mitigation measures identified within this report.

1. Introduction

The NSW Department of Education (the department) proposes upgrades to The Ponds High School (TPHS) located at 180 Riverbank Drive, The Ponds (the site).

This Review of Environmental Factors (REF) has been prepared by Mecone Group Pty Ltd (Mecone) on behalf of the department to determine the environmental impacts of the proposed upgrades at the site. For the purposes of these works, the department is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of this REF is to describe the proposal, examine and take into account all matters affecting or likely to affect the environment and to detail mitigation measures to be implemented to manage impacts.

The potential environmental impacts have been assessed in accordance with the *Guidelines for Division 5.1 Assessments* (DPE, June 2022), *Guidelines for Division 5.1 assessments - consideration of environmental factors for hospital and school activities Addendum* (DPHI, October 2024), *Environmental Planning & Assessment Act* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021*, and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessment contained within the REF has been prepared having regard to:

- Whether the proposed activity is likely to have a significant impact on the environment and therefore the necessity for an Environmental Impact Statement (EIS) to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act; and
- The potential for the proposal to significantly impact Matters of National Environmental Significance (MNES) on Commonwealth land and the need to make a referral to the Australian Government Department of Environment and Energy for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

2. Proposed Activity

2.1 The Site

The site is located at 180 Riverbank Drive, The Ponds, as shown in Figure 1.

Legally described as Lot 11 in Deposited Plan 1200915, the site has an approximate area of 8.62 hectares. The site has street frontages to Hambledon Road, Riverbank Drive and Wentworth Street, which are local roads with 50 km/h speed limits, generous road verges, footpaths, street lighting, school zone signage, street trees along all frontages and adjacent to the Council Reserve.

The site is currently zoned as R2 Low Density Residential under the *State Environmental Planning Policy (Precinct – Central River City) 2021* (the SEPP Central River City) and part of the Alex Avenue Growth Centre Precinct.

The site currently accommodates permanent school buildings and demountables along with parking facilities utilised by both TPHS and Riverbank Public School (RPS) staff. As illustrated in Figure 1, RPS is outside the scope of the proposed upgrades. The upgrades are to be undertaken exclusively at TPHS.



Figure 1: Site Location Plan (Source: Mecone)

Topographically, the site exhibits a gradual fall towards the northwest. The highest elevation point is approximately 60 metres Australian Height Datum (AHD), located at the south-eastern corner of

the site fronting Wentworth Street. The lowest elevation points are approximately 49 metres AHD, situated at two distinct locations on the western boundary of the site, fronting Hambledon Road.

The Minister for Education and Early Learning is the current owner of the site.

Potable water and sewer services to the site are provided by Sydney Water. Existing water and sewer mains are located along Hambledon Road, Riverbank Drive, and Wentworth Street, enabling direct service connections to the site.

Electrical infrastructure is supplied by Endeavour Energy, with an existing electricity substation (Substation No. 32795) positioned at the south-western corner of the site, fronting Riverbank Drive, providing local distribution capacity.

Telecommunications infrastructure includes existing Telstra cables within the site, which connect to external networks via Riverbank Drive. These services support current operational needs and provide a foundation for future upgrades or expansions.

2.1.1 Site locality

The Ponds is located within Blacktown City Council's Local Government Area (LGA), the site is located approximately 16km northwest of Paramatta Central Business District (CBD) and 19km northeast of Penrith CBD. Schofields Metro Station is approximately 2.25km walking distance to the site. It is surrounded by low-density residential areas, with a Council Reserve to the north, Douglas Reserve to the east, and John Paul II Catholic College to the south-west.

The location and existing aerial of the site is shown in Figure 2.

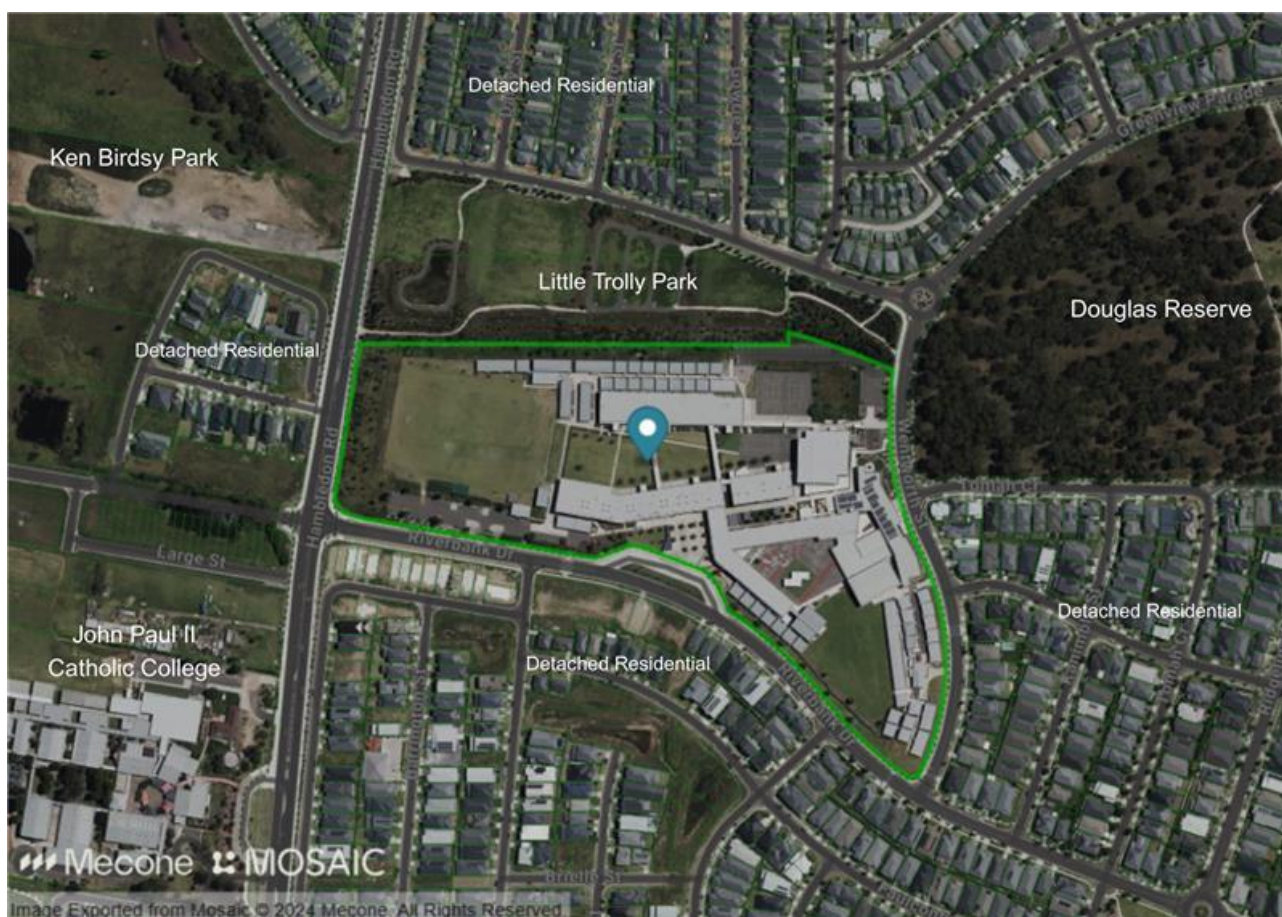


Figure 2: Location and existing aerial site map (Source: Mecone Mosaic)

2.1.2 Site Constraints and Opportunities

A Masterplan for proposed upgrades to the TPHS was completed in November 2024. Through the master planning process, opportunities for a future school expansion were identified. As part of this process consideration was given to the removal of existing demountable teaching spaces, with the intention of replacing them with new permanent teaching facilities.

Analysis of site constraints has been progressively undertaken through phases of Due Diligence (DD) and Concept plan development. These phases have included reviews of the Section 10.7(2) & (5) planning certificate for the site, planning controls & review of the mapping under relevant Environmental Planning Instruments (EPIs), and a review of specialist consultant reports and other desktop assessments. Notable site constraints or features include:

- Bushfire Prone Land – A small portion in the north-east corner of the site is mapped as bushfire prone land (vegetation buffer), the source of the hazard is located at Douglas Reserve to the west (Figure 29).
- Flood Risk – A small portion of the school lot is identified as part of the Flood Planning area under the SEPP Central River City (Figure 20).
- Aboriginal Heritage – An AHIMS search was undertaken and identified one Aboriginal site within the school and one on the boundary of the site (noting both have been destroyed).

The design presents opportunities to strengthen connections with First Nations communities through the numerous locations for the integration of culturally significant artwork and design elements. Additionally, the use of colour schemes and planting strategies offers potential for learning and appreciation to Country, supporting cultural awareness and engagement within the built environment. Consideration was given to the location of the proposed upgrades, including their interaction with the existing built form and access through the existing school site.

2.2 Proposed Activity

The proposed activity seeks the construction and operation of upgrades to the existing educational establishment. The activity includes the following:

- Construction of two new permanent school buildings, Building E and F, of three and four storeys, respectively. The buildings comprise classrooms/teaching spaces and amenities.
- Reconfiguration of external areas, including demolition of hardstand and landscaped spaces, construction of fencing, new natural and synthetic turf playing fields, and relocation of cricket nets and outdoor shelters, with ancillary landscaping works including tree removal and planting.
- Removal of demountable buildings following completion of new permanent learning spaces.
- Expansion and reconfiguration of car parking areas to improve circulation, access, and capacity, with ancillary works.
- Upgrades to site infrastructure, including stormwater management, the existing substation, and ancillary works.

Table 1 provides a summary of key aspects of the activity.

Table 1: Summary of the activity

Project Element	Description
Site Area	8.62 ha (includes high school and public school)
Project Name	The Ponds High School Upgrade
Project Summary	- Construction of two new permanent school buildings, Building E and F, of three and four storeys, respectively. The buildings comprise classrooms/teaching spaces and amenities. - Reconfiguration of external areas, including demolition of hardstand and landscaped spaces, construction of fencing, new natural and synthetic turf playing fields, and relocation of cricket nets and outdoor shelters, with ancillary landscaping works including tree removal and planting. - Removal of demountable buildings following completion of new permanent learning spaces. - Expansion and reconfiguration of car parking areas to improve circulation, access, and capacity, with ancillary works. - Upgrades to site infrastructure, including stormwater management, the existing substation, and ancillary works.
Use	Educational establishment
Student and Staff Numbers	High School Student: 1,852 (no change) High School Staff: 145 (no change)
Car Parking and Bicycle Spaces	90 additional car parking spaces (resulting in a total of 228 car parking spaces on site) - SW car park – increase from 70 spaces to 99 spaces - NE car park – increase from 68 spaces to 129 spaces - Increase from 94 bicycle parking spaces to 104 spaces 10 scooter parking spaces
Height	- Building E: 3 storeys - Building F: 4 storeys
Play Space	The proposal includes upgrade of the existing playing field to a full sized natural turf playing field, construction of a smaller synthetic turf area with futsal courts, and relocation of cricket nets.
Canopy Cover	The proposal includes the removal of 24 trees comprising: 8 trees within the building footprint and the southern carpark. 4 of the trees identified are of medium to high significance and 4 are of low significance. 8 trees within the synthetic futsal court area. It is noted that these trees are of low significance. 8 trees within the northern carpark works noting these trees are of low significance. Planting of 144 trees is proposed.
Off Site Works	A number of initiatives aimed at improving safety and access to the school are being considered to the surrounding roads and public domain. These initiatives will be assessed and implemented outside

Project Element	Description
	of the scope of this REF and subject to achieving a Heads of Agreement for shared use with Blacktown City Council.

The indicative Site Plan, Site elevations, Building elevations and Photomontages of the proposed activity are shown in Figure 3 to Figure 7.

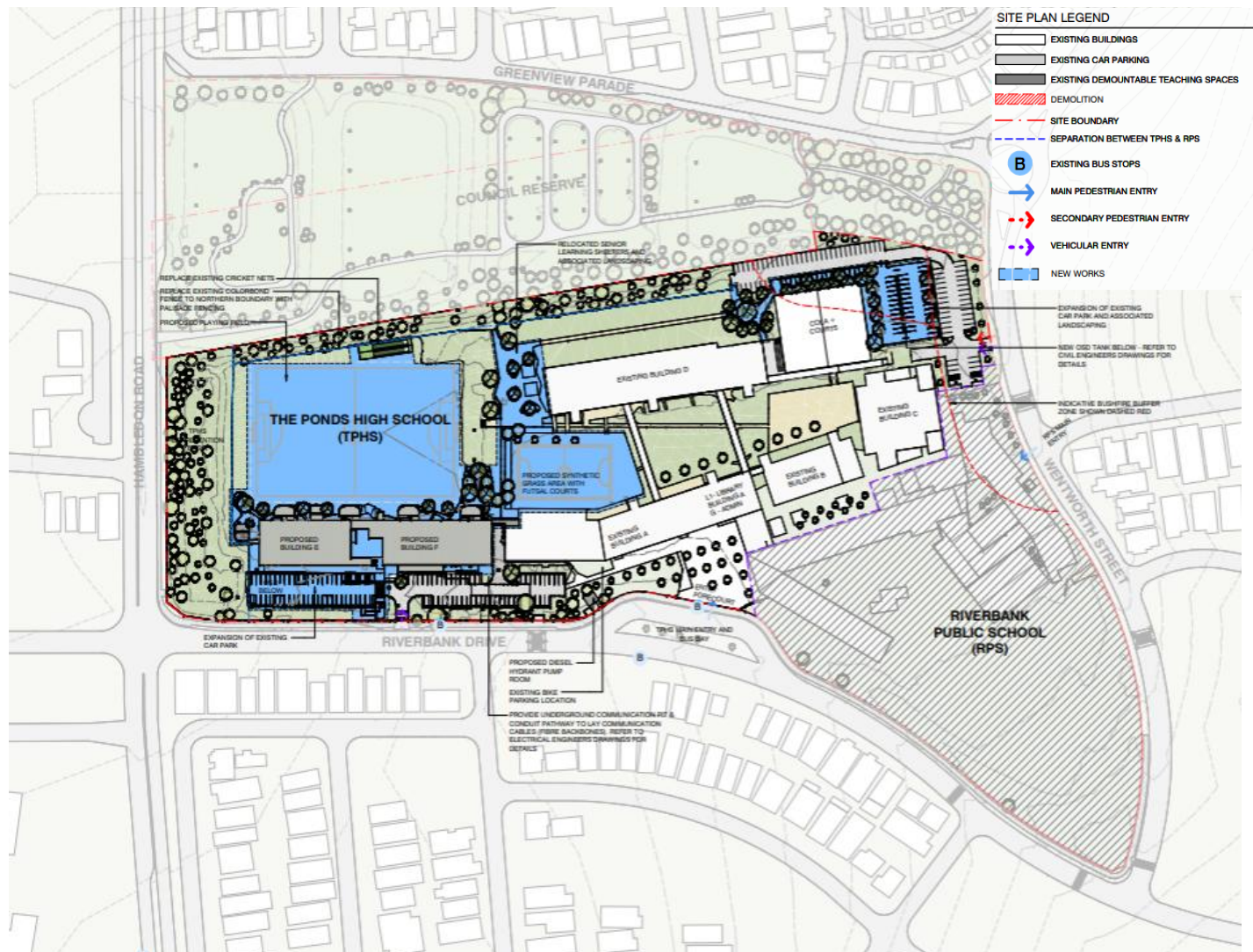


Figure 3: Campus Site Plan - Indicative (Source: DJRD Architects)



Figure 4: Indicative External Site Elevations (Source: DJRD Architects)



Figure 5: Indicative 3D Images - Photomontage of buildings E and F facing southwest from the centre of TPHS (Source: DJRD Architects)



Figure 6: Indicative 3D Images - Photomontage facing buildings E and F from Riverbank Drive facing northwest (Source: DJRD Architects)



Figure 7: Indicative 3D Images - Photomontage of building E and F from Riverbank Drive facing northeast (Source: DJRD Architects)

2.2.1 Design Development

Built Form and Scale

Block E is proposed as a 3-storey building and Block F is proposed as a 4-storey building which are both not greater than the four storeys permitted without consent in Section 3.37 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP).

Building Façade

The design of the façade is a critical element of the buildings proposed and has been designed to contribute to the aesthetic of the streetscape, maintain consistency with the existing school building design colour and aesthetic, as well as the functional performance of the building. The colours and materials selected have been used to blend into the natural landscape, including the trees which are prominent within the area. The façade design incorporates lighter tones on the upper sections of the building, complemented by vertical patterns that break up the façade and introduce a subtle visual rhythm along the streetscape. These design elements and principles are illustrated in Figure 5, Figure 6 and Figure 7, providing a clear representation of the intended colour palette and architectural expression upon completion.

Views and Vistas

The school upgrades have been designed to draw inspiration from the surrounding natural environment, incorporating its elements into the architectural and landscape design. The buildings have been strategically positioned with a north-facing orientation, offering views over the upgraded sports field. This outlook onto green open spaces fosters a welcoming and pleasant environment for the school community, while the landscape design and carefully selected plantings contribute to enhancing local biodiversity.

Overshadowing and access to sunlight

The activity was designed to avoid casting shadows on neighbouring properties between 9am and 3pm throughout the year. This ensures that the additional buildings will not negatively impact the solar access of surrounding homes. The design has also sought to avoid excessive overshadowing of the proposed play areas, particularly during mid-winter when overshadowing is at its greatest.

Design Quality Principles

DJRD, the appointed architects, have prepared a comprehensive set of plans and a design report demonstrating how the proposal aligns with the *Design Guide for Schools* published by the Government Architect NSW and the Design Quality Principles outlined in Schedule 8 of the TI SEPP. The responses are provided below:

Principle 1 – Responsive to context

TPHS is an existing school with a strong quadrangle arrangement of buildings framing a central play space.

The two new buildings maintain the alignment of the existing school buildings allowing direct site connections, continuation of the quadrangle organisational structure and optimisation of a northern orientation in line with passive sustainable environmental design principles.

The new buildings are strategically set back from Riverbank Drive to reduce bulk and scale in a residential area.

Caring for Country is embedded in the design via the Connecting with Country (CwC) process and aims to create opportunities for learning and appreciation of Country via initiatives such as, indoor and outdoor connection, different learning spaces and gathering areas - from quiet and intimate to communal, colour scheme inspiration by CwC themes and landscaping planting strategy to incorporate native species.

Opportunities to further connections with First Nations Community and Country have been identified in placeholders for Local First Nations artworks, selection of endemic plant species within the landscaping, colours of Country reflected in the facade material selections.

Principle 2 – Sustainable, efficient and resilient

The proposed activity has been designed to achieve 5-star Green Star Certification and aligns with the department's Sustainability Framework. The design pursues buildings that are easy to construct, durable, resilient and adaptable. Built on a modular grid, the buildings will be flexible in the future allowing different functions as needed, reconfigurability of internal walls can easily be achievable.

Positive environmental measures promote passive design principles, such as indoor air quality, natural lighting, cross ventilation, thermal and acoustic comfort. Practical solutions such as façade screening, shading devices responsive to façade orientation will minimize glare, solar gain and reduce heat load on the buildings. Material selection addresses durability, sustainability, embodied energy and life cycle

Principle 3 – Accessible and inclusive

The new school buildings have been designed to be accessible and inclusive to all teachers, students and the community. The proposal includes a new accessible pedestrian entry point from the main entry off Riverbank Drive, which will connect into the existing accessible pathway network across the campus.

The new buildings connect to the covered walkways, ramps and stairs and ensure access to all buildings and external grounds, assembly area and the Hall. New lift access to all levels of the three/four storey buildings is provided.

Principle 4 – Healthy and safe

The proposal ensures good relationship between buildings and the external environment, creating opportunities for connection between indoor and outdoor learning spaces.

A number of safety measures have been proposed such as higher balustrades and full height screening devices on staircases. Students' circulation or walkways wraps around buildings facing internal gathering spaces and play areas, avoiding students' exposure towards the street.

Passive surveillance and anti-bullying measures have been considered; most toilets will be 'air-line style' with their own basin in each cubical.

The site already has a perimeter high palisade fence, with access-controlled gates, no changes proposed.

Principle 5 – Functional and comfortable

The buildings are placed on site with a north-facing aspect overlooking the now formalised sports field. Overlooking green open areas creates a pleasant environment for the school community, a

variety of outdoor spaces and expansive views. The landscape design and planting selections will enhance local biodiversity.

Shadow diagrams have been produced and show no impacts on neighbouring properties. Each learning space has access to natural light and ventilation, outlook and privacy as required within the EFSG. Furthermore, the site is not subject to major noise issues due to surrounding residential areas.

