Environmental Impact Statement

Proposed Sikh Grammar School (Masterplan and Built Form Approval)

151-161 Tallawong Road, Rouse Hill
(Lots 42 & 43 DP 30186)

Prepared by Willowtree Planning on behalf of Sikh Grammar School Australia c/- PMDL Architects

September 2019

A national town planning consultancy
www.willowtreeplanning.com.au

Document Control Table

Document Reference:	WTJ18-147-EIS		
Date	**Version**	**Author**	**Checked By**
16/11/2018	1	T. Lythall	C. Wilson
26/04/2019	2	T. Lythall	C. Wilson
24/05/2019	3	T. Lythall	C. Wilson
02/08/2019	4	T. Lythall	C. Wilson

SECTION 4.12 CERTIFICATE

Declaration Form	**Submission of Environmental Impact Statement (EIS)** prepared under the *Environmental Planning and Assessment Act 1979 – Part 4, Division 4.3, Section 4.12*
EIS Prepared By	
Name	Travis Lythall
Qualifications	Bachelor of Science, UoN
Address	Suite 4, Level 7 100 Walker Street North Sydney, NSW 2060
In Respect Of	Proposed Sikh Grammar School
Development Application	
Applicant Name	Sikh Grammar School Australia
Address	151-161 Tallawong Road, Rouse Hill, NSW, 2155
Land to be Developed	151-161 Tallawong Road, Rouse Hill – includes the following parcels: 151 Tallawong Road, Rouse Hill: ▪ Lot 42 in Deposited Plan 30186 161 Tallawong Road, Rouse Hill: ▪ Lot 43 in Deposited Plan 30186
EIS	An Environmental Impact Statement (EIS) is attached.
Certificate	I certify that I have prepared the contents of this EIS to the best of my knowledge: ▪ it is in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*, ▪ contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and ▪ that the information contained in the statement is neither false nor misleading.
Signature	
Name	Travis Lythall
Qualification	BSc, UoN
Date	02 August 2019

TABLE OF CONTENTS

Figures

Tables

Appendices

Appendix 1 Secretary's Environmental Assessment Requirements
Appendix 2 Clause 4.6 Variation Request
Appendix 3 Blacktown City Council Growth Centres Development Control Plan Compliance Table
Appendix 4 Environmental Risk Assessment
Appendix 5 Capital Investment Value and Quantity Surveyors Report
Appendix 6 Survey Plan
Appendix 7 Subdivision Plan
Appendix 8 Architectural Plans
Appendix 9 Construction Staging Plans
Appendix 10 Indicative Stage 1 Construction Plans
Appendix 11 Architectural Design Report
Appendix 12 Landscape Design Report & Plans
Appendix 13 Civil Engineering Drawings
Appendix 14 Tailout Civil Engineering Drawing
Appendix 15 Concept Stormwater Management Plan and Preliminary Flood Study
Appendix 16 Geotechnical Engineering and Salinity Assessment Report
Appendix 17 Preliminary Site Investigation (Phase 1) Contamination Report (151 Tallawong Road, Rouse Hill)
Appendix 18 Preliminary Site Investigation (Phase 1) Contamination Report (161 Tallawong Road, Rouse Hill)
Appendix 19 Traffic and Parking Impact Assessment
Appendix 20 Construction Traffic Management Plan
Appendix 21 Noise and Vibration Impact Assessment
Appendix 22 Odour Advice
Appendix 23 Aquatic and Terrestrial Ecology Assessment
Appendix 24 Waste Management Plan
Appendix 25 Aboriginal Cultural Heritage Assessment Report
Appendix 26 Bushfire Assessment Report
Appendix 27 Social Impact Assessment
Appendix 28 Site Infrastructure Assessment
Appendix 29 Ecologically Sustainable Development Report
Appendix 30 Fire Engineering Report
Appendix 31 Access Report
Appendix 32 Structural Engineering Letter of Support
Appendix 33 Mechanical Strategy
Appendix 34 BCA Report
Appendix 35 BCA Capability Statement
Appendix 36 Government Architect NSW Meeting Minutes
Appendix 37 Operational Management Plan
Appendix 38 Development Contributions Plan Letter
Appendix 39 Lighting Design Statement

GLOSSARY OF KEY TERMS

TERM	MEANING
A Metropolis of Three Cities	*A Metropolis of Three Cities – The Greater Sydney Region Plan*
AU$	Australian Dollars
Council	Blacktown City Council
CIV	Capital Investment Value
DPIE	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979* (as amended)
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPI	Environmental Planning Instrument
GA NSW	Government Architect NSW
GSC	Greater Sydney Commission
LEP	Local Environmental Plan
LUIIP	North West Priority Growth Area – Land Use and Infrastructure Implementation Plan
Masterplan	Proposed Masterplan subject to this Application (SSD 9472)
OEH	NSW Office of Environment and Heritage
PMDL	PMDL Architects
The Proponent / Applicant	Sikh Grammar School Australia
RMS	Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements issued 6th August 2018
SEPP	State Environmental Planning Policy
The School	Sikh Grammar School
Sqm or m²	Square metres
SREP	Sydney Regional Environmental Plan
SSD	State Significant Development (SSD 9472)
SSDA	State Significant Development Application
The Site / Study Area / Subject Site	151-161 Tallawong Road, Rouse Hill (Lots 42 & 43 DP 30186)
TfNSW	Transport for NSW
Willowtree Planning	Willowtree Planning Pty Ltd

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Willowtree Planning Pty Ltd (Willowtree Planning) on behalf of the proponent The Sikh Grammar School Australia c/- PMDL Architects. This EIS supports State Significant Development (SSD) 9472 for the Masterplan and built-form approval of the proposed Sikh Grammar School and has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) dated 6 August 2018. The Sikh Grammar School is proposed to be located on the land portion identified as 151-161 Tallawong Road, Rouse Hill (Lots 42 & 43 DP 30186).

The proposed Sikh Grammar School is proposed on the identified site, which has a total area of approximately 2.97 hectares (ha). As mentioned above, the Proposed Development seeks development consent for the Masterplan and built-form approval, including provisions for infrastructure services and civil works across the Subject Site, which are proposed to be carried out in a staged manner, to provide a suitable platform for the Proposed Development.

The vision and approach for the Proposed Development is to create an architectural treatment towards a high-quality cohesive site, reinforced with an attractive appearance, in a manner that is considered consistent with the Rouse Hill area and the wider Sydney Region Growth Centres. Additionally, the Proposed Development will showcase the intrinsically linked cultural values of Sikhism, in the architectural design, comprising a State-of-the-Art, Four-Star-Green-Star rated Educational Establishment, demonstrating standards concerning sustainability, social amenity and building quality. Additionally, the Proposed Development would incorporate provisions to include activated open and green space, as further illustrated in the proposed Masterplan.

Running concurrently to this State Significant Development Application (SSDA) is a Development Application (DA) (to be determined by Blacktown City Council), which integrates a proposed eleven (11) Lot Torrens Title subdivision with regard to the identified Subject Site. The DA would make provisions to utilise the western portion of the Subject Site, which includes ten (10) lots dedicated for residential purposes. The remaining lot would house the proposed Sikh Grammar School, which is the subject of this SSDA. Additionally, the DA would form the fundamental grounding, economic stability and support to allow for the proposed SSDA to progress.

The Subject Site is under the ownership of the proponent – The Sikh Grammar School Australia – and is currently utilised for rural / residential purposes. The Subject Site forms part of the Sydney Region Growth Centres, located within the North West Growth Centre Precinct Boundary – Riverstone East Precinct – which, forms part of the Precinct Plan identified as the *Blacktown Growth Centres Precinct Plan, 2013* under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Sydney Region Growth Centres SEPP). Under the Sydney Region Growth Centres SEPP the Subject Site is zoned R2 Low Density Residential, which allows for land uses that provide facilities or services that meet the day-to-day needs of residents, particularly an Educational Establishment.

The Proposed Development is considered consistent with surrounding land uses to which the Sydney Region Growth Centres SEPP applies; and, would contribute to the efficient use and development of land designated for such permissible purposes.

The Proposed Development concerns the proposed Sikh Grammar School, constituting a type of Educational Establishment in accordance with the Standard Instrument definitions. The Proposed Development is classified as State Significant Development (SSD) pursuant to Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Clause 15 of Schedule 1 relates to Educational Establishments and provides the following with regard to its compatibility and classification as SSD, including:

(1) Development for the purposed of a new school (regardless of the capital investment value).

The Proposed Development would include a three (3) stream primary school, a four (4) stream secondary school and an Early Learning Centre, with an ultimate population of approximately 1,260 Students and 120 Staff. Pursuant to this SSDA, approval for the Masterplan and all built-form is sought. Key components of the proposed Sikh Grammar School include:

- Site preparation works, including bulk earthworks and soil remediation;
- Site infrastructure works;
- Class rooms (attaining a maximum four (4) storey height);
- Staff and Student Accommodation;
- Administration offices;
- Primary and Secondary Library;
- Place of Public Worship (Gurdwara & Langar) – also to be utilised as a multi-purpose hall;
- Outdoor open space, including play areas, a 'Civic Heart', and village green comprising sports courts and sports fields;
- Car parking, kiss-and-ride and driveways to service staff, parents, visitors and service vehicles and an Early Learning Centre 'drop-off'; and,
- Landscaping including riparian planting.

Subject to development consent for the Masterplan and built-form being granted, pursuant to SSD 9472, the intent is to stage construction, enabling facilities to be delivered and expanded in line with the growth in student and staff numbers.

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act) it is required that a request for SEARs be made prior to lodgement of an Application seeking approval. As mentioned above, SEARs were requested for the proposed SSD (Reference: SSD 9472) and later issued by the NSW Department of Planning, Industry and Environment (DPIE) on 6 August 2018 (refer to **Appendix 1**).

In addition to the general requirements, the SEARs for the Proposed Development highlights a number of Key Issues, to be addressed as part of the EIS, including:

- Statutory and Strategic Context;
- Policies;
- Operation;
- Built Form and Urban Design;
- Environmental Amenity;
- Staging;
- Transport and Accessibility;
- Ecologically Sustainable Development (ESD);
- Social Impacts;
- Aboriginal Heritage;
- Noise and Vibration;
- Contamination;
- Utilities;
- Contributions;
- Drainage;
- Flooding;
- Bushfire;
- Biodiversity Assessment;
- Sediment, Erosion and Dust Controls;
- Waste; and,
- Construction Hours.

Other areas evaluated throughout this EIS (for added due diligence) include the following:

- Economic Impacts;
- Suitability of the Site;
- Community and Stakeholder Engagement;
- Historic (European) Heritage; and,
- Ecologically Sustainable Development and Energy Efficiency.

Accordingly, the findings of this EIS identify that the Proposed Development can be accommodated without generating impacts that are considered unacceptable, in line with the relevant legislation applicable to the Subject Site. Furthermore, the proposed Educational Establishment would be consistent with the objectives outlined with the Sydney Region Growth Centres SEPP, *Greater Sydney Region Plan – A Metropolis of Three Cities,* the *Central City District Plan*; and, remains consistent with the principles of ESD and Crime Prevention Through Environmental Design (CPTED), through the provision of a modernised Educational Establishment as part of the overall vision and integrated design.

Based on the findings of this EIS, the Proposed Development supports Educational Establishments, inclusive of the Proposed Development concerning the Sikh Grammar School, which enables a land use that provides a facility and extensive educational services that meet the day-to-day needs of residents, community members, as-well-as the wider locale of Western Sydney.

The Proposed Development is deemed suitable for its regional and local context and would not result in any significant environmental impacts, for which it satisfactorily addresses the SEARs (issued 6 August 2018). As such, it is recommended that the Proposed Development be supported by the NSW DPIE.

PART A PRELIMINARY

1.1 INTRODUCTION

This EIS is submitted to the NSW DPIE pursuant to Part 4 of the EP&A Act in support of an SSDA (SSD 9472). This EIS has been prepared by Willowtree Planning on behalf of the proponent The Sikh Grammar School Australia c/- PMDL Architects, in accordance with the SEARs dated 6 August 2018 (refer to **Appendix 1** of this Submission).

The proposed SSD seeks development consent for a proposed Masterplan and all built-form associated with the proposed Sikh Grammar School on the land portion identified as 151-161 Tallawong Road, Rouse Hill, being legally described as Lots 42 & 43 in Deposited Plan (DP) 30186. The Proposed Development would include a three (3) stream primary school, a four (4) stream secondary school and an Early Learning Centre, with an ultimate population of approximately 1,260 Students and 120 Staff.

The Site is currently owned by The Sikh Grammar School Australia and is used for rural / residential purposes. The future use (intended operation) of the Subject Site, would be for an Educational Establishment (The Sikh Grammar School), which would deliver a comprehensive learning program across the board. As discussed throughout this EIS, the Proposed Development seeks to establish an innovative operation that would operate on many levels (being the first of its kind within Australia).

The Proposed Development is for a school, being a type of Educational Establishment in accordance with the Standard Instruments definitions. The Proposed Development is classified as SSD pursuant to Schedule 1 of the SRD SEPP. Clause 15 of Schedule 1 relates to Educational Establishments and provides that development for the purpose of a new school (regardless of Capital Investment Value (CIV) is deemed SSD.

The EIS describes the Subject Site and Proposed Development, provides relevant background information, responds to the SEARs; and, assesses the Proposed Development in terms of the relevant matters set out in relevant legislation, Environmental Planning Instrument(s) and associated planning policies.

The Structure of this EIS is as follows:

- **Part A Preliminary**
- **Part B Site Analysis**
- **Part C Proposed Development**
- **Part D Legislative and Policy Framework**
- **Part E Strategic Planning Framework**
- **Part F Consultation**
- **Part H Environmental Risk Assessment**
- **Part I Management and Mitigation Measures**
- **Part J Proposed Development Justification**
- **Part K Conclusion**

1.2 PROJECT TEAM

The Project Team involved in the preparation of this SSDA comprise the following qualified experts listed below in **Table 1**:

Table 1: Project Team				
Discipline	**Consultant**	**Technical Input**	**Date**	**Appendix**
Planning	Willowtree Planning	Environmental Impact Statement	02/08/2019	
Planning	NSW DPIE	SEARs	06/08/2018	1
Planning	Willowtree Planning	Clause 4.6 Variation	02/08/2019	2
Planning	Willowtree Planning	BCC Growth Centres DCP Compliance Table	02/08/2019	3
Planning	Willowtree Planning	Environmental Risk Assessment	02/08/2019	4
Quantity Surveying	WT Partnership	Capital Investment Value and Quantity Surveyors Report	04/09/2019	5
Surveying	Total Survey Solutions	Survey Plan	31/05/2018	6
Subdivision	PMDL	Subdivision Plan	June 2019	7
Architecture	PMDL	Architectural Plans	Feb 2019	8
Architecture	PMDL	Construction Staging Plans	March 2019	9
Architecture	PMDL	Indicative Stage 1 Construction Plans	January 2019	10
Architecture	PMDL	Architectural Design Report	July 2019	11
Landscape	Symstudio	Landscape Design Report & Plans	June 2019	12
Civil Engineering	Martens	Civil Engineering Drawings	19/07/2019	13
Civil Engineering	Martens	Tailout Civil Engineering Drawing	31/07/2019	14
Civil Engineering	Martens	Concept Stormwater Management Plan and Preliminary Flood Study	12/07/2019	15
Engineering	Martens	Geotechnical Engineering and Salinity Assessment Report	24/05/2019	16
Contamination	DLA Environmental Services	Preliminary Site Investigation (Phase 1) Contamination Report (151 Tallawong Road, Rouse Hill)	March 2014	17
Contamination	DLA Environmental Services	Preliminary Site Investigation (Phase 1) Contamination Report (161 Tallawong Road, Rouse Hill)	05/05/2017	18

Traffic	Positive Traffic	Traffic and Parking Impact Assessment	July 2019	19
Traffic	Positive Traffic	Construction Traffic Management Plan	April 2019	20
Acoustic Engineering	Resonate	Noise and Vibration and Impact Assessment	10/07/2019	21
Odour	Northstar	Odour Advice	09/04/2019	22
Biodiversity	NGH Environmental	Aquatic and Terrestrial Ecology Assessment	June 2019	23
Waste	Martens	Waste Management Plan	June 2019	24
Aboriginal Cultural Heritage	NGH Environmental	Aboriginal Cultural Heritage Assessment Report	02/07/2019	25
Bushfire	Building Code & Bushfire Hazard Solutions Pty Ltd	Bushfire Assessment Report	27/06/2019	26
Social	Sarah George Consulting	Social Impact Assessment	May 2019	27
Services	Umow Lai	Site Infrastructure Assessment	19/07/2019	28
Ecologically Sustainable Development	Umow Lai	Ecologically Sustainable Development Report	01/05/2019	29
Fire Engineering	Umow Lai	Fire Engineering Report	30/04/2019	30
Accessibility	Vista Access Architects	Access Report	07/05/2019	31
Structural Engineering	Northrop	Structural Engineering Letter of Support	27/02/2019	32
Mechanical Engineering	Umow Lai	Mechanical Strategy	09/11/2018	33
Building Code of Australia	Group DLA	BCA Report	03/05/2019	34
Building Code of Australia	Group DLA	BCA Capability Statement	03/05/2019	35
Government Architect NSW	Government Architect NSW	Government Architect NSW Meeting Minutes	10/12/2018	36
Operation	The Sikh Grammar School Australia	Operational Management Plan	July 2019	37
Contributions	Blacktown City Council	Development Contributions Plan Letter	August 2019	38
Lighting Design	Umow Lai	Lighting Design Statement	August 2019	39

1.3 THE PROPONENT

The proponent is The Sikh Grammar School Australia c/- PMDL Architects. See **Table 2** for contact details.

Table 2: Proponent Contact Details		
Contact Name	Bhupinder Singh	Craig Kerslake
Company Details	Sikh Grammar School Australia	PMDL Architects
Contact Number	0401 146 460 0422 315 749 0430 586 199	(02) 8458 5500 0410 496 427
Email Address	Bsingh64@yahoo.com	ckerslake@pmdl.com.au

1.4 APPROVALS PATHWAY

Schedule 1 of SRD SEPP identifies development which is deemed to be SSD. Clause 15 of Schedule 1 relates to Educational Establishments and provides that development for the purpose of a new school (regardless of the CIV) is SSD. The Proposed Development, for the purposes of a school; therefore, qualifies as SSD.

Accordingly, this EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and the SEARs issued 6 August 2018. The Minister for Planning will be the determining authority for the project.

1.5 CAPITAL INVESTMENT VALUE

The CIV of the Proposed Development, is estimated to be around $167,533,780 Million (M) (excluding GST) overall (See **Appendix 5** for full QS Costings).

1.6 JOBS CREATION

As detailed in the CIV and Quantity Surveyors Report (refer to **Appendix 5**), the Proposed Development is estimated to generate the following jobs:

- In the order of 280 full-time positions in the construction phase of development; and,
- In the order of 120 full-time positions in the operational phase of development.

1.7 EXISTING ZONING PROVISIONS

For purposes of the proposed SSDA, the Sydney Region Growth Centres SEPP would be invoked as the prevailing legislation concerning the Subject Site. Under the SEPP the Subject Site is zoned R2 Low Density Residential.

1.8 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Application to receive the SEARs was submitted (Reference: SSD 9472). The SEARs were subsequently issued by NSW DPIE on 6 August 2018 and are satisfactorily addressed throughout the contents of this EIS and complete submission.

The full SEARs, as issued, are annexed in **Appendix 1** of this submission. An overview of how the Secretary's Requirements have been satisfied by this EIS is also outlined in **Table 3** below and further in **Part F** of this Submission. This document is also consistent with the minimum requirements for Environmental Impact Statements, as set out in Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

Table 3: How SEARs have been satisfied	
General Requirements	**How Addressed**
The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 & 7 of Schedule 2 of the EP&A Regulation.	This EIS has been prepared in accordance with Clauses 6 & 7 of Schedule 2 of the EP&A Regulation. The structure of this EIS addresses all legislative requirements.
Key Issues	
The EIS must include an assessment of all potential impacts of the Proposed Development on the existing environment (including cumulative impacts) and develop appropriate measures to avoid, minimise, mitigate and / or manage these potential impacts. As part of the EIS assessment, the following matters must also be addressed.	A full assessment of all potential impacts of the Proposed Development on the environment is detailed in Part H of the EIS.
Statutory and Strategic Context – including: ▪ *Biodiversity Conservation Act 2016;* ▪ *State Environmental Planning Policy (State & Regional Development) 2011;* ▪ *State Environmental Planning Policy (Sydney Region Growth Centres) 2006;* ▪ *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;* ▪ *State Environmental Planning Policy No. 64 – Advertising and Signage;* ▪ *State Environmental Planning Policy No.55 – Remediation of Land;* ▪ *Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No. 2 – 1997);* ▪ *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017;* ▪ *Draft State Environmental Planning Policy (Remediation of Land); and* ▪ *Draft State Environmental Planning Policy (Environment).* *Permissibility:* Detail the nature and extent of any prohibitions that apply to the development. *Development Standards:* Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	A detailed response to the Statutory and Strategic Context for this Site including a detailed justification for landuse is shown in Sections 2.3, 2.4, 3.3 7.1 and Part H of this EIS.
Policies – including: Address the relevant planning provisions, goals and strategic planning objectives in the following:	**Part E** of this EIS provides a comprehensive analysis of the relevant policies

▪ NSW State Priorities; ▪ *The Greater Sydney Regional Plan, A Metropolis of Three Cities;* ▪ *Future Transport Strategy 2056;* ▪ *State Infrastructure Strategy 2018-2038 Building the Momentum;* ▪ *Sydney's Cycling Future 2013;* ▪ *Sydney's Walking Future 2013;* ▪ *Sydney's Bus Future 2013;* ▪ *Crime Prevention Through Environmental Design (CPTED) Principles;* ▪ *Healthy Urban Development Checklist, NSW Health;* ▪ *Greater Sydney Commission's Central City District Plan;* ▪ *North West Priority Growth Area Land Use and Infrastructure Implementation Plan 2017;* ▪ *Better Placed: An integrated design policy for the built environment of New South Wales (GANSW 2017);* ▪ *Blacktown City Council Growth Centre Precincts Development Control Plan 2018*	applicable to the Proposed Development.
Operation – including: ▪ Provide details of the proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities. ▪ Provide details of the proposed ancillary place of worship operations, including the nature and frequency of use, hours of operation and capacity. ▪ Provide a detailed justification of suitability of the site to accommodate the proposal.	**Part C**, particularly Sections 3.2 and 3.5 satisfactorily consider the operational phase of the Proposed Development. Additionally, an Operational Management Plan has been drafted for the Proposal and is located within **Appendix 37** of this EIS.
Built Form and Urban Design – including: ▪ Address the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. ▪ Address design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours. ▪ Provide details of any digital signage boards, including size, location and finishes. ▪ Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* and the GANSW Design Guide for Schools. ▪ Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development. ▪ Provide detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development.	**Section 7.2** satisfactorily considers the built-form and urban design of the Proposed Development. Additionally, **Appendix 8-12** satisfactorily address built-form requirements.

▪ Provide a detailed site-wide landscape strategy including consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation. ▪ Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site any adjoining heritage items. ▪ Address CPTED Principles. ▪ Demonstrate good environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.	
Environmental Amenity – including: ▪ Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity overshadowing and acoustic impacts. ▪ Conduct a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development). ▪ Include a lighting strategy and measures to reduce spill into the surrounding sensitive receivers. ▪ Identify any proposed use of the school outside of school hours (including weekends), including and in addition to the ancillary place of worship, and assess any resultant amenity impacts on environmentally sensitive areas, the immediate locality and proposed mitigation measures. ▪ Detailed outline of the nature and extent of the intensification of use associated with the increased floor space, particularly in relation to the proposed increase in staff and student numbers. ▪ Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	**Section 7.3** of this EIS has satisfactorily addressed environmental amenity.
Staging – including: Provide details regarding the staging of the proposed development (if any).	Construction staging has been considered within Section 3.2.7 of this EIS, as well as in the relevant consultant reports, where required. A Construction Staging Plan is provided within **Appendix 9** & **10** of this EIS. It is noted, that the Construction Staging is indicative and is proposed to be undertaken at the discretion of the Proponent upon funds being available at a given time.
Transport and Accessibility – including:	A full traffic and transport assessment, in accordance with both

Include a transport and accessibility impact assessment, which details, but not limited to the following: ▪ accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development. ▪ projected student population growth as the site develops. ▪ details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area. ▪ the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development. ▪ details of design of the surrounding local road network as per the Riverstone East planned precinct. ▪ trip generation mode share estimates based on surveys and analysis of a similar development. ▪ intersection modelling and analysis for existing and post-development (forecast year 2036 – refer to Transport Study Post Exhibition Report for the Riverstone East planned precinct), which includes Tallawong Road with Guntawong Road and Tallawong Road with Schofields Road. ▪ measures to integrate the development with the existing/future public transport network. ▪ the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years). ▪ the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays. ▪ details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site. ▪ the proposed walking and cycling access arrangements and connections to public transport services. ▪ the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones. ▪ proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance.	RMS and Blacktown City Council requirements is shown in **Section 7.4** of this EIS and located within **Appendix 19** & **20**.

▪ proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site. ▪ an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development. ▪ an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED. ▪ emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times). ▪ the preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: o assessment of cumulative impacts associated with other construction activities (if any); o an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; o details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; o details of anticipated peak hour and daily construction vehicle movements to and from the site; o details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; and o details of temporary cycling and pedestrian access during construction. Relevant Policies and Guidelines: ▪ Guide to Traffic Generating Developments (Roads and Maritime Services). ▪ EIS Guidelines – Road and Related Facilities (DoPI). ▪ Cycling Aspects of Austroads Guides. ▪ NSW Planning Guidelines for Walking and Cycling. ▪ Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development. ▪ Standards Australia AS2890.3 (Bicycle Parking Facilities).	
Ecologically Sustainable Development (ESD) – including: ▪ Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development. ▪ Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-	The principles of ESD have been satisfactorily considered throughout the overall design of the Proposed Development. Further information regarding ESD can be identified within **Section 7.18** of this EIS and **Appendix 29**.

carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy. ▪ Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance. ▪ Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change, specifically: o Hotter days and more frequent heatwave events; o Extended drought periods; o More extreme rainfall events; o Gustier wind conditions; o How there will inform landscape design, material selection and social equity aspects (respite / shelter areas). Relevant Policies and Guidelines: ▪ NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.	
Social Impacts – including: Include an assessment of the social consequences of the schools' relative location.	Social impacts as a result of the Proposed Development have been considered by Sarah George Consulting within the Social Impact Assessment, which also included a comprehensive Community and Stakeholder Management Strategy for the Proposal (refer to **Section 7.10** & **Appendix 27** of this EIS).
Aboriginal Heritage – including: ▪ Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011). ▪ Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR. ▪ Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must	An Aboriginal Cultural Heritage Assessment Report (ACHAR) was undertaken and prepared by NGH Envionmental (2019) for the Proposed Development, for which the findings can be located within **Section 7.12** and **Appendix 25** of this EIS.

demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	
Noise and Vibration – including: ▪ Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. ▪ Identify and assess operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities (including and in addition to the ancillary place of worship), and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. Relevant Policies and Guidelines: ▪ NSW Noise Policy for Industry 2017 (EPA) ▪ Interim Construction Noise Guideline (DECC) ▪ Assessing Vibration: A Technical Guideline 2006 ▪ Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008).	A qualitative and quantitative Noise and Vibration Impact Assessment has considered the relevant construction and operational phases of development, for which the findings can be located within **Section 7.7** and **Appendix 21** of this EIS.
Contamination – including: ▪ Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. ▪ Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works. Relevant Policies and Guidelines: ▪ Managing Land Contamination: Planning Guidelines – SEPP 55 Remediation of Land (DUAP).	Contamination for the Site has been previously assessed, via means of a Preliminary Site Investigation undertaken by DLA Environmental Services, which has satisfactorily addressed and considered the requirements for contamination in relation to SEPP 55, for which the Site is deemed suitable for the proposed use. A Phase 2 Environmental Site Assessment is not considered to be required. **Sections 4.2.10** & **7.5**, as well as **Appendix 17** & **18** of provide further information with regard to contamination.
Utilities – including: ▪ Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing	Services to the Site can be successfully augmented where possible and have been

capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. ▪ Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	considered in **Sections 3.2.3** & **7.14** as well as **Appendix 28** of this EIS.
Contributions: Address Council's 'Section 94/94A Contribution Plan' and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	Development Contributions have been considered in **Section 4.3.5** and **7.15** of this EIS. Indicative contributions costs are confirmed by Blacktown City Council (refer to **Appendix 38**.
Drainage – including: ▪ Detail measures to minimise operational water quality impacts on surface waters and groundwater. ▪ Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties and environmentally sensitive areas. Relevant Policies and Guidelines: ▪ Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)	The Civil Engineering Drawings located within **Appendix 13** have satisfactorily addressed any drainage requirements for the Site.
Flooding – including: Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.	Flood affectations for the Site have been considered within **Section 7.5** and **Appendix 15** of this EIS.
Bushfire – including: Address bushfire hazard and, if relevant, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 (NSW RFS).	A Bushfire Assessment Report has been prepared, which considers any potential bushfire hazards for the Proposed Development. The findings are dentified with **Section 7.13** & **Appendix 26** of this EIS.
Biodiversity Assessment – including: ▪ Identify and address the requirements of the *Biodiversity Conservation Act 2016* relevant to the State significant development application. ▪ Where a Biodiversity Development Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal. ▪ Where the land is subject to a Biodiversity Certification Order, evidence of this Order and the terms is to be provided.	**Section 7.8** and **Appendix 23** of this EIS satisfactorily considers the Proposed Development's impact on any biodiversity values within close proximity to the Site.

Note: Notwithstanding these requirements, the *Biodiversity Conservation Act 2016* requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report unless otherwise specified under the Act.	
Sediment, Erosion and Dust Controls – including: Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Relevant Policies and Guidelines: ▪ Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom). ▪ Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA). ▪ Guidelines for development adjoining land and water managed by DECCW (OEH, 2013). ▪ Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. ▪ Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP).	The Civil Engineering Drawings located within Appendix **13** of this EIS provide Sediment and Erosion Controls for the Proposed Developments. Further mitigation measures are identified within **Part H** of this EIS.
Waste – including: Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	A Waste Management Plan (refer to **Appendix 24**) has been prepared for the Proposed Developments construction and operational phases of development and is further considered within **Section 7.6** of this EIS.
Construction Hours – including: Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	**Section 3.2.7** of this EIS includes further insight to the proposed construction details for the Proposed Development.
Table 3: How SEARs have been satisfied	
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: ▪ Blacktown Council ▪ Government Architect NSW (through the NSW SDRP process) ▪ Transport for NSW ▪ Roads and Maritime Services and ▪ NSW Rural Fire Service Consultation should commence as soon as practicable to agree the scope of investigation.	For full details of the Proposed Developments Consultation Plan, refer to **Part F** of this EIS.

The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	
Further Consultation After Two (2) Years	
If you do not lodge a development application and EIS for the development within two years of the issue date of these SEARs, you must consult further with the Planning Secretary in relation to the preparation of the EIS.	Noted.

PART B SITE ANALYSIS

2.1 SITE CONTEXT & EXISTING SITE CHARACTERISTICS

The identified land portion that is the subject of this DA is legally defined as 151-161 Tallawong Road, Rouse Hill (Lots 42 & 43 DP 30186).

The Subject Site comprises a total site area of approximately 2.97 hectares (ha) and is subject to the applicable provisions outlined within the Sydney Region Growth Centres SEPP. Primary access to the Site is currently obtained via Tallawong Road (running north and south). Additionally, the southeast corner of the Subject Site adjoins a planned access road (subject to a DA running concurrently to this SSDA), which would provide additional access to the Subject Site and adjoining properties to the south and west. Surrounding properties comprise land of similar rural / residential characteristics and nature comparable to that of the Subject Site.

The Site's historical context is best described through its undeveloped state besides the one (1) residential dwelling identified on the eastern portion of 161 Tallawong Road, Rouse Hill. The Subject Site could be defined by its rural / residential character, with vegetative characteristics encompassing undulated grassed land that is considerably free of any other vegetation with a few 'still-standing' tress for recognition.

The Site is situated approximately 35.87 km northwest of the Sydney CBD, 17.73 km northwest of Parramatta and 19.88 km northeast of Penrith within close proximity to transport infrastructure such as the regional road network including Schofields Road and Windsor Road, as-well-as being in close proximity (1.2 km) from Tallawong Station (forming part of the Sydney Metro). These considerations are ultimately considered to promote the enhanced connectivity to the Subject Site and the immediate vicinity, as well as the wider locality.

Land surrounding the Site comprises the following land use zoning, including:

- R2 Low Density Residential;
- R3 Medium Density Residential;
- B2 Local Centre;
- RE1 Public Recreation; and,
- SP2 Infrastructure.

The nearest sensitive land uses are within the R2 Low Density Residential zone surrounding the Subject Site and the RE1 Public Recreation zone further south of the Subject Site. Consideration should also be given to the R3 Medium Density Residential zone to the north of the Subject Site. Accordingly, mitigation and protection measures would be accurately and appropriately implemented throughout the proposed development of the Subject Site to preserve the natural, ecological and residential amenity. The closest densely populated residential suburbs are approximately 560 m to the west of the Site (Schofields).

As mentioned, the identified land portion is subject to the provisions outlined within the Sydney Region Growth Centres SEPP. The Sydney Region Growth Centres SEPP is the prevailing EPI and categorises the Site within the R2 Low Density Residential zone (refer to **Figure 1**). The Site and surrounding context are best depicted and further illustrated in **Figures 2** & **3** below.