Principle 6 – Flexible and adaptable

The proposed design provides for future needs, environmental performance, flexibility of space and ease of adaption. Modular grid provides flexibility allowing future internal reconfigurability and function change.

Learning spaces are arranged to support a variety of teaching and learning styles, with an emphasis on collaboration, adaptability, and shared use. The activity encourages flexible groupings and can accommodate both individual and collective activities. This approach allows the school to respond to evolving needs over time, without being tied to a fixed spatial configuration.

Principle 7 – Visually appealing

The proposal identifies a number of opportunities for Connecting with Country artworks and experience with Country. Artwork elements will express relevant patterns, colours related to site context and aboriginal heritage.

Generous landscaping and native planting will break up the built form and contribute to overall aesthetic of the school and the streetscape. The design of Buildings E and F has been carefully considered to ensure visual harmony with the surrounding neighbourhood. To reduce the perceived bulk and visual prominence, both buildings are set back behind the car park, creating a buffer between the development and the residential properties across Riverbank Drive. A two-tone colour scheme has been applied, with lighter shades on the upper levels and darker tones at the base, helping the buildings blend more subtly into the streetscape and reducing visual impact for passing vehicles. Additionally, vertical colour elements have been incorporated into the façades to break up the massing and introduce architectural interest, contributing to a more refined and visually appealing design.

2.2.2 Connecting with Country

The Connecting with Country Framework acknowledges the different Aboriginal Nations in NSW, all with different natural and cultural systems, making each school site unique. For this reason, there is no universal design for Connecting with Country. How the site relates to its context, its community, natural environment, built environment, and cultural setting, will inform the project.

A Connecting with Country Sense-checking workshop was undertaken with the elders of the land. The architectural team presented the schematic design for the activity with the design reviewed through a cultural lens, the elders provided key reflections and activities including cultural review of designs, yarning & reflection, design alignment and ongoing commitments to better connect the design with the history of the land. The design has highlighted opportunities for deeper cultural embedding through providing locations where aboriginal art can be implemented and the use of materials being more closely designed with the connecting landscape. The landscape concept is

inspired by the ecosystem with the areas creating a continuous and flowing connection across the site.

To strengthen the connection to Country, the planting palette includes carefully selected Indigenous species that are native to the area, enhancing biodiversity and cultural relevance. Ongoing liaison and engagement with Dharug knowledge holders will be undertaken as a long-term strategic follow up to ensure the Country values are reflected.

2.2.3 Sustainability and Climate Change

An Ecological Sustainable Development (ESD) Report was prepared for the proposed activity.

The report evaluates the design of the proposed new buildings and outlines how ESD principles are integrated into the design, construction, and ongoing operation of the activity.

The report identifies a target of 67 points for this project under the Green Star Design & As Built v1.3 framework. To support the achievement of this target, Mitigation Measure SCMM1, as outlined in Appendix 1 (Mitigation Measure SCMM1), has been integrated into the design.

The ESD report has also considered exposure of the activity to extreme climate events & risks and has considered variables and climate risk interventions for the following:

Bushfire: The design considers removing vegetation near buildings, using non-combustible materials, sealing the building to reduce smoke infiltration, and incorporating renewable energy systems.

Heatwave: The design incorporates passive thermal principles such as shading, and light-coloured roofs to reduce heat gain and mitigate the urban heat island effect. Renewable energy systems and future-proofing strategies for HVAC and electrical equipment are included to address changing climate conditions. Cool outdoor areas, resilient paving materials, and tree planting to act as shade structures are proposed to support comfort and safety during extreme heat events.

Flood: To improve flood resilience, the design adopts higher drainage standards, including increased average recurrence intervals and the use of permeable surfaces. All critical infrastructure, such as switch rooms and substations, are positioned above the designated flood level. These measures aim to reduce flood risk and maintain operational continuity during extreme weather events.

Storm: The services and structural designs account for potential storm risks and extreme weather conditions, incorporating strategies to withstand more severe events, a Flood Emergency Response Plan has been prepared (Appendix 4) to provide evacuation measures for the safety of staff and students on the premises. These measures aim to enhance the building's durability and operational reliability under future climate scenarios. By proactively addressing environmental stressors, the activity supports long-term resilience and safety.

The above interventions have been adopted in conjunction with specialist assessments addressing bushfire, flood and stormwater (Mitigation Measures OPFMM1, OPMM2, SWMM5, BFMM1, BFMM2 & BFMM3).

2.2.4 Landscaping

The proposed landscaping scheme has been developed to enhance the ecological, educational, and recreational value of the site while complementing the surrounding natural environment. It is noted that 144 trees are proposed to be planted. The design includes sensory and buffer planting around proposed Buildings E and F, carparks, pedestrian links, and outdoor learning areas. These elements are informed by the Landscape Concept Design Report prepared for the activity, which outlines species selection, canopy dimensions, and indicative planting locations.

The site is naturally framed by existing vegetation, with tree coverage concentrated along the western and southern boundaries. Additional tree planting is present within the existing courtyard area. A bushland area within Douglas Reserve adjoins the eastern boundary, contributing to the site's ecological context and reinforcing its connection to the broader landscape.

Planting Typology

The planting palette is based on species native to the Cumberland Plain Communities, specifically *Shale Hills Woodland* and *Shale Plains Woodland*. These species were selected for their suitability in providing canopy cover, shade, and visual cohesion. The distribution of plantings in pocket areas reflects growth habits, seasonal colour, texture, and landscape character, while reinforcing the Chain of Ponds concept and connection to Country.

Planting Strategy

A planting strategy has been developed that specifies plants suited to pedestrian linkages, outdoor learning areas, sensory zones, and buffers to soften edges to the site and car parking areas. Proposed Indicative Landscape is shown below in Figure 8.

Synthetic Turf

Synthetic turf will be installed in the central area of TPHS, designated for the future futsal courts. The advantages of synthetic material include lower maintenance costs, a consistently even playing surface and durability in all weather conditions. Unlike natural grass, synthetic turf is not affected by rain, allowing students to enjoy more playtime even during periods of unpredictable weather. This contributes positively to student health and wellbeing by promoting regular physical activity throughout the year.



Figure 8: Proposed Indicative Landscape Masterplan (Source: Site Image Landscape Architects)

2.2.5 Access and Parking

Pedestrian access

A Transport and Accessibility Impact Assessment (TAIA) has been prepared by SCT Consulting (Appendix 2). The school is currently supported by footpaths along most surrounding streets and six pedestrian crossings, three of which are supervised on Riverbank Drive and Wentworth Street, with the main pedestrian entrance located adjacent to the dedicated bus bay on Riverbank Drive. A number of initiatives aimed at improving safety and access to the school are being considered to the surrounding roads and public domain. These initiatives will be assessed and implemented outside of the scope of this REF and subject to a Heads of Agreement for shared use with Blacktown City Council.

Cycling/ridable access

The existing cycling network includes shared paths along Riverbank Drive and Wentworth Street, which connect to a wider network of shared paths, providing a safe and convenient route for students cycling to and from school. The school currently offers 94 bicycle and 10 scooter parking spaces, with an additional 10 bicycle spaces proposed as part of the school upgrades to accommodate increasing demand, as the current facilities are well utilised.

Kiss and drop

Existing kiss and drop facilities are located on Riverbank Drive and Wentworth Street. Other streets surrounding the school provide parking that services 'park and walk' initiatives. No changes to the kiss and drop are proposed.

Vehicle access and parking

The current vehicle entrances to TPHS are located on both Riverbank Drive and Wentworth Street. Surface car parks are located immediately next to the driveways within the school boundary. There are currently a total of 138 car parking spaces over the northern and southern parking locations. It is noted a number of parking spaces in the northern location are currently unable to be used due to the placement of demountable teaching spaces, which is being addressed through this activity.

The proposed activity does not seek to change the existing student and staff numbers but seeks to provide an additional 90 car spaces on TPHS as part of the activity. The provision of additional off-street parking for staff is expected to ease congestion on surrounding roads, thereby enhancing the safety and efficiency of kiss-and-drop/pick-up zones, bus operations, and active travel routes. The additional car spaces are spread over the Northern and Southern car parks as follows:

- Northern Car Park
 - Existing – 68 spaces
 - Proposed – 129 spaces
- Southern Car Park
 - Existing – 70 spaces
 - Proposed – 99 spaces

2.2.6 Construction

A preliminary Construction Management Plan was prepared for the activity. The indicative timeline for the activity anticipates the commencement of physical construction works in 2026, with the new facilities expected to be operational by 2028.

To ensure seamless integration of all design elements during construction, four key milestones have been established for the activity:

- Milestone 1 – The relocation of three demountable buildings from the construction zone and the installation of a synthetic grass area with futsal court line markings will be completed as part of the initial construction phase.
- Milestone 2 – Construction works under this milestone will include the delivery of the new buildings, the upgrade of the existing substation, installation of new on-site detention (OSD) and rainwater tanks, and the expansion of the southern car park.
- Milestone 3 – A number of demountable buildings will be reassessed at completion of Milestone 2, with the removal of balance of demountables following the completion of Milestone 2.
- Milestone 4 – The works will include the upgrade of the central playing field, construction of external landscaped areas, and the expansion of the northern car park to complete the final stage of site works.

Prior to the commencement of construction, the appointed Principal Contractor will prepare a final Construction Environmental Management Plan (CEMP), including a Construction Traffic and Pedestrian Management plan. This plan will detail the management of traffic, pedestrian, and cyclist movements throughout the construction period, ensuring safe and efficient access to and around the site. The plan will also identify the types of construction vehicles expected to access the site and outline the designated travel routes to be used during the construction of the proposed activity.

Construction Hours

Construction hours will be as follows:

- 7:00am to 6:00pm, Monday to Friday
- 8:00am to 1:00pm, Saturday
- No work without prior approval on Sundays and Public Holidays

2.2.7 Demolition

The proposed activity involves the demolition of existing structures to facilitate the proposed upgrades to TPHS. A Demolition Plan has been prepared for the activity to support this component of works as shown in Figure 9. The demolition works will involve the removal of demountable teaching spaces and associated hardstand areas, cricket nets, fencing, outdoor learning shelters and selected trees. The demolition is required to facilitate the future construction and landscaping works for the proposed permanent school buildings E and F and to make space for the relocation of the cricket nets.

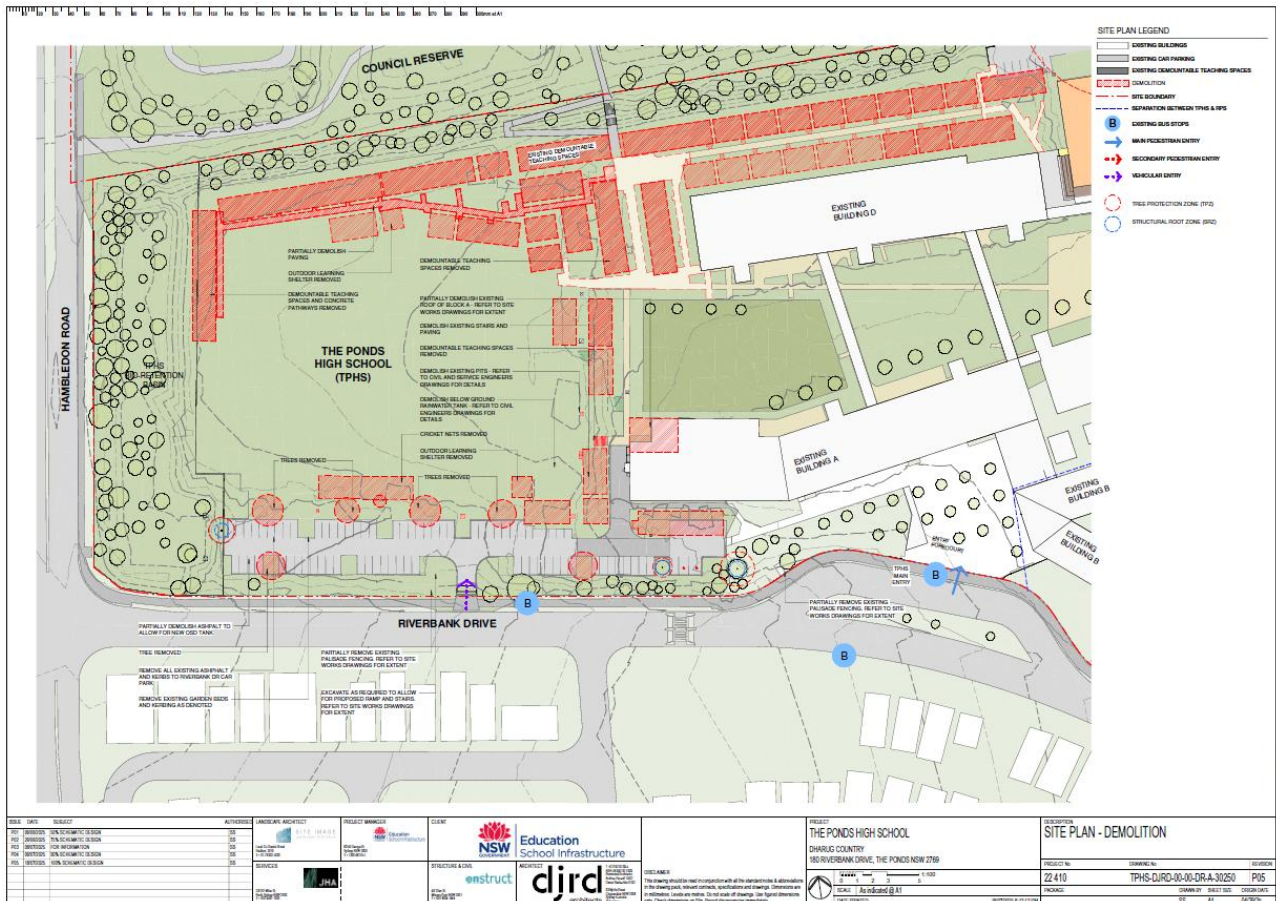


Figure 9: Indicative Demolition Plan. (Source: DJRD Architects)

2.2.8 Construction Waste Management

A Construction Waste Management Plan (CWMP) has been prepared for the activity and estimates the volume of waste and recyclable materials to be generated during the construction phase. Waste will be stored in bins provided by a contractor with collection activities to occur within the approved construction hours. During the construction of the activity, three car spaces in the southern carpark will be dedicated as a waste storage and collection area accessed from Riverbank Drive, however this is to be confirmed within the Construction Environmental Management Plan. All waste generated on site will be transported to an appropriately licensed resource recovery facility and/or landfill site. Excavated material will be reused onsite if assessed as suitable for onsite reuse. Material requiring offsite disposal must be disposed in accordance with the NSW EPA (2014) Waste Classification Guidelines. This has been addressed as part of Mitigation Measures identified in Appendix 1.

2.2.9 Earthworks

The civil engineer used a 3D model to calculate the approximate volume of bulk earthworks applicable to the proposed works. The bulk earthwork volumes are shown in Table 2 and Table 3 noting no bulking factor has been applied to the bulk excavation volumes. Figure 10 and Figure 11 represent the indicative location of cut and fill necessary over the site.

Table 2: Proposed Bulk Earthworks Volumes (Indicative)

Name	Cut Volume (m³)	Fill Volume (m³)	Balance (m³)
Cut and Fill Earthworks	2,677	3,005	328 (Fill)
Spoil	480	-	-
Cut and Fill Earthworks Including Spoil	3,157	3,005	152 (Cut)
Topsoil Stripping	3,798	-	-

Table 3: Northeastern Carpark Bulk Earthworks Volumes (Indicative)

Name	Cut Volume (m³)	Fill Volume (m³)	Balance (m³)
Cut and Fill Earthworks	808	356	452 (Cut)
Spoil	20	-	-
Cut and Fill Earthworks Including Spoil	828	356	472 (Cut)
Topsoil Stripping	392	-	-

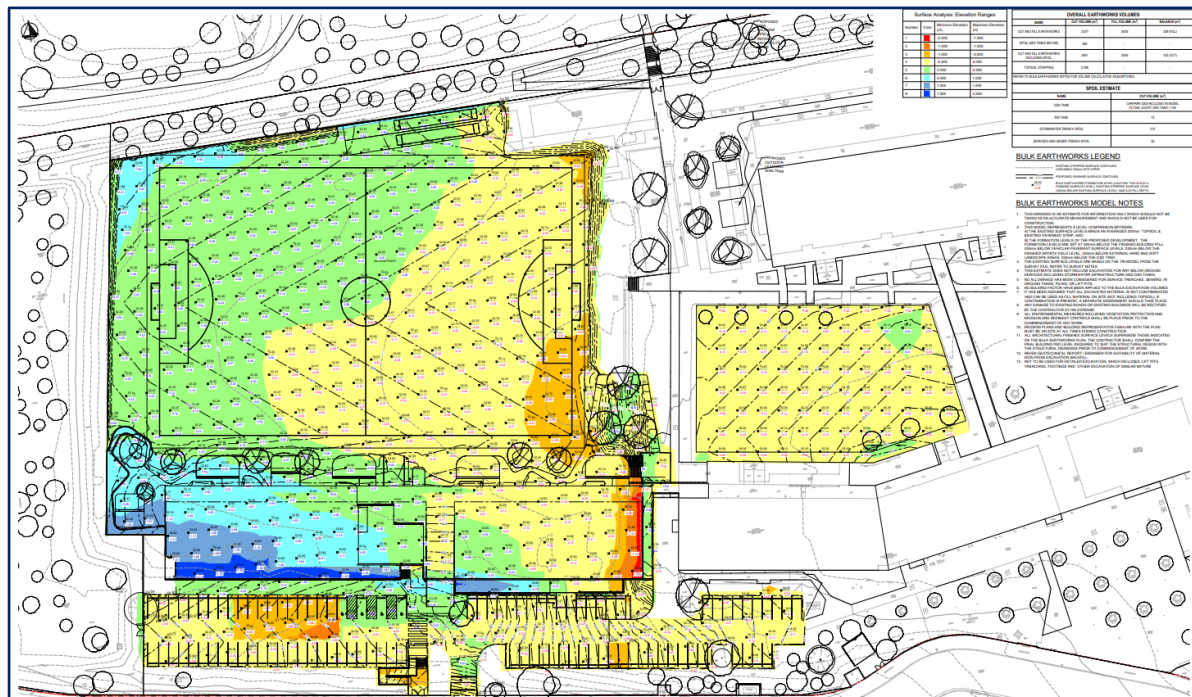


Figure 10: Proposed Indicative Bulk Earthworks Plan (Source: Enstruct)

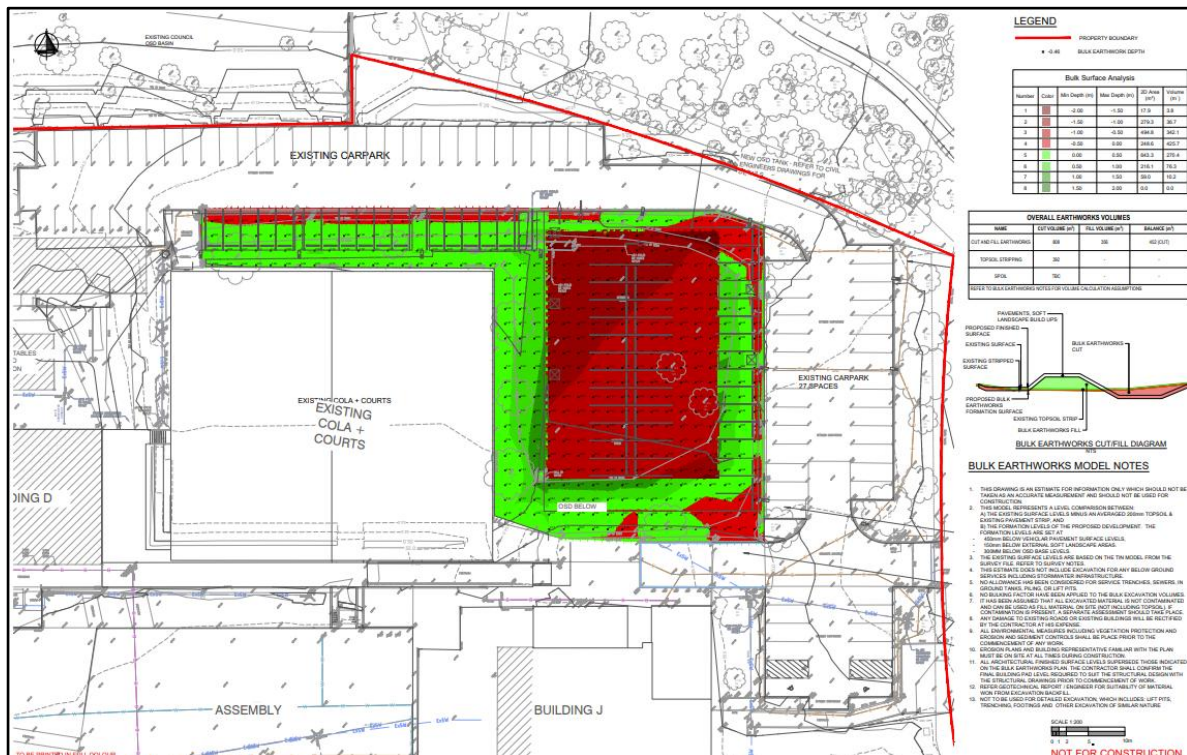


Figure 11: Northeastern Carpark Indicative Bulk Earthworks Plan (Source: Enstruct)

2.2.10 Remediation

Prior remediation works were completed at the site for the construction of the school with a site audit noting the works as complete. An updated Detailed Site Investigation (DSI) has also been obtained which confirms the site is suitable for the activity.

No further remediation works are required as part of the proposed activity. This is further discussed in Section 6.3.

2.2.11 Tree and Vegetation Removal

The site has been largely cleared of vegetation due to the development of the existing school. An Arboricultural Impact Assessment (AIA) was undertaken for the activity to evaluate the effects of the proposed activity and identified a total of twenty-four trees for removal.

The AIA evaluates tree significance using a defined set of criteria to determine the importance of each tree on the site. Significance is rated on a scale from high to low, based on the number of affirmative responses to six key questions:

1. Is the tree of botanical interest, or is it listed in a significant tree register or heritage listing under Federal State or Local Regulations?
2. Is the tree visually prominent in the locality?
3. Is the tree well structured?
4. Is the tree in good health and/or does it display signs of good vigour?
5. Is the tree typically formed for its species?

6. Is the tree currently located in a position that will accommodate future growth?

The significance rating are determined as follows:

- High: ≥ 4 affirmative answers
- Medium to High: 3.5 affirmative answers
- Medium: 3 affirmative answers
- Low to Medium: 2.5 affirmative answers
- Low: ≤ 2 affirmative answers

Eight of the trees for removal are located within the building footprint and the southern carpark area. Four of these trees are assessed as having medium to high significance, while the remaining four are of low significance.

Eight of the trees for removal are situated within the futsal court area and a further eight are located within the northern carpark works area. All trees in these two locations are considered to be of low significance.

2.2.12 Utilities and Services

Electrical and Telecommunication Services

An Electrical Report has been prepared for the activity to support the proposed activity.

- **Electrical Services:** Endeavour Energy is the electricity supply authority for the Blacktown Local Government Area, including TPHS. The school is currently serviced via a direct feed from Substation S32795, located on Riverbank Drive. To accommodate the new buildings, a new main switchboard and associated distribution boards are proposed. The existing substation will be upgraded to meet the increased electrical demand and site requirements.
- **Telecommunication Services:** The school's telecommunications infrastructure currently includes individual communication racks connected to a central Campus Distributor (CD) located in the main communications room. The CD has been assessed to have sufficient capacity to support the proposed expansion, and no upgrades are anticipated.

Water and Sewer Services

A hydraulic and fire services design report has been prepared for the activity. To support the proposed activity, the following is proposed:

- **Sewer Services:** The new buildings will connect to the existing school sewer drainage system. No new sewer mains are required, as the existing infrastructure is deemed sufficient to accommodate the additional load.
- **Water Supply:** A Sydney Water main located on the southern side of Riverbank Drive will be utilised to meet the increased water demand from the new buildings. Flow assessments indicate that the main has adequate capacity to support the activity.
- **Hydrant Services:** Given the scale of the proposed four-storey building, a diesel-powered hydrant pump will be installed to ensure compliance with fire safety requirements. The existing water main is capable of supplying the hydrant system. A Section 73 Notice of Requirements

(NOR) will be obtained prior to construction to confirm connection availability and to verify that no upgrades or adjustments to the water infrastructure are necessary.

- Potable Water: Potable water will be extended from the existing cold water services currently serving TPHS and RPS. These extensions will supply cold water to all required fixtures and fittings within the new buildings.

Staging

No staging is proposed.

2.2.13 Operation

The upgrades will maintain existing student and staff capacity for the high school. Standard school hours of operation are maintained between 8:00am and 4:00pm, Monday to Friday. Once the upgrades are operational, out of hours use of school facilities will be subject to exempt development provisions under section 3.39(1)(j) of the TI SEPP.

Waste Management

The existing dedicated waste management area will be maintained at the northern car park adjacent to existing Building C access from Wentworth Street.

An Operational Waste Management Plan (OWMP) has been prepared for the activity. With no proposed increase in student numbers, the OWMP does not anticipate any increase in waste and recycling volumes. General waste and recycling collection frequency will remain weekly, with waste collected by a private waste contractor from the same position.

Waste collection vehicles will continue to enter and exit the school via Wentworth Street.

2.3 Related activities

Works subject to a complying development certificate (CDC) are occurring concurrently at RPS and are not expected to impact the works associated with this activity. The works at RPS includes site preparation, demolition, extension and reconfiguration of existing Building D and extension of the covered outdoor learning area (COLA). Refer to Section 6.11 on Cumulative Impacts of this REF for further details.

A potential pedestrian connection and on-site infrastructure (OSI) is proposed at the northern recreation area of TPHS fronting Greenview Parade, alongside an upgrade of the grassed area to support its use as a play space. This scope of works will proceed only upon execution of a Heads of Agreement with Council and subsequent planning approval.

3. Proposal Need and Alternatives

3.1 Proposal Need

The existing high school has experienced a significant increase in student enrolments due to rapid population growth within The Ponds area, located in the Alex Avenue Precinct. As more families have moved into the locality, student enrolments have exceeded initial projections, resulting in the installation of temporary demountable classrooms. These structures have expanded across the northern portion of the school site, encroaching into designated car parking areas. The proposed activity seeks to construct permanent facilities to replace the demountables and deliver upgrades to the existing school infrastructure.

3.2 Alternatives

The proposed activity has been developed following a consideration of options and alternatives to address the need identified above. A summary of the options considered is provided in Table 4.

Table 4: Assessment of Options and Alternatives

Option	Discussion	Preferred Option
Option 1: The Proposed Activity	The proposed activity will allow for the removal of demountables and provide fit for purpose educational facilities for students and staff.	Option 1 is preferred as it addresses the identified need for fit-for-purpose educational facilities.
Option 2: Alternative Design	Providing 18 teaching spaces to RPS and 1 teaching space and specialist spaces to TPHS. The scope includes 3 wood/metal workshops, science laboratories, lecture theatre, VET kitchen and staff zones.	Option 2 is not preferred as it fails to meet the short-term enrolment demands of both schools and allocates additional learning spaces to the primary school, where student numbers are currently declining. Additionally, relocating demountable teaching spaces from the primary to the high school site to facilitate construction would significantly disrupt school operations.
Option 3: Do Nothing	In the absence of any action, students and staff will rely on existing demountables or other interventions to reduce service need.	Option 3 is not preferred as it does not address the identified need for fit-for-purpose educational facilities.

4. Statutory and Strategic Framework

4.1 Permissibility and Planning Approval Pathway

The TI SEPP aims to facilitate the effective delivery of infrastructure and educational establishments across the state and provides that various developments for the purposes of a government school are permitted without consent. The proposed activity is development permitted without consent as outlined at Table 5.

Table 5: Description of Proposed Activities under the TI SEPP

Division and Section within TI SEPP	Description of Works
Chapter 3 Part 3.4 Section 3.37	The proposed activity comprises construction, operation or maintenance on behalf of a public authority within the boundaries of an existing or approved government school, including: • Construction, operation or maintenance of a permanent classroom. • Construction, operation or maintenance of a car park. • Construction, operation or maintenance of a sporting field or any type of court used for sports that uses synthetic turf. • Security measures, including fencing, lighting and security cameras. • Demolition of structures or buildings (unless a State heritage item or local heritage item). The proposed activity involves the construction of building(s) with a maximum height of four storeys high, which is less than the greater of four storeys or the height limit of 9m under Appendix 7 Alex Avenue and Riverstone Precinct Plan 2010 of the SEPP (Precincts—Central River City) The Design Quality Principles set out in Schedule 8 of the TI SEPP and the Design Principles set out in the Design Guide for Schools have been considered as set out in section 2.2.1 of this report
Part 3.4, Section 3.38	<u>Notification to carry out development of certain development under section 3.37</u> Section 3.38 of TI SEPP sets out notification requirements to the local Council and occupiers of adjoining land. Written notice of the intention to carry out the activity will be provided to Council and neighbours before the activity is determined. Any response received within 21 days of the notice will be considered by the Determining Authority. The responses received during the notice period will be taken into consideration. Statutory consultation requirements are set out in Section 5 of this REF.
Schedule 8	<u>Design quality principles in schools – Chapter 3</u> The activity has been designed in accordance with Schedule 8 of the TI SEPP and the Design Guide for Schools as summarised in section 2.2.1 of this report.

Activities permissible without consent require environmental impact assessment in accordance with Division 5.1 of the EP&A Act and are assessed and determined by a public authority, referred to as the determining authority. The department is the proponent and determining authority for the proposed works.

The activity is not within or nearby to a wilderness area (within the meaning of the Wilderness Act 1987) and therefore will not have an effect on any wilderness area. Therefore, assessment under section 5.5(3) of the EP&A act is not required

Additionally, section 5.7 of the EP&A Act states that an activity that is likely to significantly affect the environment must be subject of an Environmental Impact Statement (EIS) rather than an REF. The effects of the activity on the environment are considered in Section 6 and have been assessed as a less than significant impact and can therefore proceed under an REF assessment.

Section 171(1) of the EP&A Regulation notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the guidelines that apply to the activity.

The *Guidelines for Division 5.1 Assessments* (DPE June 2022) and the *Guidelines for Division 5.1 assessments Consideration of environmental factors for health services facilities and schools Addendum* (DPHI, October 2024) provide a list of environmental factors that must be taken into account for an environmental assessment of the activity under Division 5.1 of the EP&A Act. These factors are considered in detail at Section 6.

4.1.1 Existing Development Consent

A search for all development consents applying to the site was undertaken on Blacktown City Council's DA tracking website. The development consent(s) are listed in Table 6 below.

A request for all development consents applying to the site was submitted to Blacktown City Council under the *Government Information (Public Access) Act 2009* (GIPA Act) and the development consent(s) listed in Table 6 were identified.

Table 6: Development consents applying to the site

Development Application #	Description	Date Determined
CDC-25-01119	Alterations and additions to an existing school hall	14/08/2025
CDC-19-01551	Infrastructure SEPP School Development – 2 x Two Storey Demountable Classrooms to fulfill a temporary need for classroom space for regional growth while awaiting completion of permanent classrooms.	10/10/2019
DA-24-01312	Removal of existing school sign and installation of a new monument-style sign structure with a digital LED notification panel at The Ponds High School.	13/02/2025
SPP-17-00034	Alterations and additions to Riverbank Public School including internal refurbishments, removal of 19 car parking spaces for the construction of a two storey Connected Hub Building including classroom and amenities, construction of a covered outdoor learning area above an existing basketball court with associated landscaping works, kiss and drop zone along Wentworth Street and school signage.	25/10/2018
MOD-19-00148	Section 4.55(1a) modification to an approved 2 storey school building at Riverbank Public School at 25 Wentworth Street, The Ponds. The modification include removal of 'kiss and drop area.	23/05/2019

Development Application #	Description	Date Determined
	And deletion of Condition 7.7.4 relating to retaining walls.	
MOD-19-00149	Alterations and additions to Riverbank Public School including internal refurbishments, removal of 19 car parking spaces for the construction of a two storey Connected Hub Building including classroom and amenities, construction of a covered outdoor learning area above an existing basketball court with associated landscaping works, kiss and drop zone along Wentworth Street and school signage. The modified application related to amendments to the approved shade structure located within the primary school play area to the south of the site.	14/05/2019
MOD-19-00310	S4.55(1A) – Minimal environmental impact including enlargement of SPED play area and relocation of vegetable garden.	22/10/2019

4.2 Environmental Protection and Biodiversity Conservation Act 1999

The provisions of the EPBC Act do not affect the proposal as it is not development that takes place on or affects Commonwealth land or waters. Further, it is not development carried out by a Commonwealth agency or development on Commonwealth land, nor does the proposed activity affect any matters of national significance. An assessment against the EPBC Act checklist is provided at Table 7.

Table 7: EPBC Act Checklist

Consideration	Yes/No
Will the activity have, or likely to have, a significant impact on a declared World Heritage Property?	No
Will the activity have, or likely to have, a significant impact on a National Heritage place?	No
Will the activity have, or likely to have, a significant impact on a declared Ramsar wetland?	No
Will the activity have, or likely to have, a significant impact on Commonwealth listed threatened species or endangered community?	No
Will the activity have, or likely to have, a significant impact on listed migratory species?	No
Will the activity involve any nuclear actions?	No
Will the activity have, or likely to have, a significant impact on Commonwealth marine areas?	No
Will the activity have any significant impact on Commonwealth land?	No
Would the activity affect a water resource, with respect to a coal seam gas development or large coal mining development?	No

4.3 Other Approvals and Legislation

Table 8 identifies any additional approvals that may be required for the proposed activity.

Table 8: Consideration of other approvals and legislation

Legislation	Relevant ?	Approval Required ?	Applicability
State Legislation			
<i>National Parks and Wildlife Act 1974</i>	Yes	No	A Preliminary Indigenous Heritage Assessment and Impact Statement / Report (PIHAIR) was undertaken for the proposed activity. The PIHAIR concludes that the study area is not subject to any Aboriginal objects and places. Notwithstanding, a mitigation measure has been included that relates to unexpected finds. The proposal is not located within or adjacent to a NSW National Park.
<i>Rural Fires Act 1997</i>	Yes	No	The activity is not situated on bushfire prone land. Nonetheless, the overall property is marginally mapped as a “vegetation buffer” on the bushfire prone land map. In a precautionary approach the department has voluntarily applied bushfire protection measures.
<i>Water Management Act 2000</i>	No	No	The site does not contain riparian land.
<i>Biodiversity Conservation Act 2016</i>	No	No	The Biodiversity Values Map and Terrestrial Biodiversity Mapping confirm the site is not mapped as containing areas of significant biodiversity.
<i>Heritage Act 1977</i>	No	No	The Ponds High School is not listed on the department's s170 Heritage Conservation Register. The proposal does not involve any works within, or that would impact, any Commonwealth, State or Local heritage item, Heritage curtilage or heritage conservation area. Therefore, a heritage Impact Statement is not required to support the REF and no approvals required under the Heritage Act.
<i>Contaminated Lands Management Act 1997</i>	Yes	No	A previous Remediation Action Plan was implemented and a site audit report completed. An updated DSI has been obtained which confirms the site is suitable for the activity.
<i>Protection of the Environment Operations Act 1997</i>	Yes	No	An acoustic and vibration assessment has been undertaken to inform the Contractor's Construction Noise and Vibration Management Plan and to ensure compliance with relevant legislation, including the avoidance of 'offensive noise' as defined under the <i>Protection of the Environment Operations Act 1997</i> . The operational phase of the proposed school upgrades is expected to result in negligible additional noise impacts. Overall, the activity is not anticipated to generate any significant acoustic or vibration concerns.
<i>Roads Act 1993</i>	Yes	No	Initiatives to improve safety and access are being considered within the surrounding local roads, but will be assessed and implemented outside the scope of this REF.
<i>Local Government Act 1993</i>	Yes	Yes	Connection to the existing water and sewer supply is required. A Section 68 will be submitted prior to construction.

Legislation	Relevant ?	Approval Required ?	Applicability
<i>Mine Subsidence Compensation Act 1961</i>	No	No	The site is not within a mine subsidence district.
<i>Environmental Planning and Assessment Regulation 2021 (Section 171A)</i>	Yes	No	The site is situated within the Hawkesbury-Nepean conservation. Development should have a neutral or beneficial effect on water quality, safeguard aquatic and riparian ecosystems, and provide adequate mitigation measures in accordance with Chapter 6 of the Biodiversity and Conservation SEPP.
State Legislation – State Environmental Planning Policies			
<i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i>	Yes	No	Chapter 6, Section 6.13 is applicable as the site is located within the Hawkesbury-Nepean catchment, though the provisions relate to development requiring consent. Nonetheless, the development is anticipated to have a neutral or beneficial effect on water quality, safeguard aquatic and riparian ecosystems, and have provide adequate mitigation measures. Section 8.4(5) of the BC Act describes the effect of biodiversity certification in relation to an activity under Part 5 of the EP&A Act. The area of the proposed activity within the site is entirely biodiversity certified, therefore no further assessment of impacts to biodiversity is required. Chapter 2 of the Biodiversity Conservation Act 2016 has been addressed through the Arboricultural Impact Assessment, which evaluated the trees proposed for removal. Additionally, confirmation has been received from the ecologist that the site is located within Biodiversity Certified land. As a result, further assessment under Chapter 2, including Parts 2 and 3-4 relating to habitat protection (such as Koala Habitat), is not required, as these matters were considered during the certification process.
<i>State Environmental Planning Policy (Sustainable Buildings) 2022</i>	Yes	No	The proposed school activity has been designed to align with section 3.2 of the Sustainable Buildings SEPP, incorporating measures to minimise construction waste, reduce peak electricity demand through energy-efficient technologies, and optimise passive design to limit reliance on artificial lighting and mechanical systems. Infrastructure for renewable energy generation and storage, energy metering, and potable water efficiency has also been considered. Additionally, the embodied emissions associated with the activity have been quantified, ensuring compliance with the SEPP requirements.
<i>State Environmental Planning Policy (Resilience and Hazards) 2021</i>	Yes	No	A previous RAP was implemented and a site audit report completed. An updated DSI has been obtained which confirms the site is suitable for the activity.
<i>State Environmental Planning Policy (Industry and Employment) 2021</i>	No	No	The site is not located within the mapped Western Sydney Employment Area land application map and does not propose signage.

Legislation	Relevant ?	Approval Required ?	Applicability
<i>State Environmental Planning Policy (Precincts – Central River City) 2021</i>	Yes	No	The site is located within the Alex Avenue Growth Centre Precinct within the Central River City SEPP and is subject to <i>Appendix 7 Alex Avenue and Riverstone Precinct Plan 2010</i> . The activity exceeds the prescribed building height control, however complies with the storey provisions outlined in the TI SEPP. The proposal demonstrates alignment with the strategic intent of the TI SEPP by supporting the delivery of infrastructure that meets current and future educational needs.
<i>State Environmental Planning Policy (Precincts – Regional) 2021</i>	No	No	The site is not located within areas identified within the Regional SEPP.

4.4 Strategic Plans

Table 9 considers strategic plans that are relevant to the proposed activity.

Table 9: Consideration of applicable Strategic Plans

Strategic Plan	Assessment
NSW State Priorities	The NSW Government's 2024-25 Budget includes record investment in education funding, including a historic \$1.4 billion for new and upgraded schools in regional NSW. This targeted investment will ensure growing communities get access to a world class public education. The proposed activity directly responds to the State's priority of delivering new high quality learning spaces and facilities aimed at improving education opportunities and learning outcomes.
State Infrastructure Strategy 2022-2042	The provision of expansions to schools aligns with key objective of 'servicing growing communities' as it will deliver key infrastructure to meet the needs of a growing population.
School Infrastructure NSW Delivery Strategy 2023 – 2024	The proposed activity was announced as one of 23 new or upgraded schools across NSW as part of the 2023-24 NSW Budget and forms part of the Department's Delivery Strategy published by the NSW Department of Education in December 2023. The proposed activity is consistent with the Delivery Strategy as it provides for an identified new high school and would allow for the delivery of high quality, sustainable and contemporary learning environments.
Blacktown Local Strategic Planning Statement 2020	The Blacktown Local Strategic Planning Statement 2020 (LSPS) sets out the 20-year vision for land use in the LGA, special characteristics that contribute to the area, shared community values and how growth and change will be managed into the future. The LSPS will work in conjunction with the <i>Community Strategic Plan 2036</i> to set out the community's long-term vision for all planning activities. The LSPS acknowledges the role that Blacktown will play in the development of the LGA. Local Planning Priority 3 of the LSPS highlights the importance of delivering services and social infrastructure that respond to the evolving needs of the community. In alignment with this, Action 9 acknowledges the ongoing development of schools as a response to increased population densities projected in the North West Growth Area (NWGA). The proposed school upgrade directly

	supports this objective by providing enhanced facilities to meet the growing demand for educational infrastructure.
Blacktown Community Strategic Plan	The Blacktown Community Strategic Plan 2036 (Community Strategic Plan) communicates the communities' vision and mission. The project directly aligns with <i>Strategic Direction 1 Community Outcome 'Our local communities are welcoming, vibrant and inclusive, enabling individuals and groups to achieve their potential and the City to prosper as a centre of culture, creativity and learning'</i>. The proposal aligns with the Community Strategic Plan's objective to achieve this objective through the collaboration with education providers, such as the department, to advocate for and promote and facilitate the delivery of early learning opportunities.