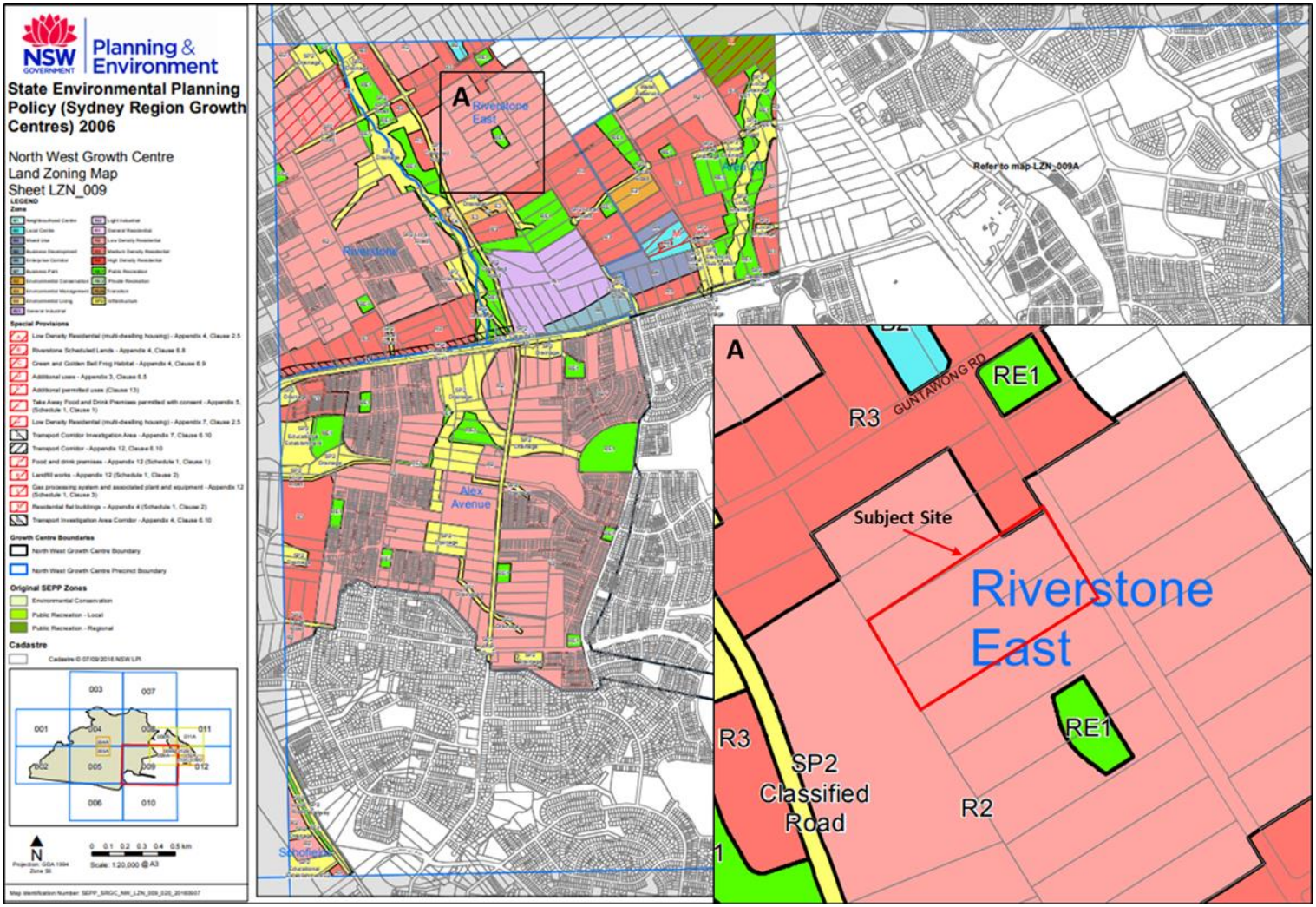


Figure 1 Applicable Zoning Category for the Subject Site under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Source: NSW Legislation, 2018)

Figure 2 Site Layout and Surrounding Context (Source: NearMaps, 2018)

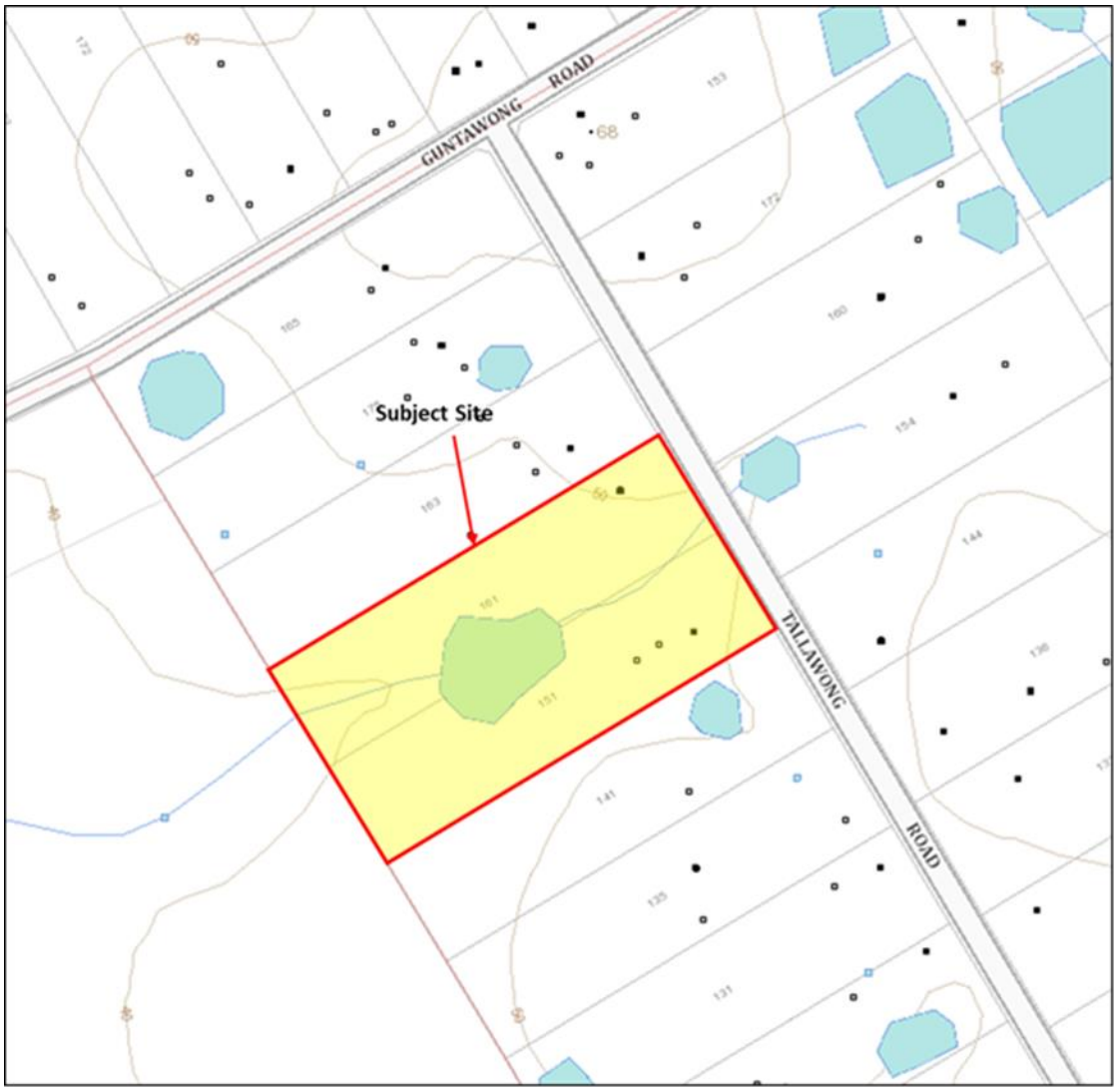


Figure 3 Site Surroundings and Context (Source: SIXMaps, 2019)

2.2 LAND OWNERSHIP

The entire land which is the subject of this Application (2.97 ha in total) is owned by The Sikh Grammar School Australia.

2.3 STRATEGIC CONTEXT OF THE SITE

Key contextual attributes of the Subject Site in relation to its context are noted as follows:

- The Site is situated approximately 35.87 km northwest of the Sydney CBD, 17.73 km northwest of Parramatta and 19.88 km northeast of Penrith;
- Tallawong Road adjoins the Subject Site to the east, while NSW DPIE owned land adjoins the Site to the west, which extends to the First Ponds Creek tributary. To the north and south comprises rural / residential land similar to the Subject Site, although the identified land is earmarked for residential development, for which construction has commenced on varied lots;
- The Subject Site is wholly located within the Blacktown LGA;
- The Sydney Region Growth Centres SEPP remains the primary EPI applicable to the Subject Site. Under the provisions of the Sydney Region Growth Centres SEPP, the Subject Site is located within the Riverstone East Precinct (refer to **Figure 1** above);

- Under the SEPP the land is subject to the core strategies and directions listed under the *North West Priority Growth Area – Land Use and Infrastructure Implementation Plan* (refer to **Section 5.12** of this EIS);
- Given the strategic location of the Subject Site being positioned within the Riverstone East Precinct of the North West Priority Growth Area, the Proposed Development represents a logical outcome, that attributes in servicing the needs of the immediate community and wider locality;
- The proposed school would deliver employment-generating opportunities in both its construction and operational phases of development along with providing an educational service in an area designated for residential urban development; and
- The surrounding regional road network and available public transport infrastructure routes in close proximity to the Subject Site, serves as being ideal, by providing enhanced connectivity to the Site and the wider locality.

2.4 STRATEGIC CONTEXT

Importantly, the Subject Site is identified within the *Central City District Plan* (issued by the GSC, 2018). The Productivity Priorities of the Central River City of which the Site forms a part identified and set out under this Plan are:

- *Planning Priority C1 – Planning for a city supported by infrastructure;*
- *Planning Priority C2 – Working through collaboration;*
- *Planning Priority C3 – Providing services and social infrastructure to meet people's changing needs;*
- *Planning Priority C4 – Fostering healthy, creative, culturally rich and socially connected communities;*
- *Planning Priority C12 – Supporting growth of targeted industry sectors;*
- *Planning Priority C17 – Delivering high quality open space; and,*
- *Planning Priority C18 – Better managing rural areas.*

The Proposed Development is considered entirely consistent with and responsive to the above priorities, making a valuable contribution to the Central River City, which is earmarked for development and higher and better uses with regard to the orderly economic development of the Subject Site. As is obvious, this Development maximises and utilises the Site where possible with regard to beneficial opportunities to provide an Educational Establishment to an area earmarked for future urban and residential development; grows industry investment within the education sector; and provides employment opportunities.

The Subject Site is included within the Riverstone East Precinct under the Sydney Region Growth Centres SEPP and further applicable to the aims and objectives articulated within the *North West Priority Growth Area: North West Land Use and Infrastructure Implementation Plan* (LUIIP, 2017), for which the suburb of Rouse Hill is identified as a District Centre.

The LUIIP's main objectives are to support the future development of new communities, with improved access to schools; parks; community facilities; jobs; roads; and public transport, for which the Proposed Development is considered to be consistent with these main objectives. Further, in delivering these outcomes, the Federal and NSW Government are planning new infrastructure and service upgrades, such as the Sydney Metro. The Proposed Development is considered to coincide with these planned outcomes perfectly, which includes the following provisions:

- New school to an area earmarked for residential urban development;
- Implementation of a Place of Public Worship (Gurdwara & Langar), which will be able to be utilised as a community facility by members of the public;
- Road upgrades along Tallawong Road, as well as the half-road construction along the northern boundary of the Subject Site; and

- The Proposed Development will provide employment-generating opportunities during both the construction and operational phases of development, which will demonstrate positive economic impacts, by contributing to the enhanced growth and development of the North West Priority Growth Area, particularly the Riverstone East Precinct.

As the Proposed Development is totally consistent with the objectives of the LUIIP; the Growth Centres SEPP; *A Metropolis of Three Cities*; and the *Central City District Plan*, it is considered to be orderly development in accordance with the EP&A Act 1979, and consistent with both the strategic vision for the region and the desired economic outcomes envisaged for the North West Priority Growth Area.

Given the strong alignment with regard to the Proposal and relevant objectives within the Growth Centres SEPP, it is deemed appropriate for the NSW DPIE to endorse and support the Proposed Development, for the purposes of a new school.

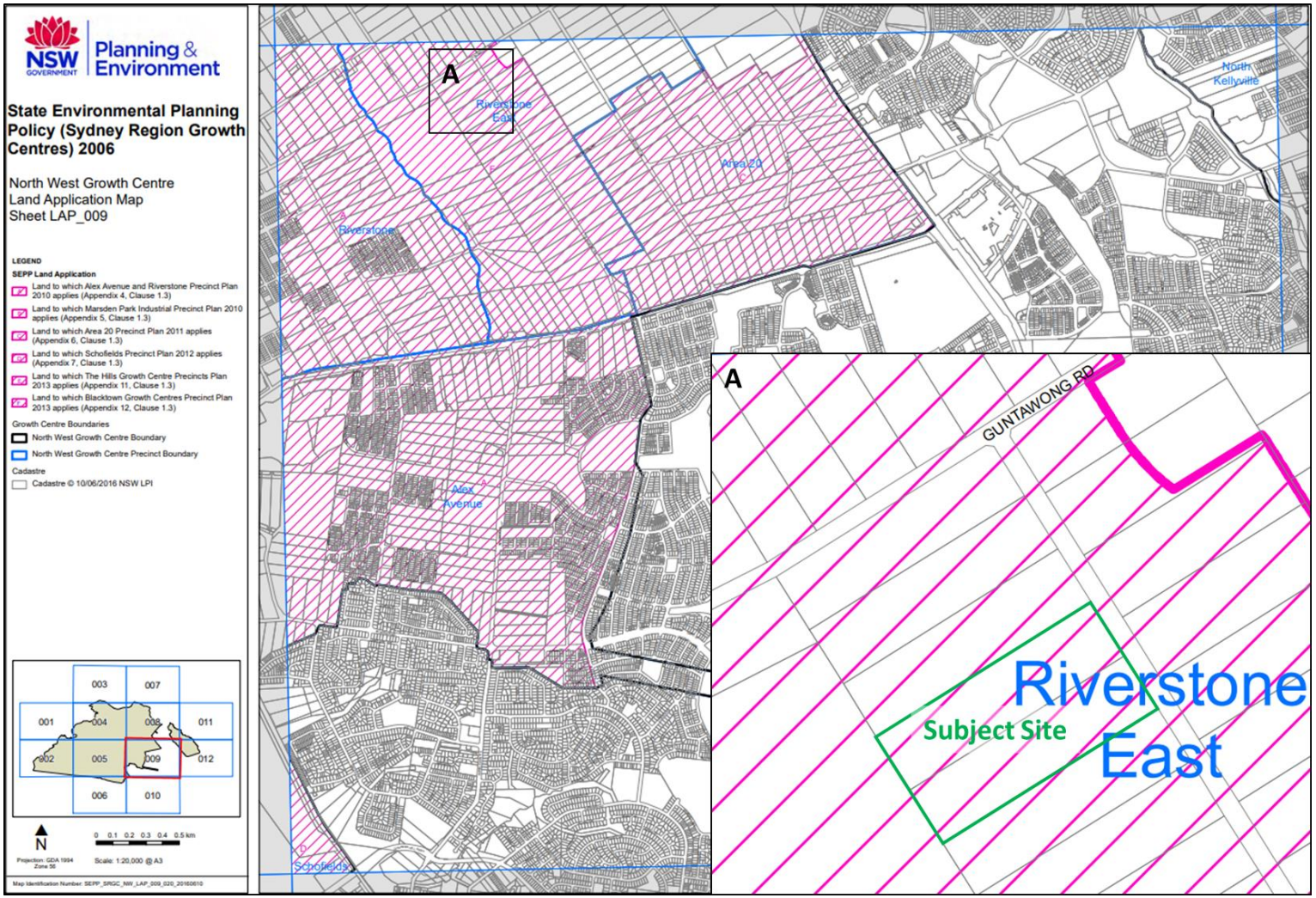


Figure 4 Land Application According to *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Source: NSW Legislation, 2019)

2.5 SERVICES AND UTILITIES

In principle, main, electricity, potable and wastewater, gas and telecommunications would be augmented accordingly to service the Subject Site, as confirmed by Umow Lai (2019) within the Site Infrastructure Assessment (refer to **Appendix 28** of this EIS). The following infrastructure is therefore proposed to be delivered to support the Proposed Development, for the purposes of a school:

- Upgraded electricity supply including kiosk substations proposed on the Subject Site, which will be fed directly from Endeavour Energy's distribution network;
- Wastewater main, which will connect to the existing Sydney Water Sewer Main traversing the southern boundary of the Subject Site;
- Telecommunications, including servicing by the NBN;
- Stormwater management system, including On-Site Detention (OSD) and reticulation tanks for reusable and recyclable potable uses, such as irrigation and amenities;
- Hydrant booster with an associated diesel pump, to aid in increasing the pressure of the relevant mains water supply experienced across the Site with regard to proposed fire hydrants;
- Hydraulic services, including cold water connections and a domestic hot water system;
- Mechanical services, including heating, cooling and fresh air ventilation systems; and
- Electronics, security, communications and associated data systems.

The complete Site Infrastructure Assessment Report prepared by Umow Lai (2019) is located within **Appendix 28** of this EIS.

2.6 SITE SUITABILITY

The Proposed Development provides for an Educational Establishment in a location that is suitably located away from any sensitive environments. The Site has an obvious advantage, as it provides an unconstrained platform for development. The topography is considered highly suitable for the intended use, and the Site is clear of contamination (DLA Environmental Services, 2017) and any significant Flora and Fauna species, for which the Proposed Development would not be subject to any offsets, as confirmed within the Ecological Report prepared by NGH Environmental (2019). The Site is also unconstrained with regard to Bush Fire. It is noted, that the Subject Site is influenced by Flood Prone Land, for which suitable mitigation measures would be implemented accordingly.

In summary, the Subject Site is deemed highly-suited to accommodate the intended new, proposed Educational Established due to the following factors, including:

- Educational Establishments (Schools) are permissible on the Site pursuant to the current zoning (R2 Low Density Residential), and no amendments to the SEPP are required to facilitate the Proposed Development;
- The proposed School would assist in meeting the increased demand for new educational facilities in Western Sydney;
- The Proposed Development would generate and maintain employment opportunities during both the construction and operational phases of development;
- The design has considered surrounding properties and would maintain a suitable level of amenity including informed considerations with regard to solar access, visual privacy, acoustic privacy and views;
- Whilst providing important new infrastructure, the proposed school also responds to the current character of the surrounding area, as achieved through architectural and landscape;
- All potential environmental impacts of the Proposed Development would be suitably mitigated within the Site;

- The Proposed Development makes suitable provisions for infrastructure upgrades such that the Site would be appropriately and adequately serviced;
- The Site is accessible by existing and proposed road infrastructure (Tallawong Road and proposed Access Road), which is capable of being upgraded to accommodate the Proposed Development and any future developments in the surrounding area;
- The Proposed Development would not affect any area of significance including Aboriginal or Historic (European) Heritage items; and,
- The Proposed Development may be developed with appropriate visual amenity given its surrounding context.

The following key elements of the Site and Proposed Development are noted:

Visual Impact:

- There will be no major impacts on the visual amenity of the locality, given the proposed architectural treatment offered by the Proposed Development, which takes into account suitable setback controls, as well as strategic building placement and articulation and modulation of relevant components, so as to not impose any adverse visual impacts.
- Land surrounding the Proposed Development site is designated for residential and urban expansion with integrated open space area under the relevant strategic planning policies, specifically, the LUIIP, for which the Proposed Development, for the purposes of a new school would provide a complimentary outcome.

Noise:

- The Proposed Development has been designed to mitigate noise impacts through the orientation of school buildings; noise screening; and sensitivity to all surrounding residential receivers in close proximity to the Subject Site. Mitigation measures have also been designed and included in the Site plans to further mitigate any operational noise impacts from occurring.
- The Noise and Vibration Impact Assessment, which was undertaken and prepared by Resonate (2019), confirms compliance with all current NSW Environment Protection Authority (EPA) Guidelines and relevant criteria, as required by the SEARs, that required due consideration.

Traffic:

- The Site will access an existing and proposed intersection, comprising Tallawong Road and the proposed access road along the northern boundary of the Subject Site for the interim period. It is noted, that a concurrent subdivision DA is proposing a half-road construction along the southern and western boundary of the Subject Site, providing connectivity around the Site.
- The Proposed Development's traffic impacts on the road network, including Tallawong Road, were calculated based on existing and future service levels. The Traffic and Parking Impact Assessment prepared by Positive Traffic, demonstrates, that the Proposed Development, along with associated local road upgrades – noting, Tallawong Road is earmarked to be upgraded, based on the *Riverstone East Precinct Transport Study* (ARUP, 2015) – which would improve the Level of Service and safety experienced along Tallawong Road.

Furthermore, the suitability of the Site is further reinforced in **Part E** of this EIS with regard to the Proposed Developments overall consistency with applicable Regional and Local Strategies; and, in **Part G** of this EIS, via a comprehensive Environmental Assessment, which includes an analysis of the potential impacts as a result of the Proposed Development. Accordingly, the Environmental Assessment prescribes recommendations and mitigation measures (where

necessary) to account for any identified potential impacts as a result of the Proposed Development. As mentioned above, the suitability of the Subject Site with regard to the Proposed Development is partially attributed to the minimal impact on the environment it would impose.

PART C PROPOSED DEVELOPMENT

3.1 OBJECTIVES OF THE PROPOSAL

The aims and objectives of the Proposed Development is to provide an Educational Establishment (The Sikh Grammar School) that is built in line with the Education Industry Sector Best Practices and would:

1. Deliver a new Educational Establishment that meets the significant demand that exists in Western Sydney, particularly the North West Priority Growth Area;
2. Design the Site to create a high quality teaching and learning environment for staff and students;
3. Respond to the current and projected growth in the region through staged delivery of the proposed School;
4. Ensure development is compatible with surrounding development and the local context;
5. Ensure minimal environmental impact; and,
6. Allow for the implementation of suitable mitigation measures where required.

The Site and proposed design are considered to meet the objectives of the project as it allows for development on land in proximity of key growth areas in Sydney's North West.

3.2 DESCRIPTION OF THE PROPOSAL

3.2.1 Educational Establishment (Sikh Grammar School)

Consent is sought to develop the Subject Site for the purpose of an Educational Establishment for the Sikh Grammar School Australia. Operational use of the proposed School would be for educational purposes concerning a three (3) stream primary school, a four (4) stream secondary school , an Early Learning Centre; and, ancillary uses such as Staff and Student Accommodation and a Place of Public Worship (Gurdwara and Langar), which would be utilised during school operating hours by the School and by the wider community when the School is not in operation.

Pursuant to this SSD, consent is sought for a Masterplan and built-form, inclusive of infrastructure, services, school buildings, play areas and land uses. Furthermore, the Masterplan for the Site, (see **Appendix 9**) illustrates the emphasis of the urban design to produce a greater and more pleasant learning environment in line with the vision outlined in the *Greater Sydney Region Plan – A Metropolis of Three Cities* and the *Central City District Plan*. Subsequent to development consent for the Masterplan and built-form being granted, pursuant to SSD 9472, the intent is to stage construction, enabling facilities to be delivered and expanded in line with the growth in student and staff numbers.

Accordingly, the Proposed Development sets out a series of stages that development would occur over the 2.97 ha site, into a diversified Educational Establishment, responsible for the delivery of a comprehensive program. The development particulars with regard to the Proposed Development are outlined as follows in **Table 4**:

Table 4: Proposed State Significant Development Particulars	
Project Element	**Development Particular**
Site Area	2.97 ha
General	The Proposed Development is considered State Significant Development pursuant to Schedule 1, Clause 15 of SEPP (SRD) 2011. Additionally, the Proposed Development will attain a CIV of approximately $167,533,780 M.
Educational Establishment	▪ Three (3) Stream Primary School (including Primary School Library) comprising 5,135m² GFA;

	▪ Four (4) Stream Secondary School (including Secondary School Library) comprising 7,667m² GFA; ▪ Early Learning Centre comprising 1,378m² GFA; ▪ Boarding House (Student Accommodation) comprising 3,618m² GFA; ▪ Gurdwara & Langar and Multi-Purpose Hall comprising 4,703m² GFA; ▪ Services Pavilion Bin Store comprising 155m² GFA; ▪ Sports Amenities comprising 19m² GFA; ▪ Forecourt; and ▪ Village Green.
Building Heights	▪ Three (3) Stream Primary School: o 15.75 m at the highest point. ▪ Four (4) Stream Secondary School: o 16.25 m at the highest point. ▪ Gurdwara & Langar: o 18.19 m at the highest point. ▪ Early Learning Centre: o 8.2 m. ▪ Student Accommodation: o 12.6 m.
Primary Land Use	- Educational purposes.
Bulk Earthworks	Earthworks on the Site are proposed as follows: - Bulk earthworks are proposed to be carried out to establish building pads and balance any cut and fill. - These works are to be carried out in stages upon issue of Development Consent. The establishment of building pads would provide flexibility for the design of future educational facilities on-site.
Site Access	- Access to the Site would be obtained via Tallawong Road and the proposed access road along the northern boundary of the Subject Site. - It is noted, that the southern and western portions of the indicative Site half-road construction are subject to consent with regard to a Subdivision DA running concurrently to this SSD Application. - The design of the road is proposed in accordance with Blacktown City Council's requirements, achieving a road reserve width of 16.0 metres for the half-road construction (subject to separate approval), capable of accommodating cars and buses.
Infrastructure and Services	Services to the Site are able to be provided from Tallawong Road to the Site, including potable water, electricity, gas, wastewater and communications.
Subdivision	Torrens Title subdivision of the Subject Site is proposed to create 12 allotments under a separate DA running concurrently to this SSDA. The proposed school site will be positioned on proposed Lot 12, for which the Subdivision Plan can be located within **Appendix 7** of this EIS.
Landscaping	A Landscape Masterplan has been prepared by Sym Studio for the Proposed Development (refer to **Appendix 12** of this EIS). The landscape approach undertaken for the Site, is to create a unified environment with a variety of spaces as fluid extensions to the built-form.
Open Space	The Architectural Plans at **Appendix 8** indicate, 12,637m² of the site is provided as Open Space. Based on 1,260 students, this equates to 10m² of open space per student.

Car Parking & Traffic Arrangements	**Primary & Secondary School:** - 135 provisional car parking spaces required. - 162 car parking (basement) spaces provided. **Early Learning Centre:** - 27 provisional car parking spaces required. - 33 car parking spaces provided. **Gurdwara & Langar:** - 96 provisional car parking spaces required. - 162 car parking (basement) spaces provided.
Operational & Construction Jobs	**Overall Employment Generation:** - Upon completion of the Proposed Development, it is anticipated that the operational phase of the project would generate in the order of 120 operational jobs. - Construction jobs generated by the Proposed Development are expected to be in the order of a further 280. Construction and Design activities will encompass the extensive environmental, technical, road, stormwater and civil works required, in addition to the latest construction techniques required to deliver the facilities.

The Site Masterplan can be found in **Figure 5** below, whilst the Architectural Plans concerning the Proposed Development with regard to Stage 1 can be located in **Appendix 8** of this EIS.

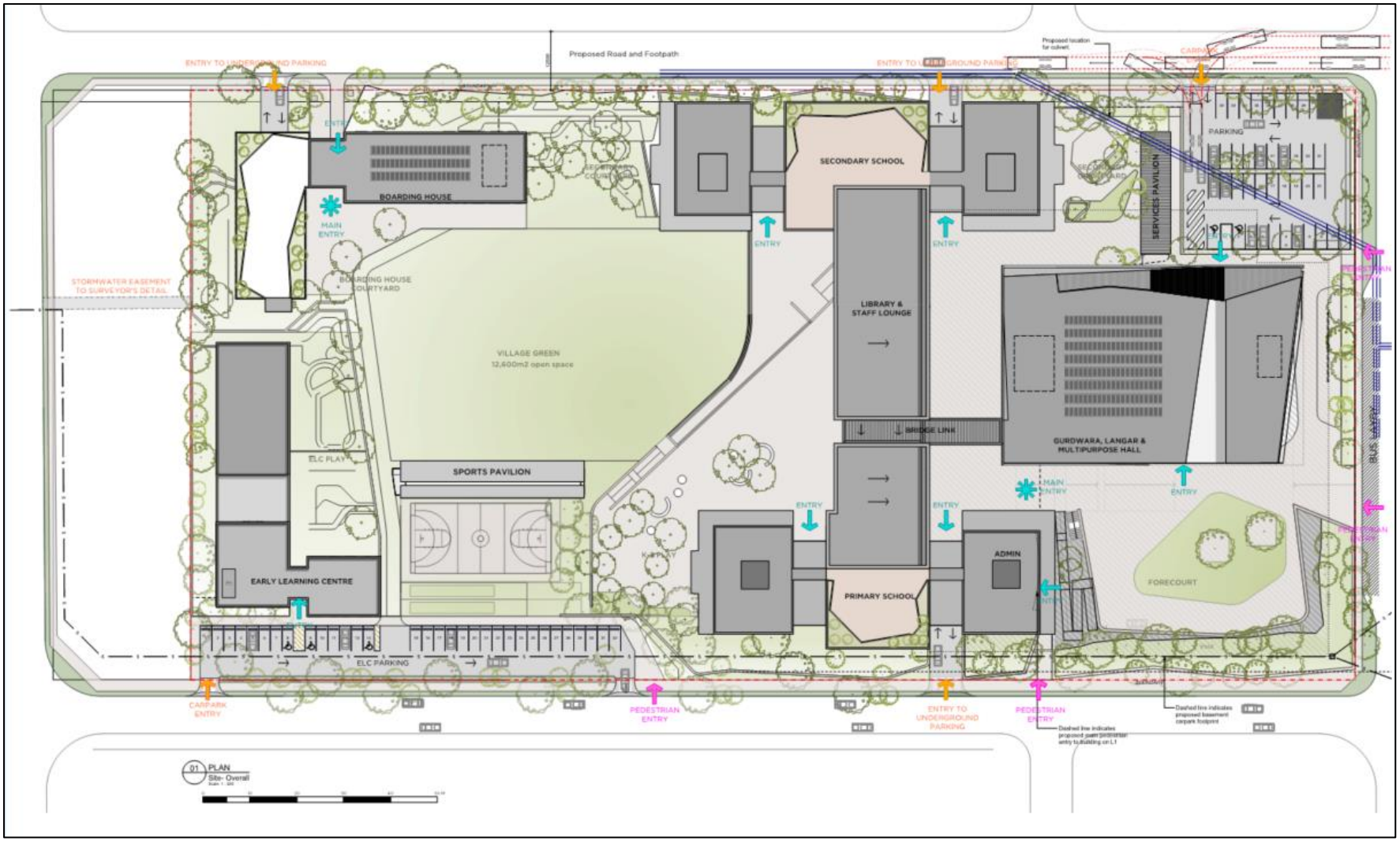


Figure 5 Proposed Site Masterplan for the Proposed Sikh Grammar School (Source: PMDL, 2019)

3.2.2 Site Preparation

Bulk earthworks are proposed across the whole site, to complete all the site preparatory works. Detailed analysis of the cut and fill, is shown in both **Figure 6** below and **Table 5** below and overleaf. The total quantum of cut/fill is proposed as follows:

Table 5: Cut/Fill Balance	
Topsoil Volume	
1,638 m^3 (50 mm topsoil depth)	
Earthworks Volume	
Cut	19,581 m^3
Detailed Excavation	5,979 m^3/ha
Fill	46,022 m^3
Balance	26,441 m^3

Cut earthworks over the Site has been estimated to be minor (fill is required). Investigations show, that no impacts are expected to groundwater levels, or soil quality, as a result of these works. Additionally, all geotechnical testing and inspections performed during earthworks, would be undertaken via a Level 1 Geotechnical Engineer in accordance with the Site earthworks specification and in accordance with AS3798-1996.

It should be noted, that the volumes outlined in **Table 5** above are based on the final ground surface at the ultimate development stage. Boxing has not been included within the investigations undertaken, for which is expected to be completed at the CC stage.

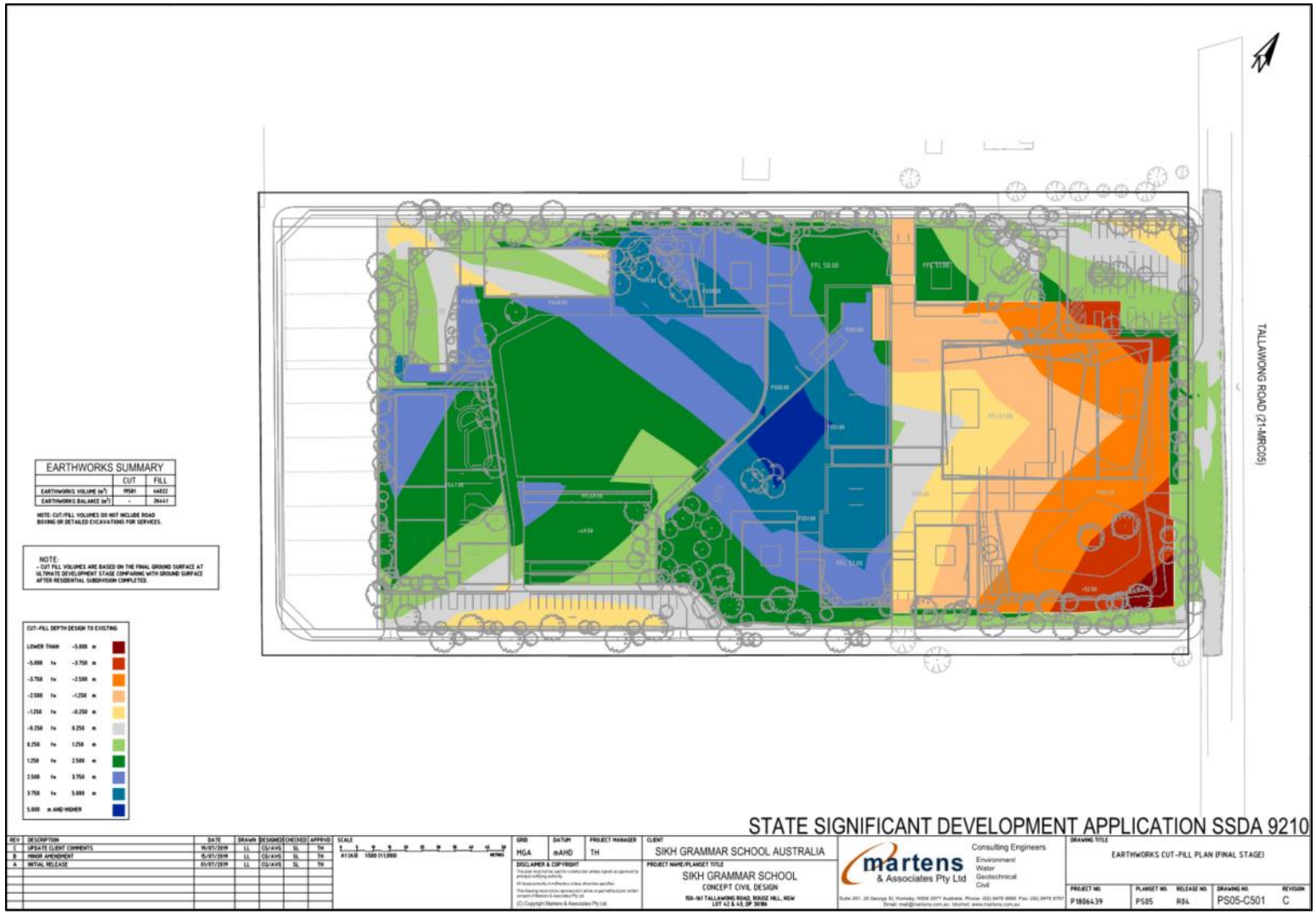


Figure 6 Proposed Earthworks Cut & Fill Plan – Final Stage (Source: Martens, 2019)

3.2.3 Site Infrastructure

The infrastructure and services required to support the school will be delivered in conjunction with civil works and built-form development. In summary, the proposed site infrastructure includes:

- Potable water main connections;
- Wastewater mains connection;
- New substation;
- Telecommunications, including NBN connection;
- Cold water connection;
- Hot water system;
- Stormwater management system, including OSD tanks and basins;
- Waste and recycling facility;
- Security and comms room (MDF Room);
- Paved pathways and access ramps, including forecourt area;
- Identification Signage;
- Heating, cooling and fresh air ventilation systems; and
- Secure fencing.

Further details of infrastructure provision are provided in the Architectural Drawings, prepared by PMDL at **Appendix 8** and the Site Infrastructure Assessment prepared by Umow Lai, located at **Appendix 28** of this EIS.

3.2.4 Landscaping

Landscape works will be carried out over the entire Subject Site to create a 'green oasis' and highly amenable learning environment. Landscaping would create useable outdoor spaces for active and passive recreation and learning activities, provide shading, enable proximity to 'nature' and contribute to an attractive visual experience. All of which, would be implemented via an aesthetically pleasing architectural landscaped design.

The proposed landscape design for the Site has been influenced by the following:

- Education SEPP – Schedule 4;
- "Better Placed – Design Guide for Schools"; and
- BCC Growth Centres DCP 2018.

Furthermore, a balance of hard and soft surfaces would support a variety of active and passive, structured and 'free' activities relating to general play, outdoor educational and organised / coordinated sporting activities. Landscape design has also enabled the establishment of natural connections between the various areas of the school. Additionally, planting adjacent to the Site boundaries will assist in protecting neighbouring amenity by providing visual screening and assisting in noise mitigation.

Extensive vegetation planting throughout the Site would improve the biodiversity and tree canopy of the Site, particularly given that in its current state it consists of completely cleared land (as mentioned in **Section 2.1**). Riparian planting and green roof spaces would activate a welcoming and inviting Site.

As noted by Sym Studio (2019) in their Landscape Design Report (refer to **Appendix 12**), the landscape approach proposed is to create a unified environment with a variety of spaces as fluid extensions to the built-form. This is imperative to the overall function of the Site, by providing a space that is safe and welcoming and accessible for students, staff and visitors, that is noted to celebrates Sikh cultural values, within its greatly valued Australian context.

Sym Studio drew inspiration for their proposed landscape approach from surrounding vegetation communities to inform the landscape response, in addition to the Site's existing character. The Cumberland Plain Woodland Plant Community Type (PCT) (whilst not present on the Site), inspired a landscape vernacular of tall canopy trees with an open 'midstorey' and expansive low growing understorey, interpreted to a strong tree canopy of local vegetation that embraces the built-form proposed and low lying, but activated groundplain.

It is noted, that consistent canopy cover of Corymbia maculate and Angophora costata street trees work to unify the Site and ground the buildings within the landscape setting, whilst the open midstorey creates visual connections between the spaces and aids in passive surveillance. Species selection of the Angophora costata reference the local history with the word 'tallawong' derived from the Darug word 'dalawong' for the rough barked apple tree (Angophora costata).

The plant pallete utilises mostly native species with selected plant species included from the BCC Growth Centres DCP 'Prescribed Trees and Preferred Species' List, instilling a strong sense of place and ensuring a hardy pallete well suited to its environment. Further, a mix of evergreen and deciduous trees will provide valuable solar access, as well as seasonal colour and variation experienced throughout the selective dichotomous mix of species.

Proven exotic species have also been proposed, in respect to their 'day-one-impact', compact form, low water use characteristics and suitability to harsh rooftop conditions. Edible species such as Salvia and Rosmary have been included for education, culinary and sensory benefits. The rooftops on slab will utilise aboveground planters and mounding to achieve adequate soil depth for small tree planting; and wherever possible, deep-soil planting has been proposed.

Landscaped edges and predominantly indigenous boundary planting work to emphasise the pedestrian scale, provide visual privacy to students, reduce visual impact to built-form and create an enhanced and unified street character suited to the R2 Low Density Residential zone applicable to the Site and surrounding area, further complementing the Riverstone East Precinct, subject to the Growth Centres.