5. Consultation

5.1 Early Stakeholder Engagement

Table 10 provides a summary of early stakeholder (non-statutory) consultation undertaken to inform project and preparation of the REF.

Table 10: Summary of Early Stakeholder Engagement

Stakeholder	Engagement
Project Reference Group (PRG)	PRG01 held 27/06/2022 PRG02 held 18/08/2022 PRG03 held 02/11/2022 PRG04 held 10/03/2023 PRG05 held 28/04/2023 PRG06 held 01/08/2023 PRG07 held 22/11/2023 PRG08 held 28/02/2024 PRG09 held 15/03/2024 – Project Update PRG10 held 03/04/2024 – Design Re-group PRG11 held 09/05/2024 – Stage 1 Review PRG12 held 29/05/2024 – Masterplan Update PRG13 held 20/08/2024 – Masterplan Endorsement PRG14 held 12/12/2024 – RPS Hall Design PRG15 held 01/04/2025 – Stage 2 Delivery – 50% Concept Design PRG16 held 21/07/2025 – Stage 2 Delivery – 50% Schematic Design
Project Control Group (PCG)	PCG01 held 15/06/2022 PCG02 held 24/11/2022 PCG03 held 17/01/2023 PCG04 held 14/06/2023 PCG05 held 08/12/2023 PCG06 held 29/07/2024 – Endorsement to proceed with Masterplan Option 1 into Business Case Addendum. (This meeting was combined with VM03) PCG07 held 14/05/2025 – Stage 2 Delivery – Concept Design Endorsement PCG08 held 11/06/2025 PCG09 held 31/07/2025 – Stage 2 Delivery – Schematic Design Endorsement PCG10 held 21/08/2025
Executive Steering Committee (ESC)	Meeting was held approximately once a month. Notable dates include Full Business Case (FBC) Option 1 endorsed by ESC on 31 July 2024, Stage 2 – Concept Design Endorsement on 14 May 2025 and Stage 2 – Schematic Design Endorsement on 11 August 2025.
Value Management (VM)	VM01 held 14/10/2022 VM02 held 09/12/2022 VM03 held 29/07/2024 – Masterplan Option 1 chosen as preferred.
Technical Services Group (TSG)	TSG01 held 01/07/2022 TSG02 held 03/08/2022 TSG03 held 10/11/2022 TSG04 held 01/05/2023

Stakeholder	Engagement
	TSG05 held 31/08/2023 TSG06 held 13/05/2025 – Stage 2 Delivery – Concept Design Endorsement TSG07 held 26/06/2025 TSG08 held 31/07/2025 – Stage 2 Delivery – Schematic Design Endorsement
School Design Review Panel (SDRP) & CwC	Three consultation sessions with the School Design Review Panel (SDRP) were held between mid-2022 and late 2023 as part of the project's design process. Throughout these sessions, the Panel provided recommendations relating to CwC, master planning, landscaping, and built form elements. The inputs and recommendations from the SDRP sessions have informed the activity's design approach and strategic planning outcomes.
Safety in Design (SiD) Workshop	SiD01 held 03/06/2025 – Stage 2 – 100% Concept Design SiD02 held 19/08/2025 – Stage 2 – 100% Schematic Design
Risk Workshop (RW)	RW01 held 26/06/2025
Blacktown City Council	An offer for a project update for a REF briefing was made to Blacktown Council and referred to the director of planning. Section 3.38 of TI SEPP sets out notification requirements to the local Council. Written notice of the intention to carry out the activity will be provided to Council before the activity is determined. Any response received within 21 days of the notice will be considered by the Determining Authority. The responses received from Council during the notice period will be taken into consideration.
Transport Working Group	The concept design proposal was presented at a Transport Working Group in September 2024 and the 90% Schematic Design and refined transport initiatives was presented at a second TWG in July 2025. The inputs and recommendations from TWG have informed the activity's design approach and strategic planning outcomes.
Local Community	October 2023 – Project Update - Announcement that early planning has begun for TPHS upgrade. December 2024 – Planning Update - Update on planning progress for both RPS and TPHS. Concept designs underway. March 2025 – Planning Update - Update on the planning progress for both RPS and TPHS. June 2025 – Project Update - Invitation to Community Information Session for the upgrade to TPHS. June 2025 – Information Pack - Information pack showing project overview for TPHS upgrade. Distributed a Community Information Session on 17 June 2025.

5.2 Statutory Consultation

Consultation will be undertaken in accordance with statutory requirements under the TI SEPP and having regard to the SCPP DPHI and the SCPP DoE. This includes:

- sending notices to adjoining neighbours, owners and occupiers inviting comments within 21 days
- sending notices to the local council and relevant state and commonwealth government agencies and service providers inviting comments within 21 days

- making the REF publicly available on the Planning Portal throughout the consultation period.

Comments received will be carefully considered and responded to.

6. Environmental Impact Assessment

This section provides an environmental impact assessment for the construction and operation of the upgrades to TPHS.

This section of the REF provides a detailed description of the potential environmental impacts associated with the establishment and construction of the new structures proposed on the site. Aspects of the environment, potentially impacted upon by the proposal, are considered, under the following subsections:

- Traffic, Access and Parking (Section 6.1)
- Noise and Vibration (Section 6.2)
- Contamination and Hazardous Materials (Section 6.3)
- Soils and Geology (Section 6.4)
- Hydrology, Flooding and Water Quality (Section 6.5)
- Aboriginal Heritage (Section 6.6)
- Ecology (Section 6.7)
- Bushfire (Section 6.8)
- Social Impact (Section 6.9)
- Other Issues (6.10)
- Cumulative Impact (6.11)

6.1 Traffic, Access and Parking

6.1.1 Existing Conditions

A Transport and Accessibility Impact Assessment (TAIA) was prepared by SCT Consulting (Appendix 2) to support the proposed upgrade to The Ponds High School. The school currently draws enrolments from a wide catchment area, spanning from Schofields Road in the north to Stanhope Parkway in the south, and is situated within the rapidly growing Alex Avenue precinct.

Access to the site is primarily via Riverbank Drive and Wentworth Street, with a single pedestrian entry point near the bus bay on Riverbank Drive. There are six pedestrian crossings servicing the school, three of which are supervised, as shown in Figure 12. The northern boundary of the site is constrained by a Council-owned detention basin, limiting access from that direction.



Figure 12: Existing Crossing Location (Source: SCT Consulting)

Public transport options include two nearby bus routes (734 and 752) and six dedicated school buses during peak periods. While Schofields and Tallawong stations are the closest rail options (approximately 2.4 km away), rail travel is not commonly relied upon as this distance is not considered a reasonable walking distance for most people.

Schofields Road, a state road located to the north of the site, serves as the primary vehicular corridor feeding into Hambledon Road, a sub-arterial route running north–south. The school currently provides 138 car parking spaces (70 accessed from Riverbank Drive and 68 from Wentworth Street) along with 94 bicycle and 10 scooter spaces to support active transport.

6.1.2 Impacts

Operation

The southern car park will increase from 70 to 99 spaces, while the northern car park will increase from 68 to 129 spaces. Additionally, 10 new bicycle spaces (equivalent to two racks) will be provided to support active transport. Notably, the project does not seek to increase student enrolments. Therefore, student travel demand to and from the school and staff parking requirements will remain the same as the existing situation. For this reason, traffic modelling is not warranted.

The TAIA recommends a number of initiatives identified in Figure 13 to the school, aimed at improving safety and access to the school. The initiatives have been summarised in Table 11, outlining their anticipated benefits and the proposed delivery pathway. This provides a flexible framework to guide implementation while allowing for adaptation as project needs evolve. A Travel Access Guide will also be introduced to inform students and staff of available infrastructure and encourage walking and cycling to school. Figure 13 illustrates the proposed transport improvements.

Table 11: Transport Initiatives

No.	Initiative	Benefit	Delivery authority & pathway
1	Install additional sheltered lockable bicycle/scooter parking and associated	Supports active transport by providing safe, weather protected facilities for	The activity provides an additional 10 bicycle parking

No.	Initiative	Benefit	Delivery authority & pathway
	storage (for helmets etc)	students and staff, encouraging cycling and reducing the reliance of cars.	spaces.
2	Install double barrier lines on Riverbank Drive	Improves road safety by discouraging unsafe U-turns near the kiss and drop area.	The department and Council.
3	Assist TPHS with the application for additional crossing supervisors	Enhances pedestrian safety by ensuring all school crossings are supervised, supporting safe access for students.	TPHS / TfNSW
4	Explore the potential for shared use of future Council car park (at Ken Birdsey Park) for staff	Additional off-street parking for staff will potentially ease congestion and improving safety around school access points. Additional on-site parking reduces demand for on-street parking and supports more efficient traffic flow.	The department and Council are in negotiations regarding this initiative.
5	Provide additional parking on-site for staff		The department has proposed an additional 88 car spaces as part of the redevelopment.
6	Implement a Travel Access Guide (TAG) that identifies safe active transport routes to school and use this to educate students, staff, parents/caregivers and the local community	The TAG promotes safe walking and cycling routes encouraging active travel among students and staff.	TAG developed as part of the activity; to be distributed by TPHS.
7	Engage a School Travel Coordinator (STC) for the first year to implement the School Travel Plan (STP) and develop a framework for its ongoing implementation	Supports implementation and monitoring of the STP fostering long-term sustainable travel behaviours.	STP developed as part of the activity.
8a, 8b, 8c	Implement new pedestrian crossing on Greenview Parade and new footpath links on Greenview Parade	Increase the number of students walking and cycling safely to school	These works fall outside the scope of the REF under consideration and would be subject to reaching a Heads of Agreement with Blacktown City Council

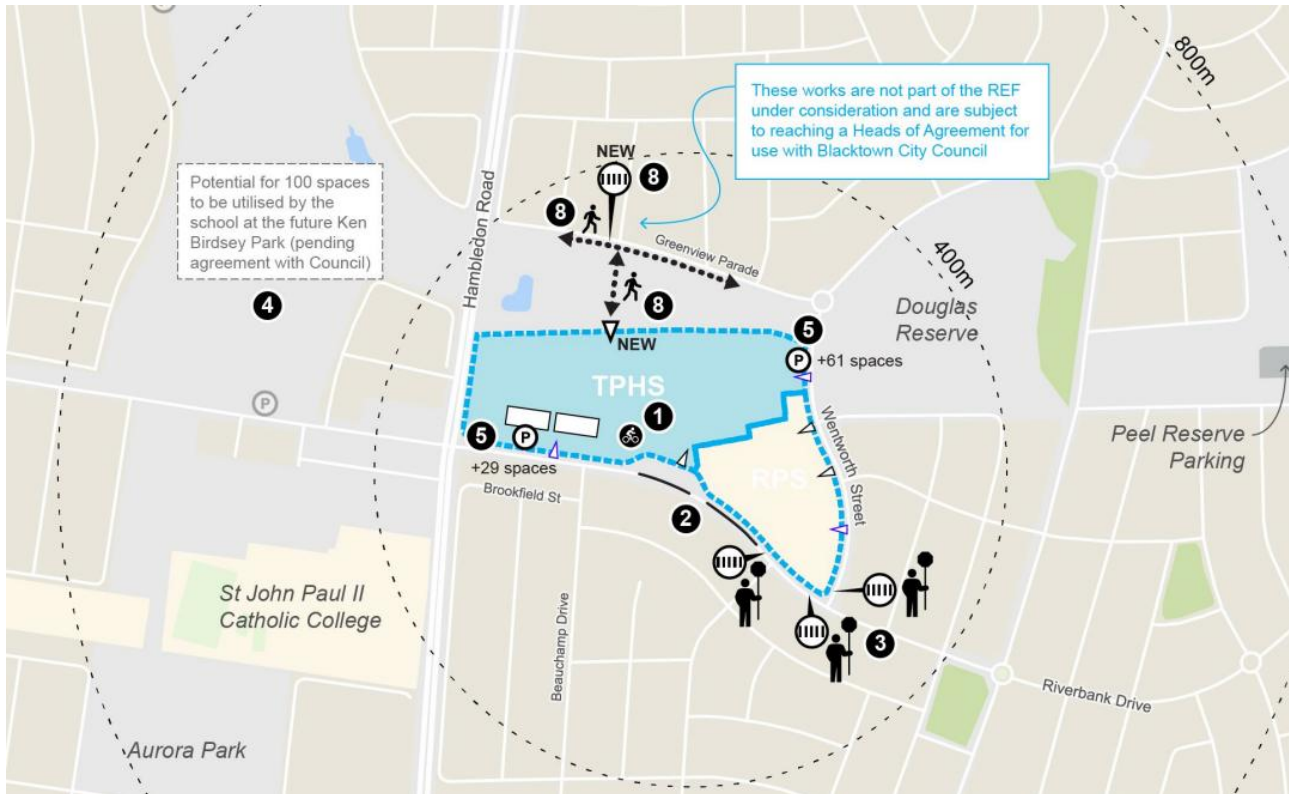


Figure 13: Proposed Traffic and Pedestrian Upgrades (Source: SCT Consulting)

The draft School Transport Plan (STP) aims to promote the use of sustainable transport modes, including walking, cycling, and public transport, among staff, parents, and students (Appendix 2). The STP proposes mode share targets for students and outlines specific tools and actions that will help achieve the set vision. It also provides an event operations plan, communications plan, data collection and monitoring framework, and governance framework.

There are no changes to the existing bus network and kiss and ride proposed as the activity does not seek to increase the capacity of student intake.

Updates to loading and emergency access, have been incorporated to reflect changes in the site layout and parking configuration.

A new loading zone is proposed within the expanded southern car park, adjacent to the new Building F. The relocation of the wood and metal learning spaces to the ground floor of Building F enables convenient loading and unloading via the southern car park. Preliminary swept path analysis for Heavy Rigid Vehicles (HRVs) indicates that, in certain instances, sections of the car park may need to remain clear to allow safe vehicle manoeuvring. This consideration will also be factored into the detailed Construction Traffic and Pedestrian Management Plan to ensure safe and efficient access during delivery periods during construction. (Figure 14).

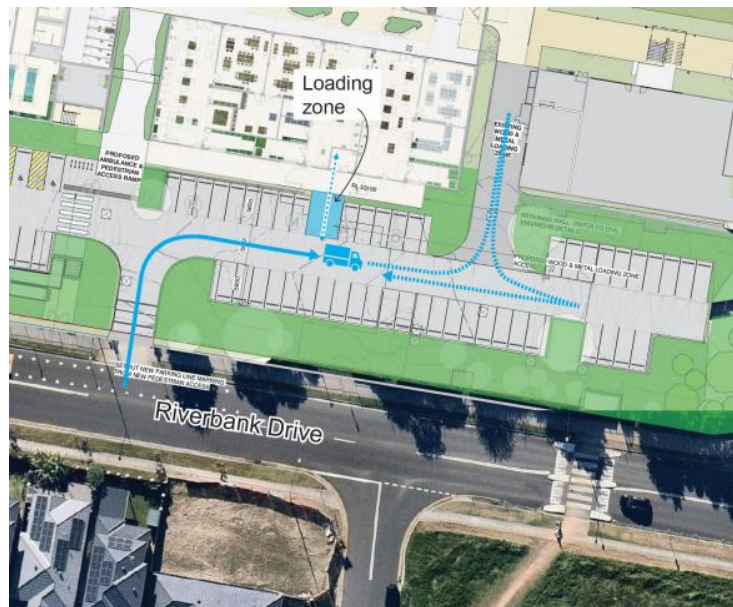


Figure 14: Loading at the wood and metal learning spaces. (Source: SCT Consulting)

Ambulance access will be facilitated via the central gap between the two new buildings, allowing direct access to the oval (Figure 15).



Figure 15: Emergency (ambulance) access to the oval. (Source: SCT Consulting)

Operational waste collection will continue to be managed from the northern car park, where a dedicated waste collection area and turning space currently exist and will not be altered by the carpark upgrade. This setup supports safe front-in/front-out vehicle movements, minimising disruption to other site activities. Operational waste access arrangements to the northern carpark will remain unchanged during construction and following the completion of the new buildings.. Figure 16 demonstrates the location of the existing waste area, and existing access for waste vehicles.



Figure 16: Operational waste servicing. Source: (SCT Consulting)

Construction

A preliminary Construction Traffic and Pedestrian Management Plan (CTPMP) has been prepared to guide road safety considerations during the construction phase of the project. The appointed contractor will be responsible for developing a detailed CTPMP prior to commencement of works as addressed in Construction Mitigation Measure 2 (CMM2) in Appendix 1.

It is anticipated that heavy vehicle access to the site will be via Old Windsor Road, Schofields Road, and Hambledon Road, entering through either the Riverbank Drive or Wentworth Street access carparks. Delivery and transportation activities including loading and unloading will be scheduled outside peak school hours, specifically avoiding the 8:00-9:30am and 2:30-6:00pm windows, to minimise disruption to the surrounding transport network.

Access to the eastern end of the southern car park will be maintained throughout construction to support ongoing deliveries, including to the existing wood and metal workshops.

The removal and relocation of demountable buildings during and after construction will be managed by the department. Historically, demountables were delivered via the school oval and southern car park. However, with the completion of Buildings E and F, access to the southern car park will no longer be feasible. As such, demountables will likely be removed via Wentworth Street, using the northern car park.

Given that construction will occur on an operational school site, heightened attention to safety and site management is essential. Construction personnel must remain vigilant to the presence of children and the associated risks around the work zone. To ensure safe movement of construction and heavy vehicles, on-site traffic management personnel may be required during key activity periods.

Temporary diversions to footpaths or shared paths must incorporate safe crossing facilities, maintain clear sightlines for pedestrians, cyclists, and vehicles, and provide alternative walking routes that are at least equal in width to the original footpath which is to be addressed in the detailed CTPMP. These measures are essential to ensure safety and accessibility during construction activities.

The estimated peak workforce during the construction phase is approximately 100 full-time equivalent (FTE) workers. To reduce pressure on surrounding on-street parking, provision for 50 light vehicle parking spaces will be required on-side. It is expected that during construction, the southern car park will be inaccessible for staff use. As a result, staff will need to utilise alternative parking options within the site, nearby public parking areas such as Ken Birdsey Park, and surrounding streets or use public transport during this period.

6.1.3 Transport Mitigation Measures

Subject to the implementation of the bespoke mitigation measures identified in **Table 12** and standard Mitigation Measures in Appendix 1, traffic, access and parking impacts are determined to have no significant impacts for both the construction phase and the successful ongoing operation of the school.

Table 12: Traffic, Access and Parking Mitigation Measures

ID	Mitigation Measure	Timing
UIMM6	TPHS and RPS school staff should be encouraged to choose public transport and carpool as much as possible during the construction period to limit the number of vehicles parking on and around the school site.	Construction
UIMM7	The contractor should investigate accommodation within the site compound or allowance for securing/leasing off-site parking for 50 light vehicles to minimise the impact on the availability of on-street parking.	Construction
UIMM8	Install additional bicycle/scooter parking to provide a safe and convenient place for students (and staff) to store their bicycles/scooters as an important part of encouraging mode shift to cycling.	Construction
UIMM9	Pursue conversations with Blacktown City Council to install double barrier lines at the location of the kiss and drop on Riverbank Drive.	Construction
UIMM10	Appoint a STC for the first 12 months of operation. The STC will establish a STP Committee, develop a framework to guide ongoing STP implementation and educate the school community in accordance with the TAG to encourage active travel to school over car dependency.	Commencement of operations of Buildings E and F

6.2 Noise and Vibration

6.2.1 Existing Conditions

An Acoustic and Vibration Assessment was undertaken to support the activity at TPHS.

Unattended and supervised noise monitoring was conducted at two locations, Hambledon Road and Wentworth Street, to establish background noise levels for the school and surrounding residential areas. The locations of the noise loggers are shown in Figure 17.



Figure 17: Noise Monitoring Locations (Source: JHA Services)

6.2.2 Impacts

The assessment was conducted in accordance with the NSW EPA's *Noise Policy for Industry (2017)* and the *Interim Construction Noise Guideline (2009)*. The assessment undertaken has considered both operational and construction noise and vibration impacts.