The proposed water cycle for the Site collects surface runoff through open biofiltration swales, filters through raingardens and beds and stores through proposed On-site Stormwater Detention (OSD), which will be reused through irrigation of the ground and rooftop landscaped areas. Additional design elements, such as permeable paving, irrigated (recycled water) artificial lawn, tree cover and built form work to create adaptable spaces and comfortable microclimates throughout the day, that can both capture morning winter sun and mitigate hot summer afternoon sun.

Extracts from the Landscape Plans and Design Report are provided in **Figures 7** & **8** below and located within **Appendix 12**.

Figure 7 Proposed Landscape Masterplan for the proposed Sikh Grammar School (Source: Sym Studio, 2019)

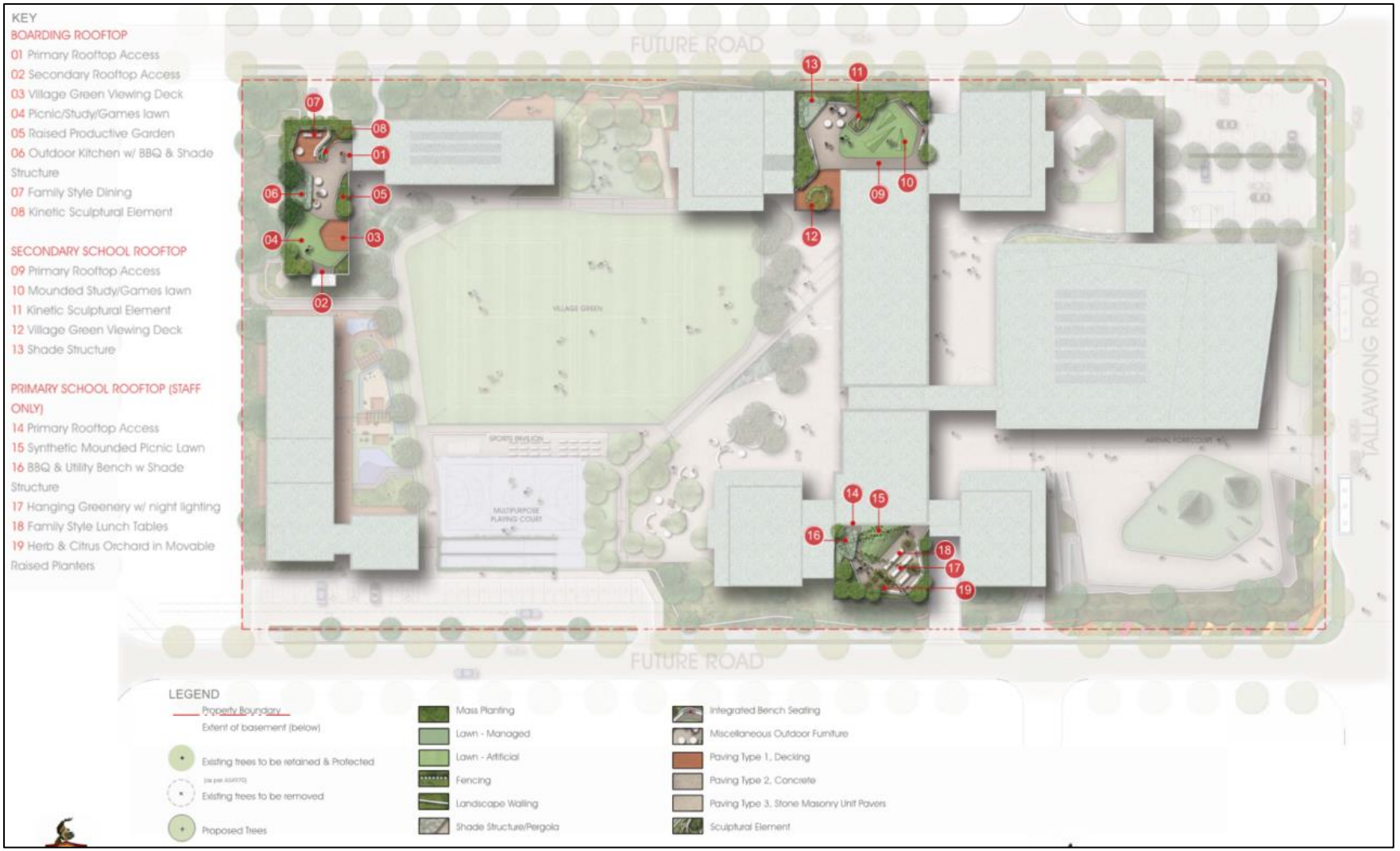


Figure 8 Proposed Rooftop Landscape Masterplan for the proposed Sikh Grammar School (Source: Sym Studio, 2019)

3.2.5 Traffic Arrangements

The proposed Masterplan and physical site works make provisions for vehicular and pedestrian access, car parking, student drop-off and pick-up, and service vehicles. Access to the Site for all vehicles will be facilitated from Tallawong Road and the newly proposed access roads along the northern and southern boundaries of the Subject Site.

Separate pedestrian access will be provided via an internal footpath connecting the street to the main school entry, reception, administration, staff areas and classrooms. Other internal footpaths would provide safe pedestrian access from the car park and kiss-and-ride zones.

A student and staff car parking area comprising 162 basement car parking spaces is proposed in the on the Subject Site, for which access would be provided off both Tallawong Road and the northern and southern access roads (once constructed). Additionally, kiss-and-ride spaces have been positioned in a designated lane adjoining the driveway of the Early Learning Centre to accommodate the drop-off and pick-up of students, as well as eleven (11) spaces in the basement car parking area for kiss & drop purposes. As noted, internal footpaths would provide safe pedestrian connections between the kiss-and-ride zone and school via marked pedestrian crossings.

Furthermore, service vehicles would be accommodated by the proposed driveway(s) available. The waste (bin) room and sewer pump have been sited accordingly with respect to the parking spaces made available to enable direct access for waste collection and other service vehicles.

With respect to the external road network, it is acknowledged that Roads and Maritime Services (RMS) are planning an upgrade of Tallawong Road, which would accommodate public and school buses as-well-as additional traffic volumes anticipated from residents in the wider community and vehicles associated with the School. Details of infrastructure upgrades and traffic and parking arrangements are provided in **Section 7.4** of this EIS and in the Traffic Impact Assessment undertaken by Positive Traffic (2019), which is located in **Appendix 19** & **20**.

Additionally, it is important to note, that provisions for a half-road construction providing access around the Site is subject to a separate Development Application, which is to be determined by Blacktown City Council.

3.2.6 Operational Details

Details of the Proposed Development's operations (for the ultimate development scenario) are further summarised in **Table 6** below.

Table 6: Proposed Operational Particulars	
Operational Particular	**Details**
Streams	**School Operations:** - Three Stream Primary School; and - Four Stream Secondary School. It is noted, that specialist curricula activities such as outdoor recreation, drama, robotics, STEM and music will be a part of the overall school curriculum. **ELC:** - Early Learning Centre.

	The ELC will form the earliest part of oneself educational journey at the Sikh Grammar School, which includes a purpose built long day car service, including provisions for State-of-the-Art facilities.

Number of Students	**School:**
	1,260 Students
	
	Boarding occupancy:
	- 58 rooms x 2 students = 116 students;
	- 7 apartments:
	  o 4 x 2 beds;
	  o 3 x 1 bed.
	
	ELC:
	89 spaces for babies to children at pre-school age.

Number of Staff	**School:** 120 Staff **ELC:** 18 Staff **Gurdwara & Langar:** 3 Staff

Hours of Operation	**School Operations:**
	
	- Primary School (3 stream):
	  o 7am-6pm (Monday-Friday).
	- Secondary School (4 stream):
	  o 7am-6pm (Monday-Friday).
	
	ELC:
	
	- 7:00am-7:00pm.

Out-of-Hours Activities	**Out of School Hours Care (OOSH):**
	
	- Before School:
	  o 7:00am-8:30am.
	- After School:
	  o 3:00pm-7:00pm.
	- Vacation Care:
	  o 7:00am-7:00pm.
	
	Gurdwara & Langar:
	
	- Outside of School Days:
	  o 7:00am-9:00pm.
	
	It is noted, that the entry of school students to the Gurdwara during school hours will be regulated to ensure the general safety of students and to apply child protection guidelines and protocols.

	The entire school, Gurdwara and open spaces may be used by the community outside of school hours. The sporting fields are to be on offer to the community for small sided games. The ELC and boarding areas will not be open to the general public.

3.2.7 Construction Details

Subsequent to consent being granted, the intent is to stage construction, enabling facilities to be delivered and expanded in line with the growth in student and staff numbers. Key components of each construction phase are summarised in **Table 7** below. It is important to note, that after the completion of Construction Stage 1 (and any site remediation occurring), construction staging may occur in any order required by the School; therefore, the following (**Table 7**) outlines a possible / potential option only.

Table 7: Construction Stages

Construction Stage	Details
1	**Stage 1 Permanent Construction:** ▪ Play space (becomes part of the Village Green in later stages of construction); ▪ Tallawong Road upgrade; ▪ New northern half-road construction; ▪ Stormwater infrastructure to northeast corner of the Site; and ▪ Northeast corner on-grade car parking area. **Stage 1 Temporary Construction:** ▪ Relocatable Primary School building; ▪ Multi-purpose Hall; and ▪ On-ground car parking area. **Stage 1 Demolition:** ▪ Existing house at 161 Tallawong Road, Rouse Hill; and ▪ Existing on-ground car parking area.
2	**Stage 2 Permanent Construction:** ▪ Primary school block; ▪ Village Green (part construction to meet Stage 1); ▪ K-2 Play Space; and ▪ Multi-purpose Court and Cricket Nets. **Stage 2 Temporary Construction:** ▪ Nil.
3	**Stage 3 Permanent Construction:** ▪ Primary School Block, including Library and Staff Room on the 3rd and 4th floors; ▪ Part Civic Heart construction under the Library building; and ▪ Southern entry to future underground car parking area. **Stage 3 Temporary Construction:** ▪ Play space along the southeast corner.
3B	**Stage 3B Permanent Construction:** ▪ Early Learning Centre; ▪ Early Learning Centre outdoor play area; and ▪ Early Learning Centre car parking area and kiss & drop.

4	**Stage 4 Permanent Construction:** ▪ Secondary School block with specialist science facilities; and ▪ Part Village Green construction. **Stage 4 Temporary Construction:** ▪ Nil.
5	**Stage 5 Permanent Construction:** ▪ Secondary School block with café, TAS, Performing & Visual Arts, Secondary Library and Staff Room; and ▪ Part Civic Heart construction. **Stage 5 Temporary Construction:** ▪ On-ground Kiss & Drop.
6	**Stage 6 Permanent Construction:** ▪ Secondary School block with specialist TAS facilities and remaining home bases; ▪ TAS outdoor workshops; and ▪ Services pavilion. **Stage 6 Temporary Construction:** ▪ Nil.
7	**Stage 7 Permanent Construction:** ▪ Multi-purpose Hall & Bridge Link; ▪ Gurdwara & Langar; ▪ Finish Civic Heart construction; ▪ Landscaping along Tallawong Road; ▪ Secondary School courtyard; and ▪ Underground car parking area. **Stage 7 Demolition:** ▪ Temporary parking to the southeast corner; and ▪ Temporary Multi-purpose Hall.
8	**Stage 8 Demolition:** ▪ Temporary carpark to the northwest corner; and ▪ Relocatable classrooms. **Stage 8 Permanent Construction:** ▪ Administration building; ▪ Final three (3) GLAs for Primary School; ▪ School Reception and Sick Bay; and ▪ Principal and Support Staff offices.
9	**Stage 9 Permanent Construction:** ▪ Boarding House; ▪ Staff Apartments; and ▪ Undercroft car parking for the Boarding House.

The complete set of construction staging plans can be located in **Appendix 9** of this EIS.

3.2.8 Drawings

Drawings for the Proposed Development are outlined in **Table 8** below.

Table 8: Drawing Schedule for SSD 9472		
Drawing No.	**Description**	**Author**
Architectural		
DA 001	Cover Page	PMDL Architects

Table 8: Drawing Schedule for SSD 9472		
Drawing No.	**Description**	**Author**
DA 100	Site Plan	PMDL Architects
DA 101	Site Plan – Level 1 (Basement)	PMDL Architects
DA 102	Site Plan – Level 0 (Ground Floor)	PMDL Architects
DA 110	Site Plan – Admin, School & Gurdwara (Level 0)	PMDL Architects
DA 111	Site Plan – Admin, School & Gurdwara (Level 1)	PMDL Architects
DA 112	Site Plan – Admin, School & Gurdwara (Level 2)	PMDL Architects
DA 113	Site Plan – Admin, School & Gurdwara (Level 3)	PMDL Architects
DA 120	Site Plan – ELC & Boarding House	PMDL Architects
DA 121	Site Plan – ELC & Boarding House	PMDL Architects
DA 201	Site Elevations	PMDL Architects
DA 301	Site Sections	PMDL Architects
DA 600	Shadow Study	PMDL Architects
DA 601	Areas	PMDL Architects
Construction Staging Plans		
DA 131	Stage 01 – Site Plan	PMDL Architects
DA 132	Stage 02 – Site Plan	PMDL Architects
DA 133	Stage 03A – Site Plan	PMDL Architects
DA 134	Stage 03B – Site Plan	PMDL Architects
DA 135	Stage 04 – Site Plan	PMDL Architects
DA 136	Stage 05 – Site Plan	PMDL Architects
DA 137	Stage 06 – Site Plan	PMDL Architects
DA 138	Stage 07 and Basement – Site Plan	PMDL Architects
DA 139	Stage 07 – Basement Parking – Site Plan	PMDL Architects
DA 140	Stage 08 – Site Plan	PMDL Architects
DA 141	Stage 09 – Site Plan	PMDL Architects
Survey		
181107_A	Plan Showing Detail & Levels Over Lots 42 & 43 in DP 30186	Total Surveying Solutions
Subdivision		
190492-1	Plan of Proposed Subdivision of Lot 42 & 43 DP 30186	Total Surveying Solutions
DA 100	Residential Subdivision & Draft Consolidation including Access Roads	PMDL Architects
Landscaping		
PMD-DA-101	Concept Landscape Masterplan	Sym Studio
PMD-DA-102	Concept Landscape Rooftop Masterplan	Sym Studio
PMD-DA-103	Concept Imagery	Sym Studio
PMD-DA-104	Concept Grading Plan	Sym Studio
PMD-DA-105	Indicative Plant Schedule & Imagery	Sym Studio
PMD-DA-106	Planting Plan	Sym Studio
PMD-DA-107	Detail Plan – 1 of 4	Sym Studio
PMD-DA-108	Detail Plan – 2 of 4	Sym Studio
PMD-DA-109	Detail Plan – 3 of 4	Sym Studio
PMD-DA-110	Detail Plan – 4 of 4	Sym Studio
PMD-DA-601	Edge Studies – Section AA	Sym Studio
PMD-DA-602	Edge Studies – Section BB	Sym Studio

Table 8: Drawing Schedule for SSD 9472		
Drawing No.	**Description**	**Author**
PMD-DA-603	Edge Studies – Section CC	Sym Studio
PMD-DA-604	Edge Studies – Section DD	Sym Studio
Engineering		
PS05-A000	Cover Sheet	Martens
PS05-A050	Development Overview Plan (Final Stage)	Martens
PS05-B300	Sediment & Erosion Control Plan (Stage 1)	Martens
PS05-B301	Sediment & Erosion Control Plan (Final Stage)	Martens
PS05-B310	Sediment & Erosion Control Details	Martens
PS05-C100	Earthworks Grading Plan (Stage 1)	Martens
PS05-C101	Earthworks Grading Plan (Final Stage)	Martens
PS05-C501	Earthworks Cut-Fill Plan (Final Stage)	Martens
PS05-D100	Roadworks Plan (Stage 1) – Tallwong Road	Martens
PS05-D200	Tallawong Road (22-MRC05) Longitudinal Section & Typical Cross Section	Martens
PS05-E100	Drainage Plan (Stage 1)	Martens
PS05-E101	Drainage Plan (Final Stage)	Martens
PS05-E201	Drainage Details	Martens
PS05-E601	OSD Catchment Plan, Model & Results (Final Stage)	Martens
PS05-E701	Water Quality Catchment Plan, Models & Results (Final Stage)	Martens

3.2.9 Supporting Project Documentation

Documents provided in support of the proposal are outlined in **Table 9**.

Table 9: Document Schedule and Consultant Team		
Appendix No.	**Description**	**Author**
Appendix 1	Secretary's Environmental Assessment Requirements	NSW DPIE
Appendix 2	Clause 4.6 Variation Request	Willowtree Planning
Appendix 3	BCC Growth Centres DCP Compliance Table	Willowtree Planning
Appendix 4	Environmental Risk Assessment	Willowtree Planning
Appendix 5	CIV and Quantity Surveyors Report	WT Partnership
Appendix 6	Survey Plan	Total Survey Solutions
Appendix 7	Subdivision Plan	PMDL Architects
Appendix 8	Architectural Plans	PMDL Architects
Appendix 9	Construction Staging Plans	PMDL Architects
Appendix 10	Indicative Stage 1 Construction Plans	PMDL Architects
Appendix 11	Architectural Design Report	PMDL Architects
Appendix 12	Landscape Design Report & Plans	Sym Studio
Appendix 13	Civil Engineering Drawings	Martens
Appendix 14	Tailout Civil Engineering Drawing	Martens
Appendix 15	Concept Stormwater Management Plan and Preliminary Flood Study	Martens

Appendix 16	Geotechnical Engineering and Salinity Assessment Report	Martens
Appendix 17	Preliminary Site Investigation (Phase 1) Contamination Report (151 Tallawong Road, Rouse Hill)	DLA Environmental Services
Appendix 18	Preliminary Site Investigation (Phase 1) Contamination Report (161 Tallawong Road, Rouse Hill)	DLA Environmental Services
Appendix 19	Traffic and Parking Impact Assessment	Positive Traffic
Appendix 20	Construction Traffic Management Plan	Positive Traffic
Appendix 21	Noise and Vibration Impact Assessment	Resonate
Appendix 22	Odour Advice	Northstar
Appendix 23	Aquatic and Terrestrial Ecological Assessment Report	NGH Environmental
Appendix 24	Waste Management Plan	Martens
Appendix 25	Aboriginal Cultural Heritage Assessment Report	NGH Environmental
Appendix 26	Bushfire Assessment Report	Building Code & Bushfire Hazard Solutions Pty Ltd
Appendix 27	Social Impact Assessment	Sarah George Consulting
Appendix 28	Site Infrastructure Assessment	Umow Lai
Appendix 29	Ecologically Sustainable Development Report	Umow Lai
Appendix 30	Fire Engineering Report	Umow Lai
Appendix 31	Access Report	Vista Access Architects
Appendix 32	Structural Engineering Letter of Support	Northrop
Appendix 33	Mechanical Strategy	Umow Lai
Appendix 34	BCA Report	Group DLA
Appendix 35	BCA Capability Statement	Group DLA
Appendix 36	Government Architect NSW Meeting Minutes	Government Architect NSW
Appendix 37	Operational Management Plan	The Sikh Grammar School Australia
Appendix 38	Development Contributions Plan Letter	Blacktown City Council
Appendix 39	Lighting Design Statement	Umow Lai

3.3 PROJECT NEED

Given the strong economic growth anticipated for Western Sydney generally and surrounding the planned North West Priority Growth Area specifically, The Sikh Grammar School Australia would provide an Educational Establishment that would subsequently service needs of the community and the wider locality.

Additionally, the Proposed Development fulfills a significant role in satisfying market needs, as-well-as improving the operational efficiencies of education within NSW by providing a State-of-the-Art ('first of its kind') Educational Establishment. The whole education sector is expected to experience significant growth, due to the increase in population dynamics in NSW, particularly the North West Priority Growth Area, for which the Proposed Development responds to accordingly.

The Proposed Development, for the purposes of an Educational Establishment is considered consistent with the strategic direction of *A Metropolis of Three Cities*; *Central City District Plan*; the LUIIP; and Blacktown City Council's Community Strategic Plan – *Our Blacktown 2036*.

Furthermore, the Proposed Development would generate a range of community need drivers, in particular the following:

- Reduced travel distances by improving the areas accessibility to new schools, leading to savings in time and fuel for local residents, staff and students requiring access to the Subject Site;
- Diversification of available schooling facilities experienced within the Rouse Hill area;
- New employment opportunities for the education sector; and,
- Provide jobs and improved infrastructure services close to people's homes.

3.4 CONSIDERATION OF ALTERNATIVES

The purpose of the Proposed Development is to provide an Educational Establishment in an area experiencing dynamic growth, and as a result, requiring an increased need for infrastructure, services and facilities that meet the day-to-day needs of the community. It is considered that the Proposed Development:

- Allows for development that is consistent with the aims and objectives of the Sydney Region Growth Centres SEPP;
- Has appropriate access to the regional road network;
- Is compatible with surrounding development and the local context;
- Represents orderly and sequential development having regard to the proximity of the Subject Site with the North West Priority Growth Area, in particular the Riverstone East Precinct;
- The Site can be serviced immediately and at no cost to the Government;
- Would result in minimal impact on the environment; and,
- Would allow for the implementation of suitable mitigation measures (where required).

The Subject Site is considered to be commensurate with the objectives of the Proposed Development as it allows for industry-based (education) activities, whilst minimising the impact on the surrounding environment. Additionally, the Site design and Site layouts show strong connections that maintain consistency with the objectives set out in the Sydney Region Growth Centres SEPP and enhance the underlying character intended for the locality.

In determining the best outcomes for the Site, several options were considered, and subsequently dismissed, in arriving at the current Proposed Development. These included:

(a) 'Do Nothing' Scenario

This option was dismissed as the objectives of the Proposed Development would not be met. If the Proposed Development was not to proceed, essential educational services would not be delivered. Additionally, if the Proposed Development was not to proceed, the Subject Site would remain vacant and undeveloped and developed in the future for another land use, permissible within the R2 zone.

(b) Development on an Alternative Site

Due consideration was also given to developing alternative sites. This option was also dismissed as the Subject Site offered clearly superior outcomes for the intended Proposed Development with regard to the following reasons, including:

- The Proposed Development is located on a site, where Educational Establishments are considered permissible with development consent;
- Demand for new Educational Establishments exists in Western Sydney (particularly the North West Growth Area), and the Site is located in proximity of areas experiencing population growth;
- The Site is suitably separated from sensitive land uses including residential development and the Proposed Development would maintain an adequate level of amenity for neighbouring properties;
- Through architectural and landscape design, the Proposed Development responds to the character of the local area;
- All potential environmental impacts of the Proposed Development can be suitably mitigated within the Site;
- The Proposed Development would generate employment opportunities during both the construction and operational phases of development;
- The Site would be appropriately serviced and accessed, subject to infrastructure upgrades;
- The Proposed Development would not affect any area of Aboriginal or Historic (European) Heritage items of significance; and,
- The Proposed Development may be developed with appropriate visual amenity, given its surrounding context.

The Proposed Development can be justified on the basis that, it is compatible with the locality in which it is proposed whilst having an obvious positive economic, environmental or social impact on its surrounding region. Additionally, the Proposed Development would result in positive economic impacts, totally in line with the aims and objectives for the North West Priority Growth Area, particularly the Riverstone East Precinct.

3.5 THE SIKH GRAMMAR SCHOOL AUSTRALIA

The Sikh Grammar School Australia is an independent coeducational school, offering educational programs endorsed and approved by the both State and Federal levels of Government. The overarching aim and vision for the Sikh Grammar School is to provide its future students with best possible education in the best possible environment to achieve the best possible educational outcomes, through the incorporation of a comprehensive curriculum.

The Sikh Grammar School Australia believes the journey to success requires dynamic community engagement, supported by an organised vision with strong leadership. The wider-shared philosophy is an inter-dependent student engagement, promoting growth around values and morals. It is noted, that The Sikh Grammar School Australia advocate that the Sikh principles of: 'Eat Together'; 'Pray Together'; and 'Perform Community Service Together' are the core philosophy in their teaching methodologies. The core Sikh religion and cultural values have been passed on from generation to generation using the same method.

This vision and philosophy creates a timeless approach, with a strong social compass and moral basis, in which Sikh's engage in everything they do. To further enhance these core values, their wider community group are deeply involved in the operations of the school, including committees for all of its operations, administration and food preparation.

The proposed Sikh Grammar School would pose a necessary community school, which serves the rich and vibrant Sikh and broader community, located within the North West Priority Growth Area.

Accordingly, the proposed architectural design reflects the educational philosophy of the Sikh culture and its local community. Contemporary spaces for teaching and learning offer agility and flexibility to accommodate a variety of groups, learning styles and settings, whilst enabling them to be adapted over time. Ultimately, the architectural design will support, stimulate and

provide opportunities for teachers and students to excel and will reflect a positive, professional and collaborative environment that celebrates strong social connection.

PART D LEGISLATIVE AND POLICY FRAMEWORK

Controls and Policies

The following current and draft Commonwealth, State, Regional and Local planning controls and policies have been considered in the preparation of this State Significant Development Application:

Commonwealth Planning Context

- *Environment Protection and Biodiversity Conservation Act 1999*

State Planning Context

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2000*
- *Protection of the Environment Operations Act 1979*
- *Biodiversity Conservation Act 2016*
- *Biodiversity Conservation Regulation 2017*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *State Environmental Planning Policy No 19 – Bushland in Urban Areas*
- *State Environmental Planning Policy No 55 – Remediation of Land*
- *State Environmental Planning Policy No 64 – Advertising and Signage*
- *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*
- *Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No 2 – 1997)*

Local Planning Context

- *Blacktown Local Environmental Plan 2015*
- *Blacktown Development Control Plan 2015*
- *Blacktown City Council Growth Centre Precincts Development Control Plan 2018*
- *Blacktown City Council – Indirect (Section 7.11) Development Contributions Plan 2011*

The Project is assessed against the requirement and objectives of the above planning framework in detail, in the following sections:

4.1 COMMONWEALTH PLANNING CONTEXT

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

Under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), any action (which includes a development, project or activity) that is considered likely to have a significant impact on Matters of National Environmental Significance (MNES) (including nationally threatened ecological communities and species and listed migratory species) must be referred to the Commonwealth Minister for the Environment. The purpose of the referral is to allow a decision to be made about whether an action requires approval on a Commonwealth level. If an action is considered likely to have significant impact on MNES, it is declared a "controlled action" for which formal Commonwealth approval is required.

As mentioned above, in the Biodiversity Assessment undertaken by NGH Environmental (2019), they note, that Biodiversity Certification was conferred upon the Sydney Region Growth Centres SEPP on 14 December 2007, via the gazettal of a Biodiversity Certification Order, signed by the

Minister for Climate Change and the Environment. The Order required, that 2,000 ha of Existing Native Vegetation (ENV) be retained across the Growth Centres. Any such clearance of ENV proposed to be undertaken within Non-Certified Areas will be required to undertake a threatened species assessment and vegetation removal may need to be offset in accordance with the Biodiversity Certification Ministerial Order.

Notwithstanding, the Subject Site is situated within an existing Certified Area, for which no further offsets are required for the removal of native vegetation.

It is noted, that the Cumberland Plain Woodland Plant Community Type (PCT) (whilst not present on the Site), inspired a landscape vernacular of tall canopy trees with an open 'midstorey' and expansive low growing understorey, interpreted to a strong tree canopy of local vegetation that embraces the built-form proposed and low lying, but activated groundplain.

The complete Aquatic and Terrestrial Ecology Assessment is located within **Appendix 23** of this EIS.

4.2 STATE PLANNING CONTEXT

4.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the overarching governing statute for all development in NSW and pursuant to Section 4.36(2) of the Act, provides that:

> *A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

The Proposed Development has been identified as State Significant Development under *State Environmental Planning Policy (State and Regional Development)* as outlined in **Section 4.2.5** below.

Pursuant to Section 4.12(8), *a development application for State significant development or designated development is to be accompanied by an environmental impact statement prepared by or on behalf of the applicant in the form prescribed by the regulations.* This EIS has been prepared in accordance with the form prescribed by the EP&A Regulation.

4.2.2 Environmental Planning and Assessment Regulation 2000

In accordance with NSW EP&A Regulation, the Proposed Development is not classified as Designated Development.

Section 4(1) – Designated Development

Section 4(1) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) states that any development described in Part 1 of Schedule 3 would be declared Designated Development for the purposes of the Act.

Therefore, the Proposed Development being for a proposed Educational Establishment, does not trigger the Designated Development thresholds under Part 1 of Schedule 3 of the EP&A Regulation.

4.2.3 Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017

The *Biodiversity Conservation Act 2016* (BC Act) is the key piece of legislation in NSW relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act is to "maintain a healthy, productive and resilient environment, for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development". The BC Act is supported by a number of regulations, including the *Biodiversity Conservation Regulation 2017* (BC Regulation).

As mentioned above, in the Biodiversity Assessment undertaken by NGH Environmental (2019), they note, that Biodiversity Certification was conferred upon the Sydney Region Growth Centres SEPP on 14 December 2007, via the gazettal of a Biodiversity Certification Order, signed by the Minister for Climate Change and the Environment. The Order required, that 2,000 ha of Existing Native Vegetation (ENV) be retained across the Growth Centres. Any such clearance of ENV proposed to be undertaken within Non-Certified Areas will be required to undertake a threatened species assessment and vegetation removal may need to be offset in accordance with the Biodiversity Certification Ministerial Order.

Notwithstanding, the Subject Site is situated within an existing Certified Area, for which no further offsets are required for the removal of native vegetation.

The complete Aquatic and Terrestrial Ecology Assessment is located within **Appendix 23** of this EIS.

4.2.4 Protection of the Environment Operations Act 1979

Another important item of legislation against which this proposal has been assessed, is The *Protection of the Environment Operations Act 1979* (POEO Act). Schedule 1 of the POEO Act, contains a core list of activities that require a licence before they may be undertaken or carried out. The definition of an 'activity' for the purposes of the POEO Act is:

> *"an industrial, agricultural or commercial activity or an activity of any other nature whatever (including the keeping of a substance or an animal)."*

The Proposed Development as submitted to DPIE, does not trigger any thresholds in respect of this legislation.

4.2.5 State Environmental Planning Policy (State and Regional Development) 2011

Proposed Developments involving activities that are listed in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) are identified as being State Significant Development. Clause 15 of Schedule 1 states:

> **"15 Educational establishments**
>
> *(1) Development for the purpose of a new school (regardless of the capital investment value).*
> *(2) Development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing school.*
> *(3) Development for the purpose of a tertiary institution (within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017), including associated research facilities, that has a capital investment value of more than $30 million."*

The Proposed Development relates to the potential development of an Educational Establishment including a Primary and Secondary School, with ancillary uses such as an Early Learning Centre and a Gurdwara & Langar (Place of Public Worship) proposed under this State Significant Development Application. The Proposed Development constitutes a development for the purpose of a new school and is therefore deemed and categorised as SSD under Clause 15(1) of Schedule 1 of the SRD SEPP. This EIS has been prepared based on the SEARs issued on the 6th of August 2018.

4.2.6 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

In September 2017, the NSW DPIE released *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) with the aim of facilitating the effective delivery of education and child care facilities across the state of NSW.

Part 4 of the Education SEPP relates specifically to schools and identifies Prescribed Zones within to which development for a school may be carried out by any person with formal development consent. The R2 Low Density Residential zone (Sydney Region Growth Centres SEPP) within to which the Site is zoned, is identified within a Prescribed Zone for the purposes of Part 4 of the Education SEPP; therefore, the Proposed Development, for the purposes of an Educational Establishment, is considered permissible with development consent.

Pursuant to Part 4, Clause 35(6), *before determining a development application for development of a kind referred to in subclause (1), (3) or (5), the consent authority must take into consideration:*

> *(a) the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4, and*
> *(b) whether the development enables the use of school facilities (including recreational facilities) to be shared with the community.*

The Design Quality Principles outlined in Schedule 4 of the Education SEPP relate to context, built-form and landscape; sustainability, efficiency and durability; accessibility and inclusivity; health and safety; amenity; whole of life; flexibility and adaptivity; and, aesthetics. The Proposed Development has been designed in accordance with the design quality principles, as detailed in the Architectural Design Report prepared by PMDL Architects (2019) found in **Appendix 11** of this Submission.

Due to the rich communal and inclusive qualities of Sikh culture and religion, the School includes strong interconnections across the campus with the broader community. Building forms respond to the need for construction staging and are reflective of the programme within. Accordingly, the School design is focused on the community that it supports, the learning opportunities on offer and the oasis that it creates for the largely Sikh community.