The assessment identified eight locations as sensitive receivers, and the approximate distance to the proposed activity from each sensitive receiver is listed below:

- 45 Dhaka Cct, Schofields (55m)
- 73 Brookfield St, The Ponds (20m)
- 59 Tomah Cres, The Ponds (60m)
- 196 Greenview Pde, The Ponds (60m)
- Riverbank Public School (<5m)
- St John Paul II Catholic School (140m)
- Little Trolley Park (<5m)
- Douglas Reserve (20m)

Operational Impacts

The assessment considered the potential noise emissions during operation that may impact on existing surrounding noise sensitive receivers. The noise sources associated with the activity are assumed as follows:

- Noise emissions from the mechanical plant
- Noise emissions from school bells and public address system

- Noise from outdoor playgrounds located within the school grounds
- Noise emissions from carpark
- Traffic generation noise

73 Brookfield Street has been identified as the nearest residential receiver likely to be impacted by noise emissions from both the mechanical plant and car park operations.

The acoustic assessment identified a total of 19 rooftop Condenser Units (CUs), each emitting sound pressure levels that collectively equate to 56 dB(A), exceeding the Operational Noise Level Criterion of 43 dB(A). This level is considered unacceptable, and as such, the development will require the installation of acoustic louvres to mitigate noise emissions from the rooftop mechanical plant. With the implementation of these louvres, noise levels are expected to comply with the required criteria at the nearest noise-sensitive receiver.

A car park noise assessment was also undertaken, measuring impacts at the nearest receiver boundaries from the centre of both upgraded car parks. The primary source of noise is anticipated to be vehicle movements, including parking activities. The assessment assumed usage during school hours (7:00am–6:00pm) and occasional evening periods (6:00pm–10:00pm). A 15-minute assessment period was modelled with 10 vehicle movements, each taking approximately 30–60 seconds, and a typical sound power level of 85 dB(A) per movement. Based on these assumptions, Figure 18 demonstrates that the upgraded car park will comply with both daytime and evening noise level criteria.

Calculation	Noise Level, dB(A)	
	Receiver 2	Receiver 4
Total Sound Power Level of 10 cars L_{Aeq} , dB	95	95
Time correction to account for 60 secs of car movement per 15 minutes, dB	-12	-12
Total Sound Power Level of 10 cars $L_{Aeq,15min}$, dB	83	83
Correction for distance, dB	-40	-44
Resulting Sound Pressure Level at Boundary of Nearest Receiver, dB(A)	43	39
Noise Level Criterion Evening-Time / Complies?	43 / Yes	43 / Yes

Figure 18: Noise assessment of car movements for the proposed carparks. (Source: JHA)

Noise levels associated with the outdoor playgrounds have been assessed, with the proposed playing fields located to the north of Buildings E and F. The introduction of these new buildings is expected to act as a physical buffer, reducing noise impacts on nearby residences to the south of Riverbank Drive.

The assessment concluded that there is no anticipated increase in traffic noise levels, as the proposed development does not involve an increase in student or staff population. However, noise generated by existing traffic on Hambledon Road could affect the school operations within building E due to the proximity to the road. The traffic assessment has carried out a review of traffic noise impacts and recommends minimum glazing thickness for the buildings to provide a minimum sound reduction index of R_w32 . As such, noise emissions from both playground activities and the traffic generation are expected to remain consistent with existing conditions.

The public address and school bell system selections have not been made, therefore the assessment is unable to undertake a detailed assessment of these noise emissions. Mitigation measures are recommended to mitigate the level of noise.

Construction Noise and Vibration Impacts

A construction noise and vibration assessment was carried out as part of the Noise and Vibration Impact Assessment. As the construction program is not fully defined, preliminary advice has been provided as part of the assessment. This advice will form the basis of the detailed Construction Noise and Vibration Management Plan (CNVMP) to be undertaken by the appointed contractor. This has been addressed as part of CMM2 identified in Appendix 1.

The assessment has been undertaken to assess the noise and vibration levels over the construction hours set out in Section 2.2.5 of this report. A high-level airborne noise assessment has been conducted as part of the overall acoustic evaluation. The results indicate that construction noise levels may exceed standard limits during certain phases of the works. However, the upgrade of the playing field and demolition of the outdoor learning shelters are not expected to introduce any additional noise sources. The closest noise-sensitive receiver at 73 Brookfield Street, along with Building A within the existing school, have been assessed under worst-case construction noise scenarios during standard working hours. The results that were received from the predicted airborne noise levels, based on typical construction plant usage, indicate exceedances to the NSW Interim Construction Noise Guideline (ICNG) 2009 criteria. This suggests that construction noise levels are expected to exceed acceptable limits for all noise-affected receivers, particularly near the site boundary.

Vibration impacts have been assessed in accordance with the NSW RMS 'Construction Noise and Vibration Guideline', which outlines safe working distances for vibration-intensive equipment such as hydraulic hammers, pile drivers, pile boring rigs, and jackhammers. These distances have been evaluated for both cosmetic building damage and human comfort.

Should any vibration-intensive plant be expected to operate within the minimum safe distances outlined in Figure 19, the contractor will be required to engage a qualified engineer to undertake a vibration survey to assess potential risks and ensure compliance with safety standards.

<i>Plant Item</i>	<i>Description</i>	<i>Cosmetic Damage</i>	<i>Human Response</i>
Small Hydraulic Hammer	5 – 12 tonne	2m	7m
Medium Hydraulic Hammer	12 – 18 tonne	7m	53m
Large Hydraulic Hammer	18 – 34 tonne	22m	73m
Vibratory Pile Driver	Sheet piles	2-20m	20m
Pile Boring	<800mm	2m	N/A
Jack hammer	Handheld	1m	Avoid Contact with Structure

Figure 19: Recommended minimum working distances for vibration intensive plant from sensitive receivers. (Source: JHA)

Compliance with the relevant construction noise criteria can be achieved through specific noise mitigation measures such as acoustic screening round the site. Mitigation Measures have been

provided in Table 12 and Appendix 1 as general control elements during the construction process to minimise noise and vibration.

6.2.3 Noise and Vibration Mitigation Measures

Subject to implementation of the bespoke mitigation measures set out in Table 13 and standard mitigation measures in Appendix 1, noise and vibration impacts are determined to have no significant impacts.

Table 13: Noise and Vibration Mitigation Measures

ID	Mitigation Measure	Timing
OPMM6	Detailed design shall investigate appropriate glazing system to Building E to manage traffic noise from Hambledon Road.	Prior to the commencement of Operations of Buildings E.
OPMM7	The PA system should be designed with a downward speaker orientation and volume adjustments to minimise disturbance to nearby residences.	Prior to the commencement of Operations of Buildings E and F.

6.3 Contamination and Hazardous Materials

A DSI was undertaken for the proposed activity. The assessment indicates no significant presence of contaminants of potential concern (CoPCs) in the targeted soil sample locations. The site is considered suitable for activity from a contamination perspective and no remediation is required. An unexpected finds protocol and formal waste classification are to be incorporated into the CEMP prior to any soil removal. If hazardous materials such as asbestos are encountered during works, a Hazardous Materials Assessment and appropriate remediation actions may be required.

Subject to the standard mitigation measures in Appendix 1, the proposed activity is not likely to result in any significant environmental impacts related to contamination.

6.4 Soils and Geology

6.4.1 Existing Conditions

A Geotechnical Investigation was undertaken, which included the drilling of fourteen boreholes over the site. Samples were collected and sent for laboratory testing to identify the soil conditions and how they will interact with construction materials.

Test results indicate that ground conditions at the sampled locations range from non-aggressive to moderately aggressive with respect to concrete, and non-aggressive to steel. Salinity levels in the tested samples varied from non-saline to moderately saline. Sodicity testing revealed soil conditions ranging from non-sodic to sodic, suggesting a high potential for erosion in areas where soils are left exposed.

6.4.2 Impacts

The geotechnical report has outlined specific requirements to be adopted into the architectural design and construction methods for the proposed activity to ensure the structural integrity and long-term performance.

As outlined in Section 2.2.9 of this report, the proposed earthworks have been designed to generally balance cut and fill to minimise material that is required to be exported or imported; however, surplus cut material will remain and will require off-site disposal. Mitigation measures are recommended to ensure that both imported and exported material is appropriately tested and classified for use and where required disposal.

Cut and fill depths and gradients have been carefully designed with natural contours and will minimise erosion potential.

Subject to the implementation of the standard mitigation measures identified in Appendix 1, the activity will not result in any adverse impacts in relation soils and geology.

6.5 Hydrology, Flooding and Water Quality

6.5.1 Flood Existing Conditions

A Flood Impact and Risk Assessment (FIRA) (Appendix 3) was undertaken for the activity, identifying that the site is located within the First Ponds Creek catchment. A Flood Evacuation Response Plan (FERP) (Appendix 4) was then prepared to support the proposed activity. The catchment identified has experienced significant urban development, including increased residential subdivisions, housing projects, and road upgrades, contributing to rising population density and altered flood behaviour. A detailed study of First Ponds Creek was conducted in 2021 to assess these impacts.

The flood study has identified areas of ponding across the site and provided corresponding hazard classifications. The current school site exhibits hazard levels ranging from H1 to H3, where:

- H1 indicates conditions generally safe for people, vehicles, and buildings,
- H2 represents areas unsafe for small vehicles; and
- H3 represents areas unsafe for vehicles, children, and the elderly. Pre-development conditions

Flood mapping available from Blacktown City Council indicates that the northeastern portion of the school boundary falls within “flood prone and major creeks land” in the SEPP (Precincts – Central River City) 2021 (Figure 20).

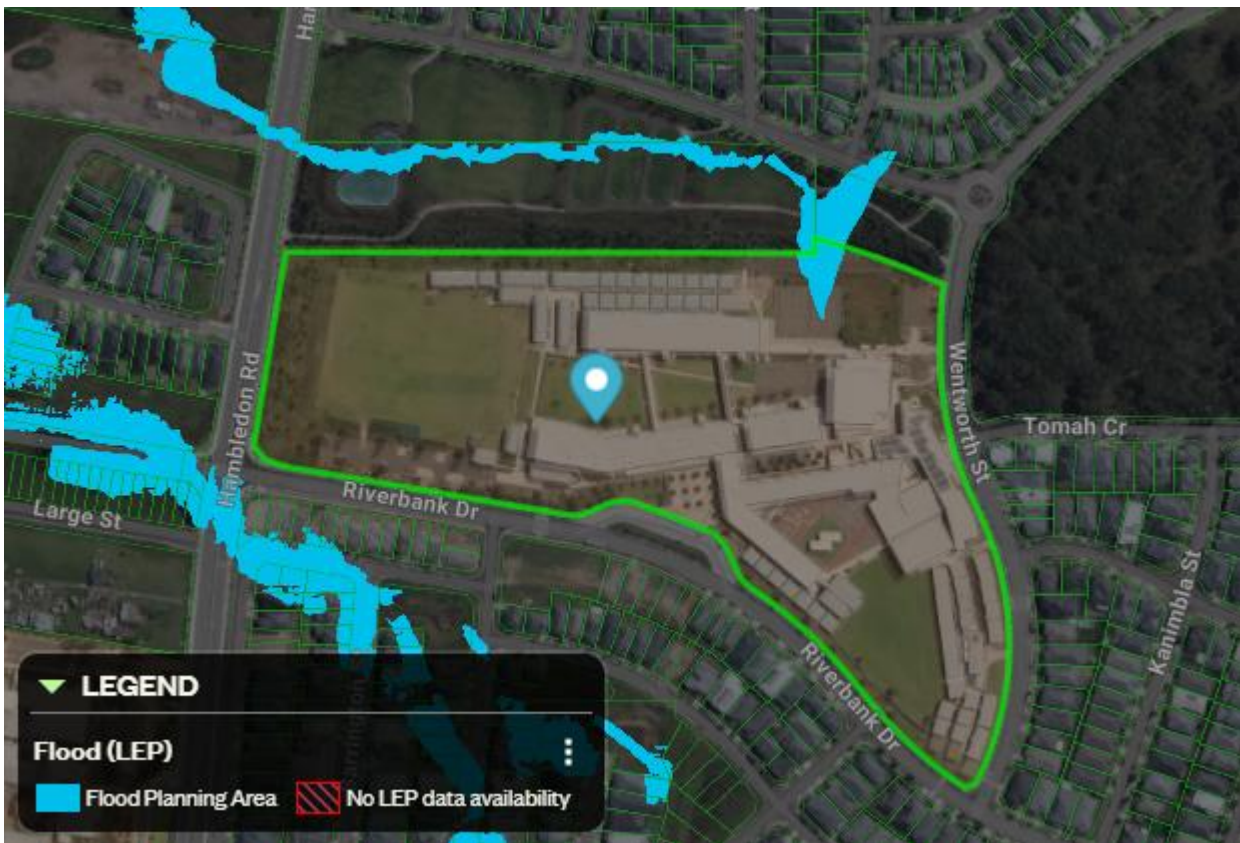


Figure 20: Flood prone land (Source: Mecone Mosaic)

Pre Development Scenario – 1% AEP Event

The maximum flood depths, velocities, levels, and hazard classifications for the 1% Annual Exceedance Probability (AEP) event are illustrated in Figure 21. Overall, flood affectation across the site is relatively low, with minor ponding observed around the demountable buildings, classified as low hazard H1. More notable ponding was identified adjacent to the northern car park and the bioretention basin to the west. The bioretention basin recorded a peak ponding depth of approximately 0.55m, while the area near the northern car park experienced ponding depths of up to 0.68m, both of which fall under the H3 hazard classification, indicating conditions unsafe for vehicles, children, and the elderly.



Figure 21: 1% AEP event - Pre-development Scenario. (Source: TTW (NSW) Pty Ltd)

Post Development Scenarios – 1% AEP Event

The flood depths and levels for the 1% Annual Exceedance Probability (AEP) event under the post-development scenario are presented in Figure 22. The post-development modelling indicates a reduction in flood levels within the bioretention basin to the west, with peak depths decreasing by approximately 14mm, although the hazard classification remains at H3.

In contrast, ponding within the northern car park has significantly reduced, with peak depths now ranging between 0.15m and 0.16m, resulting in a lower hazard classification of H1. For Buildings E and F, peak flood depths are estimated between 0.10m and 0.14m, with hazard levels also remaining at H1, indicating conditions generally safe for people, vehicles, and buildings.



Figure 22: 1% AEP event - Post-development Scenario. (Source: TTW (NSW) Pty Ltd)

Pre Development Scenario – PMF Event

The maximum flood depths, velocities, levels, and hazard classifications for the Probable Maximum Flood (PMF) event are presented in Figure 23. Under PMF conditions, ponding depths around the demountable buildings are expected to increase significantly, peaking at approximately 0.53m. The bioretention basin to the west records a peak depth of 0.92m, while the northern car park reaches up to 0.77m. All three areas are classified with a hazard level of H3, indicating conditions unsafe for vehicles, children, and the elderly.

In comparison, the southern car park, where Buildings E and F will be constructed, experiences a peak depth of 0.3m, corresponding to a hazard level of H2, which may be unsafe for small vehicles and vulnerable individuals.

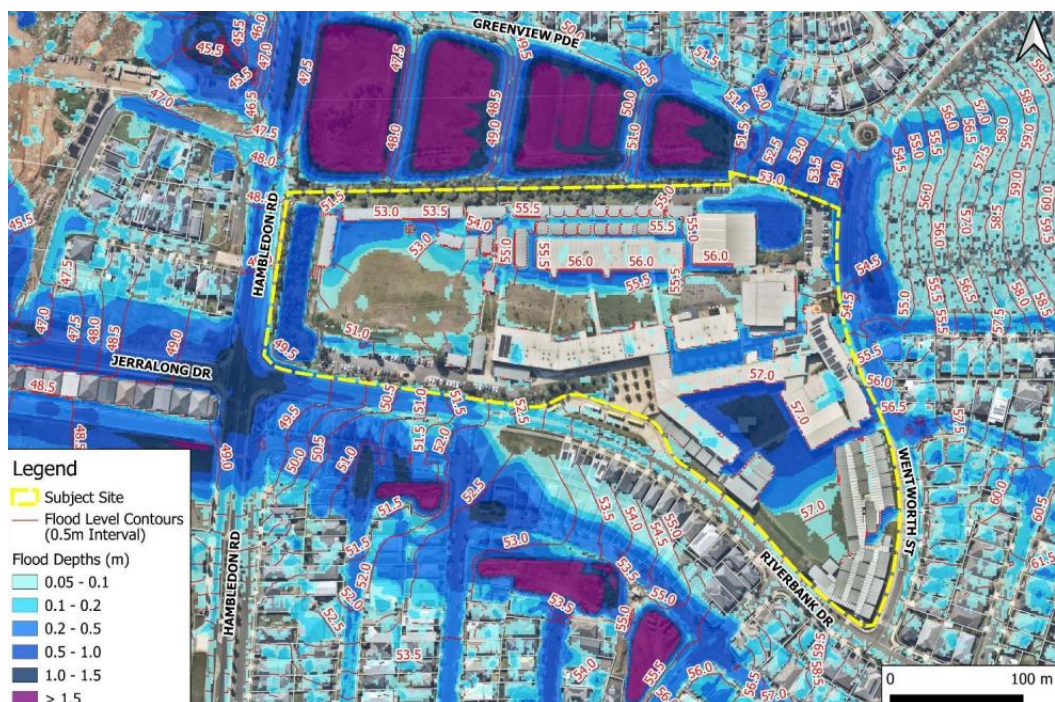


Figure 23: PMF event - Pre-development Scenario. (Source: TTW (NSW) Pty Ltd)

Post Development Scenario – PMF Event

The flood depths and levels under the post-development scenario are presented in Figure 24. The proposed activity results in a reduction in flood levels, with depths decreasing by approximately 0.3m to 0.35m. Despite this reduction, hazard classifications remain consistent with pre-development conditions, predominantly at H3.

The removal of the demountable buildings contributes to reduced ponding along the northern boundary, while the northern car park would experience a lower peak ponding depth of approximately 0.25m, corresponding to a hazard level of H1. Additionally, the regrading of the sports field leads to a split flow pattern, with ponding occurring both to the north and south of the field. Peak depths are approximately 0.23m to the north and 2.4m to the south.

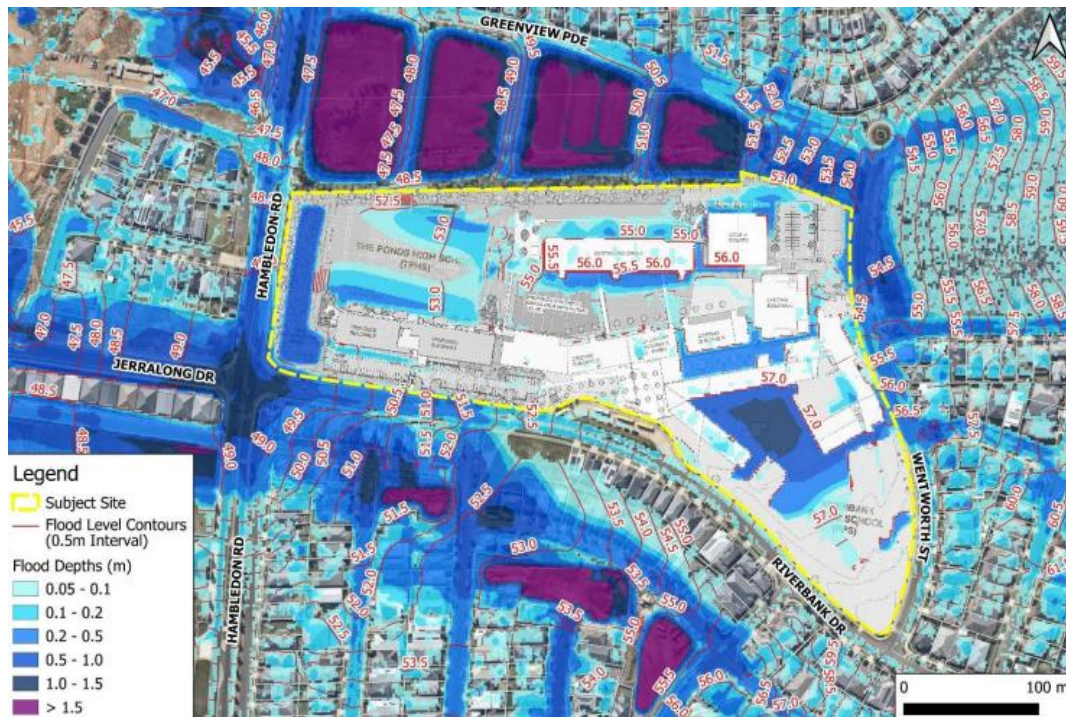


Figure 24: PMF event - Post-development Scenario. (Source: TTW (NSW) Pty Ltd)

Offsite Flood Impact

Recent site activities have modified the existing ground levels and stormwater storage capacity originally associated with the high school. These changes have resulted in a measurable increase in flood levels within the offsite regional basin located to the north of the site, with the peak rise estimated at approximately 0.87m. Importantly, this increase remains fully contained within the designated basin area, which is zoned as 'SP2 Drainage'. This zoning reflects the intended use of the land for stormwater detention and flood attenuation, and as such, the basin continues to function within its planned capacity and purpose.