Furthermore, integrated into the scheme of the Proposed Development, includes provisions for a proposed Early Learning Centre, for which Part 3 of the Education SEPP would be applied. In accordance with acknowledgement of Part 3, referral should be made to the provisions set out in the NSW DPIE, *Child Care Planning Guideline 2017,* which has been utilised and factored into the final design of the Proposed Development. **Table 10** below outlines the applicable parameters for consideration regarding the proposed Early Learning Centre, as well as highlights, the components overall compliance and consistency with the Guideline.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
Legislative Control Measure and / or Control Description	**Considerations & Setbacks**
Clause 23 – Matters for Consideration by Consent Authorities	Before determining a development application for development for the purpose of a centre-based child care facility, the consent authority must take into consideration any applicable provisions of the *Child Care Planning Guideline*, in relation to the proposed development. Refer to provisions set out in the NSW DPIE *Child Care Planning Guideline* detailed below.
NSW DPIE: *Child Care Planning Guideline 2017* – Matters for Consideration	
3.1 Site Selection and Location	
Objective: *To ensure that appropriate zone considerations are assessed when selecting a site.*	
For proposed developments in or adjacent to a residential zone, consider: ▪ *The acoustic and privacy impacts of the proposed development on the residential properties;* ▪ *The setbacks and siting of buildings within the residential context; and,* ▪ *Traffic and parking impacts of the proposal on residential amenity.*	Comment: The Noise and Vibration Impact Assessment prepared by Resonate (refer to **Appendix 21** of this EIS) has satisfactorily considered the acoustic and privacy impacts anticipated from the proposed Early Learning Centre. Resonate conclude the following with regard to the proposed ELC: ▪ It is considered appropriate to use the criterion recommended by the AAAC Guideline for Child Care Centres when the areas are used for up to two (2) hours per day, which is the background level + 10 dB(A). It is noted, that this is 5 dB higher than the standard NPI criterion. The ELC has been given an aesthetically pleasing architectural treatment, that is considered conducive and transitional along with the remainder of the Sikh Grammar School. Appropriate setback controls have been implemented, that are considered to adhere to and comply with the relevant BCC Growth Centres DCP controls. The Traffic and Parking Impact Assessment prepared by Positive Traffic (refer to **Appendix 19** of this EIS) confirms, that during the morning and afternoon peak periods, the ELC would generate up to 69 AM peak and 60 PM peak trips (two way), which is considered to be compliant in regard to remainder of the School site, as well as in line with the trip generations of the surrounding area.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
For proposed developments on school, TAFE or university sites in Special Purpose zones, consider: ▪ *the compatibly of the proposal with the operation of the institution and its users;* ▪ *the proximity of the proposed facility to other uses on the site, including premises licensed for alcohol or gambling;* ▪ *proximity to sources of noise, such as places of entertainment or mechanical workshops;* ▪ *proximity to odours, particularly at agricultural institutions; and,* ▪ *previous uses of a premises such as scientific, medical or chemical laboratories, storage areas and the like.*	Comment: Although the Subject Site is not located within a Special Purpose zone, the Proposed Development includes provisions for an Early Learning Centre within a Site predominantly dominated by an Educational Establishment, for the purposes of a Primary and Secondary School. Notwithstanding, the provisions to include an Early Learning Centre on the southwest corner of the Subject Site has been strategically influenced by appropriate setback controls; satisfactory amenity provisions, including environmental, visual and acoustic parameters that are considered to comply with the relevant criteria, for which they have been assessed against in the relevant consultant reports.
Objective: *To ensure that the site selected for a proposed child care facility is suitable for the use.*	
When selecting a site, ensure that: ▪ *the location and surrounding uses are compatible with the proposed development or use;* ▪ *the site is environmentally safe including risks such as flooding, land slip, bushfires, coastal hazards;* ▪ *there are no potential environmental contaminants on the land, in the building or the general proximity, and whether hazardous materials remediation is needed;* ▪ *the characteristics of the site are suitable for the scale and type of development proposed having regard to:* o *size of street frontage, lot configuration, dimensions and overall size* o *number of shared boundaries with residential properties* o *the development will not have adverse environmental impacts on the surrounding area, particularly in sensitive*	The Site is suitable for the proposed component, for the purposes of an ELC, as it is permissible within the R2 Low Density Residential zone, as well as the potential impacts to health, safety and the overall wellbeing of children, staff and visitors is considered nominal due to the nature of surrounding land uses and adjoining residential zoned land.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
environmental or cultural areas ▪ *where the proposal is to occupy or retrofit an existing premises, the interior and exterior spaces are suitable for the proposed use;* ▪ *there are suitable drop off and pick up areas, and off and on street parking;* ▪ *the type of adjoining road (for example classified, arterial, local road, cul-de-sac) is appropriate and safe for the proposed use; and,* ▪ *it is not located closely to incompatible social activities and uses such as restricted premises, injecting rooms, drug clinics and the like, premises licensed for alcohol or gambling such as hotels, clubs, cellar door premises and sex services premises.*	
Objective: *To ensure that sites for child care facilities are appropriately located.*	
A child care facility should be located: ▪ *near compatible social uses such as schools and other educational establishments, parks and other public open space, community facilities, places of public worship;* ▪ *near or within employment areas, town centres, business centres, shops;* ▪ *with access to public transport including rail, buses, ferries; and,* ▪ *in areas with pedestrian connectivity to the local community, businesses, shops, services and the like.*	The location of the ELC is considered to be appropriately located, as it forms part of the wider Sikh Grammar School, comprising the Subject Site. Additionally, the ELC is located in close proximity to public transport infrastructure services such as the bus and rail networks. Further, the Subject Site is positioned close to commercial and retail premises, providing further accessible services to the Site.
Objective: *To ensure that sites for child care facilities do not incur risks from environmental, health and safety hazards*	
A child care facility should be located to avoid risks to children, staff or visitors and adverse environmental conditions arising from: ▪ *proximity to:* ○ *heavy or hazardous industry, waste transfer depots or landfill sites;*	The proposed ELC is not located in close proximity to any hazardous elements, that could pose a health or safety impact to children and staff.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
○ *LPG tanks or service stations;* ○ *water cooling and water warming systems;* ○ *odour (and other air pollutant) generating uses and sources or sites which, due to prevailing land use zoning, may in future accommodate noise or odour generating uses.*	
3.2 Local Character, Streetscape and the Public Domain Interface	
Objective: *To ensure that the child care facility is compatible with the local character and surrounding streetscape.*	
The proposed development should: ▪ *contribute to the local area by being designed in character with the locality and existing streetscape;* ▪ *reflect the predominant form of surrounding land uses, particularly in low density residential areas;* ▪ *recognise predominant streetscape qualities, such as building form, scale, materials and colours;* ▪ *include design and architectural treatments that respond to and integrate with the existing streetscape;* ▪ *use landscaping to positively contribute to the streetscape and neighbouring amenity; and,* ▪ *integrate car parking into the building and site landscaping design in residential areas.*	The proposed ELC includes an aesthetically pleasing architectural and landscape design, which is considered to be in line with the surrounding locality and existing streetscape of the area. The proposed design has also considered future residential development, that is earmarked for the area, by applying an appropriate bulk & scale, setbacks and not detracting from any existing views and privacy with regard to amenity of the surrounding residential receivers.
Objective: *To ensure clear delineation between the child care facility and public spaces.*	
Create a threshold with a clear transition between public and private realms, including: ▪ *fencing to ensure safety for children entering and leaving the facility;* ▪ *windows facing from the facility towards the public domain to provide passive surveillance to the street as a safety measure*	Appropriate visual screening via means of acoustic walls and fencing would be implemented to improve the privacy of the proposed ELC. Windows would also be appropriate located to face toward the public domain, which is also considered to be in line with the principles of Crime Prevention Through Environmental Design.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
and connection between the facility and the community; and, ▪ *integrating existing and proposed landscaping with fencing.*	
On sites with multiple buildings and/or entries, pedestrian entries and spaces associated with the child care facility should be differentiated to improve legibility for visitors and children by changes in materials, plant species and colours.	The proposed ELC has been appropriately distanced from the remainder of other school buildings. Additionally, the proposed ELC includes a separate car parking area and kiss and drop, which will service the building.
Where development adjoins public parks, open space or bushland, the facility should provide an appealing streetscape frontage by adopting some of the following design solutions: ▪ *clearly defined street access, pedestrian paths and building entries;* ▪ *low fences and planting which delineate communal/ private open space from adjoining public open space; and* ▪ *minimal use of blank walls and high fences.*	N/A
Objective: *To ensure that front fences and retaining walls respond to and complement the context and character of the area and do not dominate the public domain.*	
Front fences and walls within the front setback should be constructed of visually permeable materials and treatments. Where the site is listed as a heritage item, adjacent to a heritage item or within a conservation area front fencing should be designed in accordance with local heritage provisions.	The front fences and walls would be constructed with appropriate materials, that are in accordance with the Guidelines and relevant Australian Standards.
High solid acoustic fencing may be used when shielding the facility from noise on classified roads. The walls should be setback from the property boundary with screen landscaping of a similar height between the wall and the boundary.	Acoustic screening would be implemented in outdoor areas to comply with relevant acoustic criteria, as well as improve the overall acoustic amenity of adjoining residential receivers.
3.3 Building Orientation, Envelope and Design	
Objective: *To respond to the streetscape and site, while optimising solar access and opportunities for shade.*	
Orient a development on a site and design the building layout to: ▪ *ensure visual privacy and minimise potential noise and overlooking impacts on neighbours by:*	The proposed ELC has been appropriately sited on the Subject Site, so as to not cause any adverse visual impacts on surrounding residential receivers. The siting of the proposed ELC has also considered the orientation of the outdoor play area, for which it would be exposed to a desired

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
○ *facing doors and windows away from private open space, living rooms and bedrooms in adjoining residential properties;* ○ *placing play equipment away from common boundaries with residential properties;* ○ *locating outdoor play areas away from residential dwellings and other sensitive uses.* ▪ *optimise solar access to internal and external play areas;* ▪ *avoid overshadowing of adjoining residential properties;* ▪ *minimise cut and fill;* ▪ *ensure buildings along the street frontage define the street by facing it; and,* ▪ *ensure that where a child care facility is located above ground level, outdoor play areas are protected from wind and other climatic conditions.*	degree of solar access throughout the day time period. The building orientation has also considered solar access during the day, for which high ceilings have been proposed to accumulate as much natural light as possible. Further, adjoining residential receivers would not be exposed to overshadowing, as a result of the proposed ELC, due to appropriate height controls being implemented into the proposed design.
Objective: *To ensure that the scale of the child care facility is compatible with adjoining development and the impact on adjoining buildings is minimised.*	
The following matters may be considered to minimise the impacts of the proposal on local character: ▪ *building height should be consistent with other buildings in the locality;* ▪ *building height should respond to the scale and character of the street;* ▪ *setbacks should allow for adequate privacy for neighbours and children at the proposed child care facility;* ▪ *setbacks should provide adequate access for building maintenance; and,* ▪ *setbacks to the street should be consistent with the existing character.*	The proposed ELC is consistent with the building heights proposed across the Subject Site, for which it includes setback controls, that are consistent with the remainder of the Site in accordance with the BCC Growth Centres DCP.
Objective: *To ensure that setbacks from the boundary of a child care facility are consistent with the predominant development within the immediate context.*	
Where there are no prevailing setback controls minimum setback to a classified	The relevant setbacks have been duly considered for the proposed ELC; however, it is

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
road should be 10 metres. On other road frontages where there are existing buildings within 50 metres, the setback should be the average of the two closest buildings. Where there are no buildings within 50 metres, the same setback is required for the predominant adjoining land use.	noted, that the setbacks articulated within the BCC Growth Centres DCP best apply to the Site and are more aligned with the setbacks for the remainder of the School site.
On land in a residential zone, side and rear boundary setbacks should observe the prevailing setbacks required for a dwelling house.	The side and rear setbacks have considered appropriate separation distances required from the adjoining residential receivers, particularly the residential lots that are proposed along the western portion of the Subject Site in a DA, that is running concurrently to the subject SSD Application.
Objective: *To ensure that the built form, articulation and scale of development relates to its context and buildings are well designed to contribute to an area's character.*	
The built form of the development should contribute to the character of the local area, including how it: ▪ *respects and responds to its physical context such as adjacent built form, neighbourhood character, streetscape quality and heritage;* ▪ *contributes to the identity of the place;* ▪ *retains and reinforces existing built form and vegetation where significant;* ▪ *considers heritage within the local neighbourhood including identified heritage items and conservation areas;* ▪ *responds to its natural environment including local landscape setting and climate; and,* ▪ *contributes to the identity of place.*	In the immediate context, the proposed ELC responds to the built-form of the Sikh Grammar School, which is proposed across the remainder of the Site, where as from a regional context, the proposed Educational Establishment (including the proposed ELC), responds directly to the vision and objectives of the North West Priority Growth Area. The Proposed Development would implement an aesthetically pleasing architectural landscaped design, which would respond to the existing ecological characteristics of the surrounding area, via the implementation of a selective dichotomous mix of endemic species across the Site, creating a vibrant and welcoming aesthetic.
Objective: *To ensure that buildings are designed to create safe environments for all users.*	
Entry to the facility should be limited to one secure point which is: ▪ *located to allow ease of access, particularly for pedestrians;* ▪ *directly accessible from the street where possible;* ▪ *directly visible from the street frontage;* ▪ *easily monitored through natural or camera surveillance;*	Entry and accessibility to and within the proposed ELC would be designed in accordance with all relevant legislation, including (but not limited to) the following: ▪ *The National Construction Code;* ▪ *Discrimination Disability Act 1992; and* ▪ *Disability (Access to Premises-Buildings) Standards 2010.*

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
▪ *not accessed through an outdoor play area; and,* ▪ *in a mixed-use development, clearly defined and separate from entrances to other uses in the building.*	
Objective: *To ensure that child care facilities are designed to be accessible by all potential users.*	
Accessible design can be achieved by: ▪ *providing accessibility to and within the building in accordance with all relevant legislation;* ▪ *linking all key areas of the site by level or ramped pathways that are accessible to prams and wheelchairs, including between all car parking areas and the main building entry;* ▪ *providing a continuous path of travel to and within the building, including access between the street entry and car parking and main building entrance. Platform lifts should be avoided where possible; and,* ▪ *minimising ramping by ensuring building entries and ground floors are well located relative to the level of the footpath.*	As above.
3.4 Landscaping	
Objective: *To provide landscape design that contributes to the streetscape and amenity.*	
Appropriate planting should be provided along the boundary integrated with fencing. Screen planting should not be included in calculations of unencumbered outdoor space. *Use the existing landscape where feasible to provide a high quality landscaped area by:* ▪ *reflecting and reinforcing the local context; and,* ▪ *incorporating natural features of the site, such as trees, rocky outcrops and vegetation communities into landscaping.*	The Proposed Development would implement an aesthetically pleasing architectural landscaped design, which would respond to the existing ecological characteristics of the surrounding area, via the implementation of a selective dichotomous mix of endemic species across the Site, creating a vibrant and welcoming aesthetic. The Landscape Plans for the Proposed Development are located in **Appendix 12** of this EIS.
Incorporate car parking into the landscape design of the site by: ▪ *planting shade trees in large car parking areas to create a cool*	The Landscape Plans for the Proposed Development include provisions for landscape planting in the proposed car parking areas. This would satisfactorily address and reduce the impacts of the heat island effect, that can be

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
▪ *outdoor environment and reduce summer heat radiating into buildings;* ▪ *taking into account streetscape, local character and context when siting car parking areas within the front setback; and,* ▪ *using low level landscaping to soften and screen parking areas.*	generated from concrete and bitumen surfaces within the warmer months of the year.
3.5 Visual and Acoustic Privacy	
Objective: *To protect the privacy and security of children attending the facility.*	
Open balconies in mixed use developments should not overlook facilities nor overhang outdoor play spaces.	N/A
Minimise direct overlooking of indoor rooms and outdoor play spaces from public areas through: ▪ *appropriate site and building layout;* ▪ *suitably locating pathways, windows and doors; and,* ▪ *permanent screening and landscape design.*	The proposed ELC would be suitably screened by fencing and landscape planting to protect the overall privacy and security of children attending the ELC.
Objective: *To minimise impacts on privacy of adjoining properties.*	
Minimise direct overlooking of main internal living areas and private open spaces in adjoining developments through: ▪ *appropriate site and building layout;* ▪ *suitable location of pathways, windows and doors; and,* ▪ *landscape design and screening.*	Acoustic privacy involves reducing sound transmission between activity rooms and outdoor play areas of the ELC. It is noted, that the proposed building has been strategically sited, so as to not cause any adverse acoustic and privacy impacts on surrounding residential receivers.
Objective: *To minimise the impact of child care facilities on the acoustic privacy of neighbouring residential developments.*	
A new development, or development that includes alterations to more than 50 per cent of the existing floor area, and is located adjacent to residential accommodation should: ▪ *provide an acoustic fence along any boundary where the adjoining property contains a residential use. (An acoustic fence is one that is a solid, gap free fence); and,* ▪ *ensure that mechanical plant or equipment is screened by solid, gap free material and constructed*	It is noted, that acoustic screening will be implemented, pursuant to recommendations provided by Resonate, to further comply with the relevant acoustic criteria.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
to reduce noise levels e.g. acoustic fence, building, or enclosure.	
A suitably qualified acoustic professional should prepare an acoustic report which will cover the following matters: ▪ *identify an appropriate noise level for a child care facility located in residential and other zones;* ▪ *determine an appropriate background noise level for outdoor play areas during times they are proposed to be in use; and,* ▪ *determine the appropriate height of any acoustic fence to enable the noise criteria to be met.*	The Noise Impact Assessment report prepared by Resonate (2019) has considered the potential acoustic impacts of the proposed Early Learning Centre as part of the overall assessment. Further considerations and recommendations provided, requiring adherence can be found summarised in **Section 7.7** of this EIS.
3.6 Noise and Air Pollution	
Objective: *To ensure that outside noise levels on the facility are minimised to acceptable levels.*	
Adopt design solutions to minimise the impacts of noise, such as: ▪ *creating physical separation between buildings and the noise source;* ▪ *orienting the facility perpendicular to the noise source and where possible buffered by other uses;* ▪ *using landscaping to reduce the perception of noise;* ▪ *limiting the number and size of openings facing noise sources;* ▪ *using double or acoustic glazing, acoustic louvres or enclosed balconies (wintergardens);* ▪ *using materials with mass and/or sound insulation or absorption properties, such as solid balcony balustrades, external screens and soffits; and,* ▪ *locating cot rooms, sleeping areas and play areas away from external noise sources.*	The recommendations stipulated within the Noise and Vibration Impact Assessment with regard to the proposed ELC will be implemented accordingly to minimise any anticipated noise impacts. The recommendations are discussed further in **Section 7.7** of this EIS.
An acoustic report should identify appropriate noise levels for sleeping areas and other non-play areas and examine impacts and noise attenuation measures where a child care facility is proposed in any of the following locations:	N/A

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
▪ *on industrial zoned land; and,* ▪ *where the ANEF contour is between 20 and 25, consistent with AS 2021 – 2000.*	
Objective: *To ensure air quality is acceptable where child care facilities are proposed close to external sources of air pollution such as major roads and industrial development.*	
Locate child care facilities on sites which avoid or minimise the potential impact of external sources of air pollution such as major roads and industrial development.	The location of the proposed ELC is not considered to warrant further assessment with regard to air pollution, as it is suitably located away from major roads and industrial development.
A suitably qualified air quality professional should prepare an air quality assessment report to demonstrate that proposed child care facilities close to major roads or industrial developments can meet air quality standards in accordance with relevant legislation and guidelines. *The air quality assessment report should evaluate design considerations to minimise air pollution such as:* ▪ *creating an appropriate separation distance between the facility and the pollution source. The location of play areas, sleeping areas and outdoor areas should be as far as practicable from the major source of air pollution;* ▪ *using landscaping to act as a filter for air pollution generated by traffic and industry. Landscaping has the added benefit of improving aesthetics and minimising visual intrusion from an adjacent roadway; and,* ▪ *incorporating ventilation design into the design of the facility.*	N/A
3.7 Hours of Operation	
Objective: *To minimise the impact of the child care facility of neighbouring residential developments.*	
Hours of operation within areas where the predominant land use is residential should be confined to the core hours of 7.00am to 7.00pm weekdays. The hours of operation of the proposed child care facility may be extended if it adjoins or is adjacent to non-residential land uses.	It is noted, that the proposed hours of operation will be compliant and confined to 7:00am – 7:00pm weekdays.
Within mixed use areas or predominantly commercial areas, the hours of operation	N/A

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
for each child care facility should be assessed with respect to its compatibility with adjoining and co-located land uses.	
3.8 Traffic, Parking and Pedestrian Circulation	
Objective: *To provide parking that satisfies the needs of users and generated by the centre.*	
Off street car parking should be provided at the rates for child care facilities specified in a Development Control Plan that applies to the land. *Where a Development Control Plan does not specify car parking rates, off street car parking should be provided at the following rates:* *Within 400 metres of a metropolitan train station:* ▪ *1 space per 10 children;* ▪ *1 space per 2 staff. Staff parking may be stack or tandem parking with no more than 2 spaces in each tandem space.* *In other areas:* ▪ *1 space per 4 children.* *A reduction in car parking rates may be considered where:* ▪ *the proposal is an adaptive re-use of a heritage item;* ▪ *the site is in a B8 Metropolitan Zone or other high density business or residential zone;* ▪ *the site is in proximity to high frequency and well connected public transport;* ▪ *the site is co-located or in proximity to other uses where parking is appropriately provided (for example business centres, schools, public open space, car parks); and,* ▪ *there is sufficient on street parking available at appropriate times within proximity of the site.*	For Child Care Centres, the BCC Growth Centres DCP requires the following parking provision: *One (1) space per employee based on the following ratio of primary contact staff to children being provided, as stipulated in the Children's Services Regulation 2004:* *a) 1:5 in respect of all children who are under the age of 2 years;* *b) 1:8 in respect of all children who are 2 or more years of age but under 3 years of age; and* *c) 1:10 in respect of all children who are 3 or more years of age but under 6 years of age.* *One (1) designated space for disabled parking / service vehicles located close to the main entrance.* Visitor car parking is to be provided in accordance with: *One (1) space per 6 children.* Based on the above rates, the proposed ELC is subject to the following: - 27 provisional car parking spaces required. - 33 car parking spaces provided. Therefore, the proposed ELC is compliant on parking grounds.
In commercial or industrial zones and mixed use developments, on street parking may only be considered where there are no conflicts with adjoining uses, that is, no high levels of vehicle	N/A

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
movement or potential conflicts with trucks and large vehicles.	
A Traffic and Parking Study should be prepared to support the proposal to quantify potential impacts on the surrounding land uses and demonstrate how impacts on amenity will be minimised. The study should also address any proposed variations to parking rates and demonstrate that: ▪ *the amenity of the surrounding area will not be affected; and,* ▪ *there will be no impacts on the safe operation of the surrounding road network.*	Positive Traffic have undertaken and prepared a Traffic and Parking Assessment, which considers the impacts of the proposed ELC on the immediate and wider regional road network. During the morning and afternoon peak periods, the ELC would generate up to 69 AM peak and 60 PM peak trips (two way), which is considered to be compliant in regard to remainder of the School site, as well as in line with the trip generations of the surrounding area.
Objective: *To provide vehicle access from the street in a safe environment that does not disrupt traffic flows.*	
Alternate vehicular access should be provided where child care facilities are on sites fronting: ▪ *a classified road; and* ▪ *roads which carry freight traffic or transport dangerous goods or hazardous materials.* *The alternate access must have regard to:* ▪ *the prevailing traffic conditions; and* ▪ *pedestrian and vehicle safety including bicycle movements • the likely impact of the development on traffic.*	N/A
Child care facilities proposed within cul-de-sacs or narrow lanes or roads should ensure that safe access can be provided to and from the site, and to and from the wider locality in times of emergency.	Safe access can be provided to the proposed ELC along the southern access road.
Objective: *To provide a safe and connected environment for pedestrians both on and around the site.*	
The following design solutions may be incorporated into a development to help provide a safe pedestrian environment: ▪ *separate pedestrian access from the car park to the facility;* ▪ *defined pedestrian crossings included within large car parking areas;*	The adjacent design solutions have been taken into due consideration, which have informed the finalised design. The Architectural Plans for the Proposed Development are located within **Appendix 8** of this EIS.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
▪ *separate pedestrian and vehicle entries from the street for parents, children and visitors;* ▪ *pedestrian paths that enable two prams to pass each other;* ▪ *delivery and loading areas located away from the main pedestrian access to the building and in clearly designated, separate facilities;* ▪ *in commercial or industrial zones and mixed use developments, the path of travel from the car parking to the centre entrance physically separated from any truck circulation or parking areas; and,* ▪ *vehicles can enter and leave the site in a forward direction.*	
Mixed use developments should include: ▪ *driveway access, manoeuvring areas and parking areas for the facility that are separate to parking and manoeuvring areas used by trucks;* ▪ *drop off and pick up zones that are exclusively available for use during the facility's operating hours with spaces clearly marked accordingly, close to the main entrance and preferably at the same floor level. Alternatively, direct access should avoid crossing driveways or maneuvering areas used by vehicles accessing other parts of the site; and* ▪ *parking that is separate from other uses, located and grouped together and conveniently located near the entrance or access point to the facility.*	N/A
Car parking design should: ▪ *include a child safe fence to separate car parking areas from the building entrance and play areas;* ▪ *provide clearly marked accessible parking as close as possible to the primary entrance to the building in accordance with*	The car parking area has been appropriately designed in terms of safety, access and compliance with the relevant Australian Standards.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
appropriate Australian Standards; and, ▪ *include wheelchair and pram accessible parking.*	
Applying the National Regulations to Development Proposals	
4.1 Indoor Space Requirements	
Regulation 107 *Every child being educated and cared for within a facility must have a minimum of 3.25 m^2 of unencumbered indoor space.* **Note:** if this requirement is not met, the concurrence of the regulatory authority is required under the SEPP.	The proposed ELC complies with the minimum 3.25 m^2 of indoor space for each child, with a maximum of 86 children. Furthermore, in accordance with Regulation 107, i.e. Storage, it is recommended that a Child Care Facility provides: ▪ a minimum of 0.3 m^3 per child of external storage space; and ▪ a minimum of 0.2 m^3 per child of internal storage space. The proposed ELC will comply with the abovementioned provision.
4.2 Laundry and Hygiene Facilities	
Regulation 106 *There must be laundry facilities or access to laundry facilities; or other arrangements for dealing with soiled clothing, nappies and linen, including hygienic facilities for storage prior to their disposal or laundering. The laundry and hygienic facilities must be located and maintained in a way that does not pose a risk to children.*	The proposed ELC includes a laundry located in an appropriate location in accordance with the adjacent provision. Further confirmation prior to the issue of a Construction Certificate is required to ensure, that the laundry has the capacity to store goods prior to their disposal.
4.3 Toilet and Hygiene Facilities	
Regulation 109 *A service must ensure that adequate, developmentally and age-appropriate toilet, washing and drying facilities are provided for use by children being educated and cared for by the service; and the location and design of the toilet, washing and drying facilities enable safe use and convenient access by the children.*	The proposed hygiene / sanitary facilities within the ELC will be designed and constructed to comply with the requirements of the *National Construction Code.*
4.4 Ventilation and Natural Light	
Regulation 110 *Services must be well ventilated, have adequate natural light, and be maintained at a temperature that ensures the safety and wellbeing of children. Child care facilities must comply with the light and*	The proposed ELC includes provisions for high ceilings which would further influence and optimise available natural light experienced indoors, which would improve the overall wellbeing of children and staff. Furthermore, satisfactory mechanical ventilation systems would be implemented within the building,

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
ventilation and minimum ceiling height requirements of the National Construction Code. Ceiling height requirements may be affected by the capacity of the facility.	which would provide optimum temperatures to the indoor environment.
4.5 Administrative Space	
Regulation 111 *A service must provide adequate area or areas for the purposes of conducting the administrative functions of the service, consulting with parents of children and conducting private conversations.*	The proposed ELC includes provisions for an office space with adequate provisions that comply with the adjacent controls.
4.6 Nappy Change Facilities	
Regulation 112 *Child care facilities must provide for children who wear nappies, including appropriate hygienic facilities for nappy changing and bathing. All nappy changing facilities should be designed and located in an area that prevents unsupervised access by children.*	There are two (2) proposed nappy change rooms is located in the proposed ELC. Further confirmation, prior to the issue of a Construction Certificate would be required to confirm, that the nappy change facility does not allow for unsupervised access by children.
4.7 Premises Designed to Facilitate Supervision	
Regulation 115 *A centre-based service must ensure that the rooms and facilities within the premises (including toilets, nappy change facilities, indoor and outdoor activity rooms and play spaces) are designed to facilitate supervision of children at all times, having regard to the need to maintain their rights and dignity.*	Prior to the issue of a Construction Certificate, confirmation would be required to confirm, that the proposed ELC has been designed to facilitate the supervision of children at all times.
4.8 Emergency and Evacuation Procedures	
Regulations 97 and 168 *Regulation 168 sets out the list of procedures that a care service must have, including procedures for emergency and evacuation.* *Regulation 97 sets out the detail for what those procedures must cover including:* ▪ *instructions for what must be done in the event of an emergency;* ▪ *an emergency and evacuation floor plan, a copy of which is displayed in a prominent position near each exit;*	Prior to the issue of a Construction Certificate, and as part of the formalised Operational Plan of Management for the Site, an emergency evacuation plan would be implemented for the Subject Site.

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
▪ *a risk assessment to identify potential emergencies that are relevant to the service.*	
4.9 Outdoor Space Requirements	
Regulation 108 *An education and care service premises must provide for every child being educated and cared for within the facility to have a minimum of 7.0 m^2 of unencumbered outdoor space.*	The proposed ELC complies with the minimum 7 m^2 of outdoor open space for each child, with a maximum of 86 children.
4.10 Natural Environment	
Regulation 113 *The approved provider of a centre-based service must ensure that the outdoor spaces allow children to explore and experience the natural environment.*	The outdoor recreation area for the proposed ELC has been strategically designed to create a natural and vibrant element for children and staff, which contributes to a positive wellbeing and experience.
4.11 Shade	
Regulation 114 *The approved provider of a centre-based service must ensure that outdoor spaces include adequate shaded areas to protect children from overexposure to ultraviolet radiation from the sun.*	The proposed ELC makes provisions to implement shade sails over the outdoor recreation area, to provide a means of safety against being exposed to ultraviolet radiation.
4.12 Fencing	
Regulation 104 *Any outdoor space used by children must be enclosed by a fence or barrier that is of a height and design that children preschool age or under cannot go through, over or under it.* *This regulation does not apply to a centre-based service that primarily provides education and care to children over preschool age, including a family day care venue where all children are over preschool age.* *Child care facilities must also comply with the requirements for fencing and protection of outdoor play spaces that are contained in the National Construction Code.*	Fencing is proposed around the ELC in accordance with the relevant Australian Standards to comply with safety regulations.
4.13 Soil Assessment	
Regulation 25	A Geotechnical Report prepared by Martens (refer to **Appendix 16**) of this EIS confirms that the Site is suitable for the Proposed

Table 10: *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP) – Part 3 Early Education and Care Facilities – Early Learning Centre	
Subclause (d) of regulation 25 requires an assessment of soil at a proposed site, and in some cases, sites already in use for such purposes as part of an application for service approval. *With every service application one of the following is required:* ▪ *a soil assessment for the site of the proposed education and care service premises;* ▪ *if a soil assessment for the site of the proposed child care facility has previously been undertaken, a statement to that effect specifying when the soil assessment was undertaken; and,* ▪ *a statement made by the applicant that states, to the best of the applicant's knowledge, the site history does not indicate that the site is likely to be contaminated in a way that poses an unacceptable risk to the health of children.*	Development, for the purposes of an Educational Establishment, which includes provisions for an ELC. Further analysis undertaken by DLA Environmental Services (refer to **Appendix 17** & **18**) confirms, that pursuant to the dam being treated on the Subject Site, there are no Contaminants of Potential Concern (COPC), that would warrant further investigations with regard to contamination.

In light of the above-listed summary, the proposed ELC is considered to be compliant with regard to *Child Care Planning Guidelines 2017* and the relevant BCC Growth Centres DCP controls.

4.2.7 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) repeals the former *State Environmental Planning Policy No. 11 – Traffic Generating Development* and, pursuant to Clause 104, provides for certain Proposed Developments known as Traffic Generating Development, to be referred to NSW Roads and Maritime Services (RMS) for concurrence.

Schedule 3 of ISEPP, lists the types of development that are defined as Traffic Generating Development. Educational Establishments (Schools) are not expressly considered in Schedule 3 and therefore the generic threshold (*Any other purpose*) applies. Development for *any other purpose* constitutes the following thresholds, including:

- *200 or more motor vehicles per hour with site access to any road; or*
- *50 or more motor vehicles per hour where the site has access to a classified road or to a road that connects to a classified road (if access is within 90 metres of connection, measured along the alignment of the connecting road).*

Given, that the Proposed Development would generate more than 200 vehicles per hour, referral to the NSW RMS is required pursuant to Schedule 3 of the ISEPP.

4.2.8 State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 aims to protect the biodiversity values of trees and other vegetation in non-rural areas, and to preserve the amenity of non-rural areas through the preservation of trees and other vegetation.

The SEPP applies to non-rural, meaning those zones referred to in Clause 5(1)(b). The Subject Site lies within the Blacktown LGA and is zoned R2 Low Density Residential, which is deemed a non-rural that is nominated for the purpose of Clause 5(1)(b). The provisions of the SEPP are therefore applicable to this Application.

Furthermore, Clause 7 of the SEPP provides that vegetation at the Subject Site may not be cleared without either a Council permit, or relevant development consent in place. Should the vegetation clearing proposed on-site exceed the biodiversity offset scheme threshold (as defined under the BC Act), the approval to clear the vegetation on-site must be obtained from the Native Vegetation Panel under Part 4 of the SEPP.

In the Biodiversity Assessment undertaken by NGH Environmental (2019), they note, that Biodiversity Certification was conferred upon the Sydney Region Growth Centres SEPP on 14 December 2007, via the gazettal of a Biodiversity Certification Order, signed by the Minister for Climate Change and the Environment. The Order required, that 2,000 ha of Existing Native Vegetation (ENV) be retained across the Growth Centres. Any such clearance of ENV proposed to be undertaken within Non-Certified Areas will be required to undertake a threatened species assessment and vegetation removal may need to be offset in accordance with the Biodiversity Certification Ministerial Order.

Notwithstanding, the Subject Site is situated within an existing Certified Area, for which no further offsets are required for the removal of native vegetation.

4.2.9 State Environmental Planning Policy No. 19 – Bushland in Urban Areas

State Environmental Planning Policy No 19 – Bushland in Urban Areas (SEPP 19) aims to protect and preserve bushland within urban areas owing to its community, aesthetic, recreational, educational and scientific values.

Given the Proposed Development does not relate to land zoned and / or reserved for public open space or adjoin land zoned and / or reserved for such purposes, the provisions of SEPP 19 are not applicable.

4.2.10 State Environmental Planning Policy No. 55 – Remediation of Land

Under the provisions of *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55), where a development application is made concerning land that is contaminated, the consent authority must not grant consent unless:

"

(a) it has considered whether the land is contaminated, and
(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose."

Clause 7(1) of SEPP 55 requires the consent authority to consider whether land is contaminated prior to formalising consent of proposed development.

Previous Detailed Site Investigations undertaken by DLA Environmental Services (2017) assume the following:

- The historical use of the Subject Site comprised primarily of agriculture use until the 1970's, after which the premises transitioned into rural / residential properties which they have been currently identified as;
- Due to the historical nature of the still-standing erected residence, the potential for asbestos should be considered throughout the demolition stage of the proposed development. It is noted, that four (4) Areas of Environmental Concern (AECs), namely areas associated with the fill around the residential dwelling and the dam were identified as part of the results recorded in the contamination report;
- The investigations entailed throughout the contamination report included soil and surface water testing at six (6) various locations which were identified as potential AECs. From the identified locations, contaminants of potential concern that may have occurred as a result of the prior land use, as-well-as the associated fill material on the Subject Site were sampled and tested; however, no such exceedances were recorded in any of the soil samples gathered;
- Surface water of the associated dam traversing the properties should be chemically treated prior to discharge, and safe application to the land should be ensured so that no run-off would leave the Subject Site;
- Advised that a hazardous materials survey may be conducted on the existing residential dwelling prior to demolition to account for the management of any potential risks, namely, asbestos and polychlorinated bi-phenyls (PCBs); and,
- A contaminated land professional should be consulted with should any unexpected finds concerning stained or odorous material be uncovered during the demolition and construction phases of development.

In accordance with the requirements of SEPP 55 and adherence to the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011) and the *Guidelines for the NSW Site Auditor Scheme* (NSW EPA, 2nd ed., 2006, the Report undertaken by DLA Environmental Services (2017) concludes, that there is a low likelihood of unacceptable contamination to be present on the Subject Site due to the historical past and present status of the associated land use activities (refer to **Appendix 17** & **18**). No further consideration with regard to SEPP 55 is considered warranted under this SSD Application, for which the Site is considered suitable, with respect to the Proposed Development.

4.2.11 State Environmental Planning Policy No. 64 – Advertising Structures and Signage

State Environmental Planning Policy No 64 – Advertising and Signage (SEPP 64) aims to ensure that signage is of a high quality and compatible design, with the desired amenity and visual character of the area. SEPP 64 applies to all signage:

> *(a) that, under another environmental planning instrument that applies to the signage, can be displayed with or without development consent, and*
> *(b) is visible from any public place or public reserve.*

The Proposed Development makes provisions to include the following signage:

- School name (Sikh Grammar School) and school logo would be mounted to the solid wall over the main school entrance and on the Gurdwara & Langar (Place of Public Worship), which would be utilised for multi-disciplinary educational and cultural/learning activities.

Pursuant to Clause 8 of SEPP 64, a consent authority must not grant development consent to an Application to display signage unless the consent authority is satisfied:

(a) that the signage is consistent with the aims/objectives of the Policy, and
(b) that the signage satisfies the assessment criteria specified in Schedule 1 of SEPP 64.

These matters are addressed below.

Aims and Objectives of SEPP 64:

SEPP 64 aims:

(a) to ensure that signage (including advertising):
(i) is compatible with the desired amenity and visual character of an area, and
(ii) provides effective communication in suitable locations, and
(iii) is of high quality design and finish, and
(b) to regulate signage (but not content) under Part 4 of the Act, and
(c) to provide time-limited consents for the display of certain advertisements, and
(d) to regulate the display of advertisements in transport corridors, and
(e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.

The proposed signage for the School would achieve the aims and objectives of SEPP 64 as it would be integrated with the overall design of the School. Furthermore, the siting, design and scale of the signage would be consistent with the visual character the of Proposed Development, and through a high quality design and finish, the signage would contribute to a high level of visual amenity. Additionally, the signage would effectively identify the main entry to the School, thereby contributing to a legible environment for staff, students and visitors.

Assessment Criteria

The assessment criteria under Schedule 1 of SEPP 64 is addressed in **Table 11** below. Based on this assessment the Proposed Development is considered consistent with the provisions of SEPP 64.

Table 11: SEPP 64 Criteria	
Criteria	**Compliance**
1 Character of the area	
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	Yes, the proposed signage would be compatible with the character of the new school development, which has been designed to integrate with the surrounding area.
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	Yes, as above.
2 Special areas	
Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	No, the proposed signage would enhance the visual amenity of the Site. The signage has been designed to integrate with the overall design of the School, which in turn has been designed with respect to surrounding landscape, natural areas, cultural values and neighbouring properties.
3 Views and vistas	
Does the proposal obscure or compromise important views?	No, the proposed signage would be of a height and scale consistent with the built-

	form on-site and would not disrupt any views or dominate views toward the Site.
Does the proposal dominate the skyline and reduce the quality of vistas?	No, the Proposed Development would be of a size and design suitable for the intended use and context. Furthermore, the signage would not be dominant on the skyline given the position of the signage located on the façade of the building, or in a location that is well below the roof level.
Does the proposal respect the viewing rights of other advertisers?	Yes, the Proposed Development would not obstruct viewing towards any other signage.
4 Streetscape, setting or landscape	
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	Yes, the proposed signage has been designed with respect to the proposed built-form on-site to effectively identify the school entry whilst not being visually obtrusive. The proposed signage would be compatible with the character of the Site and its surrounds.
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	Yes, the signage is to be used to provide identification and direction in a manner that respects the landscape and architectural design intended for the Subject Site.
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	Yes, the number of signs has been limited.
Does the proposal screen unsightliness?	The signage would not be used as a visual screen or filter.
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	No, the signage would not be dominant on the skyline. It would be located below the roof level or tree canopy.
Does the proposal require ongoing vegetation management?	No, the proposed signage would not require ongoing management.
5 Site and building	
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	Yes, the sign would be of suitable scale and design for its intended purpose. The signage would only occupy a small proportion of the building façade and overall school area.
Does the proposal respect important features of the site or building, or both?	Yes, the signage would be balanced with façade elements to integrate with the proposed built-form. The proposed signage would not dominate the landscape or be visually obtrusive.
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	Yes, the signage would be integrated with the design of the building so as to achieve a positive visual outcome.
6 Associated devices and logos with advertisements and advertising structures	
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	Appropriate lighting would be provided to illuminate the proposed School (where necessary). This can be identified within the Lighting Plan provided within **Appendix 11**.
7 Illumination	
Would illumination result in unacceptable glare?	No. Illumination would not result in unacceptable glare, due to directional and

	overhead lighting being strategically implemented across the Site in locations, which would not be considered an amenity impact to adjoining residential typologies.
Would illumination affect safety for pedestrians, vehicles or aircraft?	No. Illumination would not result in unacceptable glare, due to directional and overhead lighting being strategically implemented across the Site in locations, which would not be considered a safety impact on passersby.
Would illumination detract from the amenity of any residence or other form of accommodation?	No. Illumination would not result in unacceptable glare, due to directional and overhead lighting being strategically implemented across the Site in locations, which would not be considered an amenity impact to adjoining residential typologies.
Is the illumination subject to a curfew?	No. Illumination would not result in unacceptable glare, due to directional and overhead lighting being strategically implemented across the Site in locations, which would not be considered an amenity impact to adjoining residential typologies.
Can the intensity of the illumination be adjusted, if necessary?	Illumination can be mitigated further where necessary.
8 Safety	
Would the proposal reduce the safety for any public road?	No, the proposed signage would be located within the site boundaries and well set back from the street.
Would the proposal reduce the safety for pedestrians or bicyclists?	No, the Proposed Development would not obstruct any pedestrian or cycle routes, or other infrastructure, and therefore would not negate the safety of pedestrians or cyclists.
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	No, the proposed signage would not obscure any sightlines from public areas frequented by pedestrians. Additionally, the proposed signage would not obstruct any vehicle sight lines from public roads or the access driveway(s).