Flood Evacuation

A FERP was prepared for the proposed activity (Appendix 4). The purpose of the FERP is to identify protection measures that should be undertaken to mitigate risks associated with the flood risks identified in the FIRA. The strategy noted in the FERP is to undertake pre-emptive closure if advanced warning is received outside of school hours, or where a severe event is forecast several hours in advance.

It is noted that flash flood events and times of extreme rainfall events are unpredictable and can occur with no warning time, where pre-emptive closure cannot be accomplished. In these scenarios a Shelter-in-place (SIP) guidance published by DPHI is to be undertaken.

Stormwater

A Civil Engineering Schematic Design Report prepared for the activity, along with supporting civil plans, has addressed Water Sensitive Urban Design (WSUD) principles and On-site Stormwater Detention (OSD) measures. Three OSD tanks have been included to manage stormwater runoff, ensuring discharge rates do not exceed pre-activity conditions. The three OSD tanks are located in the following locations with the associated areas listed below:

- Western Catchment – A 195m³ OSD tank proposed to service the new Buildings E & F and the impervious areas around the buildings.

- Futsal Court Catchment – A 100m³ OSD tank proposed to service the new impervious areas associated with the synthetic turf futsal courts.
- Northeastern Catchment – A 1067m³ OSD tank proposed to service the new northeastern car park, this tank system will replace the existing above ground detention basin with a volume of 975m³.

The proposed stormwater design changes are shown from Figure 25 to Figure 27 below.

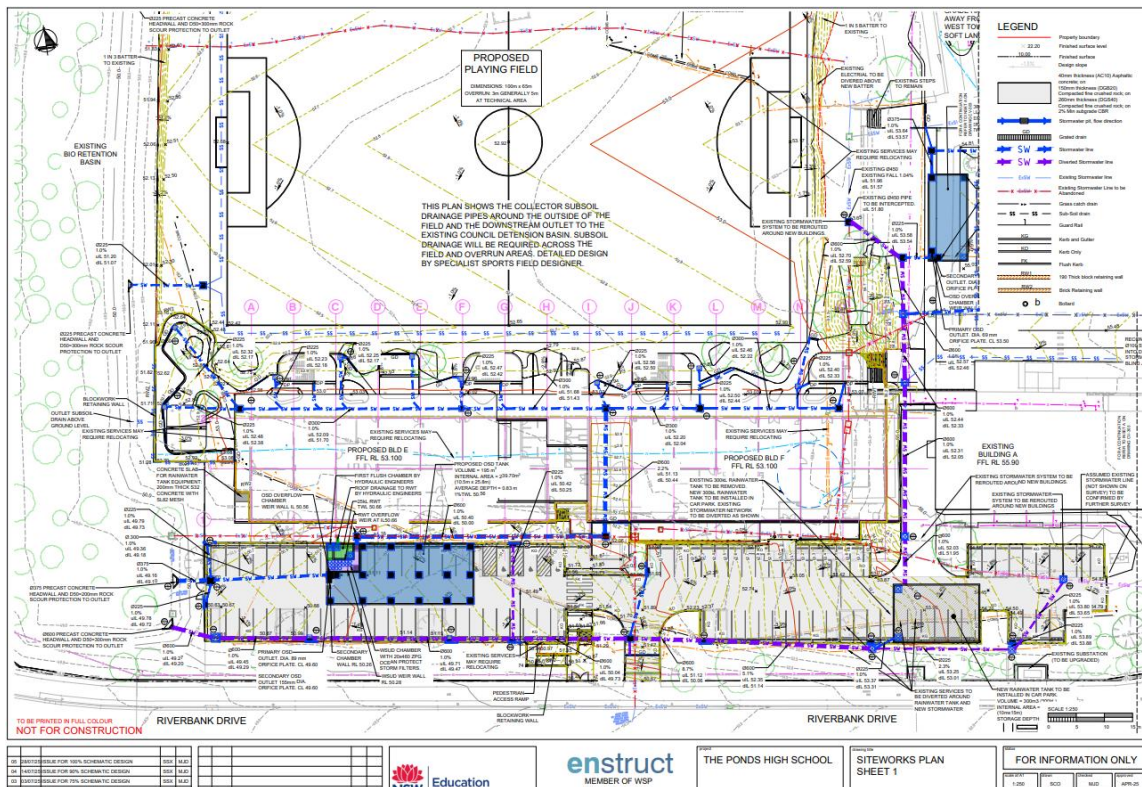


Figure 25: Indicative Siteworks Plan - Southeast Carpark (Source: Enstruct)

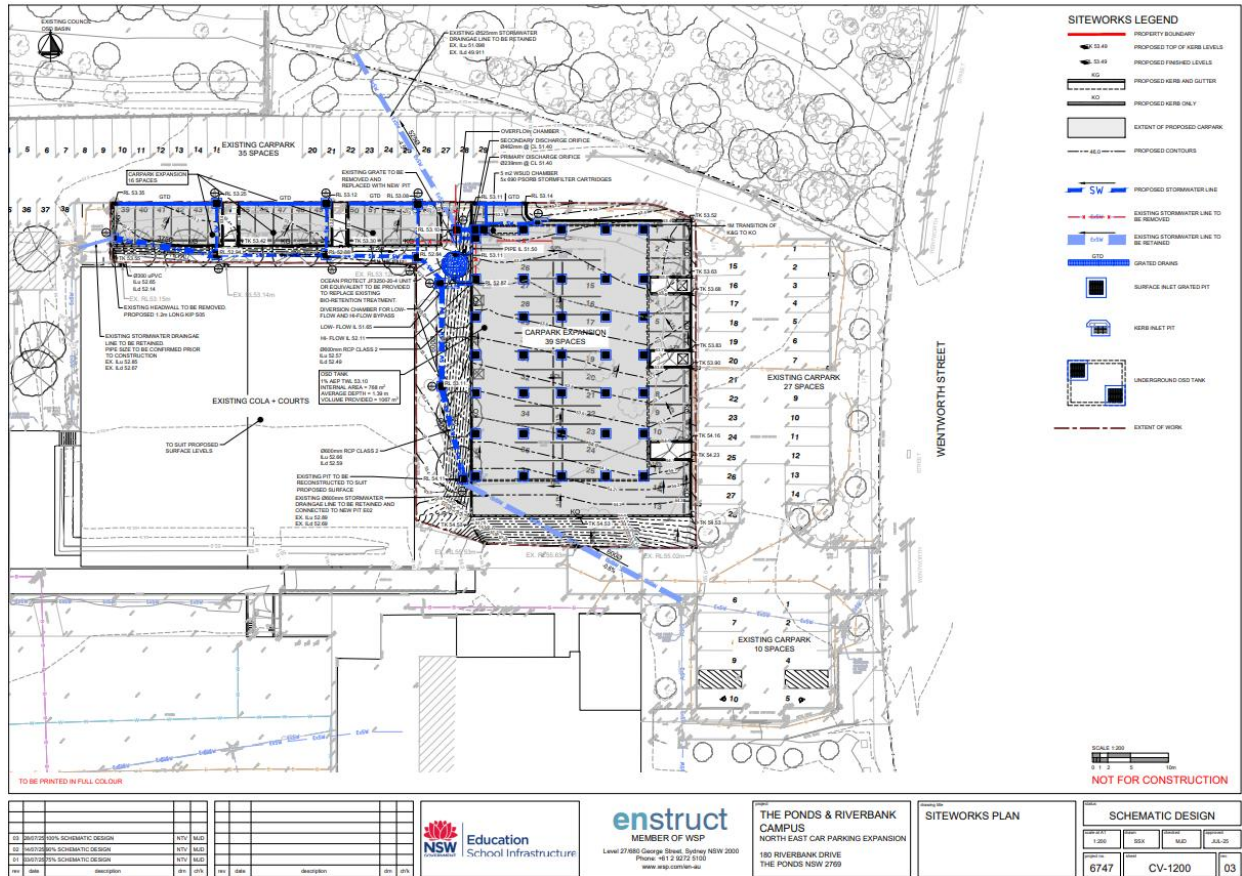
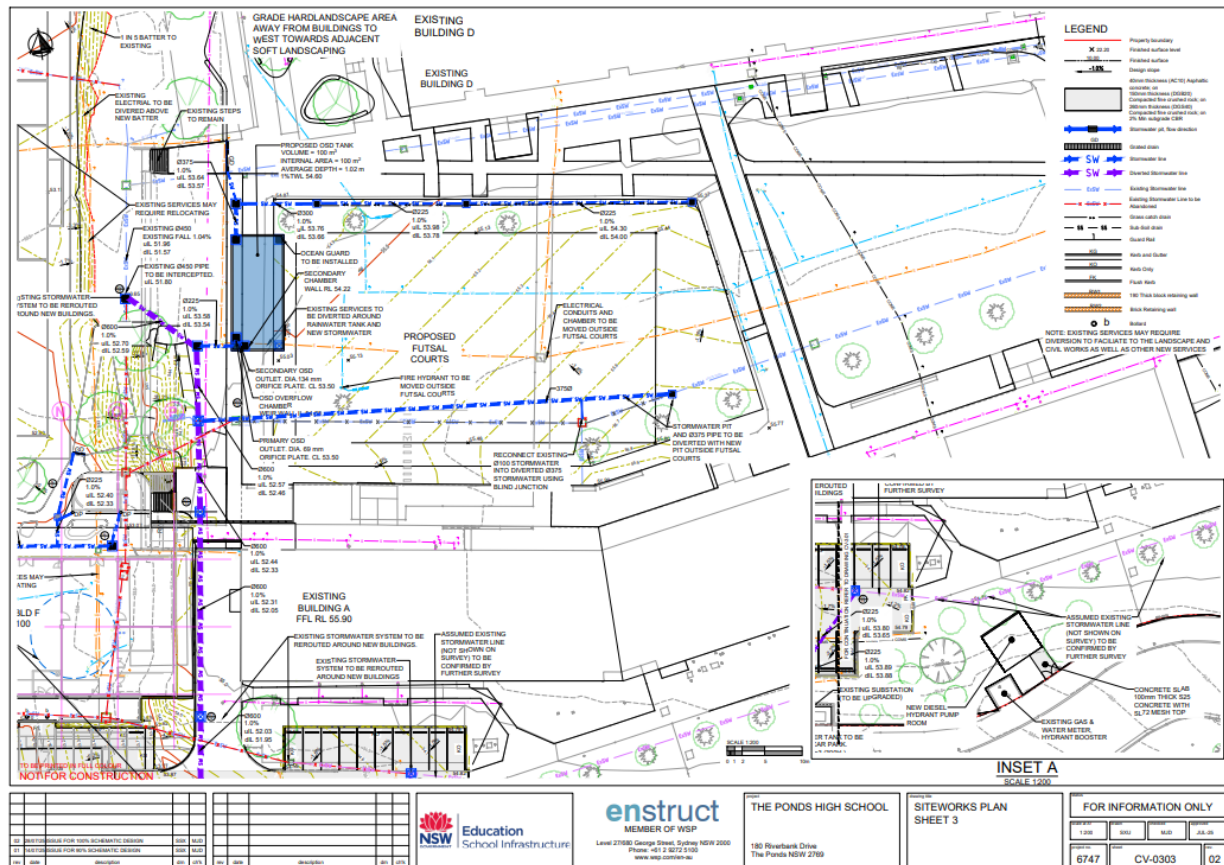


Figure 27: Indicative Siteworks Plan - Northeast Carpark (Source: Enstruct)

Subject to the standard mitigation measures in Appendix 1, the proposed activity is not likely to result in any significant environmental impacts related to hydrology, flooding and water quality.

Water Quality

Model for Urban Stormwater Improvement Conceptualisation (MUSIC) modelling was undertaken for the Futsal Court, Western and Northeastern catchments, confirming that the proposed stormwater treatment devices and the Gross Pollutant Traps (GPTs) (i.e. OceanProtect OceanGuard pit inserts, ZPG StormFilter Cartridges, ECOSOL Litter Baskets) to be added into the stormwater inlet pits and the results will effectively reduce pollutant discharge from the site. While the synthetic turf Futsal Court catchment in isolation does not meet pollution reduction, the activity includes 1 OceanProtect OceanGuard pit insert and a 300kL rainwater tank with reuse for irrigation for the Futsal Court catchment which in accordance with the study and modelling does not worsen existing water quality. The Guidelines for Division 5.1 assessments – Addendum for synthetic turf sports fields is discussed further in Table 17 in Section 6.12. The activity overall is considered to maintain or improve the current environmental performance of the site.

6.6 Aboriginal Heritage

A Due Diligence assessment for the school site was undertaken which identified one previously registered Aboriginal sites (AHIMS #45-5-4267) was located within the study area. These sites have been formally recorded as “destroyed” in accordance with an approved Aboriginal Heritage Impact Permits (AHIP Permit ID: 3616/ C0000056 – expired 29/11/2023), and the updated site card has been provided for the site.

One additional AHIMS site (AHIMS #45-5-4598) was identified to be located immediately north of the boundary of the school site, outside the study area. This site has also been formally recorded as “destroyed” in accordance with an approved AHIP (AHIP Permit ID: 3972/C0002027 – expired 30/8/2021).

During the due diligence survey, no archaeological material was identified during the visual pedestrian inspection, and the study area was assessed as having no sub-surface archaeological potential due to the high level of disturbance from past and current land use. The assessment was informed by landform analysis, previous archaeological investigations in the wider region, and direct site inspection. Based on these findings, no further Aboriginal archaeological assessment was required, and no additional AHIP application is necessary for the proposed activity.

An unexpected finds protocol will be adopted for the site and in the unlikely event that any unexpected archaeological material is encountered (Mitigation Measure HMM2).

Subject to the standard mitigation measures in Appendix 1, the proposed activity is not likely to result in any significant environmental impacts related to Aboriginal Heritage.

6.7 Ecology

The site is located outside areas identified in the Biodiversity Values Map and Terrestrial Biodiversity Mapping, in accordance with *Biodiversity Conservation Act 2016* (BC Act). Furthermore, in accordance with Part 8 of the BC Act, the site is wholly situated within land that has been biodiversity certified (refer Figure 28).



Figure 28: The site located within Biodiversity Certified Land (Source Ecological)

Under Section 8.4(5) of the BC Act, a determining authority operating under Part 5 of the EP&A Act is not required to consider the impact on biodiversity for activities carried out on biodiversity certified land. This provision overrides any contrary requirements in the EP&A Act or Part 7 of the BC Act.

Given that the site is entirely within biodiversity certified land, no further assessment of biodiversity impacts is required under the BC Act. The certification process has already accounted for biodiversity considerations at a strategic level, thereby streamlining the environmental assessment process for activities on the site.

An Arboricultural Impact Assessment (AIA) was undertaken for the activity. Within the proposed activity footprint, 24 total trees are expected to be removed, A total of eight trees are located within the building footprint and the southern carpark area. Four trees are assessed as having medium to high significance, while the remaining four are of low significance.

An additional eight trees are situated within the futsal court area and a further eight a located within the northern carpark works area. All trees in these two locations are considered to be of low significance. As part of the activity, planting of 144 trees will be undertaken, with the specific locations for the new trees to be determined at detailed design.

6.7.1 Ecology Mitigation Measures

Subject to the bespoke mitigation measures in Table 14 and standard mitigations in Appendix 1, the proposed activity is not likely to result in any significant environmental impacts related to ecology.

Table 14: Ecology Mitigation Measures

ID	Mitigation Measure	Timing
TMM2	Vegetation identified for retention within adjacent properties, specifically the area directly north of the study area mapped as NVR should be clearly delineated as a 'No Go' zone with high visibility bunting.	Construction
TMM3	A pre-clearance survey is to be undertaken by a qualified ecologist to identify fauna habitat features that may be present within trees to be removed. Habitat features present within trees may include hollows, stick nests and/or decorticated bark.	Prior to Construction
TMM4	If the pre-clearance survey identifies the presence of any habitat features within trees to be removed, it is recommended that a qualified ecologist will be on site to supervise the clearance of these trees. If required, the qualified ecologist will relocate any displaced fauna.	Prior to Construction

6.8 Bushfire

A small portion of the north-eastern corner of the existing school site is identified as bush fire prone land (vegetation buffer), with the source of the hazard being Douglas Reserve to the west (Figure 29).

Development on bushfire prone land (BFPL) for the purposes of a school requires a Bushfire Safety Authority (BSA) to be obtained, pursuant to CI 100B of the *Rural Fires Act 1997*. However, as the activity is not on BFPL a BSA is not required and the activity is not subject to the mandatory bushfire protection measures of Planning for Bush Fire Protection 2019 (PBP). Regardless the department seeks to voluntarily apply the relevant Bushfire Protection Measures as a margin of safety for any potential bushfire risk.

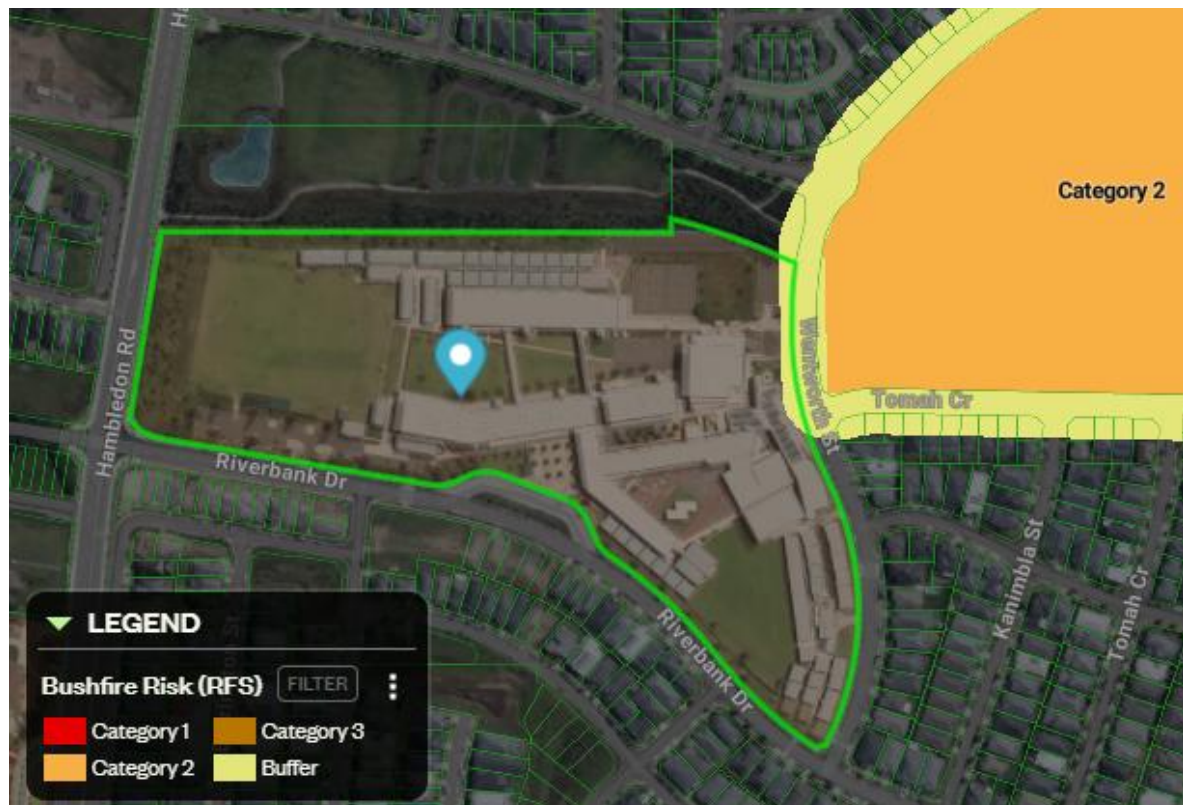


Figure 29: Bushfire prone land map (Source: Mecone Mosaic)

6.8.1 Bushfire Mitigation Measures

The Bushfire mitigation measures in Table 15 and Appendix 1, are proposed for the activity as a margin of safety to ensure there are no significant environmental impacts related to bushfire.