Advertisements

Part 3 of SEPP 64 outlines a number of additional matters to be considered for certain signs. This Part does not apply to Building Identification Signage and is therefore not applicable to the Proposed Development, for purposes of an Educational Establishment.

Based on the above, should any proposed signage be undertaken, it will be in accordance with all SEPP 64 requirements. Accordingly, the Proposed Development would be consistent with the provisions of SEPP 64.

4.2.12 State Environmental Planning Policy (Sydney Region Growth Centres) 2006

The Sydney Region Growth Centres SEPP is the prevailing EPI applicable to the Subject Site with regard to the Proposed Development, for the purposes of an Educational Establishment (The Sikh Grammar School), comprising a Primary & Secondary School and an Early Learning Centre, along with an ancillary Staff & Student Accommodation and a Place of Public Worship (Gurdwara & Langar).

Additionally, a DA running concurrently to this SSDA integrates a proposed eleven (11) Lot Torrens Title subdivision, which includes provisions for ten (10) subdivided lots along the western perimeter of the Subject Site, earmarked for residential purposes; and, one (1) additional lot, for which the Proposed Development would be situated upon, for educational purposes.

Contextually, the Subject Site is situated and identified as part of the wider Sydney Region Growth Centres, for which it is located within the North West Growth Centre Precinct Boundary – Riverstone East Precinct (at 151-161 Tallawong Road, Rouse Hill) – which, forms part of the Precinct Plan identified as the *Blacktown Growth Centres Precinct Plan, 2013*.

Under the Sydney Region Growth Centres SEPP, the Subject Site is zoned as follows:

- R2 Low Density Residential (refer to **Figure 9**).

Table 12 below, outlines the relevant planning controls applicable to the Site, as stated within the Sydney Region Growth Centres SEPP.

Table 12: *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Sydney Region Growth Centres SEPP) – General SEPP Clauses	
Requirement	**Application to Proposed Development**
Clause 2.3 – Zone Objectives and Land Use Table	*(2) The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.*
R2 Low Density Residential Zone	
R2 Low Density Residential – Objectives of Zone	- *To provide for the housing needs of the community within a low density residential environment.* - *To enable other land uses that provide facilities or services to meet the day to day needs of residents.* - *To allow residents to carry out a reasonable range of activities from their homes, where such activities are not likely to adversely affect the living environment of neighbours.* - *To support the well-being of the community, by enabling educational, recreational, community, religious and other activities where compatible with the amenity of a low density residential environment.*
Permitted without Consent	*Home occupations*
Permitted with Consent	*Bed and breakfast accommodation; Boarding houses; Business identification signs;* ***Centre-based child care facilities****; Community facilities; Drainage; Dual occupancies; Dwelling houses; Earthworks;* ***Educational establishments****; Environmental protection works; Exhibition homes; Exhibition villages; Group homes; Health consulting rooms; Home-based child care; Home businesses; Home industries; Information and education facilities; Neighbourhood shops;* ***Places of public worship****; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Shop top housing; Studio dwellings; Veterinary hospitals.*
Prohibited	*Any development not specified in item 2 or 3.*
SEPP Clauses	
Clause 4.1AB – Minimum Lot Sizes for Residential Development in Zone R2 Low	The Subject Site is zoned R2 Low Density Residential, for which it is subject to a minimum lot size of 300 m^2, based on an applicable Residential Dwelling Density target of 15.

Density Residential and Zone R3 Medium Density Residential	Notwithstanding the minimum lot size applicable to the Subject Site is **300 m^2** under Clause 4.1AB of the SEPP. The Subject Site comprises a lot size of approximately 2.97 ha complying with Clause 4.1AB under the SEPP. It is noted, that a DA running concurrently to this Application, includes provisions subdivide the land portion for residential and educational purposes. This would create the lot, for which the Proposed Development would be housed. For added reference the Subdivision Plan submitted to Council for assessment and determination is provided in **Appendix 7**.
Clause 4.1B – Residential Density	As mentioned above in Clause 4.1AB, the Site is subject to a Residential Density Target of **15** Dwellings per hectare with regard to residential development. The Proposed Development is for educational purposes; therefore, Clause 4.1B is not applicable to the Proposed Development. It is noted, that the DA running concurrently to this Application has addressed residential density and is considered compliant with regard to Clause 4.1B under the SEPP. No further consideration with regard to residential density is considered warranted under this Application.
Clause 4.3 – Height of Buildings	The Site is subject to a maximum building height of **9m** under Clause 4.3 of the Sydney Region Growth Centres SEPP (refer to **Figure 10**). The Proposed Development would exhibit architectural components exceeding the maximum building height permitted on the Subject Site. The maximum height proposed includes 18.19 m, for which a Clause 4.6 height justification would be made (for added due diligence), with regard to the proposed height (refer to **Appendix 2**).
Clause 4.4 – Floor Space Ratio (FSR)	The Site is not subject to a maximum FSR under Clause 4.4 of the SEPP.
Clause 4.6 – Exceptions to Development Standards	The Proposed Development for purposes of an Educational Establishment would exhibit a proposed maximum height of 18.19 m at the proposed Gurdwara and Langar. This is a 9.19 m deficit with regard to compliance concerning the maximum building height under the Sydney Region Growth Centres SEPP of 9 m. For further information, refer to the Clause 4.6 Variation provided within **Appendix 2**.
Clause 5.3 – Development Near Zone Boundaries	The Proposed Development would not rely on adjoining zone boundaries as it is appropriately zoned for the Proposed Development.
Clause 5.9 – Preservation of Trees or Vegetation	**Part G** of this EIS assesses the ecological values of the Subject Site summarizing the findings of the Aquatic and Terrestrial Ecology Assessment, prepared by NGH Environmental (refer to **Appendix 23**).
Clause 5.10 – Heritage Conservation	There are no Aboriginal or Historic (European) Heritage items located on the Site. An Aboriginal Cultural Heritage Assessment Report was undertaken and prepared by NGH Environmental (2019) and is located within **Appendix 25** of this EIS.
Clause 5.11 – Bush Fire Hazard Reduction	The Subject Site is not identified as being affected by bushfire prone land.
Clause 6.1 – Public Utility Infrastructure	The Subject would be serviced accordingly by augmentation of the existing and available infrastructure services. A

	servicing and infrastructure report undertaken by Umow Lau is further summarised in **Part G** of this Report.
Clause 6.2 – Information and Education Facilities in Zone R2 Low Density Residential	The Subject Site is zoned R2 Low Density Residential under the SEPP. The Proposed Development for the purposes of an Educational Establishment would comply with the objectives of Clause 6.2 under the SEPP.

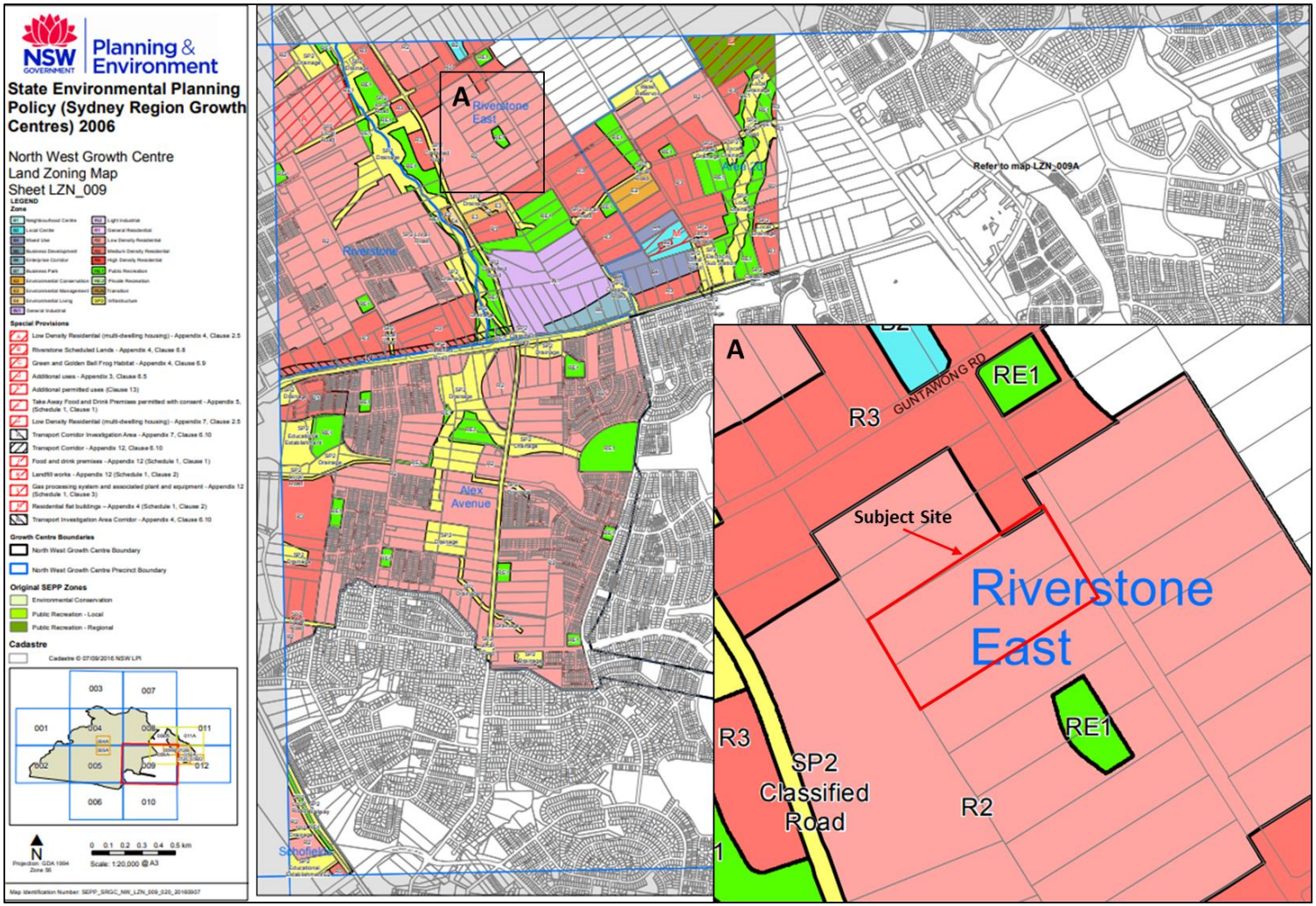


Figure 9 Applicable Zoning Category Concerning the Subject Site under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Source: NSW Legislation, 2019)

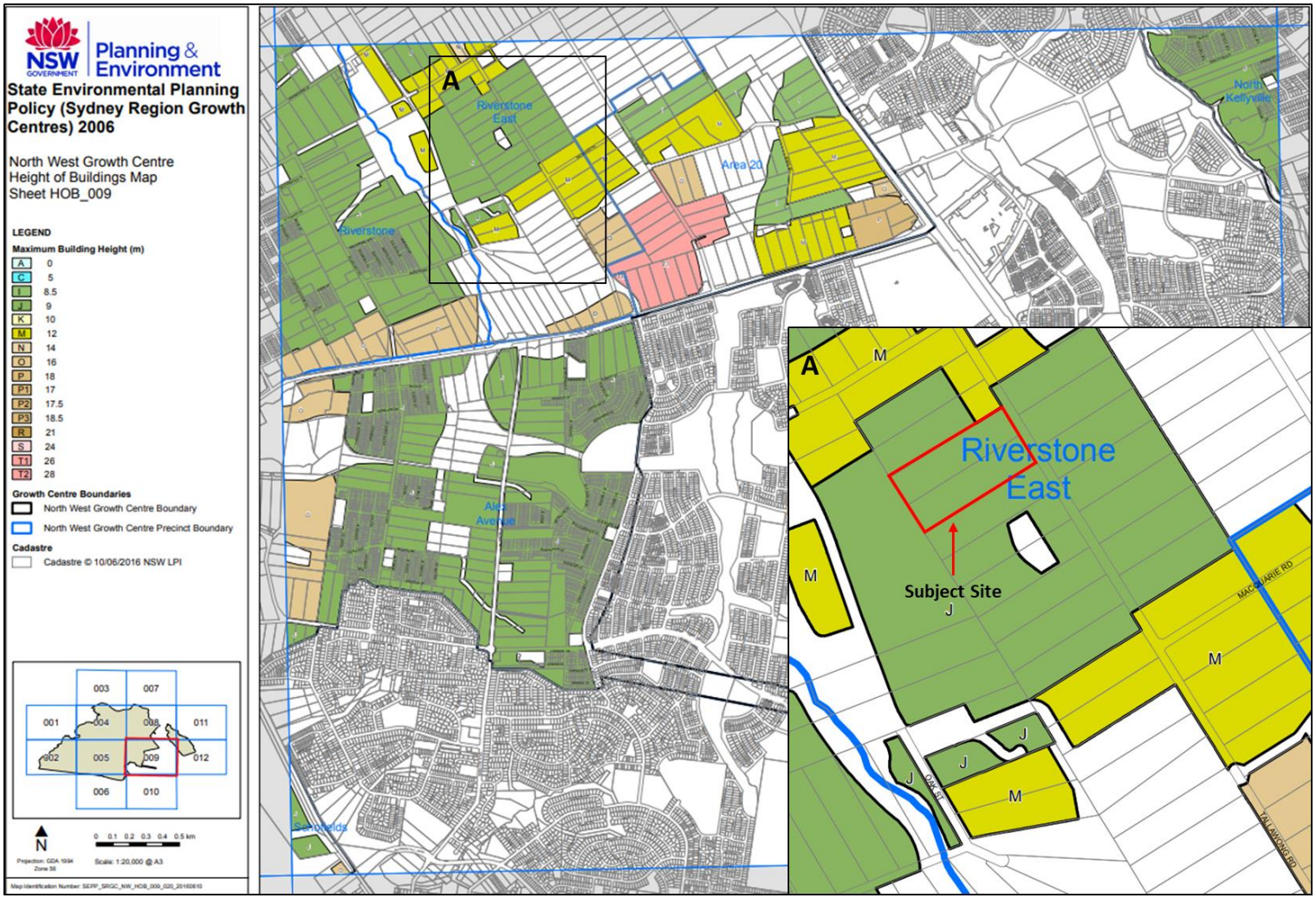


Figure 10 Maximum Building Height Applicable to the Subject Site under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Source: NSW Legislation, 2019)

4.2.13 Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No 2 – 1997)

The *Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River* (Hawkesbury-Nepean River SREP) applies to the following LGAs:

- Baulkham Hills;
- Blacktown;
- Blue Mountains;
- Camden;
- Campbelltown;
- Fairfield;
- Gosford;
- Hawkesbury;
- Hornsby;
- Ku-ring-gai;
- Liverpool;
- Penrith;
- Pittwater;
- Warringah; and Wollondilly.

The Subject Site is located within the Blacktown LGA, for which the SREP requires to be considered. In accordance with Clause 3 of the SREP, the Proposed Development is considered to have taken full cognisance of the Proposal from both a local and regional context, for which the planning considerations and strategies identified within Clauses 5 & 6 are considered to have been satisfactorily addressed.

The Proposed Development would exhibit minimal environmental impacts remaining completely consistent with the SREP, for which it would not promote any adverse impacts from a regional context. Rather, regional impacts, would be attributed to positive impacts, comprising social and economic impacts.

4.3 LOCAL PLANNING CONTEXT

4.3.1 Blacktown Local Environmental Plan 2015

Blacktown Local Environmental Plan 2015 (BLEP2015) is not applicable to the Subject Site as the provisions of the Sydney Region Growth Centres SEPP apply.

4.3.2 Draft Environmental Planning Instruments

No Draft EPIs apply to the Proposed Development.

4.3.3 Blacktown Development Control Plan 2015

The *Blacktown Development Control Plan 2015* (BDCP2015) provides a non-statutory instrument to guide development in the Blacktown LGA, that is subsequently zoned under BLEP2015. The Subject Site is not zoned under BLEP2015; therefore, BDCP2015 is not applicable to the Proposed Development.

4.3.4 Blacktown City Council Growth Centres Precincts Development Control Plan 2018

The *Blacktown City Council Growth Centres Precincts Development Control Plan 2018* (BCC Growth Centres DCP) was formally adopted by the Deputy Director General Strategies and

Land Release (or Delegate) of the NSW DPIE on 14th May 2010 and came into force on 19th May 2010. This DCP only applies to Precincts where precinct planning has been completed with regard to the Precincts listed below. These include:

- The Alex Avenue Precinct (Schedule One);
- The Riverstone Precinct (Schedule Two);
- The Marsden park Industrial Precinct (Schedule Three);
- The Area 20 Precinct (Schedule Four);
- The Schofields Precinct (Schedule Five);
- The Marsden Park Precinct (Schedule Six);
- The West Schofields (Townson Road) Precinct (Schedule Seven); and;
- **The Riverstone East Precinct (Schedule Eight).**

The Subject Site is positioned within the Riverstone East Precinct. Additionally, the purpose and aims of the BCC Growth Centres Precinct DCP are as follows:

- Communicate the planning, design and environmental objectives and controls against which the Consent Authority will assess DA's;
- Consolidate and simply the planning controls for the Blacktown City Council's Growth Centre Precincts;
- Ensure the orderly, efficient and environmentally sensitive development of the Precincts as envisaged by the North West Growth Centre Structure Plan and the Sydney Region Growth Centres SEPP; and,
- Promote high quality urban design outcomes within the context of environmental, social and economic sustainability.

Notwithstanding, Clause 11 of the SRD SEPP states that:

> "*Development controls plans (whether made before or after the commencement of this*
> *Policy) do not apply to:*
> *(a) State significant development"*

Additionally, Clause 35(9) of the Education SEPP, which relates to schools that are permitted with development consent, provides that:

> "*A provision of a development control plan that specifies a requirement, standard or control in relation to development of a kind referred to in subclause (1), (2), (3) or (5) is of no effect, regardless of when the development control plan was made."*

This SSDA for the purposes of an Educational Establishment, concerns a proposed development within a Prescribed Zone, and considered development referred to in subclause (1) of the Education SEPP. Therefore, the provisions of a DCP are not considered applicable.

The SEARs (issued 6th August 2018) however, establish the requirement to consider the BCC Growth Centres DCP; therefore, an assessment of the Proposed Development against the relevant provisions of the BCC Growth Centres DCP has been carried out in the Compliance Table provided in **Appendix 3** of this EIS.

The Proposed Development works are generally compliant with the relevant controls; however, where the Proposed Development departs from certain controls, the design satisfies the objectives of the control and would result in an improved environmental or amenity outcome, achieving the objectives of, and facilitating the Proposed Development furthermore.

4.3.5 Development Contributions

The Proposed Development is subject to Section 7.11 Contribution Plans under the EP&A Act. The Subject Site is applicable to the *Section 94 Contributions Plan No. 20 – Riverstone & Alex Avenue Precincts*, for which the Proposed Development would be required to pay a Contribution Plan. Section 94 (now Section 7.11) contributions will be calculated by Council in accordance with the *Section 94 Contributions Plan No. 20 – Riverstone & Alex Avenue Precincts* (2015).

It is noted that the cost of constructing the proposed access road (proposed half-road construction and subdivision, subject to a DA running concurrently to this Application) would be borne by proponent, and would create an amenity improvement for all current and future inhabitants and users of the immediate surroundings as well as the wider locality.

Contributions payable for the Proposed Development have been calculated by Blacktown City Council and can be located with **Appendix 38** of this EIS.

PART E STRATEGIC PLANNING FRAMEWORK

5.1 OVERVIEW OF RELEVANT STRATEGIC PLANS

This EIS has given consideration to relevant strategic plans and policies, including:

- *NSW State Priorities*
- *Greater Sydney Region – A Metropolis of Three Cities*
- *Central City District Plan*
- *NSW Future Transport Strategy 2056*
- *State Infrastructure Strategy 2018-2038 Building the Momentum*
- *Sydney's Cycling Future 2013*
- *Sydney's Walking Future 2013*
- *Sydney's Bus Future 2013*
- *Crime Prevention Through Environmental Design Principles*
- *Healthy Urban Development Checklist, NSW Health*
- *North West Priority Growth Area Land Use and Infrastructure Implementation Plan 2017*
- *Better Placed: An Integrated Design policy for the Built Environment of New South Wales (GANSW 2017)*

Detailed consideration of this Strategic Planning framework is provided in the following sections.

5.2 NSW STATE PRIORITIES

Eighteen (18) state priorities are being actioned by the NSW Government to *make this state of ours even better*. The priorities have been categorised under the following headings, including:

- Strong budget and economy;
- Building infrastructure;
- Protecting the vulnerable;
- Better services; and,
- Safer communities.

The Proposed Development, for the purpose of a School on the Subject Site would achieve a number of priorities, as outlined below.

Improving Road Travel Reliability

As part of improving the overall efficiency and reliability of the State's road network, the Government has prioritised making better use of existing road infrastructure and building extra road capacity.

Given the Site's proximity to major new and planned road infrastructure, the proposed School would benefit from improved road travel reliability. Additionally, through road and intersection upgrades along Tallawong Road (RMS upgrade), along with strategic siting of the car parking areas and new school bus service, the proposal would contribute to the efficient use of the transport network. In turn, this would create a reduced proportion of trips being made by car.

Increasing Housing Supply

To support population and housing growth, the Government has emphasized the importance of building new infrastructure. The provision of a new school on the Subject Site responds

accordingly, to existing and projected growth in North-Western Sydney and delivers the educational infrastructure, for which demand has already been demonstrated.

5.3 A METROPOLIS OF THREE CITIES – GREATER SYDNEY REGION PLAN

A Metropolis of Three Cities – Greater Sydney Region Plan (Greater Sydney Commission, 2018) divides the Sydney Region into three (3) Cities, with a vision of growth until 2056. (refer to **Figure 11** below). The Plan seeks to foster productivity, liveability and sustainability, to be achieved through the '30-minute city' model, by which a majority of people live within 30 minutes of jobs, education, health facilities and services. The creation of the 30-minute city is to be promoted through infrastructure investment and coordinated transport and land use planning. The overall vision pursues an objective of transforming 'Greater Sydney' into a Metropolis of Three Cities, including:

- The Western Parkland City;
- The Central River City; and
- The Eastern Harbour City

The division into three (3) Cities aims to locate a greater proportion of the population closer to employment regions with more intensive jobs; 'city-scale' infrastructure & services; entertainment; and cultural facilities. By managing and retaining residential land close to city centres and transport, the Plan aims to ensure critical and essential services, are readily available to support local businesses and community members and residents. The Proposed Development would not only achieve new economic growth but would also encourage employment-generating opportunities, closer to residential communities, allowing for better access to job opportunities and a shorter commute time to and from work, as well as providing an educational facility that is situated in close proximity to the immediate community and the wider locality.

The Proposed Development also contributes to the four (4) standardised elements in the Plan, across for all three (3) cities, including:

- Infrastructure and collaboration – once in operation, the Proposed Development would be associated with the delivery of a state-of-the-art, first of its kind, educational facility, readily available for the immediate community, as-well-as the wider locality and region;
- Liveability – the Proposed Development encourages employment-generating opportunities and economic prosperity, which would have positive influences on the greater Western Region, by promoting a sense of community engagement through a new school in an area subject to such infrastructure demand;
- Productivity – the Proposed Development would be situated within the Sydney Region Growth Centres, and pursuant to the Development Approval being granted the aims of *A Metropolis of Three Cities, Central City District Plan* and the Sydney Region Growth Centres SEPP, as set out in **Sections 4.2.12** and **5.4** and providing over 400 jobs (during construction and operation) would be fulfilled; and
- Sustainability – the Proposed Development would not cause any detrimental impacts to its wider ecological surroundings, as set out and identified in **Part G** of this EIS.

In summary, the Proposed Development would contribute to the objectives set out in the *A Metropolis of Three Cities - Greater Sydney Region Plan,* by providing an Educational Establishment as well as employment-generating opportunities to the wider locality and community, and by being positioned and identified within Sydney Region Growth Centres with its concentration of education, adding to the credentials of the new, intelligent economy and landing supporting services to the wider Sydney Region Growth Centres, experiencing rapid growth and increased demand for infrastructure and services such as that of the Proposed Development for purposes of an Educational Establishment – The Sikh Grammar School.

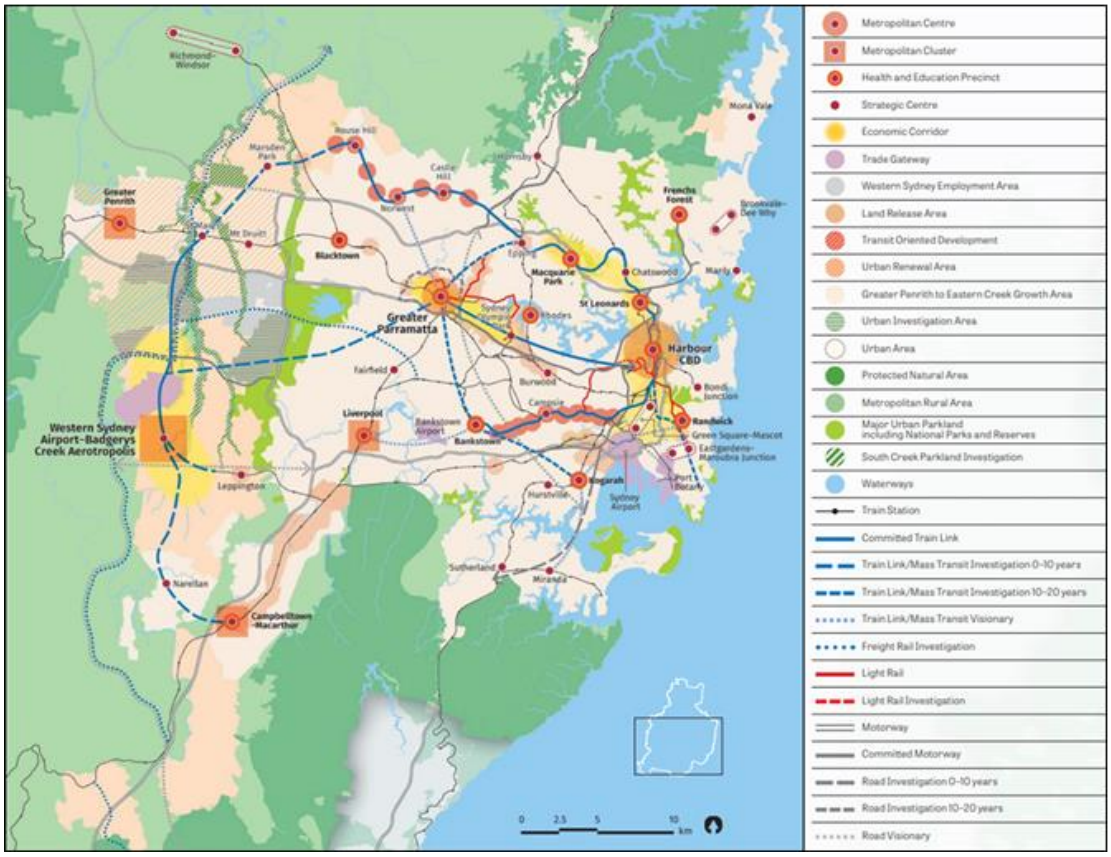


Figure 11 Metropolis of Three Cities: A Vision to 2056 (Source: Greater Sydney Commission: Greater Sydney Region Plan, 2019)

5.4 CENTRAL CITY DISTRICT PLAN

The *Central City District Plan* covers the Parramatta LGA. The Plan encourages a twenty-year plan to help encourage and establish goals set out in the *Greater Sydney Region Plan*, mentioned above. The Plan is considered the 'bridge' between the Regional and Local planning.

The Subject Site – 151-161 Tallawong Road, Rouse Hill is situated within the *Central City District Plan*, which falls within the Central River City (refer to **Figure 11** above).

The *Central City District Plan* reinforces the four (4) planning priorities of the GSC. The Plan establishes a number of priorities and actions to guide growth, development and change, relating to infrastructure & collaboration, liveability, productivity and sustainability.

The Greater Sydney Commission's mission statement further reinforces the Plan's concentrated aims by outlining its main strategies, namely:

- *Developing the economy with jobs and skills growth from unprecedented city-scale infrastructure investments;*
- *Supporting cohesive and socially dynamic communities with new social infrastructure like schools and community services, new cultural and sporting facilities;*
- *Establishing transport connections north, south, east and west from Parramatta to optimise Greater Parramatta's location in the centre of Greater Sydney;*
- *Transforming Westmead health and education precinct to an innovation district with greater diversity of knowledge-intensive jobs;*
- *Retaining industrial and urban services land and creating new skills with a 21st century*
- *cleantech and advanced manufacturing cluster around precincts such as Camellia, Rydalmere Silverwater and Auburn;*

- *Linking parks, bushland, playgrounds and waterways through the Greater Sydney Green Grid with enhanced opportunities for safe walking and cycling paths; and,*
- *Enhancing the quality of, and access to, waterways such as Parramatta River, Duck River and South Creek.*

The Proposed Development, would contribute to the objectives set out in the *Central City District Plan* by promoting a greater range of land uses of benefit to the community, including the Proposed Development (Educational Establishment) and other associated land uses; facilitating the provision of greater and improved infrastructure, cycle and pedestrian pathways; and, promoting additional employment-generating opportunities, to the wider locality and community closer to home, whilst supporting economically and environmentally sustainable development. These aims are specifically relevant to the Proposed Development.

Table 13 below sets out the main strategic objectives of the *Central City District Plan* and demonstrates how the Proposed Development would help achieve the vision set by the Greater Sydney Commission and NSW DPIE.

Table 13: Consistency of Proposal with Federal, State and Local Strategic Objectives	
Central City District Plan Objective	**Proposed Development Response**
A City Supported by Infrastructure	Infrastructure to service a new development at **No Cost to Government** as all works will be funded by the proponent, by extensions to existing infrastructure, facilitating immediate development.
A Collaborative City and a City for People	The Proposed Development would provide an Educational Establishment, ultimately servicing the needs of a growing community. The built-form would be further promoted by activated open space, by implementing biometric design elements. These include a State-of the Art educational facility, sporting grounds and pedestrian footpaths, which can be accessed by the school cohort as well as passersby in the area.
Housing the City	The Proposed Development responds directly to the increase in housing demand in the Growth Centres. The increase in demand supports the requirement for additional infrastructure and services, such as that of the proposed Educational Establishment, which meets the needs of the community and wider locality.
A City of Great Places	The Development aligns with the Plan objective by creating an renewing an underdeveloped and underperforming site, zoned for such permissible purposes.
A Well Connected City	The Proposed Development will participate in combining land-use and transport, creating pedestrian and bike links to the proposed Tallawong Station, identified as part of the new Sydney Metro rail network, which is located approximately 1.2 km south of the Subject Site. The Proposed Development will be designed to cater for and promote the use of public transport, with

	dedicated bus stops along Tallawong Road and bus stops adjoining the School site, both designed to promote the use of public transport for all staff and students. The School would also have superb road access with linkages to the wider regional road network in the surrounding area.
Jobs and Skills for the City	The Proposed Development supports the growth of the Education sector furthermore.
A City in its Landscape	The Proposed Development would be designed using best practice biometric design elements to protect and enhance the natural environment surrounding the Subject Site, by increasing tree cover around the within the Site, through an aesthetically pleasing architectural landscaped design.
An Efficient City	Reducing transport-related emissions, by providing facilities such as bus services that allow for different modes (rather than just cars) and are inclusive of public transport links (i.e. Tallawong Station 1.2 km south of the Site).
A Resilient City	Incorporation of climate-change measures to flexibly include future changes as environmental needs evolve. Also increasing the environmental credentials of the Site, will enhance both the duality of the walking environment and the health and well-being of staff & students and visitors to the School.

In accordance with the *Central City District Plan*, the Plan's visionary urban transformation is subject to a District influenced by an administrative and business centre; health and education precinct; and an economic centre with strong transport connections to the adjoining Eastern Harbour City and Western Parkland City.

The Proposed Development represents a direct consistency by providing an Educational Establishment to an area, that is currently undergoing exponential urban and economic growth and development, for which it is considered to completely align with the intentions of the *Central City District Plan*.

5.5 NSW FUTURE TRANSPORT STRATEGY 2056

Future Transport 2056 present an integrated 40-year vision and guide for transport investment in NSW. As an update of NSW's *Long Term Transport Master Plan, Future Transport 2056* has been developed in concert with the GSC's Sydney Region Plan, Infrastructure NSW's State Infrastructure Strategy and the NSW DPE's Regional Plans. The Strategy is underpinned by a suite of supporting plans.

The Strategy seeks to support a productive economy through the delivery of transport that enables business to reach new markets, attract new investment, while presenting more job and training opportunities. Transport is also recognised as a significant importance in the creation of liveable communities in association with its ability to transform the public domain, activate centres and unlock new commercial and housing developments, renewing existing

neighbourhoods and spaces. Ensuring the efficiency of transport investments, both with respect to environmental performance and budget, is key to obtaining sustainability objectives. Additionally, productivity, liveability and sustainability are sought to be achieved by the Strategy through the mobilisation of emerging technologies and innovation.

Furthermore, the Subject Site would benefit substantially from new transport infrastructure investment, including roads (Tallawong Road upgrade) and rapid transit (Sydney Metro – Tallawong Station), linking areas of North-Western Sydney to the Sydney CBD. Through the provision of a new school in an area designated for future urban development to be coordinated with major investment in transport infrastructure (such as the Sydney Metro), the proposal promotes the attainment of the Strategy's productivity, liveability and sustainability objectives.

Representing the efficient use of existing and planned transport networks, the strategic siting of an Educational Establishment with a K-12 stream is considered conducive with regard to facilitating efficient access to the School (rather than spread over separate school campuses), ultimately reducing the need for multiple trips (by large families) and enabling the School to be accessed via sustainable, active modes of travel. Measures to promote sustainable travel are incorporated in the Sustainable Travel Plan found in **Appendix 19** prepared by Positive Traffic (2019).

5.6 STATE INFRASTRUCTURE STRATEGY 2018-2038 – BUILDING THE MOMENTUM

The *NSW State Infrastructure Strategy 2018-2038* sets out the NSW Government's infrastructure vision for the State over the next 20 years, across all industry sectors. It is underpinned by the *Greater Sydney Region Plan, Regional Development Framework* and *Future Transport 2056*. The Strategy focuses on achieving sustainable growth in the NSW population and economy by aligning investment in infrastructure with the way we build our communities and achieve innovation in service delivery.

The Strategy seeks to:

- Better integrate land use and infrastructure;
- Deliver infrastructure to maximise value for money;
- Optimise asset management;
- Make our infrastructure more resilient;
- Improve digital connectivity; and,
- Use innovative service delivery models.

In accordance with the objectives of the Strategy, the Proposed Development would deliver school infrastructure in an area (North West Priority Growth Area) experiencing significant population growth. The continued growth of Western Sydney would therefore be supported by the infrastructure required to attain local amenity.

The design of the School has accounted for natural hazards and site constraints, including flooding and bushfire, so as to ensure the longevity of the asset and safety of future users. Through providing opportunities for the future shared use of school facilities by the wider community and locality, the Proposed Development would also optimise the efficiency of the asset's overall management; and, represents an innovative model of service delivery. This is achieved through an adaptive design, that allows for the flexible use of indoor and outdoor spaces and fosters creative and innovative teaching and learning models.

The related NSW Government publication on 'Building Schools and Skills' emphasises investment in schools, for which it aims to provide more student places and classrooms across

the State to accommodate the current and expected surge in enrolments. Specifically, through the 'School Assets Strategic Plan', the NSW Government is:

- Ensuring that our schools can flexibly accommodate increasing student numbers with expansions and modular buildings;
- Involving the community in new approaches to planning. Instead of upgrading education infrastructure one school at a time, we are collaborating with the community to determine how best to distribute students and deliver new and upgraded facilities within an area or region;
- Making it easier for school infrastructure projects to start by streamlining the approvals process in a new education-based State Environmental Planning Policy; and,
- Investigating how we can better harness innovative technologies and equip our education facilities for the digital age.

The proposed new school (The Sikh Grammar School) would accommodate approximately 1,260 students and 120 staff across the Subject Site, which has been based on the specific response to the trends and needs of a growing local community. The Proposed Development, for purposes of a School, would provide a State-of-the-Art Educational Establishment, including provisions for modern, technology-equipped, energy efficient and flexible facilities across the board. Accordingly, the Proposed Development would support the unique requirements of the School's diverse student population, and as a result, be conducive to best-practice teaching and learning models and accommodate emerging & innovative teaching methodologies and practices.

5.7 SYDNEY'S CYCLING FUTURE 2013

Sydney's Cycling Future 2013 represents a new direction in the way we plan, prioritise and provide for cycling in Sydney. The Plan came into force to reflect the change in culture, where individuals were using bicycles as a more frequent mode of transportation.

In accordance with the Traffic and Parking Assessment, prepared by Positive Traffic (refer to **Appendix 19**) and in respect to the Precinct Traffic Study undertaken by ARUP, the future bicycle and pedestrian network is shown in **Figure 12** below.

Figure 12 Riverstone East ILP Future Pedestrian / Bicycle Network (Source: Positive Traffic, 2019)

As illustrated in **Figure 12** above, a new shared pedestrian and bicycle off-road pathway along Tallawong Road, directly adjacent to the eastern boundary of the Subject Site is earmarked to be developed in the future. This pathway would then extend into Guntawong Road in the north and extend to the recently constructed shared pathways along Schofields Road, further improving and complimenting the Subject Site's connectivity to the surrounding area.

5.8 SYDNEY'S WALKING FUTURE 2013

Sydney's Walking Future 2013 was introduced by Transport for NSW to implement measures to encourage walking, making it more convenient, better connected and a safer mode of transport. The actions set out in the Plan aim to make walking, the ultimate transport of choice, for quick trips under 2 km and further assist individuals in accessing public transport.

The appropriateness of promoting walking to school would however be compromised by safety concerns related to the condition of the surrounding road network. This would be of such concern until the indicative RMS upgrade of Tallawong Road would be undertaken, for which footpaths would be provided. This would ultimately provide safe passageway to the immediate surroundings as well as create immediate and safe passage to the nearby proposed Tallawong Station, located approximately 1.2 km away, which forms part of the new Sydney Metro rail network.

It is noted, that the future development of the Subject Site's immediate surrounds in accordance with the 'urban development areas' designated by the *Greater Sydney Region Plan – A Metropolis of Three Cities* and the *Central City District Plan* would increase the viability of walking in the future, more so than currently anticipated.

Furthermore, the provision and establishment of new school bus and accessible public transport services in the area would facilitate alternate access to the School through the integration of sustainable transport modes. The origin of these services (being in the residential areas, close to where students live) would be potentially conducive to students walking to bus stops. Therefore, in connection with bus services and investment in pedestrian infrastructure located within residential areas, walking could be promoted furthermore as a component the journey-to-school.

5.9 SYDNEY'S BUS FUTURE 2013

Sydney's Bus Future 2013 was introduced by the NSW Government as a long-term plan to redesign Sydney's bus network to meet customer needs now and into the future.

The Subject Site is not currently serviced by public bus services; however, to support sustainable travel modes, it is proposed to establish a dedicated school bus service along the southern boundary of the Subject Site, as well as proposed bus services running along Tallawong Road. Proposed bus services would provide linkages to the immediate community and wider locality, as well as promoting an enhanced and expedited travel mode to the nearby Tallawong Station, located 1.2 km south of the Site.

Furthermore, in the Northwest Sector Bus Servicing Plan (McCormick Rankin Cagney, 2012), prepared for NSW Transport and Infrastructure, a future bus network was earmarked to service the North West Growth Centre. The proposed network consists of five (5) regional and twelve (12) district route, as described below:

- Regional routes are high frequency services intended to connect town and regional centres. These routes were planned to ensure 90% of residents of the North West Growth Centre are within 800 m of a service; and
- District bus services are less frequent that typically run during the day only, providing further accessibility and connectivity to village centres and extending bus service provisions to the widest areas practically possible.

The location and positioning of the School has been an integral and key component in ensuring efficient access can be provided to the School site by applicable transport modes, including bus services proposed that are linked to the school as well as services running along Tallawong Road.

5.10 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN PRINCIPLES

The principles of Crime Prevention Through Environmental Design (CPTED) have been considered in the design of the Proposed Development.

The CPTED Guidelines were prepared by the NSW Police in conjunction with the Department of Planning. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods.' The main aims of the policy are to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and the encouraging the general public to become active guardians; and,
- Increase the perceived risk involved in committing crime.

The Guidelines provide four (4) key principles to limit crime, including:

- Natural Surveillance;
- Access Control;
- Territorial Reinforcement;
- Space Management.

Principle 1 – Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The Proposed Development orientates active areas such as building entrances, learning precincts and ground floor open space towards surrounding roads, driveways, pedestrian paths, car parking and deep-soil landscaping;
- The Proposed Development utilises low-level landscaping in appropriate locations to ensure there is no obstruction of surveillance opportunities; and,
- External security lighting will enable the maintenance of sight lines and surveillance after dark.

Principle 2 – Access Control

Access control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- During after school hours, access would be allowed via secure access points only;
- The design of the built-form incorporates in-built access control throughout the Site, for example, building elevation and retaining walls, have led to the avoidance for the requirement of excessive fencing; and,
- Directional signage and design features would facilitate legibility and direct all site-users to the appropriate access points and areas of the School.

Principle 3 – Territorial Reinforcement

Territorial Reinforcement can be described as creating a sense of ownership to a public space or vicinity, encouraging the usage of that space. By increasing the usage capability, this also deters crimes and, further increases the chances of a crime being witnessed and reported in a timely manner.

- The provision of boundary treatments will emphasise the separation between the private and public realm; and,

- Well maintained planters, gardens and pavers will indicate the development is well-used and cared for to reduce criminal activity.

Principle 4 – Space Management

Space Management is intuitive of Principle 3 – Territorial Reinforcement – and, refers to ensuring a space is utilised and cared for appropriately.

- Space management strategies to be implemented, include activity coordination, site cleanliness, rapid repair of vandalism, rapid removal of graffiti and the replacement of decayed physical elements;
- On the ground level, pathways and planters will be well maintained;
- Continued repairs and maintenance will discourage vandalism; and,
- High quality materials, varied façade treatments and landscaping along boundaries will assist in discouraging vandalism and graffiti.

Accordingly, through the integration of CPTED in design and the overall intended built-form, the School has been planned to prevent crime.

5.11 HEALTH URBAN DEVELOPMENT CHECKLIST, NSW HEALTH

The *Healthy Urban Development Checklist* was released by NSW Health to assist in the understanding of health issues relative to urban development plans and proposals, with the aim of promoting healthy communities and lifestyles across NSW. The document is primarily aimed towards officers of NSW Health to provide an understanding of the Planning System and the manner of assessing and providing input into development plans and proposals with consideration to numerous health-related checklist items.

The Proposed Development is considered to be consistent with the *Healthy Urban Development Checklist*, as applicable to design and planning for schools, for the following reasons:

- The Proposed Development, for the purposes of a school, incorporates significant areas of useable outdoor space conducive to a variety of active and passive, structured and 'free' activities relating to general play, outdoor education and organised sport. Physical activity and incidental exercise would therefore be promoted for students during school hours;
- In the future, the potential sharing of the School's facilities would be formally extended to benefit the wider community;
- Although the School site is not currently accessible by walking or cycling, the introduction of a school bus service would enable students to access the school via active travel modes. In connection with bus services and investment in pedestrian infrastructure in residential areas, walking could be promoted as a component of the journey-to-school. Additionally, by encouraging parents and carers of younger students to car-pool and older students to utilise the school bus service, car trips would be significantly reduced;
- The Proposed Development would provide vital social infrastructure needed to support the sustainability, amenity and functionality of Western Sydney's growing communities;
- The future shared use of school facilities (i.e. sporting grounds and the Gurdwara & Langar) would allow the School to function as a 'social connector' for the wider community, fostering social cohesion;
- The architectural design of the School integrates flexibility and adaptability, allowing indoor and outdoor spaces to be used for a variety of purposes by a variety of user-groups with diverse needs;

- Similarly, the design and layout of the School would create healthy environments in which to teach and learn with space benefitting from natural ventilation, excellent daylight, glare control, acoustic and thermal comfort;
- The overall health of the environment would be supported through the design of the development in accordance with principles of ESD, incorporating both active and passive design features to maximise energy and water efficiency;
- Landscape design incorporates and maximises views of natural landscapes. Extensive vegetation planting throughout the Site would promote access to nature for students, for which the health benefits are widely recognised.

Accordingly, the proposed school would support the health of future staff and students, as well as the wider community and environment.

5.12 NORTH WEST PRIORITY GROWTH AREA LAND USE AND INFRASTRUCTURE IMPLEMENTATION PLAN 2017

The *North West Priority Growth Area: Land Use and Infrastructure Implementation Plan* (LUIIP) was released by the NSW DPIE in May 2017. The LUIIP notes, that within the North West Priority Growth Area, new communities will progressively develop over time, with increased access to schools; parks; community facilities; jobs; roads and public transport. By 2027, the North West Priority Growth Area is estimated to have an increase in approximately 33,000 homes, with a population of approximately 92,400 people. The LUIIP provides the essential framework to allow for linear progression between community groups and the provision of infrastructure supply.

It is important to note, that the North West Priority Growth Area is in close proximity to a number of identified key transport nodes and established areas of employment, including:

- Rouse Hill and Norwest Business Park;
- State and regional road network connections, including Windsor Road, Richmond Road, The Northern Road and M7 Motorway, providing connections to the M4 Motorway to Blacktown, Penrith and Parramatta;
- Sydney Metro Northwest connecting the North West Priority Growth Area to Chatswood via Epping with the construction of eight new stations;
- The town centres of Rouse Hill, Blacktown, Penrith and Castle Hill to the southwest and east which provide retail, commercial and industrial uses, and associated employment; and
- A public transport corridor from the Sydney Metro Northwest towards Marsden Park.

Figure 13 below illustrates the North West Priority Growth Area from a Regional and Local Context.

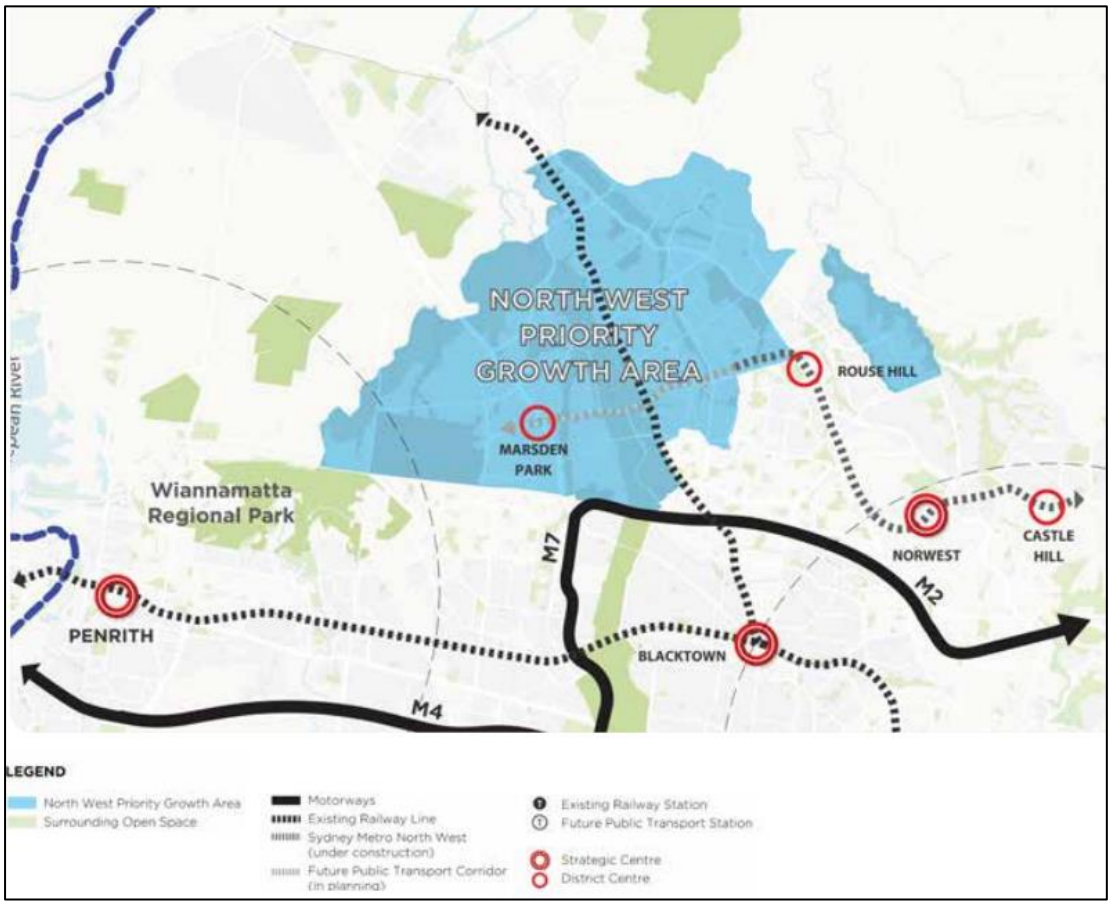


Figure 13 North West Priority Growth Area (Source: NSW DPIE, 2017)

It is noted, that a Special Infrastructure Contributions (SIC) scheme applies to development within the North West Priority Growth Area, to contribute to the funding of regional infrastructure, for which the Proposed Development, for the purposes of an Educational Establishment includes provisions for.

The LUIIP suggests, that new communities will progressively develop across the North West Priority Growth Area with access to schools, parks, community facilities, jobs, roads and public transport. The LUIIP provides the land use framework for the wider community and relevant industry sections, which ultimately form the strategic direction of the North West Priority Growth Area and its intended function. It is noted, that the strategic direction characterised within the LUIIP is aligned and consistent with the overarching Strategic Plans, including *A Metropolis of Three Cities* and the *Central City District Plan*.

The LUIIP provides six (6) main objectives as overriding themes to the Land Use Strategic Plan for the North West Priority Growth Area. The Site is located within the Riverstone East Precinct in the LUIIP. Therefore, the LUIIP is significant in terms of the planning guidelines for the Site. The main objectives and themes of the LUIIP are discussed in the context of the Proposed Development below in **Table 14**.

Table 14: North West Priority Growth Area – Land Use and Infrastructure Implementation Plan (LUIIP)	
LUIIP Objectives	**Proposed Development Outcomes**
Create vibrant and liveable neighbourhoods: *The Implementation Plan identifies a low and high growth housing capacity scenario based on a clear understanding of how the housing market is influencing lot size and housing diversity in the North West. The Implementation Plan anticipates increases in residential densities at key transport nodes and future centres. Diverse housing choices will meet the needs of people of different ages, incomes and cultural backgrounds. Under the Implementation Plan, the Priority Growth Area could ultimately provide up to an additional 20,000 dwellings than was originally anticipated. The Implementation Plan seeks to facilitate the supply of 18,000 new homes by 2021 and 33,000 new homes by 2026.*	The Proposed Development includes a direct response towards the envisaged residential population growth anticipated for the North West Priority Growth Area, by providing key infrastructure required to adequately service a growing population dynamic.
Balance the needs for employment and recreation: *The Implementation Plan proposes to establish new density controls (minimum and maximum) for residential land so that new communities are supported by adequate infrastructure and local councils can plan for the new population. The Department will work with local councils to implement the controls and will establish a system to monitor the delivery of homes.*	The population expected for the Proposed Development includes provisions for approximately 1,260 students, 120 staff and an 86 place Early Learning Centre, which will assist in accommodating the expected residential population growth for the area in direct response to the increase in residential dwelling stock within the immediate vicinity and surrounding areas.
Improve Accessibility: *The Implementation Plan seeks to improve access and mobility throughout the Priority Growth area to connect homes, jobs and local facilities. An indicative road, rail and active transport strategy will link new homes to employment, shops, and services, including Rouse Hill, Norwest, Blacktown and Penrith. Public transport, pedestrian and cycle paths will reduce the reliance on cars for local trips, and will connect people to other parts of Sydney.*	The Subject Site is located adjacent to Tallawong Road, for which is earmarked for future road upgrades, providing enhanced and improved connectivity to nearby local and commercial centres, as well as improving linkages to nearby transport infrastructure including bus stops adjoining the Site, as well as the newly operable Sydney Metro. The Site's location and the overall Proposal is considered ideal and consistent with planned and existing infrastructure upgrades for the area.
Infrastructure to support housing & employment growth: *The Implementation Plan identifies the infrastructure needs to support growth and prioritises the forward funding or delivery of infrastructure to meet higher capacity growth projections. Communities will be*	As above.

supported by infrastructure that is planned and delivered to meet the needs of new residents.	
Improve, protect & provide diverse open space: *The Implementation Plan identifies additional open space requirements needed to support new communities, based on a high-growth housing capacity scenario. It also identifies the opportunity to establish a new green space corridor along Eastern Creek to provide new open space and better green connections to where people will live.* *Bushland will be protected and connected through a Green Grid across the North West Priority Growth Area and beyond, linking growing suburbs, rehabilitating waterways, and providing places for recreation and community events.* *Areas of sensitive heritage significance in precincts yet to be rezoned will be considered as part of detailed planning for those areas.*	With regard to the Proposed Development, a variety of semi-public and private open spaces connect to the built-form and activate the Site. High quality materials and integrated furniture will create flexible spaces for learning, discovery, study and recreation. The public realm and open space will have a distinctively identifiable character unique to the Site, to create a strong sense of place and community pride / sense of ownership with respect to the Proposal. The Proposed Development embraces Sikh Australian identity with a strong outward focus to the surrounding neighbourhood, emphasising core beliefs of the overarching Sikh philosophy.
Explore new land uses along major infrastructure corridors: *The Implementation Plan incorporates infrastructure commitments across the North West Priority Growth Area and recommends that further investigation be undertaken to leverage the opportunities along key corridors, such as significant road upgrades - Schofields Road, Richmond Road and Bandon Road - and public transport - Sydney Metro Northwest and its transport corridor extension. The Western Sydney Rail Needs Scoping Study will help to identify future transit corridors in the North West.* *Corridor preservation projects such as the Outer Sydney Orbital and Bells Line of Road will influence the land uses in the area and are incorporated into the Implementation Plan and will be considered as planning progresses in the North West Priority Growth Area.*	The Proposed Development is located approximately 1.2 km north of the newly operable Sydney Metro at Tallawong Station. The Proposed Development is considered to provide an infrastructure asset in close proximity to nearby infrastructure that is considered highly accessible.

5.13 BETTER PLACED: AN INTEGRATED DESIGN POLICY FOR THE BUILT ENVIRONMENT OF NSW

Better Placed is the NSW Government Architect's integrated design policy for the built environment of NSW. It seeks to provide a clear approach to underpin good design in architecture, public places and environments, to realise positive outcomes for the places people live, work and play, both now and into the future. Good design is recognised as producing social, environmental and economic benefits.

The following seven (7) distinct objectives have been created to define the key considerations in the design of the built environment:

- Better fit – contextual, local and of its place;
- Better performance – sustainable, adaptable and durable;
- Better for community – inclusive, connected and diverse;
- Better for people – safe, comfortable and liveable;
- Better working – functional, efficient and fit for purpose;
- Better value – creating and adding value; and,
- Better look and feel – engaging, inviting and attractive.

The design of the School has responded to these objectives, as described below.

Better Fit

Good design in the built environment is informed by and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, and communal aspirations. It also contributes to evolving character and setting.

The design of the School has been informed by its overall context, both in the Site's existing undeveloped nature and status as well as the future intended developed status. Landscape design in particular is integral to enabling the Site to integrate with the currently rural / residential character of the immediate surrounds. Vegetation planting adjacent to the Site boundaries will soften views toward the Site, riparian planting will enhance the environmental quality of the corridor in the Site's west, and more than half of the Site will be retained as open space.

Simultaneously, the School responds to the rapidly changing character of Sydney's northwest, which is experiencing significant population and housing growth (i.e. Growth Centres). It is this transformational character of the surrounding context that generates the need for a new Educational Establishment, comprising both a Primary School and Secondary School as well as an Early Learning Centre. In the future, the immediate surrounds of the Site are similarly anticipated to exhibit a changing character, noting that the area has been designated for future urban development by the *Greater Sydney Region Plan – A Metropolis of Three Cities* and the *Central City District Plan*.

As well as respond to the physical attributes of its context, the school respects the diversity of the local communities. In particular, the surrounding suburbs within the Blacktown LGA are defined by a broad spectrum of cultural backgrounds, including an influx of Sikh followers; hence, the significant and valued need for such a development containing so much intrinsic and extrinsic cultural importance. The in-built flexibility incorporated into the design of the School's indoor and outdoor spaces, further promotes adaptability in order to support a wide range of needs, now and into the future.

Better Performance

Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.

The Proposed Development has been designed in accordance with principles of ESD, incorporating both active and passive design features to maximise energy and water efficiency and create high-amendable indoor and outdoor learning environments. These features include:

- Natural ventilation with additional mechanically-assisted fresh air flow;
- Heat recovery;
- Well-sealed and highly insulated building;
- Maximum daylight access achieved through building depths, three-dimensional spatial relationships and high level operable skylights;
- Thermal comfort;
- Acoustic attenuation;
- Solar glare control integrated into the façade design;
- Rainwater collection; storage and recycling;
- Green roofs and walls;
- Locally sourced, low-maintenance, fit-for-purpose, sustainable building materials; and,
- Sustainable construction methods.

The layout and multi-storey design of the school make efficient use of the land, particularly in response to identified site constraints, such as flooding. Whilst not compromising natural processes, the School effectively creates a safe and functional environment for staff and students.

Furthermore, the aesthetically pleasing architectural landscape design responds to the topography, local character and flood characteristics of the land, in order to incorporate useable open space and utilise natural landscapes within the School site. Extensive vegetation planting throughout the Site will improve the biodiversity and tree canopy of the Site, particularly given that in its current state, the Site consists primarily of cleared land, attaining a low ecological value.

The Proposed Development, for the purposes of a new school, is considered to support social sustainability through the provision of essential educational facilities for the area's growing communities. The Proposed Development would provide a State-of-the-Art Educational Establishment, with modern, technology-equipped, energy efficient and flexible facilities. Accordingly, the proposal would support the unique requirements of the School's diverse student-base; be conducive to creative and innovative teaching and learning models; and, accommodate emerging and innovative techniques and practices. Through the provision of opportunities for the future shared use of the School's facilities by the wider community, the Proposed Development would also multiply the social benefits offered by the investment of reputable calibre, such as that of a new school.

Better for Community

The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.

As described above, with respect to social sustainability, the proposed new school would support the diverse sectors of the surrounding communities, though an inclusive enrolments policy, flexible learning spaces and adaptable programs. Through architectural design, the

school integrates flexibility and adaptability, allowing indoor and outdoor spaces to be used for a variety of purposes by a variety of user-groups with diverse needs.

The future shared use of school facilities would allow the school to function as a 'social connector' for the wider community, fostering social cohesion and providing wide-ranging benefits beyond the immediate student-base and population.

Better for People

The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.

The proposed new school has been designed to provide a highly amenable environment of flexible indoor and outdoor spaces for staff, students, visitors and the wider community (in the future). The design and layout of the School would create healthy environments, which would teach and promote a sense of learning, with spaces benefitting form natural ventilation, solar access, glare control and thermal comfort. Significant areas of useable outdoor space and innovative landscape design would support a variety of active and passive, structured 'free' activities relating to general play, outdoor education and organised sport. The School would therefore support the holistic wellbeing of its end users.

Better Working

Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to changes over time. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.

The proposed new school would provide a State-of-the-Art Educational Establishment, with modern, technology-equipped, energy efficient and flexible facilities. Accordingly, the Proposed Development would support the unique requirements of the School's diverse student-base, be conducive to best-practice teaching methodologies and curriculum models, and accommodate emerging, innovative techniques.

The Proposed Development would also present opportunities for shared use of its facilities by the wider community, thereby enhancing the efficiency and functionality of the investment.

Better Value

Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.

The value associated with the Proposed Development would be multiplied through planning and design such that the School provides needed social infrastructure that is also energy efficient and designed in accordance with the principles of ESD. The social and economic benefits associated with the School would be secured now and into the future through the incorporation of flexible and adaptive spaces suited to a variety of users (including the wider community through the future shared use of school infrastructure and amenities), innovative teaching models and emerging technologies.

Better Look and Feel

The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings.

The visual environment should contribute to its surroundings and promote positive engagement.

The architectural design of the School creates an aesthetically pleasing environment, defined by visual interest created through façade modulation, varied roof forms (integration of green roofs), design features and landscaping. Outside, the landscape design proposed, has defined a number of active and passive recreational areas and promotes the 'channeling' of movement through the Site, via activated open space and the creation of thoroughfares through the 'Civic Heart'.

Overall, the design and planning of the Subject Site has focused on the creation of a 'sense of place' with each of the spaces, though noted as diverse, are considered complementary and contributary in their own right, to a cohesive school identity, which is earmarked to be the first of its kind.

Whilst focusing on the School as a 'place', it has also been considered in light of the surrounding context. As described above, with respect to 'better fit', the School seeks to respond to the local character (past, future and present). Through attention to the landscape design, riparian planting, views to and from the Site, architectural design and the particulars of the infrastructure investment, the School will effectively integrate with its context accordingly.

Robust, long-lasting construction materials, low energy use, water and waste recycling, and future sustainable energy production on-site, will ensure the low maintenance and running costs of the School.

PART F CONSULTATION

6.1 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

In accordance with formal requirements, an application to receive SEARs was submitted to DPIE (Reference No. 9472). The SEARs were subsequently issued on the 6th of August 2018.

The SEARs for this Project issued are shown in full in **Appendix 1**. An overview of how the Secretary's Requirements have been satisfied within this EIS are outlined in **Table 15** below:

Table 15: How SEARs have been satisfied	
General Requirements	**How Addressed**
The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 & 7 of Schedule 2 of the EP&A Regulation.	This EIS has been prepared in accordance with Clauses 6 & 7 of Schedule 2 of the EP&A Regulation. The structure of this EIS addresses all legislative requirements.
Key Issues	
The EIS must include an assessment of all potential impacts of the Proposed Development on the existing environment (including cumulative impacts) and develop appropriate measures to avoid, minimise, mitigate and / or manage these potential impacts. As part of the EIS assessment, the following matters must also be addressed.	A full assessment of all potential impacts of the Proposed Development on the environment is detailed in Part H of the EIS.
Statutory and Strategic Context – including: ▪ *Biodiversity Conservation Act 2016;* ▪ *State Environmental Planning Policy (State & Regional Development) 2011;* ▪ *State Environmental Planning Policy (Sydney Region Growth Centres) 2006;* ▪ *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;* ▪ *State Environmental Planning Policy No. 64 – Advertising and Signage;* ▪ *State Environmental Planning Policy No.55 – Remediation of Land;* ▪ *Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No. 2 – 1997);* ▪ *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017;* ▪ *Draft State Environmental Planning Policy (Remediation of Land); and* ▪ *Draft State Environmental Planning Policy (Environment).* *Permissibility:* Detail the nature and extent of any prohibitions that apply to the development.	A detailed response to the Statutory and Strategic Context for this Site including a detailed justification for landuse is shown in Sections 2.3, 2.4, 3.3 7.1 and Part H of this EIS.

Development Standards: Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	
Policies – including: Address the relevant planning provisions, goals and strategic planning objectives in the following: ▪ NSW State Priorities; ▪ *The Greater Sydney Regional Plan, A Metropolis of Three Cities;* ▪ *Future Transport Strategy 2056;* ▪ *State Infrastructure Strategy 2018-2038 Building the Momentum;* ▪ *Sydney's Cycling Future 2013;* ▪ *Sydney's Walking Future 2013;* ▪ *Sydney's Bus Future 2013;* ▪ *Crime Prevention Through Environmental Design (CPTED) Principles;* ▪ *Healthy Urban Development Checklist, NSW Health;* ▪ *Greater Sydney Commission's Central City District Plan;* ▪ *North West Priority Growth Area Land Use and Infrastructure Implementation Plan 2017;* ▪ *Better Placed: An integrated design policy for the built environment of New South Wales (GANSW 2017);* ▪ *Blacktown City Council Growth Centre Precincts Development Control Plan 2018*	**Part E** of this EIS provides a comprehensive analysis of the relevant policies applicable to the Proposed Development.
Operation – including: ▪ Provide details of the proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities. ▪ Provide details of the proposed ancillary place of worship operations, including the nature and frequency of use, hours of operation and capacity. ▪ Provide a detailed justification of suitability of the site to accommodate the proposal.	**Part C**, particularly Sections 3.2 and 3.5 satisfactorily consider the operational phase of the Proposed Development. Additionally, an Operational Management Plan has been drafted for the Proposal and is located within **Appendix 37** of this EIS.
Built Form and Urban Design – including: ▪ Address the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. ▪ Address design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours. ▪ Provide details of any digital signage boards, including size, location and finishes. ▪ Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of *State Environmental Planning Policy*	**Section 7.2** satisfactorily considers the built-form and urban design of the Proposed Development. Additionally, **Appendix 8-12** satisfactorily address built-form requirements.

(Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools. ▪ Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development. ▪ Provide detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development. ▪ Provide a detailed site-wide landscape strategy including consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation. ▪ Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site any adjoining heritage items. ▪ Address CPTED Principles. ▪ Demonstrate good environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.	
Environmental Amenity – including: ▪ Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity overshadowing and acoustic impacts. ▪ Conduct a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development). ▪ Include a lighting strategy and measures to reduce spill into the surrounding sensitive receivers. ▪ Identify any proposed use of the school outside of school hours (including weekends), including and in addition to the ancillary place of worship, and assess any resultant amenity impacts on environmentally sensitive areas, the immediate locality and proposed mitigation measures. ▪ Detailed outline of the nature and extent of the intensification of use associated with the increased floor space, particularly in relation to the proposed increase in staff and student numbers. ▪ Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	**Section 7.3** of this EIS has satisfactorily addressed environmental amenity.
Staging – including: Provide details regarding the staging of the proposed development (if any).	Construction staging has been considered within Section 3.2.7 of this EIS, as well as in the relevant consultant reports, where required. A Construction Staging Plan is provided within **Appendix 9** of this

	EIS. It is noted, that the Construction Staging is indicative and is proposed to be undertaken at the discretion of the Proponent upon funds being available at a given time.
Transport and Accessibility – including: Include a transport and accessibility impact assessment, which details, but not limited to the following: ▪ accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development. ▪ projected student population growth as the site develops. ▪ details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area. ▪ the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development. ▪ details of design of the surrounding local road network as per the Riverstone East planned precinct. ▪ trip generation mode share estimates based on surveys and analysis of a similar development. ▪ intersection modelling and analysis for existing and post-development (forecast year 2036 – refer to Transport Study Post Exhibition Report for the Riverstone East planned precinct), which includes Tallawong Road with Guntawong Road and Tallawong Road with Schofields Road. ▪ measures to integrate the development with the existing/future public transport network. ▪ the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years). ▪ the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays. ▪ details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel	A full traffic and transport assessment, in accordance with both RMS and Blacktown City Council requirements is shown in **Section 7.4** of this EIS and located within **Appendix 19** & **20**.

plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site. ▪ the proposed walking and cycling access arrangements and connections to public transport services. ▪ the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones. ▪ proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance. ▪ proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site. ▪ an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development. ▪ an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED. ▪ emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times). ▪ the preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: o assessment of cumulative impacts associated with other construction activities (if any); o an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; o details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; o details of anticipated peak hour and daily construction vehicle movements to and from the site; o details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; and o details of temporary cycling and pedestrian access during construction. Relevant Policies and Guidelines: ▪ Guide to Traffic Generating Developments (Roads and Maritime Services).	

▪ EIS Guidelines – Road and Related Facilities (DoPI). ▪ Cycling Aspects of Austroads Guides. ▪ NSW Planning Guidelines for Walking and Cycling. ▪ Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development. ▪ Standards Australia AS2890.3 (Bicycle Parking Facilities).	
Ecologically Sustainable Development (ESD) – including: ▪ Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development. ▪ Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy. ▪ Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance. ▪ Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change, specifically: o Hotter days and more frequent heatwave events; o Extended drought periods; o More extreme rainfall events; o Gustier wind conditions; o How there will inform landscape design, material selection and social equity aspects (respite / shelter areas). Relevant Policies and Guidelines: ▪ NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.	The principles of ESD have been satisfactorily considered throughout the overall design of the Proposed Development. Further information regarding ESD can be identified within **Section 7.18** of this EIS and **Appendix 29**.
Social Impacts – including: Include an assessment of the social consequences of the schools' relative location.	Social impacts as a result of the Proposed Development have been considered by Sarah George Consulting within the Social Impact Assessment, which also included a comprehensive Community and Stakeholder Management Strategy for the Proposal (refer to **Section 7.10** & **Appendix 27** of this EIS).
Aboriginal Heritage – including:	An Aboriginal Cultural Heritage Assessment

▪ Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011). ▪ Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR. ▪ Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Report (ACHAR) was undertaken and prepared by NGH Envionmental (2019) for the Proposed Development, for which the findings can be located within **Section 7.12** and **Appendix 25** of this EIS.
Noise and Vibration – including: ▪ Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. ▪ Identify and assess operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities (including and in addition to the ancillary place of worship), and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. Relevant Policies and Guidelines: ▪ NSW Noise Policy for Industry 2017 (EPA) ▪ Interim Construction Noise Guideline (DECC) ▪ Assessing Vibration: A Technical Guideline 2006 ▪ Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008).	A qualitative and quantitative Noise and Vibration Impact Assessment has considered the relevant construction and operational phases of development, for which the findings can be located within **Section 7.7** and **Appendix 21** of this EIS.
Contamination – including: ▪ Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. ▪ Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works.	Contamination for the Site has been previously assessed, via means of a Preliminary Site Investigation undertaken by DLA Environmental

Relevant Policies and Guidelines: ▪ Managing Land Contamination: Planning Guidelines – SEPP 55 Remediation of Land (DUAP).	Services, which has satisfactorily addressed and considered the requirements for contamination in relation to SEPP 55, for which the Site is deemed suitable for the proposed use. A Phase 2 Environmental Site Assessment is not considered to be required. **Sections 4.2.10** & **7.5**, as well as **Appendix 17** & **18** of provide further information with regard to contamination.
Utilities – including: ▪ Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. ▪ Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	Services to the Site can be successfully augmented where possible and have been considered in **Sections 3.2.3** & **7.14** as well as **Appendix 28** of this EIS.
Contributions: Address Council's 'Section 94/94A Contribution Plan' and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	Development Contributions have been considered in **Section 4.3.5** and **7.15** of this EIS. Indicative contributions costs are currently being confirmed by Blacktown City Council.
Drainage – including: ▪ Detail measures to minimise operational water quality impacts on surface waters and groundwater. ▪ Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties and environmentally sensitive areas. Relevant Policies and Guidelines: ▪ Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)	The Civil Engineering Drawings located within **Appendix 13** have satisfactorily addressed any drainage requirements for the Site.
Flooding – including:	Flood affectations for the Site have been considered within

Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.	**Section 7.5** and **Appendix 15** of this EIS.
Bushfire – including: Address bushfire hazard and, if relevant, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 (NSW RFS).	A Bushfire Assessment Report has been prepared, which considers any potential bushfire hazards for the Proposed Development. The findings are dentified with **Section 7.13** & **Appendix 26** of this EIS.
Biodiversity Assessment – including: ▪ Identify and address the requirements of the *Biodiversity Conservation Act 2016* relevant to the State significant development application. ▪ Where a Biodiversity Development Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal. ▪ Where the land is subject to a Biodiversity Certification Order, evidence of this Order and the terms is to be provided. Note: Notwithstanding these requirements, the *Biodiversity Conservation Act 2016* requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report unless otherwise specified under the Act.	**Section 7.8** and **Appendix 23** of this EIS satisfactorily considers the Proposed Development's impact on any biodiversity values within close proximity to the Site.
Sediment, Erosion and Dust Controls – including: Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Relevant Policies and Guidelines: ▪ Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom). ▪ Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA). ▪ Guidelines for development adjoining land and water managed by DECCW (OEH, 2013). ▪ Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. ▪ Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP).	The Civil Engineering Drawings located within Appendix **13** of this EIS provide Sediment and Erosion Controls for the Proposed Developments. Further mitigation measures are identified within **Part H** of this EIS.
Waste – including:	A Waste Management Plan (refer to **Appendix 24**) has

Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	been prepared for the Proposed Developments construction and operational phases of development and is further considered within **Section 7.6** of this EIS.
Construction Hours – including: Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	**Section 3.2.7** of this EIS includes further insight to the proposed construction details for the Proposed Development.
Table 3: How SEARs have been satisfied	
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: ▪ Blacktown Council ▪ Government Architect NSW (through the NSW SDRP process) ▪ Transport for NSW ▪ Roads and Maritime Services and ▪ NSW Rural Fire Service Consultation should commence as soon as practicable to agree the scope of investigation. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	For full details of the Proposed Developments Consultation Plan, refer to **Part F** of this EIS.
Further Consultation After Two (2) Years	
If you do not lodge a development application and EIS for the development within two years of the issue date of these SEARs, you must consult further with the Planning Secretary in relation to the preparation of the EIS.	Noted.