Table 15: Bushfire Mitigation Measures

ID	Mitigation Measure	Timing
BFMM1	At the commencement of building works and in perpetuity all grounds within the subject property shall be managed as an inner protection area (IPA) as outlined within Appendix 4 of 'Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service's document 'Standards for asset protection zones'.	At all times
BFMM2	All new construction shall comply with sections 3 and 6 (BAL 19) of Australian Standard 3959 'Construction of buildings in bushfire-prone areas'.	Construction
BFMM3	A bushfire emergency management and evacuation plan must be prepared consistent with the NSW Rural Fire Service guidelines.	Prior to the commencement of Operations of Buildings E and F.

6.9 Social Impact

The proposal is expected to deliver positive social outcomes through improved educational infrastructure while managing temporary impacts during construction. The project will not increase student numbers, so operational impacts on the surrounding community are expected to be minimal. Table 16 provides consideration of social impacts.

Table 16: Social Impact

Type of Impact	Describe the impacts on the community and how they might be experienced, either positively or negatively	Discussion
Impacts on access – will there be an improvement to the quality of provision and a response to emerging and changing needs?	Positive – Minimal: The proposal delivers upgraded teaching spaces, sporting fields, and circulation routes, improving the quality of educational provision and responding to changing community needs. The expansion of the north-eastern car park increases on-site parking, reducing reliance on on-street parking by staff and easing local traffic congestion. Negative – Minimal: During construction there may be temporary restrictions on access within parts of the campus and at carpark entries. Local residents	Improved access to high-quality school facilities strengthens educational outcomes and community benefit. The additional car parking provides operational efficiencies and safety improvements for the school and surrounding residents. Any temporary access restrictions during construction will be managed to maintain safe and continuous school operations. Refer to Mitigation

Type of Impact	Describe the impacts on the community and how they might be experienced, either positively or negatively	Discussion
	may experience short-term increases in traffic from construction vehicles, minor delays at access points, and reduced availability of on-site parking. Pedestrian routes around the site may also be temporarily diverted, with potential inconvenience for students and parents.	Measure UIMM4.
Impacts on privacy, overshadowing, peace and quiet, and visual amenity (views / vistas) - will there be significant change for neighbours and the local area during both construction and operation?	Positive – Moderate: No impacts on privacy are anticipated, as the proposed buildings are located well within the school site and away from residential boundaries. There will be no overshadowing of adjoining properties. The main change for the community will be the altered visual character along Riverbank Drive, with new multi-storey school buildings becoming a more prominent feature. While residential dwellings are located opposite Riverbank Drive, there is a separation distance of more than 50m and the existing car park provides a setback and buffer. Preliminary overshadowing modelling confirms there will be no overshadowing of adjoining residences on the winter solstice between 9am and 3pm.	The change in visual character is not considered unreasonable given the established use of the site as a school. The proposed buildings are designed to a high architectural standard and will contribute positively to the streetscape. Construction impacts such as noise and temporary visual disruption will be managed through standard mitigation measures. The removal of demountables will also improve the outlook from the northern park, providing a positive visual outcome.
Impacts on sense of place - will there be effects on community cohesion or how people feel connected to the place and its character?	Positive – Minimal: The school contributes significantly to local identity and community life. The replacement of demountables with permanent, well-designed facilities will improve the character of the campus, reinforce the role of the school as valued social infrastructure, and enhance community dignity by removing temporary buildings.	The proposal will have a positive effect on community cohesion by enhancing the presentation and function of the school. High-quality architecture, improved grounds, and the removal of demountables strengthen the sense of place for students, families and the wider community, and integrate the campus more effectively with its residential setting.
Impacts on the way people get around – will there be changes associated with traffic or parking in the area?	Positive – Moderate: The proposal does not increase student or staff numbers and therefore will not generate additional long-term traffic. The expansion of the northern and southern car parks provides 90 additional spaces, which will reduce staff reliance on on-street parking and ease congestion on surrounding streets. Upgrades to pedestrian infrastructure, including a new	In the long term, the proposal improves local conditions by formalising parking supply and circulation within the site, reducing pressure on nearby residential streets, and strengthening safe pedestrian connections to the surrounding neighbourhood. Construction traffic and temporary parking constraints will be managed through a Construction Traffic

Type of Impact	Describe the impacts on the community and how they might be experienced, either positively or negatively	Discussion
	crossing and provision of missing footpath links off-site, will improve safety and connectivity for students and the community. Temporary impacts on traffic and parking may be experienced during construction.	and Pedestrian Management Plan to minimise disruption and maintain safe pedestrian and vehicle movement. Refer to Mitigation Measure CMM2.
Impacts on wellbeing - will there be benefits for students and the community associated with better school facilities, sporting facilities and grounds, and active transport options?	Positive – Moderate: Students will benefit from permanent classrooms and modern learning environments, with more of the school population accommodated in fit-for-purpose facilities rather than demountables. The provision of upgraded sporting fields and grounds promotes active lifestyles and creates opportunities for community use. Off-site pedestrian upgrades, including a new crossing and provision of missing footpath links, will improve safety and encourage active transport.	The proposal enhances student wellbeing by supporting high-quality education and replacing temporary accommodation with purpose-built facilities. Improved grounds, sporting infrastructure, and safer pedestrian connections also provide broader health, safety, and social benefits for the community. Collectively, these measures strengthen wellbeing outcomes and ensure the school remains a valued piece of social infrastructure.
Impacts on safety - will the proposal improve safety, security, and passive surveillance outcomes for students, staff, and the wider community?	Positive – Minimal: The proposal introduces new perimeter fencing, controlled access points, and improved circulation within the school. These measures will reduce opportunities for unauthorised access and increase safety for students, staff, and visitors. Improved sightlines and passive surveillance around key entry points, car parks, and play areas further enhance security.	The project strengthens the school's ability to operate safely and securely. The community benefits from a more orderly and predictable environment, with clear access arrangements that balance safety and permeability. These upgrades contribute to student wellbeing, parent confidence, and overall community safety.
Economic impacts – will the proposal generate employment or affect the provision of other community services or infrastructure?	Positive – Minimal: The proposal will support short-term construction employment across a range of trades and suppliers, generating local economic activity. Neutral – There are no long-term increases in staff or student numbers, so ongoing economic impacts are neutral. The project does not displace or affect the provision of other community services or infrastructure.	While the economic benefits are primarily temporary, the proposal contributes to the local economy during construction. The delivery of high-quality education infrastructure also represents an investment in long-term human capital, supporting the community's future economic wellbeing through improved learning outcomes.

6.10 Other Issues

Issue	Consideration
Visual Amenity and Privacy	The design of the proposed activity has carefully considered visual impacts to minimise any adverse effects on the surrounding environment and neighbouring

Issue	Consideration
	properties. The architectural treatment of the street-facing façades incorporates lighter colours on the upper levels and vertical patterning to break up the building mass, creating a more refined and rhythmic streetscape presentation. Buildings E and F are positioned behind the car park and are limited to a maximum height of four storeys. Due to their location and scale, they are not expected to generate any adverse privacy impacts for surrounding properties. In addition, supplementary tree planting is proposed along the Riverbank Drive frontage, in front of the car park. This landscaping will enhance visual screening and contribute to increased privacy for residents located on the opposite side of Riverbank Drive.
Overshadowing	The new buildings fronting Riverbank Drive have been appropriately set back to reduce perceived bulk and scale, thereby eliminating potential overshadowing at the winter solstice between 9am and 3pm.
Waste	A CWMP and OWMP have been prepared for the proposed activity. There are no hazardous wastes identified in the CWMP. The OWMP has noted potentially hazardous waste associated with small amounts of chemical, oil and electronic waste, hazardous waste can be disposed via Council Scheduled Chemical Clean-out, any garden chemicals are to be managed and disposed by landscape/gardening contractors, electronic waste is to be collected by an appropriate contract on an as required basis.
Air Quality	A consolidated CEMP, required under Mitigation Measure CMM2 is to be prepared and will consider management measures to reduce the generation of dust and to maintain air quality.
Wind	The activity proposes buildings up to four storeys and will not impact pedestrian wind environment.
Land Use	The site is not within or near to a restricted land use, oil or gas pipeline, mine subsidence area, or within proximity to HV powerlines or telecommunications infrastructure.
Coastal Risks	The site is not mapped within Coastal Management Area or within close proximity to coastal lands.
Environmental Heritage	The site is not mapped with or within the vicinity of environmental heritage items.
Aviation	The site is not located within proximity to airports or other aviation facilities.

6.11 Cumulative Impact

Two other projects have been identified that may contribute to cumulative impacts with the proposed activity:

1. Alterations and additions to the existing primary school hall at RPS (CDC-25-01119)
 - Located at the subject site towards the eastern end of the high school.
 - Approved and currently under construction.
2. Expansion of St John Paul II Catholic College (DA-25-01129)
 - Located at 91 Hambledon Road, approximately 90m from TPHS.
 - Lodged July 2025 and proposes an increase in enrolments from 720 to 1,380 students, new car parking, demolition, tree removal, and associated works.

6.11.1 Potential cumulative impacts

- Construction phase:

- Primary school hall works to be completed D1 T1 2026, which is prior to the anticipated commencement on site for TPHS upgrade.
- Concurrent construction activities at St John Paul II may temporarily compound noise, vibration, dust, and visual impacts.
- Construction traffic on Hambledon Road and Riverbank Drive may be subject to short-term congestion and parking pressures.
- Multiple active worksites may affect pedestrian and vehicle safety if not coordinated.
- Operational phase:
 - The TPHS proposal does not increase student numbers, so operational impacts are neutral in terms of transport, parking, and service demand.
 - The St John Paul II project, if approved, will substantially increase student numbers, resulting in higher long-term traffic and parking demand in the catchment. The TPHS project may be perceived as part of this broader increase in school-related activity, though it does not itself contribute additional demand.
 - Collectively, the completed projects will provide modernised school facilities, improved grounds, additional parking, and enhanced educational infrastructure for the community.

6.11.2 Management

A consolidated CEMP, required under Mitigation Measure CMM2, will account for all works occurring on the TPHS site will coordinate staging to minimise overlap with other unexpected nearby construction.

- A Construction Traffic and Pedestrian Management Plan will manage contractor access, parking, and haulage routes, and will consider cumulative traffic on Hambledon Road.
- Ongoing consultation with Council and relevant agencies will ensure monitoring of construction impacts and coordination of mitigation measures.
- Contact with St John Paul II Catholic College will be initiated prior to the commencement of works to confirm construction timing, and open communication will be encouraged throughout delivery to assist in managing potential cumulative impacts.
- The St John Paul II proposal will be subject to its own development consent conditions, including traffic and parking management, which will mitigate its operational impacts.

Cumulative impacts are primarily associated with the overlap of construction activities on and around the TPHS site, and the proposed expansion of St John Paul II Catholic College. These impacts are temporary and relate mainly to construction traffic, noise, and amenity. They can be effectively managed through integrated planning, consolidated environmental management measures, and proactive communication with Council, neighbouring schools, and the local community.

In the longer term, no adverse cumulative operational impacts are anticipated, as the TPHS works do not increase student numbers. Instead, the completed projects will deliver a net positive outcome, with modernised permanent teaching spaces, removal of demountables, improved

sporting fields, upgraded circulation and parking, and high-quality facilities that strengthen the role of both schools as key pieces of educational and community infrastructure.

6.12 Consideration of Environmental Factors

Section 171(1) of the EP&A Regulation notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the guidelines that apply to the activity.

Section 171A of the EP&A Regulation sets out additional matters to take into account when considering the likely impact of an activity on the environment in a regulated catchment.

The assessment provided in the sections above has been prepared to provide a detailed consideration of the factors that must be taken into account for an assessment under Division 5.1 of the EP&A Act. These factors are summarised at Table 17 and where mitigation measures have been proposed in response to the factor, these have been identified.

Table 17: Environmental Factors considered

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
(a) Any environmental impact on a community?	(a1) Impact during construction – such as noise, vibration, traffic, construction vehicle routes, access and parking, pollution/dust, water and stormwater flow, sediment and run-off, waste removal, servicing arrangements, bushfire, flooding, contamination, other construction occurring in the area. (a2) impact post-construction (including from any development, activity, public-address systems and sirens, signage, events, hours of operation, or out of hours use of facilities, helicopter facilities, emergency facilities) which may include: (i) water flow/water quality, downstream impacts (ii) flooding impact, flood evacuation routes, changes to flood risk and patterns (iii) bushfire impact, bushfire evacuation routes, changes to bushfire risk and patterns (iv) impact, during a flood or bushfire event, on existing infrastructure such as roads, etc (v) impact on emergency response to existing Communities (vi) waste and servicing arrangements (vii) traffic and parking impacts, pedestrian and road safety (including pedestrian and cyclist conflict and safety), operation of the surrounding road network, impact on road capacity, including peak hour, intersection performance and any cumulative impact from surrounding approved developments, impacts of potential queuing in drop-off/pick-up zones and bus bays during peak periods, emergency drop-offs, servicing and loading/unloading areas, large vehicles and height clearances, parking arrangements and rates. Consider in the context of availability, frequency, location and convenience of public transport and	(a1) During construction, temporary impacts will occur from noise, vibration, traffic, access, parking, dust, stormwater, waste and servicing. Noise may exceed guidelines at nearby residences and schools during piling and excavation, but will be managed through EPA standard hours, safe working distances, and a Construction Noise and Vibration Management Plan. Construction traffic will increase but will be managed by a Pedestrian and Traffic Management Plan to maintain access, safety and minimise disruption, with contractor parking contained on or near the site. Pollution, dust, water flow, sediment, run-off, waste removal and servicing will be managed under the CEMP required by Mitigation Measure CMM2, ensuring no unreasonable environmental impacts. Bushfire risk is low as the site is outside mapped bushfire prone land and exceeds required APZs, with hydrants available. Flood modelling confirms overland flow paths will be preserved with no unreasonable adverse impacts. A detailed site investigation confirms the land is suitable for development, with contamination below adopted criteria and unexpected finds to be managed under the CEMP, including hazardous materials surveys before demolition. (a2) Post-construction, the project will deliver improved outcomes for access, parking, and environmental performance. The upgraded carparks will provide 90 additional car spaces which improve circulation and reduce pressure on local streets. Noise and traffic impacts will return to existing	Multiple Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
	consequences of parking overflowing into adjoining streets (viii) existing utility infrastructure and service provider assets (a3) impact on flight paths of nearby airport, airfield, or helicopter landing sites (a4) other environmental impacts (social, economic or cultural) on the community not mentioned above (a5) cumulative impacts from the development and other surrounding approved developments	background levels, with no ongoing vibration impacts. Stormwater management upgrades, including new onsite detention, will improve site water quality and flow control compared with existing conditions. Landscaping works will enhance the APZs, maintaining low bushfire risk. Flood modelling confirms the activity will not increase flood risk on or off site. The site is suitable for use, with contamination addressed and no residual constraints. The completed activity will provide modern school facilities with no unreasonable ongoing environmental impacts. (a3) The site is not located within the flight path of any nearby airport, airfield, or helicopter landing site. The proposed works will not generate any impact on aviation operations. (a4) The works will deliver positive social and economic benefits by improving school capacity and facilities, enhancing educational opportunities, and providing new community infrastructure. No adverse cultural impacts are expected, as the site is already developed for educational use and does not affect items of heritage significance. (a5) Cumulative impacts may arise from overlap with other nearby construction works, particularly in relation to noise, traffic, and dust. These impacts are temporary and will be managed through the CEMP as detailed in Section 6.11. Subject to the implementation of mitigation measures, no unreasonable cumulative impacts are expected.	
(b) Any transformation of a locality?	(b1) impact on the existing and future character of the neighbourhood, streetscape and local area (b2) impact on the operation of existing and future surrounding	(b1) The activity is consistent with the surrounding residential and community character. Building scale and design are compatible with the school context.	No mitigation measures required.

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
	uses, including industrial or agricultural land uses (b3) visual impact from key viewpoints and views to key viewpoints (b4) cumulative impacts from the development, and other approved developments, on the locality	(b2) The activity does not adversely impact the operation of surrounding residential or open space uses. No industrial or agricultural land uses exist in proximity. The works will improve school access and facilities without constraining nearby development. (b3) New buildings are located within the existing school grounds and will be viewed in the context of existing educational facilities. No unreasonable impact is anticipated. (b4) Cumulative impacts with other approved developments in the locality are addressed in Section 6.11 and will be managed through the CEMP. No unreasonable cumulative visual or character impacts are anticipated.	
(c) Any environmental impact on the ecosystems of the locality?	(c1) impact on the existing and future ecosystem (flora, fauna, habitats, biodiversity, ecological integrity, biological diversity, connectivity/fragmentation, air, water including hydrology, soil) (c2) long- and short-term impact of: (i) loss or harm to trees or other vegetation (ii) removed canopy cover (iii) landscape setting in respect of the site and streetscape (iv) impacts of the above on urban heat island effect and urban and internal comfort levels on and off-site (c3) impact from introducing new trees and vegetation species (c4) cumulative impacts on the ecosystem	(c1-c4) The site is not shown on the Biodiversity Values Map and Threshold Tool and is not listed on any terrestrial biodiversity map and is mapped within the Biodiversity Certification land map. Eleven trees will be removed; however, proposed landscaping will result in a net increase in canopy cover, improving shading, reducing urban heat island effects, and enhancing comfort levels. Planting will use species consistent with the local landscape character. No unreasonable impacts on flora, fauna, air, water or soil are expected, and no cumulative ecosystem impacts are anticipated.	Multiple Refer to Appendix 1
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of	(d1) impacts onto adjoining properties and public spaces (particularly in residential areas) such as lighting impacts and light spill, acoustic, visual privacy, noise and vibration (including from helicopters and ambulances), visual amenity, solar access, view loss and view sharing, vistas, overshadowing, local character, streetscape, weather factors such as wind impacts	(d1) Impacts on adjoining properties and public spaces will be limited. Construction noise and vibration are temporary and managed under the CEMP. Post-construction, operational noise will remain consistent with a school use. No helicopter or ambulance facilities are proposed. Lighting will	No Mitigation measures required.