During the preparation of the SEARs, DPIE also consulted with stakeholders, and in the process obtained a list of their Key Issues for the proponent(s) to assess throughout this EIS. These Key Issues for assessment are contained in **Tables 16-22.**

Table 16: Blacktown City Council Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
Planning Comments:	Refer to **Part G** of this EIS, which provides a

1. *The proposal is to undertake a full and detailed assessment of potential impacts of the proposal on any surrounding residential areas. The proposal should assess the wider potential impacts on residents. Any measures to mitigate these potential impacts in the design of the proposal and management of operational matters are to be detailed.* 2. *The proposal is to take into consideration the impact of traffic movements and noise on adjoining residential properties.* 3. *The proposal is to take into consideration privacy, overlooking and overshadowing impacts on adjoining properties.* 4. *We believe the subdivision of land along the south-western boundary for the site for residential lots is premature on this basis we will object to any subdivision of the land. What we would prefer is for the school land to be developed first in order to determine that matters such as carparking, drainage, landscaping, playground space etc. can be addressed and satisfied, noting that overflow parking will be needed for any special events. A future application could be lodged for subdivision later to create residential lots once it can be established that the proposed school and place of assembly can satisfy the relevant design criteria without this.* 5. *The submission of a social impact statement is to address the integration of the school in its local community.* 6. *The submission of a Plan of Management for the student boarding house accommodation.* 7. *The submission of a Crime Prevention through Environmental Design (CPTD) report prepared by a suitably qualified security consultant. This should be prepared having regards to the checklist at Attachment B and consultation with Quakers Hill Local Area Police Command.* 8. *The submission of an Archaeological report to identify any known or potential archaeological site on the land.* 9. *Compliance with the Department of Education and Training schools requirements for playground space for students.*	comprehensive environmental risk assessment with regard to the Proposal.
City Architect's Comments: *Council's Architect has raised the following matters which should be taken into consideration:* 1. *The site layout has been internalised positioning the outdoor "noisy" spaces towards the centre of the development. This will minimise acoustic impacts on the neighbouring residential development.* 2. *The boulevard that runs east-west is a strong design element and provides a strong connection between different zones across the campus. Where possible the boulevard should be set to a 'walkway' gradient in lieu of a 'ramp' as defined in AS 1428 to eliminate the need for handrails, tactiles and the like.* 3. *The termination of the boulevard at the western end would be strengthened by positioning landscaping in this area and not car parking.* 4. *A landscaped buffer width of at least 3m should be provided along the western boundary at the transition to the residential development.*	The Architectural and Landscape Plans provided within **Appendix 8** & **12** have considered Council's relevant design comments.

5. *No information has been provided to describe the architectural language of the proposal. Building, massing, façade and roof design should incorporate suitable materials and thoughtful composition of building elements in order to create a high quality development.* 6. *There is an opportunity to select materials and provide a design concept that represents the Sikh culture in a modern and contemporary way.* 7. *Waste collection configuration must be wholly within the site. Trucks must enter and leave in a forward direction. Collection areas should be adequately screened with landscaping and have suitable acoustic treatment to minimise impact on students and the neighbouring development.* 8. *The City Architects office will provide detailed comment on architectural matters as the design progresses beyond the initial sketch masterplan stage.*	
Engineering Matters: *Council's Engineers require the following information to be provided with the proposal:* 1. *The flow from the trapped drainage low point in Tallawong Road is to be managed through the site. Provide a minimum 8 m wide drainage easement to convey the 100 year pipe and surface flows through the site.* 2. *The pipe within the easement is to be sized for the 20 year Ari with sufficient pits and pipes to collect such flows. The pipe is to be directed to the rear road at the northern tangent point with the future ILP road to the west.* 3. *The floor levels adjacent to the flow path are to be a minimum of 300 mm above the 100 year flow level assuming the pipe is half blocked.* 4. *The rear road is to be redesigned to force the roadwater to the future ILP road to the west.* 5. *For school and places of worship a minimum of 80% of the non-potable water uses on site is to be met through rainwater. This is to be assessed using the node water balance in MUSIC. Allow for a 20% loss in rainwater tank size volume in MUSIC to that shown on the design plans below the overflow invert to allow for anaerobic zones, mains water top up levels and overflow levels. Provide the MUSIC model. Allow for internal rainwater reuse of 0.1 kL/day per toilet/urinal and for watering landscaped areas only (excluding turf areas) e.g. common areas, allow 0.4 kL/year/m^2 as PET-Rain.* 6. *Total site area for both Lots 42 & 43 shall provide temporary OSD & STM (water quality and quantity) to comply with Part J of Blacktown Development Control Plan 2015.* 7. *Approval from the adjoining owner to the west (F/407863) for a tail out drain for the drainage pipe is to be provided.*	Council's engineering matters are addressed within **Section 7.5** of this EIS and further engineering considerations are identified within **Appendix 13-16** of this EIS.
Road Construction: 1. *Roads within R2 zone shall be 16 m wide.* 2. *All roads adjoining R3 zones shall be 18 m wide, having 11 m carriageway and 3.5 m footpath on each side. In this regard, roads*	It is noted, that the proposed half-road construction is being undertaken within a concurrent

between R2 & R3 land shall have half-road construction with adjoining R3 land of 9.5 m. 3. *Being a place of worship that will be likely to have special occasions and festivities, additional parking (on/off site) will be required. Alternatively, wider streets can be considered to accommodate on-street parking problems.* 4. *Implement Council's road centreline design levels at Attachment C.* 5. *The applicant is required to consult with Council's City Asset Infrastructure team to ensure that the development site levels match the final levels required for Tallawong Road.*	Subdivision Application for the Site, which includes provisions for a proposed
Section 7.11 Matters: *Council's Section 7.11 Officer has advised that contributions will be applicable to the proposed development as the subject lots are located within Contribution Plans No.22L and 22W.*	A request has been sent to Jenny Rodger of Blacktown City Council to provide an indicative calculation of applicable contributions to be paid prior to the issue of a relevant Construction Certificate.
Traffic Matters: *Council's Traffic Engineer requires the following report to be provided with the proposal:* 1. *A Traffic Report addressing traffic circulation and full compliance with the parking requirements in the Growth Centres DCP for schools.* 2. *The roads along the school frontages must be designed and built to have 11m wide carriageway (2.5m footway plus 7.5m road).* 3. *The bus bay is unsatisfactory as it does not meet traffic design standards in regard to depth of bay and transition into and out of bus bay. In addition the applicant will need to demonstrate that bus circulation can occur around the site via the half road construction.* 4. *The applicant has failed to show any wombat crossings across each road fronting the site.* 5. *The applicant is to provide a Green Travel Plan and operational traffic management plan for the day to day running of the school.*	A full traffic and transport assessment, in accordance with both RMS and Blacktown City Council requirements is shown in **Section 7.4** of this EIS and located within **Appendix 19** & **20**.
Building Matters: *Council's Building Surveyor requires the following reports to be provided with the proposal:* 1. *BCA Compliance Report.* 2. *Access to premises Report under the Disability Discrimination Act.* 3. *Given the proximity of the site to nearby RFS designated bushfire prone land an emergency evacuation plan of management is to be submitted.* 4. *Demolition Report.* 5. *Given the development straddles 2 properties, in order to meet BCA requirements these lots will have to be consolidated, so a draft consolidation plan is required.*	The BCA Report provided within **Appendix 34** & **35** satisfactorily considers any BCA matters.

Environmental Health Matters: *Council's Environmental Health requires the following reports to be provided with the proposal:* *Contamination:* *EIS will require the submission of a Stage 2 site Contamination Investigation Report, a Remediation Action Plan for implementation and recommendations in Section A2 Site Audit Statement prepared by a EPA accredited site auditor.* *Acoustic:* *The acoustic impacts generated through the future operation of the school and associated traffic along Tallawong Road must be assessed as part of the future EIS. Acoustic report should include impacts to future receivers (including residential flat buildings on site) for:* ▪ *Car park and bus noise emission for all hours of its use (both school and place of worship);* ▪ *Amplified sound from within the school and place of worship;* ▪ *Noise associated with outdoor sporting activities;* ▪ *Early learning centre; and,* ▪ *Mechanical plant.* *Air Quality:* *An odour assessment is to be included in the EIS. The odour assessment is to provide recommendations to mitigate the impact of any potentially offensive odours that may impact the development. The report shall be prepared by an appropriately qualified environmental consultant with suitable technical qualifications and experience.* *Utility Services:* ▪ *Details are required for the proposed management of sewerage through reticulated or bioseptic or pump out to Sydney Water Corporation and Council requirements; and,* ▪ *Adequacy of water supply to meet Fire Brigade requirements.*	It is noted, that all environmental matters have been considered in **Sections 3.2.3, 4.2.10, 7.5, 7.14**, as well as **Appendix 16, 17, 18, 22** & **28**.
Natural Areas Matters: *Council's Natural Areas division requires the following information to be provided with the proposal:* 1. *The requirement for a Biodiversity Development Assessment Report as outlined in the draft SEARs is suitable to address the biodiversity impacts as the land is biodiversity certified.* 2. *There is a dam onsite so considerations for the dam dewatering are required to EPA permit requirements. Also the relocation of fauna to suitable new habitats will necessitate an ecological management plan to be submitted.*	**Section 7.8** and **Appendix 23** of this EIS satisfactorily considers the Proposed Development's impact on any biodiversity values within close proximity to the Site.
Open Space:	The Landscape Design Report and Plans is located

Council's Open Space division requires the following information to be provided with the proposal: *1. Detailed landscape plan that shows the internal landscaping as well as the proposed streetscape with street trees.* *2. Carparking area trees that provide 50% shade at 10 year maturity will be required.*	within **Appendix 12** of this EIS, which satisfactorily considers Council's landscaping requirements.

Table 17: NSW Environment Protection Authority (EPA) Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
The Environmental Assessment (EA) should assess, quantify and report on the following issues: ▪ *Soil and groundwater contamination;* ▪ *Air quality, especially dust from site preparation and construction;* ▪ *Noise and vibration during construction and operational phases of the project;* ▪ *Water quality impacts (including water conservation and re-use opportunities);* ▪ *Waste management in the context of the waste management hierarchy;* ▪ *Soil erosion and sedimentation particularly during the construction phase;* ▪ *Energy and water conservation; and* ▪ *Cumulative environmental impacts.* *The proponent should ensure that the EA is sufficiently comprehensive and detailed to allow the EPA to determine the extent of the impact(s) of the proposal. The EA should both:* *(a) describe mitigation and management options that will be used to prevent, control, abate or minimise identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment; and* *(b) include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.*	It is noted, that all environmental matters have been considered in **Part G** of this EIS.

Table 18: Government Architect NSW (GANSW) Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
In Key Issues, section 2 policies, please add: ▪ *Better Placed: An integrated design policy for the built environment of New South Wales, GANSW 2017.*	Refer to **Section 5.13** of this EIS.
In Key Issues, Section 4 Built Form and Urban Design, please replace this section with the following standard requirements including introductory sentence: *In consultation with the Government Architect NSW ensure that the proposal demonstrates design quality in accordance with the Design*	The Architectural Design Report located within **Appendix 11** has satisfactorily considered the

Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the Design Guide for Schools, through consideration of the following: ▪ *Site and context including planning and massing options and preferred strategy for future development;* ▪ *Contextual fit including height, bulk and scale, setbacks and interface of the proposal with surrounding development, topography, streetscape and public open spaces;* ▪ *Visual impact including views to and from the site and any adjoining heritage items;* ▪ *Built form including overall site layout, planning and massing, facades, building articulation and scale, materials, colours;* ▪ *Crime Prevention Through Environmental Design Principles;* ▪ *Aboriginal culture and heritage, to be developed in consultation with the local Aboriginal community and cultural groups and incorporated holistically in the design proposal; Environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility;* ▪ *Landscape design, including consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation;* ▪ *ESD principles including sustainability targets and integration of these in design approach; and* ▪ *Integration of services including waste management, loading zones and mechanical plant.*	Schedule 4 Design Quality Principles.
In Plans and Documents, please remove points one, two, three, five, six, seven and eleven and replace with the following standard requirements: ▪ *Architectural drawings should include key dimensions, RLs, scale bar and north point, including:* o *Site analysis plan;* o *Site context plans that demonstrate principles for future development and expansion, built-form character, open space network, active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links;* o *Plans, sections and elevation of the proposal at no less than 1:200 showing indicative furniture layouts and program;* o *Illustrated materials schedule including physical or digital samples board with correct proportional representation of materials, nominated colours and finishes;* o *Details of proposed signage, including size, location and finishes;* o *Detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality;* o *Site plans and operations statement demonstrating the after-hours and community use strategy;* o *Shadow diagrams; and,*	The Architectural Plans have been designed to addressed the adjoining items where possible (refer to **Appendix 8**).

○ *View analysis, photomontages and architectural renders, including those from public vantage points.* ▪ *Landscape Architectural drawings should include key dimensions, RLs, scale bar and north point, including:* ○ *Integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed including articulation of playground spaces; and* ○ *Plan identifying significant trees, trees to be removed and trees to be retained or transplanted.* ▪ *Design report to demonstrate how design quality will be achieved in accordance with Key Issues, Section 4, Built Form and Urban Design, including:* ○ *Architectural design statement;* ○ *Diagrams, illustrations and drawings to clarify the design intent of the proposal;* ○ *Detailed site and context analysis;* ○ *Analysis of options considered including building envelope study to justify the proposed site planning and design approach;* ○ *Visual impact assessment identifying potential impacts on the surrounding built environment and adjoining heritage items;* ○ *Summary of feedback provided by GANSW and NSW SDRP and responses to this advice; and* ○ *Summary record of consultation with the community and response to any feedback provided.* ▪ *Site Survey Plan, showing existing levels, location and height of any existing and adjacent structures / buildings and boundaries.*	
In consultation, we request proponents also consult with: ▪ *Local Aboriginal Community and cultural groups.*	Noted. Refer to **Appendix 25**.

Table 19: NSW Rural Fire Service (RFS) Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
Future stages of the application shall be support by information which demonstrates that this land will be managed to the standard of an asset protection zone (APZ) for the life of the development. This information should also show that the land will not be subject to any revegetation works which would cause the vegetation to become a future mapped bush fire hazard. *Where this cannot be demonstrated consideration needs to be given to the provisions of APZs in accordance with Table A2.6 of Planning for Bush Fire Protection (PBP) 2006 within the subject site. This may require alterations to the current Masterplan design and the provision of a bush fire assessment report that demonstrate compliance with the relevant provision of Planning for Bush Fire Protection 2006.*	Noted.

Table 20: Office of Environment & Heritage Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
Aboriginal Cultural Heritage:	An Aboriginal Cultural Heritage

1. *The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011).* 2. *Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.* 3. *Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.*	Assessment Report has been prepared and undertaken by NGH Environmental (2019), which has satisfactorily addressed the relevant comments provided by OEH (refer to **Section 7.11** and **Appendix 25**).
Water and Soils: 4. *The EIS must map the following features relevant to water and soils including:* a. *Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).* b. *Rivers, streams, wetlands, estuaries (as described in s4.2 of the Biodiversity Assessment Method).* c. *Wetlands as described in s4.2 of the Biodiversity Assessment Method.* d. *Groundwater.* e. *Groundwater dependent ecosystems.* f. *Proposed intake and discharge locations.* 5. *The EIS must describe background conditions for any water resource likely to be affected by the development, including:* a. *Existing surface and groundwater.* b. *Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.* c. *Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index/htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters.* d. *Indicators and trigger values / criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.* e. *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions http://www.environment.nsw.gov.au/research-and-publications/publications-search/risk-based-framework-for-*	**Section 7.5** and **Appendix 13-18** of this EIS satisfactorily address the relevant OEH comments.

considering-waterway-health-outcomes-in-strategic-land-use-planning. 6. *The EIS must assess the impacts of the development on water quality, including:* a. *The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.* b. *Identification of proposed monitoring of water quality.* c. *Consistency with any relevant certified Coastal Management Program (or Coastal Zone Management Plan).* 7. *The EIS must assess the impact of the development on hydrology, including:* a. *Water balance including quantity, quality and source.* b. *Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.* c. *Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.* d. *Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches).* e. *Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.* f. *Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.* g. *Identification of proposed monitoring of hydrological attributes.*	
Flood and Coastal Hazards: 8. *The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:* a. *Flood prone land.* b. *Flood planning area, the area below the flood planning level.* c. *Hydraulic categorisation (floodways and flood storage areas).* d. *Flood hazard.* 9. *The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP, flood levels and the probable maximum flood, or an equivalent extreme event.* 10. *The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:* a. *Current flood behaviour for a range of design events as identified in 14 above. This includes the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.*	Flooding has been considered by Martens in **Appendix 15** and is satisfactorily addressed in **Section 7.5** of this EIS.

11. Modelling the EIS must consider and document: *a. Existing council flood studies in the area and examine consistency to the flood behaviour documents in these studies.* *b. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood, or an equivalent extreme flood.* *c. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affectation of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazard categories and hydraulic categories.* *d. Relevant provisions of the NSW Floodplain Development Manual 2005.* *12. The EIS must assess the impacts on the proposed development on flood behaviour, including:* *a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.* *b. Consistency with Council floodplain risk management plans.* *c. Consistency with any Rural Floodplain Management plans.* *d. Compatibility with the flood hazard of the land.* *e. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.* *f. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.* *g. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses,* *h. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the NSW SES and Council.* *i. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the NSW SES and Council.* *j. Emergency management, evacuation and access, and contingency measures for the development considering the full range or flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the NSW SES.* *k. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.*	

Table 21: Sydney Water Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
Water-Related Infrastructure Requirements: *1. The proponent of development should determine service demands following servicing investigations and demonstrate that satisfactory arrangements for drinking water, wastewater and recycled water (if required) services have been made.* *2. The proponent must obtain endorsement and/or approval from Sydney Water to ensure that the proposed development does not*	The Site Infrastructure Assessment prepared by Umow Lai (2019) has satisfactorily considered

adversely impact on any existing water, wastewater or stormwater main, or other Sydney Water asset, including any easement or property. When determining landscaping options, the proponent should take into account that certain tree species can cause cracking or blockage of Sydney Water pipes and therefore should be avoided. 3. *Strict requirements for Sydney Water's stormwater assets (for certain types of development) may apply to this site. The proponent should ensure that satisfactory steps/measures been taken to protect existing stormwater assets, such as avoiding building over and/or adjacent to stormwater assets and building bridges over stormwater assets. The proponent should consider taking measures to minimis or eliminate potential flooding, degradation of water quality, and avoid adverse impacts on any heritage items, and create pipeline easements where required.*	augmentation of infrastructure services to the Site (refer to **Sections 3.2.3** & **7.14**, as well as **Appendix 28** of this EIS).
Integrated Water Cycle Management: 4. *The proponent should outline any sustainability initiatives that will minimise/reduce the demand for drinking water, including any alternative water supply and end uses of drinking and non-drinking water that may be proposed, and demonstrate water sensitive urban design (principles are used), and any water conservation measures that are likely to be proposed. This will allow Sydney Water to determine the impact of the proposed development on our existing services and required system capacity to service the development.*	**Appendix 15** has satisfactorily considered the requirements to implement a Water Sensitive Urban Design (WSUD) strategy into the overall design. This is reflective within the Architectural and Landscape Plans identified within **Appendix 8** & **12** of this EIS.

Table 22: Transport for NSW Key Issues for Assessment	
Key Issues	**How Addressed**
General Requirements	
The following should be included within the EIS in additional to the assessment requirements stipulated in Section 7: Transport and Accessibility of the draft SEARs: ▪ *Projected student population growth as the site develops;* ▪ *Details of design of the surrounding local road network per the Riverstone East planned precinct;* ▪ *Estimated school catchment area (if any);* ▪ *Trip generation and mode share estimates based on surveys and analysis of a similar development; and* ▪ *Intersection modelling and analysis for existing and post-development (forecast year 2036 – refer to Transport Study Post Exhibition Report for the Riverstone East planned precinct), which includes Tallawong Road with Guntawong Road and Tallawong Road with Schofields Road.*	A full traffic and transport assessment, in accordance with both RMS and Blacktown City Council requirements is shown in **Section 7.4** of this EIS and located within **Appendix 19** & **20**.

6.2 STAKEHOLDER CONSULTATION

The following stakeholders were required to be consulted with under this SSD Application:

1. Blacktown City Council;
2. Government Architect NSW;
3. Transport for NSW;
4. NSW RMS; and
5. NSW Rural Fire Service.

Extensive consultation has already been completed to date, via a combination of consultation letters, which were issued to the immediate community members, the wider locality and Local & State Government Agencies (as required by the SEARs). The *Social Impact Assessment* (Sarah George Consulting, 2019) provides details with a comprehensive analysis of the overall consultation strategy formulated and undertaken to date. The information provided herein, demonstrates, that genuine consultation has already taken place with stakeholders seeking feedback for the Proposed Development and its proposed future benefits and potential social and economic impacts.

Consultation with adjoining landowners has taken place, prioritising proximity to the Proposed Development. As **Figure 14** illustrates, consultation was completed with regard to adjoining landowners, that would be potentially impacted by the Proposed Development.

In total, 38 notices were distributed on 18 October 2018 to properties in the immediate vicinity of the Subject Site, that were most likely to be able to be seen, heard or otherwise be affected by the Proposed Development. Recipients were asked to respond to the notice within 30 days.

As part of the wider Community & Stakeholder and Participation Strategy, stakeholders and adjoining landowners, were all issued with consultation letters, as mentioned above. The letters sent, summarised the Proposed Development from a neutral information perspective, allowing for questions and any issues to be raised and dealt with.

The consultation letters provided to the relevant agencies and stakeholders, including adjoining landowners, provided a two (2) week turn-around-time for all responses to be received.

In addition, the wider community was notified of the Proposed Development within a "Call for Comment" notice in the *Rouse Hill Times* on 31 October 2018, requesting formal comment or feedback on the Proposal. Comments were also sought from key groups representing the interests of the local communities, including:

- Deerubbin Local Aboriginal Land Council; and
- Kellyville Rouse Hill Progression Association.

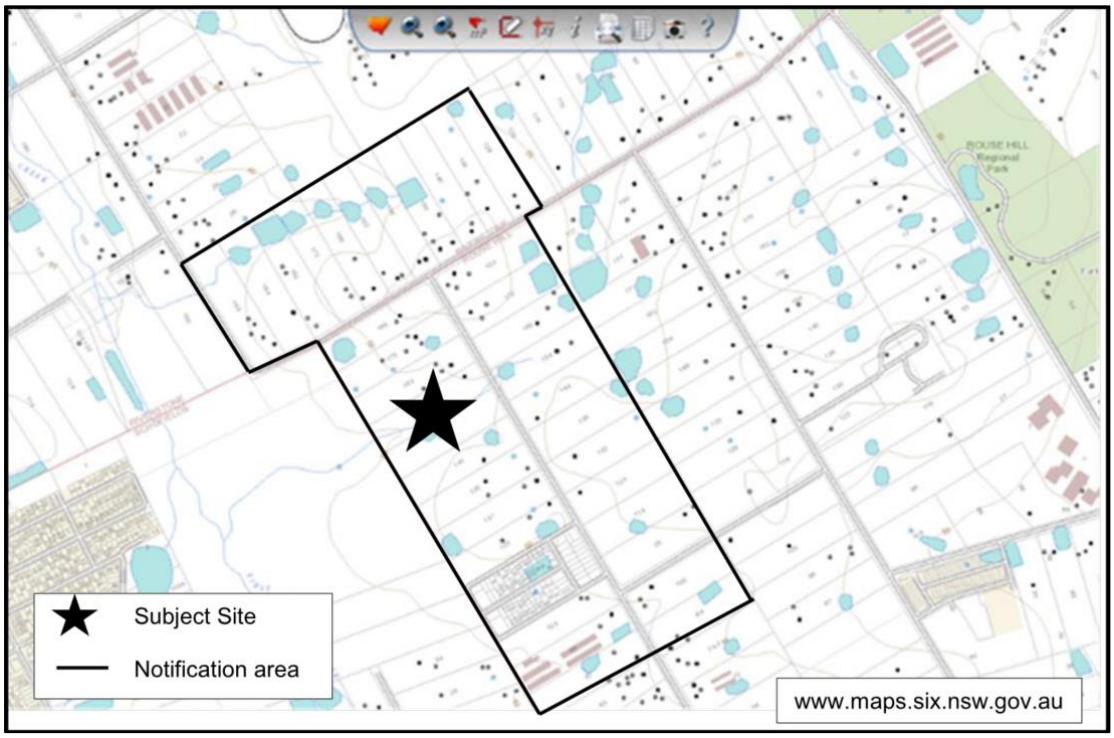


Figure 14 Proximity for which Landowners were Engaged for Consultation (Source: Six Maps, 2019)

At the time of finalising the SIA, Sarah George Consulting note, that some four (4) months after the notices were distributed, one (1) resident from Guntawong Road responded to the notice by text message, asking when construction of the proposed school was likely to start.

It is noted, one (1) resident responded to the notice in the newspaper by email, requesting additional information on the Proposed Development. The email was responded to accordingly, for which no reply was received.

There were no comments received from the Deerubbin Local Aboriginal Land Council, or the Kellyville Rouse Hill Progression Association. The lack of response from the local and wider community to the notifications issued, suggests there are no objections to the Proposed Development.

PART G ENVIRONMENTAL RISK ASSESSMENT

7.1 OVERVIEW

The proposed Masterplan and built-form have been designed with respect to the operational requirements of The Sikh Grammar School Australia in order to provide high standard, adaptable and sustainable educational facilities to meet the demonstrated needs of the Western Sydney region's growing population. The planning and design of the proposed school has been closely informed by environmental site constraints, the existing and desired future character of the surrounding area, and the amenity of nearby properties.

These key considerations, together with the requirements of the SEARs, have been incorporated into the built-form, urban design and landscaped scheme for the School. Key assessment items are addressed in the following sections of this EIS.

7.2 BUILT FORM AND URBAN DESIGN

The proposal demonstrates good design including with respect to built-form, architectural expression, urban design, landscaping and overall site layout. This 'good design' has been developed in conjunction with the NSW State Design Review Panel process (refer to the details of consultation undertaken in **Part F of this EIS**) and has been acknowledged by the Government Architect (GA) NSW. Expressly, the GANSW provided the following recommendations:

1. *Open Space, Car Parking and Landscape Design:*

The Panel raises concerns about the impact on the landscape design as a result of:

- *The quantity of carparking.*
- *The open space and play requirements for a population of (circa) 1500 students.*
- *The heat island effect resulting from hard paving and artificial turf.*

To improve the quality and quantity of open space, the Panel recommends design development that considers:

- *Reducing the footprint for car parking through:*
  - *Further understanding the spatial impacts and programmatic requirements for vehicle movements and parking relative to the school/cultural/community uses, including time of day scenarios in and outside of the school calendar.*
  - *Options to maximise car parking flexibility such as overflow and multi-programmed spaces.*
  - *Exploring opportunities to use the site's topography to provide full or partial underground parking.*
- *Mitigating the heat island effect through reducing hardstand areas, increasing the amount of soft landscaping, increasing planting to car parks and outdoor play areas and providing more external shading.*
- *Improving the open space provision relative to the needs of individual buildings such as a dedicated open space for the boarding accommodation.*
- *Reducing perimeter fencing by locating fences between car parks and the school and not along the site boundary.*
- *Consulting with staff, students and parents to determine the range of open space and play requirements to be provided.*

2. *Entry and School Identity:*

To fully realise the opportunity to present the school's cultural identity to its community and provide a welcoming and engaging plaza entry to the south east of the site, the Panel recommends design development that considers:

- *Minimising vehicle parking and movement at the entry so as to privilege pedestrians over vehicles, including accommodating scenarios for different activities and times of day.*
- *Providing an interstitial space between the buildings and the road that is welcoming, clearly visible and spatially engaging, to encourage gathering, waiting and movement such as a colonnade or awning structure.*
- *Reducing the monolithic expression of the Gurdwara and admin buildings by articulating the façades to break down the visual mass and scale.*
- *Balancing security with the intention of being welcoming by removing fencing and boom gate elements along the site boundary.*

3. Built Form Massing, Expression and Relationship to the Streetscape:

The Panel recommends that ongoing design development:

- *Acknowledge and respond to the Blacktown City Council DCP for the Growth Precincts such that street interfaces, setbacks and the like contribute to the character and context of the future residential neighbourhood.*
- *Improve the transition between the buildings and open space, through covered external spaces (e.g. at the boarding accommodation and southern edge of the Gurdwara).*

4. Sustainability and Hydrology:

The Panel emphasises the importance of the sustainability strategy to provide the school with a long-term foundation for climate resilience and environmental performance. The Panel recommends detailed exploration of all proposed sustainability measures during design development.

The Panel commends the hydrology and water saving strategy for the site, which includes use of overland flow paths, water harvesting and green roofs. The Panel recommends that the landscape design be developed to tell the water story of the site, such that the site's hydrology is readily understood.

An assessment of the Proposed Development relative to the Site context and in response to the GANSW recommendations is provided below. The minutes from the GANSW meeting are located within **Appendix 35** of this EIS.

7.2.1 Building Envelope

The height, density, bulk, scale and setbacks of the proposal respond to the surrounding context, including in relation to surrounding development, topography, streetscape and other features of the public domain.

The three-to-four storey form of the proposed buildings would exceed the 9 m maximum height limit applicable to the Site pursuant to the Sydney Region Growth Centres SEPP; however, a strategic justification under Clause 4.6 of the Sydney Region Growth Centres SEPP would be made. Furthermore, the built-form of the School would integrate with surrounding developments, the local streetscape and its environment. Canopy trees proposed to be planted, would extend above the height of the roofline (subject to maturity), thereby assisting the scale of the Proposed Development to integrate with its landscape accordingly.

The overall appearance of the density, bulk and scale of the Proposed Development has been managed through façade articulation, appropriate massing of different building elements, the equitable treatment of level changes to create appropriate transitions across the School grounds, and landscaping to soften the appearance of the built-form. In particular, roof levels and the scale of building elements has considered the perspectives of future users (including small children), so as to create an environment that is considered to be 'friendly', relatable and unintimidating.

Street and boundary setbacks respond accordingly to the BCC Growth Centres DCP, the required APZs and the vegetated riparian zone. The proposed setbacks enable the Site to maintain a sympathetic street presence with built-form being softened by landscaping, adequate separation from adjoining properties to maintain neighbouring amenity, and compliant separation from hazards and sensitive environments.
The proposed building envelope, complemented by appropriate siting, architectural design and landscaping, thereby provides a positive contribution to the Site, streetscape and surrounding area. This is achieved whilst ensuring the School is capable of meeting the operational brief and providing a functional, highly-amenable learning environment for future students.

7.2.2 Site Layout

The Site layout, including the positioning of entries / exit points, buildings, play areas, driveways, car parking and other infrastructure, responds to the characteristics of the Site and surrounding context as well as the functional requirements for the School's intended operation.

As detailed further below (refer to **Sections 7.5** & **7.13**), key considerations informing the proposed site layout include, required APZs, flood lines, contamination, topography, the existing and future character of the surrounding area, neighbouring amenity, and the amenity of the School for its staff and students.

To mitigate the natural overland flow through the centre of the Site, the Gurdwara & Langar is lifted up, with parking underneath, which provides a diversion for flood waters northward over the Site to the north eastern carpark. Flood waters are also diverted via a culvert which then flows onto the road reserve drainage system.

The proposed building components form an edge to the Site and surround central open spaces. This offers a strong connection and interface with the street frontage for access, serviceability and street presence. The taller building forms are sited more centrally on the Site to avoid overshadowing and loss of amenity to the neighbouring residential context. On the southern streetscape, the School is set back further to mitigate any overshadowing from occurring.

It is noted, that the upper level of the learning areas will experience uninterrupted views towards the west with the Blue Mountains beyond. There is a strong axial relationship from the entry, with deliberate view lines, to visual landmarks beyond. Landscaping elements reinforce this important relationship, whilst creating outdoor learning opportunities, recreation spaces and good passive surveillance.

Upon arrival to the Subject Site, the Gurdwara forms a striking presence with abstracted expressions of Sikh culture. This includes iconic sculptures of Sikh horses, a flag-pole bearing the Sikh flag and cultural wrappings and the traditional colour of saffron. Additionally, subtle references to the past stencil the walls of the ground floor with a vibrant, saffron soffit. The contemporary, monolithic form is punctured, in places, to both articulate the entry and to allow cross ventilation to occur.

The proposed Masterplan takes advantage of the raised Gurdwara with an underground offering that provides the much needed additional parking the Site requires and a 'kiss and drop' facility.

The layout and design of open spaces have been planned as part of the integrated landscape strategy proposed to be implemented across the entirety of the School site. A diversity of open spaces would support a variety of active and passive, structured and 'free' activities relating to general play, outdoor education and organised sport. Further details of the landscape strategy are provided in **Section 7.2.9** below.

7.2.3 Architectural Expression

The architectural expression of the built-form creates visual interest, forms the impression of a 'welcoming' environment, simultaneously contributes to high levels of amenity and environmental performance for the school, and responds to local character.

Building articulation is considered to contribute to positive aesthetic and creates a 'human' scale to the Proposed Development. This has been achieved through the application of contrasting render and face brick textures in facades, glazing, appropriate massing of different building elements, clearly defined building entries, modulated canopies and alternating skillion roof forms.

A neutral and minimalistic approach has been adopted with respect to materiality, in order to create a school that complements its surrounds and is recessive within its landscape setting.

Additionally, the incorporation of passive energy principles within building and façade design has similarly been commended by the GA NSW. Notably, shading devices, natural lighting and natural ventilation have been integrated into the architectural design of the buildings, avoiding the need for additional applied elements.

7.2.4 Urban Design

Further to the above, the Proposed Development delivers a high quality urban design outcome, achieved through architecture and landscaping that is attentive to the spaces between buildings and the relationship of individual elements within the Site, overall. Similarly, consideration of the street, riparian corridor and adjoining properties, has contributed to the Proposed Development site, providing a positive interface with its surrounds.

In particular, the School will uplift the streetscape through the provision of an architecturally-designed school, set within landscaped grounds, positioned on a site that was previously used for rural / residential purposes. The School would create an appropriate street address through the orientation of buildings and openings to overlook the street, clearly defined building entries, highly articulated facades and the appropriate treatment of level changes. Generous street setbacks comprising significant vegetation planting would soften the appearance of the built-form.

The built-form of the Proposed Development responds to the operational requirements of the end-user (The Sikh Grammar Australia). Accordingly, the height of the Proposed Development is considered highly appropriate for the Site and its local and regional context. Notwithstanding, the height is representative of market needs and demands for Educational Establishments, to be able to cater for intended student and staff populations, whilst being able to deliver on open space requirements across the Site.

The intent of the Proposed Development is to contribute to the existing and future character experienced and intended within the R2 Low Density Residential zone within the immediate

vicinity of the Subject Site in a complementary manner, consistent with the Sydney Region Growth Centres SEPP and the BCC Growth Centre Precincts DCP.

The design approach for the Site has evolved in a considerate relationship to adjoining properties on the Tallawong Road and future access road(s) street frontages, to ensure their current and future amenity would not be compromised. It is important to note, that the predominant building setbacks would be maintained accordingly, with regard to the setback controls (both building and landscaping) articulated within the BCC Growth Centres DCP for residential development. It is noted, that a sympathetic position has been imposed with regard to the underlying residential setback controls for the Site (as there are no such set development controls for Educational Establishments). Particular focus has been maintained, that the height breach and non-compliance is only evident within certain portions of the development profile and footprint and not across the whole of the Site.

With regard to the Proposal's overall site configuration; a well-resolved built-form; and potential public realm benefits, the Proposed Development can create a high quality built-form, which is complementary and conducive to the street character on the Tallawong Road and future access road(s) street frontages. The Proposal will also demonstrate a quality contribution to the urban built-form of the surrounding area and wider North West Priority Growth Area, comprising a versatile mix of similar, transitional developments, with respect to residential development adjoining a school site.

Accordingly, through generous landscaping and peripheral amenities to help activate the Site and surrounds, the Proposed Development can achieve a suitable fit within the existing and future public realm character and locality, intended and earmarked for the area. The Proposal would express and exhibit positive economic, social and environmental benefits for the wider community, whilst not impacting on existing and future residential receivers adjoining the Site.