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
a locality?	(i) the above should be considered from any proposed development or activity on the development site, public-address system, ambulance siren, flashing signage, event, hours of operation, or out of hours use of school facility, helicopter facility, emergency facility, research centre where hazardous material is being used or stored and any potential incident, etc. (d2) impacts on connectivity, permeability and accessibility of public spaces and areas surrounding the development, this includes impacts on arterial and other thoroughfares and green corridors and wayfinding (d3) impacts on other aesthetic, recreational, scientific or other environmental quality or value of the locality not mentioned above or in (a) and the cumulative impacts	comply with Australian Standards to minimise light spill, and building design ensures no unreasonable overshadowing, view loss or privacy impacts. Visual amenity will be maintained with the carpark as a buffer and high-quality design. (d2) Connectivity and accessibility of surrounding public spaces will be preserved, with new carpark arrangements improving circulation within the site. Pedestrian and vehicular access along Riverbank Drive and Wentworth Street will be maintained. No impact on arterial roads or green corridors is anticipated. (d3) No additional aesthetic, recreational, scientific or environmental values will be adversely affected. Cumulative impacts with other developments are addressed in Section 6.11 and managed through the CEMP.	
(e) Any effect on locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	(e1) impacts on heritage items (local, state and commonwealth), conservation areas and Aboriginal heritage (including intangible cultural significance), draft and interim items. Both at / or near the site (e2) impacts on Aboriginal cultural heritage values on the land and connection to Country (e3) direct or indirect impacts on the heritage significance of environmental heritage, impacts to archaeological resources (e4) impacts on aesthetic, anthropological, architectural, cultural, historical, community values and identity, scenic values, scientific or social significant items, or items of other special value for present or future generations	(e1-e3) The proposed works are within an existing school complex and will not result in direct or indirect impacts on heritage significance, archaeological resources, or Aboriginal cultural heritage. An unexpected finds protocol will be included in the CEMP to manage any potential archaeological discovery during works. (e4) The proposal will not adversely affect items of aesthetic, anthropological, architectural, cultural, historical, scientific or social significance for present or future generations. The project will instead provide contemporary educational facilities that support ongoing community and social values.	Multiple Refer to Appendix 1
(f) Any impact on the habitat of	(f1) impacts on listed protected fauna at and in the vicinity of the	(f1) The site is not mapped on the Biodiversity Values Map Threshold Tool and contains no listed	No Mitigation measures

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
protected animals, within the meaning of the <i>Biodiversity Conservation Act 2016</i> ?	site, and their habitat.	habitat for protected fauna under the Biodiversity Conservation Act 2016. The land is already developed as school grounds and has limited ecological value. Eight trees will be removed, but proposed landscaping will result in a net increase in canopy cover and will not reduce habitat values for listed fauna. Accordingly, the works will not impact protected animals or their habitat.	required.
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	(g1) potential endangering of any species or vegetation (g2) protected and threatened flora, terrestrial, fauna species, populations, ecological communities and their habitats	(g1-g2) The site is already developed as school grounds and is not identified on the Biodiversity Values Map. It does not contain threatened species, populations, ecological communities or habitat listed under the <i>Biodiversity Conservation Act 2016</i> . Eight trees will be removed, but replacement planting and landscaping will result in a net increase in canopy cover. The works will not endanger any species of animal, plant or other form of life on land, in water, or in the air.	No Mitigation measures required.
(h) Any long-term effects on the environment?	(h1) Long-term effects on: (i) flood and bushfire behaviour, flooding and the flood plain, bushfire prone land (ii) natural environment, flora and fauna species and their habitats (iii) agricultural productivity (iv) industrial land supply (v) housing supply (vi) climate change (vii) cumulative impacts (h2) meet industry recognised building sustainability and environmental performance standards, integrate environmental design, minimise greenhouse gas emissions, minimise energy	(h1) Flood impact assessment (Appendix 3) confirms the proposed works, including the northern car park, will not alter flood behaviour or cause off-site impacts. The activity is outside mapped bushfire prone land and exceeds APZ requirements, so long-term bushfire risk is low. No impacts are expected on flora, fauna or habitats, agricultural productivity, industrial or housing land supply. The project does not increase greenhouse gas emissions beyond standard construction activity, and landscaping will increase canopy cover. Cumulative impacts are not anticipated beyond temporary construction effects, which are addressed in the CEMP. (h2) The new buildings will be designed to meet industry sustainability and environmental	Multiple. Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
	and water consumption (recycled water) and material resources, renewable energy generation and storage, fossil fuel-free, sustainable travel choices, manage, reuse, recycle and safely dispose of waste (h3) long term ecological, social and economic Effects	performance standards, with efficient energy and water use, material reuse and recycling, and provision for sustainable travel choices. Opportunities for renewable energy generation and storage are incorporated where feasible. Waste will be managed in accordance with EPA guidelines to maximise reuse and recycling. (h3) The works will deliver long term positive ecological, social and economic effects by enhancing canopy cover and shade, supporting climate adaptation, providing improved educational facilities, and strengthening community infrastructure without generating unreasonable adverse environmental impacts.	
(i) Any degradation of the quality of the environment?	No specific factors – to be assessed by the determining authority if relevant	Any potential degradation of environmental quality will be addressed through the CEMP.	No Mitigation measures required.
(j) Any risk to the safety of the environment?	(j1) whether the development will have adverse environmental impacts (flood or stormwater runoff, storm surge, bushfire, ongoing maintenance of landscaping within the Asset Protection Zone, contamination leak, wind speeds, extreme heat, urban heat, climate change adaptation) on the surrounding area, particularly in sensitive environmental, cultural areas or residential neighbourhoods. (j2) impacts on soil resources and related infrastructure and riparian lands on and near the site, soil erosion, salinity and acid sulfate soils, surface water resources (quality and quantity), hydrology, dependent ecosystems, drainage lines, downstream assets and watercourses, groundwater resources.	(j1) The proposed development is not expected to result in adverse environmental impacts on the surrounding area, including sensitive ecological or residential zones. Flood Impact Assessment and the Flood Emergency Response Plan confirm no unreasonable off-site flood effects, with stormwater managed through upgraded detention and drainage infrastructure. The site is outside mapped bushfire-prone land and exceeds Asset Protection Zone (APZ) requirements, with landscaping within APZs to be maintained. Soil contamination investigations confirm suitability for development with no unacceptable risks. Environmental risks such as stormwater runoff, erosion, dust, wind, extreme heat, urban heat, and climate change adaptation will be	Multiple Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
		addressed through measures outlined in the CEMP. (j2) The site is not affected by salinity or acid sulfate soils. Soil resources will be managed through erosion and sediment controls in the CEMP. Surface water, groundwater and dependent ecosystems will not be adversely impacted, with stormwater design maintaining hydrology and protecting downstream assets and watercourses.	
(k) Any reduction in the range of beneficial uses of the environment?	No specific factors – to be assessed by the determining authority if relevant	Any potential degradation of environmental quality will be addressed through the CEMP.	No Mitigation measures required.
(l) Any pollution of the environment?	(l1) any pollution during construction and post construction e.g. air (including odours and greenhouse gases); water (including runoff patterns, flooding/tidal regimes, water quality health); soil (including contamination, erosion, instability risks); noise and vibration (including consideration of sensitive receptors); light pollution; waste, including hazardous waste (l2) impact of contamination spill, movement or disturbance during and post construction, and into the long term (l3) impact of a potential rainfall or flood event during construction (e.g. storage of fuel for construction vehicles, stock piles of soil, etc) (l4) dangerous goods and hazardous materials associated with the development (i.e. labs)	(l1-l3) No unreasonable pollution is expected post-construction. Construction-phase risks, including soil disturbance, stockpiles, fuel storage, and runoff during rainfall or flood events, will be addressed under the CEMP. (l4) The activity does not involve use of dangerous goods. Unexpected finds will be managed in accordance with EPA and Work Health and Safety requirements.	Multiple Refer to Appendix 1
(m) Any environmental problems associated with the disposal of waste?	(m1) environmental problems of waste during and after construction (left over construction materials, and personnel waste), transport and disposal of waste, ongoing use and eventual decommission of the development (m2) cumulative impacts from waste	(m1-m2) Construction and operational waste will be managed under the CWMP and OWMP, consistent with the POEO Act 1997, Waste Avoidance and Resource Recovery Act 2001, and EPA Waste Classification Guidelines. Construction waste streams (e.g. concrete, metals, timber, packaging, liquids, general waste) will be segregated, reused,	Multiple Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
		recycled, or lawfully disposed of by licensed contractors. Operational waste will be managed through colour-coded bins with contracted collection. Diversion targets of ≥90% (construction) and ≥80% (operation) will ensure no unreasonable or cumulative waste impacts.	
(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	No specific factors – to be assessed by the determining authority if relevant	The proposal will not result in increased demand on resources that are, or are likely to become, in short supply.	No Mitigation measures required.
(o) Any cumulative environmental effects with other existing or likely future activities?	(o1) The cumulative effects of noise and impacts to the road network from surrounding existing and approved developments	(o1) Cumulative impacts, including noise and road network effects from surrounding developments, are addressed in Section 6.11. No unreasonable cumulative environmental effects are expected.	Multiple Refer to Appendix 1
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	(p1) coastal processes and hazards (impacts arising from the proposed activity on coastal processes and hazards and impacts on the proposed activity from coastal processes and hazards), climate scenarios	(p1) The site is not located within a coastal zone. The proposal will have no impact on coastal processes or coastal hazards, including under projected climate change conditions.	No Mitigation measures required.
(q) Applicable local strategic planning statement, regional strategic plan or district strategic plan	(q1) relevant issues, objectives, policies and actions identified in local, district and regional plans and compliance of the proposal, and policies that identify community priorities that may be impacted (q2) relevant legislation, environmental planning instruments (including drafts, policies and guidelines).	(q1) The site is located within the Alex Avenue Growth Centre Precinct, part of the broader North West Growth Area. This area has been identified for significant urban development to accommodate population growth and infrastructure needs. Blacktown City Council's Local Strategic Planning	No Mitigation measures required.

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
made under Division 3.1 of the Act?	(q3) requirements of any approvals applying to the site, including concept approval or recommendation from any Gateway determination	Statement (LSPS), adopted in 2020, outlines key objectives and actions to support sustainable development, improved community facilities, and enhanced connectivity. The proposed school upgrade aligns with these strategic priorities by responding to increased demand for educational infrastructure and supporting the community's access to quality public education. (q2) The proposal is subject to the <i>State Environmental Planning Policy (Precincts – Central Parkland City) 2021</i>, which applies to the Alex Avenue Precinct. Development controls specific to the site are outlined in Appendix 7 of the SEPP. Additionally, the Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010 provides detailed planning and design guidance for development within the precinct. (q3) No specific concept approval or Gateway determination has been referenced for the site.	
(r) Any other relevant environmental factors?	(r1) health or safety risk to children, visitors, patients or staff of the development (r2) developments compatibility with neighbouring land uses, including proximity to: (i) restricted premises, injecting rooms, drug clinics, premises licensed for alcohol or gambling, sex services premises (for schools) (ii) hazardous land uses, waste transfer depots or landfill sites, service stations, air pollutant generating uses, noise or odour generating uses, extractive industries, industrial uses (iii) intensive agriculture, agricultural spraying activities and sources (iv) adjacent to or on land in a pipeline corridor	(r1) Risks during construction (noise, vibration, dust, traffic) will be managed under the CEMP. Post-construction, no unreasonable health or safety risks are expected. (r2) The site is not in proximity to restricted premises, hazardous land uses, waste depots, extractive industries, or intensive agriculture, nor is it within a pipeline corridor. Surrounding land uses (and zones) are predominantly residential and community facilities, which are compatible with the existing school and proposed activity. (r3) The site is bordered by local roads but not by major freight routes or rail lines. No unreasonable noise, air pollution, vibration, or safety impacts from	Multiple Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
	(v) sites which, due to prevailing land use zoning, may in the future accommodate the above uses. (r3) noise/air pollution, vibration and safety impacts from the below on the proposed development: (i) roads with higher traffic volumes, higher operating speeds and more heavy vehicles, freight traffic or used to transport dangerous goods or hazardous materials (ii) rail lines	transport corridors are expected.	
(s) Development in a Regulated Catchment	The site is situated within the Hawkesbury-Nepean catchment under Part 6.2 of the <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> .	The site is within the Hawkesbury–Nepean regulated catchment. The proposed stormwater strategy includes three on-site detention (OSD) tanks, rainwater harvesting, and water quality treatment devices (e.g. OceanGuard inserts, StormFilter cartridges, Jellyfish unit, ECOSOL baskets) that achieve or exceed the pollutant reduction targets. Overland flow paths have been maintained to convey the 1% AEP event safely, and finished floor levels have been set above flood risk. Water quality and quantity (s6.6): Post-development discharges will not exceed pre-development flows. WSUD elements and end-of-line treatment devices ensure a neutral or beneficial effect on water quality. Aquatic ecology (s6.7): The site does not adjoin a natural waterbody or riparian corridor. Stormwater treatment prevents adverse impacts on downstream watercourses. Flooding (s6.8): The site is not affected by mainstream flooding, though local overland flow occurs. Hydraulic modelling confirms the proposed buildings are flood-free in all events up to the PMF, including climate change. On-site detention and drainage works preserve downstream hydrology and	Multiple Refer to Appendix 1

Environmental Factor	Division Factors for school developments <i>Guidelines for Division 5.1 assessments Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
		ensure no adverse impacts on adjoining land. Recreation and public access (s6.9): The site does not adjoin a foreshore or waterbody. The public open space to the north (Little Trolly Park) experiences only minor flood level changes, contained within Council's drainage basin and assessed as acceptable. No adverse impacts on public access or recreational use will occur. Total catchment management (s6.10): The design aligns with catchment-scale stormwater controls, achieves Council pollutant reduction targets, and modelling confirms no adverse downstream impacts. Land within 100m of waterbody (s6.11): The site is not located within 100m of a natural waterbody. In summary, the stormwater and civil design ensure compliance with Part 6.2, with no adverse cumulative impacts on the Hawkesbury–Nepean regulated catchment.	
Addendum for synthetic turf sports fields:			
Environmental Factor	<i>Guidelines for Division 5.1 assessments – Addendum for synthetic turf sports fields</i> <i>Consideration of environmental factors for health services facilities and schools Addendum</i>	Response/Assessment	Mitigation Measure Reference
Location of synthetic turf sports fields	Flooding - Many sports fields are located on land with relatively high risk of flooding. Flooding can occur as overland flow or slower floodplain inundation. Major flooding events can damage infrastructure through sediment and debris deposition and can exacerbate spread of synthetic fibres and infill into wider ecosystem. Damage to drainage pores may necessitate partial or entire replacement.	The proposed field is not located in an extreme flood risk hazard area. An appropriately experienced and qualified stormwater engineer would be engaged to design the stormwater management system to prevent damage to the field and the surrounding environment.	Refer to Appendix 1 STMM4

Addendum for synthetic turf sports fields:			
	Bushfire - Synthetic turf may be subject to radiant attack, ember attack and direct flame contact. Polymers have low melting point (~100-170 Celsius) and ignition occurs from around 330 Celsius. Materials are classified as easily flammable and can release toxic gases. No relevant testing standards exist for outdoor applications experiencing bushfire conditions.	The proposed field is not located on bushfire prone land.	No Mitigation measures required.
	Climate change - The changing climate will impact safety, health and wellbeing of citizens and biodiversity, as well as durability and resilience of built infrastructure. Future extremes of flooding, heat and fire risk will affect performance of synthetic and natural turf. Concerns include impact of intense rainfall and flood on durability, increased water runoff and pollution impacts, and increased heat effects as synthetic turf lacks cooling and latent heat loss of natural turf.	Climate change impacts have been considered in the design and location assessment. Large scale tree planting is proposed around the school to provide natural cooling and shade, which will help mitigate surface heat effects and contribute to local climate resilience. The tree planting will also assist with carbon sequestration to offset some lifecycle greenhouse gas emissions.	Refer to Appendix 1 STMM1 STMM2
	Synthetic turf sports fields within close proximity to heritage items or within heritage conservation areas can have negative impact on heritage qualities. The look and intensity of use can dominate the setting and diminish heritage values.	The site is not located within a heritage conservation area, near Aboriginal Heritage sites, or adjacent to listed heritage items. No heritage impact assessment is required.	No Mitigation measures required.
Stormwater and soil health	Stormwater discharged from development must be treated in accordance with BCC's requirements. Stormwater pollution control devices must be incorporated to achieve required water quality removal rates. Water Sensitive Urban Design (WSUD) features can be accommodated but safety to school population needs consideration. Mechanical devices may be required to remove gross pollutants and suspended solids and reduce nutrient runoff. A series of pollution control devices will be needed to remove contamination from stormwater runoff to required levels prior to discharge.	An assessment of the impact of the proposed synthetic turf sports field installation on soil health will be undertaken by a soil scientist during the detailed design phase. An appropriately experienced and qualified stormwater engineer would be engaged to design the stormwater filtration system for the synthetic turf field to capture and filter runoff and any microplastics or other synthetic materials. Stormwater pollution control devices would be incorporated for the overall site to achieve the required water quality removal rates as per Council requirements. MUSIC modelling demonstrates compliance with pollutant reduction targets for most areas. The proposed synthetic futsal court catchment in isolation does not meet the required pollution reduction target, however, does not worsen the	Refer to Appendix 1 STMM3 STMM4 STMM5 STMM6 SWMM7 OPMM2

Addendum for synthetic turf sports fields:			
		current condition and post-development reduction is equal to or greater than the existing condition. The synthetic sports field continues to drain to the adjacent detention basin as per current arrangement.	
Human health	Potential health impacts include: heat-related illness, thermal comfort and urban heat island effect; chemical, microplastic and microbiological health risks; air pollutants and odour; mental and social dimensions of health, including community access and impacts on nearby residents relating to wellbeing and social cohesion. Heat retaining properties of synthetic turf surfaces can impact health during hot conditions and late use should be discouraged during suitable weather. Without structures to reduce infill loss, tens to hundreds of kilograms of infill per year will wash into stormwater systems or waterways. Gaseous chemicals are emitted from synthetic turf sports fields at low concentrations. Air pollutants from synthetic turf require research to determine risks to vulnerable portions of the population. Odours from synthetic turf sports fields have been reported and can impact quality of life and experience for players and the local community.	Large scale tree planting is proposed around the school which will provide natural cooling across the site to reduce heat-related impacts and urban heat island effects. Stormwater management measures including pollution control devices have been incorporated to mitigate pollution (including microplastics) into the environment. A comprehensive human health risk assessment incorporating all relevant considerations would be completed, including air quality and odour impact assessments, by appropriately qualified specialists.	Refer to Appendix 1 STMM4
Biodiversity	Potential impacts include: Tree canopy loss through root removal or dieback; Biodiversity change; Biodiversity loss and health impacts for particular fauna; Increased incidences of synthetic turf ingestion; Habitat loss; Disruption of habitat corridors, increased edge effect potentially leading to population fragmentation; Increased artificial light at night; Increased heat from synthetic turf sports fields. Assessment should undertake biodiversity impact assessment to identify potential impacts, including impacts of habitat loss, heat effects on fauna and light spill. Should identify appropriate management measures to reduce impact such as strategic planting of vegetation around synthetic turf sites and replacement of trees to be replaced at a	The site is wholly located on biodiversity certified land under Part 8 of the <i>Biodiversity Conservation Act 2016</i>. No further assessment of impacts to biodiversity values is required under this legislation. The proposal involves removal of 24 trees and replanting of 144 trees, achieving a replacement ratio of 6:1 which significantly exceeds the minimum 2:1 ratio recommended. A pre-clearance survey will be undertaken by a qualified ecologist to identify fauna habitat features within trees to be removed.	Refer to Appendix 1 TMM1 TMM2 TMM3 TMM4

Addendum for synthetic turf sports fields:			
	minimum ratio of 2:1.		
Amenity and intensification of use	Synthetic turf sports fields tend to be more intensively used than natural turf sports fields and therefore impacts such as light spill, noise traffic and parking issues may be greater, particularly where sports fields are located close to residential areas. The Chief Scientist's review found greater community dissatisfaction with these factors appears mostly associated with single sports fields installed in predominantly residential areas where synthetic turf sports field has replaced a formerly natural turf sports field. Light associated with sports fields can be positive in terms of perceived increased physical safety and allowing increased hours for exercise. However, sporting lights are extremely powerful and can be an intrusive and harmful cause of light pollution to receiving communities.	The synthetic turf is provided for an existing school facility, not in a residential neighbourhood context. The facility will not attract greater traffic, noise, or parking impacts compared to the existing natural turf as it will be used by the same student population for sport and recreation activities that would occur regardless of surface type during the same hours.	No Mitigation measures required.
Material selection and management	Synthetic turf sports fields in NSW feature long synthetic blades supported by infill. Currently, the most used infill is styrene butadiene rubber (SBR) crumb sourced from waste tyres. The NSW Chief Scientist and Engineer's Review found health risks through direct contact and microplastic runoff from synthetic turf is likely to be low. However, restrictive measures to limit potentially harmful chemicals, leachates and microplastics in synthetic turf components may reduce unforeseen consequences to health. SBR crumb is the material most associated with community concerns about contamination, odour and ingestion issues. Currently, there are no requirements nor standards governing the materials or construction methods used to manufacture synthetic turf. Disposal will become a pressing issue in NSW in the coming decade as existing synthetic turf sports fields reach end of life.	Material data sheets for the materials being used will be reviewed during the detailed design phase to confirm compliance with Australian Standard technical report SA TR CEN 17519:2021 'Surfaces for sports areas — Synthetic turf sports facilities — Guidance on how to minimise infill dispersion into the environment', and in order to evaluate heat effects, lifecycle greenhouse gas, soil impacts and ongoing management. An end of life (EOL) management plan will be prepared and included in the REF. The EOL management plan should be consistent with the intent and provisions of the NSW Waste and Sustainable Materials Strategy and the NSW Plastic Reduction and Circular Economy Act 2021. If the preferred EOL option is unconfirmed, a contingency plan should be prepared. The practice of cutting up EOL sports fields for use in other settings is not an acceptable EOL plan. The Best Practice Sporting Fields - A guide for turf surfaces in the Lower Hunter (Hunter Water, 2022) was considered in project planning. The school provides a majority of natural turf with a minority of	Refer to Appendix 1 STMM1 STMM2 STMM3

Addendum for synthetic turf sports fields:

		synthetic turf, allowing for use of the grounds during wet weather as well as hot weather conditions.	
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7. Justification and Conclusion

The proposed school upgrade at The Ponds High School, at 180 Riverbank Drive, The Ponds is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting, or likely to affect, the environment by reason of the proposed activity.

As outlined in this REF, the proposed activity can be justified on the following grounds:

- It responds to an existing need within the community;
- It generally complies with, or is consistent with all relevant legislation, plans and policies;
- It has minimal environmental impacts; and
- Adequate mitigation measures have been proposed to address these impacts.

The activity is not likely to significantly affect threatened species, populations, ecological communities or their habitats, and therefore it is not necessary for a Species Impact Statement and/or a BDAR to be prepared. The environmental impacts of the proposal are not likely to be significant. Therefore, it is not necessary for an EIS to be prepared and approval to be sought for the proposal from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. On this basis, it is recommended that the department determine the proposed activity in accordance with Division 5.1 of the EP&A Act subject to the implementation of mitigation measures identified within this report.