In order to facilitate high quality resolution of the building envelope, and to enable the best outcome for a transitional relationship with the adjoining properties, the Proposed Development comprises a legible and efficient floor plan, with respect to the varied building components proposed, as well as incorporating façade articulation to maximise the Site's visual appearance in the form of a conducive, State-of-the-Art, 'First-of-its-kind', Educational Establishment. Additionally, material and colour selections complement an aesthetic, that is not considered to be visually adverse or obtrusive, but rather integrates and transitions with adjoining properties and the colour palette of native and exotic flora species located within the wider locality.

Underpinned by the subtly expressive architectural language, the building articulation of the Educational Establishment (and associated building components), transition well both horizontally and vertically, with regard to the Site's topography, streetscape and built-form relationships with existing and future planned residential and other permissible development surrounding the Subject Site.

Furthermore, the proposed height would respond to and be further complemented by the height of other Educational Establishments in close proximity to the Subject Site; also positioned within the R2 Low Density Residential zone, respectively. The Proposed Development provides a suitable amenity impact, with regard to the protection of the views, privacy and solar access of neighbouring properties. It is noted, that the additional building height contravening the Development Standard (9 m) is located away from the boundaries of any surrounding residential properties and is further buffered and screened by an increase in landscaping proposed across the Subject Site. As a result of the non-compliance incurred, the Proposed Development would not obstruct any views, will not give rise to overlooking and will not cause overshadowing.

7.2.5 Crime Prevention Through Environmental Design

As previously mentioned in **Section 5.10 of this EIS**, the principles of CPTED have been considered in the design of the Proposed Development.

The CPTED Guidelines were prepared by the NSW Police in conjunction with the Department of Planning. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods.' The main aims of the policy are to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and the encouraging the general public to become active guardians; and,
- Increase the perceived risk involved in committing crime.

The Guidelines provide four (4) key principles to limit crime, including:

- Natural Surveillance;
- Access Control;
- Territorial Reinforcement;
- Space Management.

Principle 1 – Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The Proposed Development orientates active areas such as building entrances, learning precincts and ground floor open space towards surrounding roads, driveways, pedestrian paths, car parking and deep-soil landscaping;
- The Proposed Development utilises low-level landscaping in appropriate locations to ensure there is no obstruction of surveillance opportunities; and,
- External security lighting will enable the maintenance of sight lines and surveillance after dark.

Principle 2 – Access Control

Access control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- During after school hours, access would be allowed via secure access points only;
- The design of the built-form incorporates in-built access control throughout the Site, for example, building elevation and retaining walls, have led to the avoidance for the requirement of excessive fencing; and,
- Directional signage and design features would facilitate legibility and direct all site-users to the appropriate access points and areas of the School.

Principle 3 – Territorial Reinforcement

Territorial Reinforcement can be described as creating a sense of ownership to a public space or vicinity, encouraging the usage of that space. By increasing the usage capability, this also deters crimes and, further increases the chances of a crime being witnessed and reported in a timely manner.

- The provision of boundary treatments will emphasise the separation between the private and public realm; and,

- Well maintained planters, gardens and pavers will indicate the development is well-used and cared for to reduce criminal activity.

Principle 4 – Space Management

Space Management is intuitive of Principle 3 – Territorial Reinforcement – and, refers to ensuring a space is utilised and cared for appropriately.

- Space management strategies to be implemented, include activity coordination, site cleanliness, rapid repair of vandalism, rapid removal of graffiti and the replacement of decayed physical elements;
- On the ground level, pathways and planters will be well maintained;
- Continued repairs and maintenance will discourage vandalism; and,
- High quality materials, varied façade treatments and landscaping along boundaries will assist in discouraging vandalism and graffiti.

Accordingly, through the integration of CPTED in design and the overall intended built-form, the School has been planned to prevent crime.

7.2.6 Design Quality Principles (Education SEPP)

The Design Quality Principles outlined in Schedule 4 of the Education SEPP relate to context, built-form and landscape; sustainability, efficiency and durability; accessibility and inclusivity; health and safety; amenity; whole of life; flexibility and adaptivity; and, aesthetics. The Proposed Development has been designed in accordance with the design quality principles, as detailed in the Architectural Design Report found in **Appendix 11** of this Submission**.**

7.2.6.1 Principle 1 – Context, Built Form and Landscape

PMDL note, that the Site has been earmarked under the Indicative Layout Plan as low-density housing. Notwithstanding, an Educational Establishment is permissible within the R2 Low Density Residential zone on the Subject Site, as well as a Place of Public Worship (Gurdwara & Langar). Surrounding the Site comprises existing and future built low density residential housing.

The Aboriginal Cultural Heritage Assessment Report undertaken and prepared by NGH Environmental (2019) has not revealed any Aboriginal Cultural Heritage items on the Site (or within close proximity to the Site), which would limit development on the Site, as the landscape has been substantially modified over the years.

Notwithstanding the lack of presence regarding Aboriginal Cultural Heritage, traditional Darug themes of "Country" have been brought forth, that reflect an understanding of past traditions and have been meshed with the unique qualities of Sikh culture. These include an overall site planning, based on meeting places focused on:

- Food – Student boarding and the Langar;
- Ceremony – The Civic Heart for formal gatherings;
- Learning – Breakout spaces adjacent to formal teaching spaces;
- Spiritual Meeting Place – The Gurdwara.

It is noted, that the locality has a large Indian population, of which many are identified as Sikhs. This is clearly demonstrated with the operational use of the nearby Park Lea Gurdwara, which was utilised for the basis of informing the data stipulated within the Traffic and Parking Impact Assessment (Positive Traffic, 2019).

Additionally, built-form is to engage and complement the wider surroundings in terms of scale; transition from built-form to open spaces; future housing; and their relationship with the streetscape.

7.2.6.2 Principle 2 – Sustainable, Efficient and Durable

The Proposed Development has been cognizant of the principles of ESD. This approach ensures a demonstrable, educational benefit for the users of the buildings as clean, fresh air, maximum daylight access, thermal comfort, good acoustics and solar glare all increase learning outcomes in schools, as well as reduce running costs and lost productivity days of staff.

Accordingly, the integrated design approach has created ample opportunity for natural ventilation, with additional mechanically-assisted fresh air flow (with heat recovery) within a well-sealed and highly insulated building. Simple user controls provide the most environmentally beneficial outcome for the occupants, thus addressing acoustic attenuation and indoor air quality simultaneously.

Building depths and three-dimensional spatial relationships have been developed to optimize natural daylight access and opportunities for cross ventilation and night purging through low-level and high-level, operable, louvre windows.

Solar and glare controls have been integrated into the façade design of the buildings, as appropriate to their orientation, to reduce heat gain in the summer months and to avoid unnecessary glare within the learning environment and working spaces, whilst still allowing winter solar access as part of the passive solar design strategy for the entirety of the Proposed Development.

Additionally, rainwater collection, storage and recycling (through reticulation) will support food growth and shade-plant irrigation, through recycled water re-use applications.

The careful and strategic selection of robust; quality; locally-sourced; low-maintenance; fit-for-purpose; sustainable building materials and construction methods will provide for the long-term future performance of the buildings.

7.2.6.3 Principle 3 – Accessible and Inclusive

Circulation paths are centred on obvious and intuitive journeys throughout the school. The Civic Heart is the major gathering node, that becomes the focal point of arrival to the School. The Gurdwara enjoys a generous forecourt with obvious entry points into the Gurdwara and Langar.

The main axises to the School are led past the administration building, where students either carry on to primary or secondary buildings. Student boarding enjoys access directly to the School via an internal path. The Early Learning Centre has its own entry and is somewhat autonomous in its operational phases, which is reflective in the overall circulation of this particular building component.

7.2.6.4 Principle 4 – Health and Safety

While enjoying a strong connection to the surrounding streets, the School is embraced by subtle boundary treatments, offering both security and a sense of inclusion. At the entry forecourt, the boundary fence is reduced in size to that of a balustrade with the introduction of a wall to invert security needs, while also offering a light well to the carpark below.

Buildings, that include soft landscaping become the boundaries, wherever possible. In areas where there is no structure, fencing is applied and integrated within the landscape setting wherever possible.

The overall experience, both within the School and from the public domain, is that of a welcoming aesthetic and completely accessible environment.

7.2.6.5 Principle 5 – Amenity

Principle 5 – Amenity has been successfully and satisfactorily considered by apply the practices and considerations for both 'Better for Community' and 'Better for People', as stipulated within the NSW Government's "Better Placed" document.

7.2.6.6 Principle 6 – Whole of Life, Flexible and Adaptive

Principle 6 – Whole of Life, Flexible and Adaptive has been successfully and satisfactorily considered by apply the practices and considerations for both 'Better Working' and 'Better Value', as stipulated within the NSW Government's "Better Placed" document.

7.2.6.7 Principle 7 – Aesthetics

Principle 7 of Schedule 4 of the Education SEPP has been considered, as noted by PMDL:

- Opening of the principal pedestrian entry directly through to the Civic Heart, celebrating the School's activities and offers an invitation to the community to engage.
- The three (3) dimensional articulation and façade expression aims to reduced the bulk of the buildings and informs the activities to be carried out within, offering an invitation to the local community for engagement and participation.
- The strength of identity and presentation to the street adds a sense of place to the precinct and offers a dialogue to existing and future adjacent facilities.
- Careful integration of landscape and materiality to provide a unified, but diverse whole.
- Respect for the semi-rural and future residential context through appropriate scale, materials and forms.
- Opening up views to and from the School connecting its users with their broader environmental and social context, whilst offering neighbours a glimpse of their school life.

7.2.7 Integration of Services

Services have been integrated into the design of the School so as to contribute to the presentation of a cohesive development.

Specifically, air conditioning and other mechanical services from integrated components of the façade design and as such are effectively concealed from view. The electrical substation, fire hydrant booster and all fencing have been coordinated with the landscape scheme for the Site and as a result, are 'green screened' by planting that contributes to the vegetated character of the School.

The co-location of the bin room and sewer pump adjacent to the car park minimise the visual impact and screening structures associated within this infrastructure. The siting of this infrastructure away from the street, building and play areas, together with its integration with landscaping, also assist in achieving an appropriate visual outcome. By situating the bin and sewer pump adjacent to the driveway, appropriate access for service vehicles would be ensured for the Proposed Development.

Additionally, the undergrounding of the sewage treatment zone adjacent to the southern boundary and carpark will avoid any visual impact being incurred in associated with this infrastructure.

7.2.8 Site Planning and Design Approach

The planning and design of the school directly respond to the characteristics of the Site and surrounding context. As documented in the Site Analysis Plan (refer to **Appendix 8** of this Submission), throughout this EIS, and in the multiple investigations undertaken (refer to **Appendices 15-18** & **26**), key considerations that have directed the adopted approach to the planning and design of the Proposed Development, include:

- Bushfire – Building Code & Bushfire Hazard Solutions P/L confirm, that no bushfire hazard is located within the 140 m assessment area utilised for the Proposal. It is concluded, that even by applying a Grassland or Woodland hazard to the southwest, which could be the only perceived threat, the proposed building components are located such that the corresponding minimum required Asset Protection Zones are exceeded. The Proposal is considered to comply with the relevant specifications and requirements of PBP 2006 and will provide a reasonable and satisfactory level of bushfire protection.

- Flooding – Martens (2019) note, that the proposed drainage system has been designed to fully capture and convey the 1% AEP flood flows with and without climate change. Accordingly the Probable Maximum Flood (PMF) water anticipated along Tallawong Road will be ponded up to a level of 52.4 m AHD and will travel through the northeastern carpark traversing the northern boundary. The proposed Gurdwara & Langer (multi-purpose hall) and arrival forecourt area towards the front of the Site, are to be raised to 52.5 m AHD to avoid the PMF water from entering the relevant buildings on the Subject Site.

- Contamination – based on a review of the available desktop search data, observations made during the Site walkover and supplementary sampling undertaken, DLA Environmental Services consider that there is a low likelihood of unacceptable contamination to be present on the Site as a result of past and present land use activities.

- Topography – the Subject Site exhibits a rather fall across the Site with regard to the topography (falling from RL 52.0 to RL 44.0 – being 8 m). Cut and fill is therefore proposed, which will create a flat building pad, which would be considered appropriate for the Proposed Development. Cut and fill proposed, would effectively balance and level changes in topography experienced across the Site, which would be additionally managed through appropriate landscape treatment. Furthermore, cut and fill would be minimised within the flood zone with stormwater quality and quantity controls & outcomes implemented accordingly into the proposed scheme.

- Solar – the Subject Site is located in Rouse Hill, which is known to experience variable temperatures up to ten (10) degrees warmer than that of Sydney's CBD. Accordingly, to mitigate the hot afternoon sun, integrated shading systems and cooling techniques such as riparian planting and roof trees, have been incorporated into the architectural design of building façades, roof forms and landscape elements. Further details are provided in the Architectural and Landscape Plans in **Appendix 8** & **12** of this Submission.

- Existing character of the surrounding area – the immediate surrounds of the Site currently exhibit a rural / residential character; however, it is important to note, that the surrounding area exhibits similar zoning under the Sydney Region Growth Centres

SEPP, such as R2 Low Density Residential and R3 Medium Density Residential zones, respectively. These zones are earmarked rapid urban growth as part of the wider growth centres. The landscape design for the Proposed Development has considered this future trend. Vegetation planting adjacent to the Site boundaries will soften views towards the Site; riparian planting will enhance the environmental quality of the Subject Site and, the retention of as much open space as possible will create a 'green oasis' in an otherwise denuded landscape.

- Desired future character of the surrounding area – the School responds to the rapidly changing character of Sydney's north-west, which is experiencing significant population and housing growth. The immediate surrounds of the Site are anticipated to exhibit a similar changing character, noting that the areas has been designated for future urban development by the *Greater Sydney Region Plan – A Metropolis of Three Cities* and the *Central City District Plan*.

- Neighbouring amenity – the school is currently adjoined by vacant land; however, it is noted, that residential development has been proposed along the northern and southern interfaces, as well as future residential development to occur pursuant to development consent being obtained from Council, regarding a subdivision DA running concurrently to this SSDA. Accordingly, setbacks of the R2 Low Density Residential zone have been considered and other relevant provisions and controls have been administered accordingly ensuring the adjoining properties are not compromised in any way, by the Proposed Development.

Further detail of how the Proposed Development responds to each of these matters is provided in the corresponding Appendices, referenced above.

7.2.9 Landscape Strategy

The landscape strategy for the School encompasses the entire site, subject to this SSD Application and intertwines with the built-form proposed, to create flexible indoor and outdoor environments that jointly contribute to the high standard and amenity of the proposed Educational Establishment.

As mentioned in **Section 3.2.4** of this EIS, landscape works will be carried out over the entire Subject Site to create a 'green oasis' and highly amenable learning environment. Landscaping would create useable outdoor spaces for active and passive recreation and learning activities, provide shading, enable proximity to 'nature' and contribute to an attractive visual experience. All of which, would be implemented via an aesthetically pleasing architectural landscaped design.

The proposed landscape design for the Site has been influenced by the following:

- Education SEPP – Schedule 4;
- "Better Placed – Design Guide for Schools"; and
- BCC Growth Centres DCP 2018.

Furthermore, a balance of hard and soft surfaces would support a variety of active and passive, structured and 'free' activities relating to general play, outdoor educational and organised / coordinated sporting activities. Landscape design has also enabled the establishment of natural connections between the various areas of the school. Additionally, planting adjacent to the Site boundaries will assist in protecting neighbouring amenity by providing visual screening and assisting in noise mitigation.

Extensive vegetation planting throughout the Site would improve the biodiversity and tree canopy of the Site, particularly given that in its current state it consists of completely cleared

land (as mentioned in **Section 2.1**). Riparian planting and green roof spaces would activate a welcoming and inviting Site.

As noted by Sym Studio in their Landscape Design Report (refer to **Appendix 12**), the landscape approach proposed is to create a unified environment with a variety of spaces as fluid extensions to the built-form. This is imperative to the overall function of the Site, by providing a space that is safe and welcoming and accessible for students, staff and visitors, that is noted to celebrates Sikh cultural values, within its greatly valued Australian context.

Sym Studio drew inspiration for their proposed landscape approach from surrounding vegetation communities to inform the landscape response, in addition to the Site's existing character. The Cumberland Plain Woodland Plant Community Type (PCT) (whilst not present on the Site), inspired a landscape vernacular of tall canopy trees with an open 'midstorey' and expansive low growing understorey, interpreted to a strong tree canopy of local vegetation that embraces the built-form proposed and low lying, but activated groundplain.
It is noted, that consistent canopy cover of Corymbia maculate and Angophora costata street trees work to unify the Site and ground the buildings within the landscape setting, whilst the open midstorey creates visual connections between the spaces and aids in passive surveillance. Species selection of the Angophora costata reference the local history with the word 'tallawong' derived from the Darug word 'dalawong' for the rough barked apple tree (Angophora costata).

The plant pallete utilises mostly native species with selected plant species included from the BCC Growth Centres DCP 'Prescribed Trees and Preferred Species' List, instilling a strong sense of place and ensuring a hardy pallete well suited to its environment. Further, a mix of evergreen and deciduous trees will provide valuable solar access, as well as seasonal colour and variation experienced throughout the selective dichotomous mix of species.

Proven exotic species have also been proposed, in respect to their 'day-one-impact', compact form, low water use characteristics and suitability to harsh rooftop conditions. Edible species such as Salvia and Rosmary have been included for education, culinary and sensory benefits. The rooftops on slab will utilise aboveground planters and mounding to achieve adequate soil depth for small tree planting; and wherever possible, deep-soil planting has been proposed.

Landscaped edges and predominantly indigenous boundary planting work to emphasise the pedestrian scale, provide visual privacy to students, reduce visual impact to built-form and create an enhanced and unified street character suited to the R2 Low Density Residential zone applicable to the Site and surrounding area, further complementing the Riverstone East Precinct, subject to the Growth Centres.

The proposed water cycle for the Site collects surface runoff through open biofiltration swales, filters through raingardens and beds and stores through proposed On-site Stormwater Detention (OSD), which will be reused through irrigation of the ground and rooftop landscaped areas. Additional design elements, such as permeable paving, irrigated (recycled water) artificial lawn, tree cover and built form work to create adaptable spaces and comfortable microclimates throughout the day, that can both capture morning winter sun and mitigate hot summer afternoon sun.

Further details of the landscape strategy for the Site are provided in the Landscape Plans and Landscape Design Report found in **Appendix 12**.

7.3 ENVIRONMENTAL AMENITY

The Proposed Development has been designed to minimise and mitigate any potential impacts occurring, with regard to the surrounding environment. Key considerations include:

- Solar access and overshadowing;

- Acoustic amenity impacts;
- Visual privacy;
- Views;
- Wind impacts; and
- Amenity impacts associated with use of the Subject Site out of school hours.

In summary, the Proposed Development secures a high level of amenity for the school, whilst maintaining the amenity of surrounding sites. Detailed review of potential amenity impacts associated with the Proposed Development is provided within the following sections.

7.3.1 Solar Access and Control

It is noted, that the Proposed Development is located within the R2 Low Density Residential zone, for which there are several residential subdivisions and future residential built-form earmarked for the area surrounding the Subject Site. Notwithstanding, the architectural treatment (particularly building heights) proposed for the Subject Site, has considered the potential for overshadowing to occur on adjoining residential land uses, for which the Proposed Development would not create any adverse impacts with regard to overshadowing.

With respect to the amenity of the school itself, buildings proposed under the Masterplan have been designed and orientated to benefit from natural light, where possible, which creates a substantially improved educational / learning and recreational environment for staff and students. To mitigate the impact of the western afternoon sun, integrated shading systems have been incorporated into the proposed design of building facades, roof forms and landscape elements, improving and promoting the valued safety of health of staff and students, as well as any visitors accessing the Site. The architectural treatment proposed incorporates 'passive solar design principles' from the outset of the design process, which are considered consistent with best-practice principles and the principles for Ecologically Sustainable Development.

7.3.2 Acoustic Impacts

A high level of acoustic amenity will be adopted for the Subject Site, bearing in mind, the nearby residential receivers identified within the R2 Low Density Residential zone surrounding the Subject Site.

In accordance with the Noise and Vibration Impact Assessment prepared by Resonate (2019) for the Proposed Development, the following noise emissions associated with the construction and operation of the school would be acceptable on the following basis:

To combat any anticipated noise and vibration impacts during the construction phase of development, the following recommendations and mitigation measures should be adopted for the Proposed Development:

1. **Construction Noise and Vibration Management Plan:** prior to the commencement of major construction works, the contractor should develop and implement a Construction Noise and Vibration Management Plan (CNVMP). The CNVMP should:
   - Identify relevant construction noise and vibration criteria as detailed in this report.
   - Identify neighbouring sensitive land uses for noise and vibration.
   - Summarise key noise and vibration generating construction activities and the associated predicted levels at neighbouring land uses.
   - Identify reasonable and feasible work practices to be implemented during the works.
   - Summarise stakeholder consultation and complaints handling procedures for noise and vibration.

2. **Stakeholder Consultation:** nearby stakeholders should be consulted prior to the works and kept regularly informed of potential noise and vibration impacts from the works.
3. **Work Programming:** Construction works should be limited to the following hours per day to maintain acceptable levels of acoustic amenity across the Site and surrounding area:
   - Monday to Friday: 7am to 6pm.
   - Saturday: 8am to 1pm.
   - No work on Sundays and public holidays.
   - Schedule construction works during school holidays.
   - Implementation of respite hours agreed with residents if necessary.
4. **Respite Periods:** Are to be agreed with the community.
5. **Truck Movements and Site Access:** The design and selection of site access routes shall consider the potential disturbance to residents. In particular:
   - Site access and delivery points shall be located as far away from residences as possible.
   - Truck movements shall use arterial roads and be diverted away from residential streets (where feasible).
   - Deliveries to / from the Site shall not occur during the night time period and outside of standard working hours, where possible.
6. **Site Management:** Site management procedures to be implemented, should include:
   - Processes that generate lower noise/vibration levels should be selected where feasible. In particular small vibratory rollers <7 t should be used along the Site boundary as the larger models exceed the safe working distance criteria for vibration.
   - Noisy plant should be located as far away from residences as is practical to allow efficient and safe completion of the task.
   - Site compounds should be located as far away as possible from residences.
   - Equipment that is used intermittently should be shut down or throttled down to a minimum during periods where it is not in use.
   - Works should be planned to minimise the noise from reversing signals.
   - Warning horns should not be used as signalling devices.
   - Two way radios should be set to the minimum effective volume.
   - Noise associated with packing up plant and equipment at the end of works should be minimised.
   - Potential shielding provided by site topography and intervening buildings should be considered in locating equipment.
   - It is recommended to use mobile noise barriers/enclosures when possible.
7. **Equipment Management:**
   - Selection of low-noise plant and equipment (where possible).
   - Equipment should be well maintained.
   - Equipment should have quality mufflers and silencers installed where relevant.
   - Equipment not in use on site should be shut down.
   - Tasks should be completed using the minimum feasible power and equipment.
8. **Vibration Monitoring:** Resonate recommend conducting vibration monitoring when construction work is being undertaken inside or close to the safe working distances, to account for any complaints, should they be received.

Furthermore, in accordance with **Section 7.7.2** below, which includes a qualitative and quantitative discussion concerning operational noise, the Noise Impact Assessment undertaken by Resonate has considered the effect on the future residential developments earmarked for the surrounding properties adjoining the Subject Site. By being positioned away from major arterial roads and located within a future urbanised residential area, Resonate conclude, that any adverse noise impacts anticipated on the surrounding community, from the environment on the operations of the School and associated building components are considered highly unlikely.

7.3.3 Visual Privacy and Amenity

The architectural and landscape treatment proposed for the Subject Site has successfully considered the future built-form of the surrounding area, through positioning of proposed buildings, as well as the specific dichotomy utilised with regard to endemic species, providing landscape screening along the boundaries of the Subject Site, which benefits the onlooking residential receivers and promotes further visual privacy for the school, adhering to the principles of CPTED.

7.3.4 Views

The Subject Site is located within a rural residential area, that is currently underdeveloped and underutilised; thereby, minimising the number of views that could be potentially impacted by the Proposed Development. It is important to note, that the area is not considered to comprise any significant views; however, does offer general rural outlooks. On this basis, the Proposed Development would not result in any view obstruction but would be visible in outlooks toward and over the Site.

To ensure the schools provides an appropriate visual outcome, it has been designed and sited to specifically respond to the existing and future character of the surrounding area, subject to the Riverstone East Precinct, as well as the wider North West Priority Growth Area. The landscape design proposed is integral to enabling the Site to integrate with the existing rural setting, by virtue of retaining and replanting a landscape setting derived from the Cumberland Plain Woodland. Furthermore, vegetation plant along the Site boundaries will soften the views experienced toward the Site, whilst deep-soil riparian planting will enhance the robust and effective landscaping screening offered for the Site. Additionally, the Site will satisfactorily address the open space requirements for school sites.

In the future, the immediate surrounds of the Site are anticipated to exhibit a changing character, noting that the area has been designated for future urban development by *A Metropolis of Three Cities*, the *Central City District Plan* and the *North West Priority Growth Area Land Use and Infrastructure Implementation Plan* (2017). Land adjoining the Subject Site is earmarked for similar purposes, for which the Proposed Development provides a representative infrastructure service, that would service the day-to-day needs of residents in the surrounding area. Accordingly, the delivery of a school, responds directly to the trends and requirements of the NSW Government, as well as the rapidly changing urbanised character of Northwest Sydney, which is experiencing significant population and housing growth traits.

Overall, the architectural treatment and expression; building envelope; site layout; and landscape strategy would provide a positive visual contribution to the Site, streetscape and surrounding area.

7.3.5 Wind Impacts

The selected architectural positioning of buildings within the Subject Site, as shown within the Site Analysis Plan, located in the Architectural Plans prepared by PMDL, demonstrates consideration given toward the potential effects of prevailing winds likely to impact the Subject Site such as hot and dry north-westerly summer winds and cold south westerly winter winds. Accordingly, the buildings and outdoor areas have been designed and orientated accounting for prevailing wind directions.

7.3.6 Out of Hours Use

The Proposed Development, through flexible and adaptive design, presents opportunities for the future shared use of school facilities outside of school hours. It is noted, that once construction of the proposed Gurdwara and Langar is formally completed, it is envisaged to

operate this component outside of school hours for recreational and religious purposes during the evenings on weekdays and on weekends.

It is noted, that amenity impacts associated with any future use outside of school would be captured, via a Plan of Operational Management (POM), for the Proposed Development, which is located in **Appendix 37** of this EIS.

Any light spill associated with the future use outside school hours has been assessed by Umow Lai within the Lighting Design Statement at **Appendix 39.** The Lighting Design Statement details that the internal lighting to the Function Space will be designed to comply with *AS1680 Interior Lighting* and external lighting will be designed to comply with *AS1158 Lighting for roads and public spaces* and *AS4282 Control of the Obtrusive Effects of Outdoor Lighting*. The fundamental aspects of *AS1158 and AS4282* include effects on neighbouring residents, transport indication, containing light spill, being considerate towards existing ambient lighting conditions, limits on maximum luminous intensity of individual fittings and reflection of illuminated surfaces. It is understood that any light spill will be consistent with the relevant Australian Standards.

In the Traffic Impact Assessment prepared by Positive Traffic (2019), it is noted, that the RTA's *Guide to Traffic Generating Developments*, does not provide any traffic generation rates for a Place of Public Worship (Gurdwara and Langar). Notwithstanding, and as recommended by the RTA Guide, surveys of a similar development were undertaken to determine the anticipated traffic generation to occur from the Gurdwara and Langar when it would be utilised out of school hours.

The existing 'Gurdwara Sahib Sikh Temple', identified at 8-26 Meurants Lane, Glenwood, provides a direct comparison (noting it is a slightly larger scale (2,755 m^2) than the proposed Gurdwara and Langar) of the potential traffic generation likely to occur, as a result of the Proposed Development, specifically, the proposed Gurdwara and Langar.

The existing 'Gurdwara Sahib Sikh Temple', includes an open-air car parking area, with approximately 289 car parking spaces. To gauge and understand, both traffic and parking demands of this particular development, traffic and parking demand surveys were undertaken on a Friday, between the hours of 8:00am – 6:00pm and on a Saturday between 2:00pm to 8:00pm. A summary of the survey results are outlined below:

- A total of 793 persons were recorded to enter the temple between 9:00am – 6:00pm on a Friday.
- A total of 607 persons were recorded to exit the temple between 9:00am – 6:00pm on a Friday.
- A total of 2,495 persons were recorded to enter the temple between 2:00pm – 8:00pm on a Saturday.
- A total of 1,507 persons were recorded to exit the temple between 9:00am – 6:00pm on a Saturday.
- A total of 327 vehicles were recorded to enter the car park between 9:00am – 6:00pm on a Friday.
- A total of 300 vehicles were recorded to exit the car park between 9:00am – 6:00pm on a Friday.
- A total of 753 vehicles were recorded to enter the car park between 2:00pm – 8:00pm on a Saturday.
- A total of 552 vehicles were recorded to exit the temple between 9:00am – 6:00pm on a Saturday.
- The weekday AM peak hour traffic generation of the temple occurred between 9:15am – 10:15am and included 28 vehicles entering and 28 vehicles exiting.
- The weekday PM peak hour traffic generation of the temple occurred between 12:45pm – 1:45pm and included 53 vehicles entering and 64 vehicles exiting.

- The Saturday PM peak hour traffic generation of the temple occurred between 7:00pm – 8:00pm and included 204 vehicles entering and 192 vehicles exiting.

With regard to the above, it is noted, that the existing Gurdwara and Langar generates rather benign to no amounts of traffic during the morning or afternoon road network peaks. It is anticipated, that a similar scenario would result from the proposed Gurdwara and Langar with the proposed Sikh Grammar School. As the proposed Place of Public Worship would operate only in the PM weekday peak and the weekends, only the PM peak traffic generation would apply, which accrued to approximately 90 trips in the road network during the 5:00pm – 6:00pm peak period, which is considered an acceptable level of traffic generation.

7.4 TRANSPORT AND ACCESSIBILITY

A Traffic and Parking Assessment, was prepared and carried out by Positive Traffic (2019) for the Proposed Development and included an assessment of the existing traffic generation of the area surrounding the Subject Site, as well as a comprehensive assessment likely to occur as a result from the further stages of the Proposed Development. This included a full assessment of all traffic impacts arising from the development proposed under this SSD Application. The Traffic and Parking Assessment by Positive Traffic (2019), has considered potential traffic impacts of the Proposed Development and concluded, that the Proposed Development traffic volumes can be accommodated through the existing intersections in the locality and the proposed indicative access roads surrounding the Subject Site (subject to separate DA approval). Also a review of the parking requirements for the Proposed Development confirms, that the on-site car parking (including basement car parking) would generally provide sufficient car parking spaces to satisfy the BCC Growth Centres DCP requirements.

7.4.1 Surrounding Vehicular, Pedestrian and Cycling Networks

The existing Site includes two (2) rural residential dwellings. Applying the RTA *Guide to Traffic Generating Developments* residential rate, the existing dwellings would generate two (2) peak hour trips two-way.

It is noted, that the Riverstone East Precinct (for which the Subject Site is located within) has been subject to significant area-wide traffic analysis by the NSW Government on behalf of ARUP (2015), which has been referred to as part of the single site assessment undertaken by Positive Traffic. Given the expected changed to traffic conditions in the only road currently available (Tallawong Road), formal mid-block and intersection counts were not considered appropriate.

The *Riverstone East Precinct Transport Study – Post Exhibition Study Report* (ARUP, 2015) included modelling to forecast the future traffic volumes anticipated for the Riverstone East Precinct by the year 2036, at a projected yield of approximately 5,784 dwellings. The Study included a number of existing roads that were identified for future improvement, for which these roads will include traffic, bicycle and pedestrian movements. The roads include:

- Hambledon Road;
- Tallawong Road;
- Cudgegong Road; and
- Guntawong Road.

It is noted, that over time the road network would include planned infrastructure upgrades, including road widening and intersection upgrades, of which benefits cannot be captured in isolation through local intersection assessments. Overall, the infrastructure delivery plan in the ARUP Study (and underpinned within the Contributions Plan) would provide adequate capacity

into the future. The Study prepared by ARUP identifies, that Tallawong Road is likely to be upgraded to a Collector Road[1] into the future (refer to **Figure 15** below).

[1] Provides a link between local road and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably (Source: Positive Traffic, 2019)

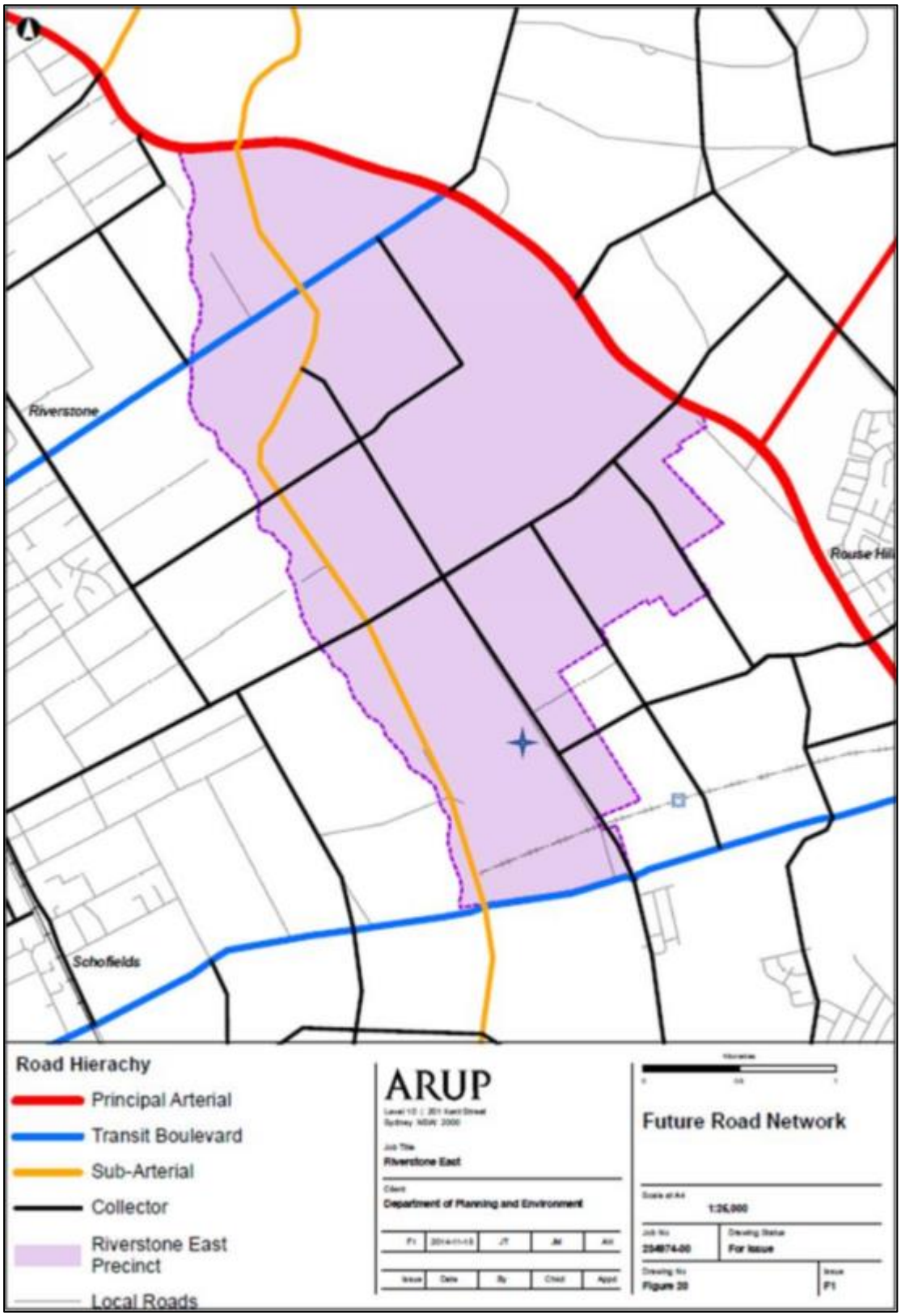


Figure 15 Future Road Network in the Vicinity of the Subject Site and Surrounding Area (Source: ARUP, 2015)

There are currently no formal bus services which operate along Tallawong Road. The nearest available bus stops are located near the Schofields Road / Tallawong Road intersection approximately 1.5 km walking distance to the Subject Site. However, additional bus services

are earmarked for introduction within the Riverstone East Precinct area as future development continues.

It is noted, that the North-West Sector Bus Servicing Plan, which was produced in 2012 by McCormick Rankin Cagney for Infrastructure NSW, provides for a future bus network to service the Northwest Growth Centre as a whole. The ARUP Study included the preparation of a bus network plan for the Riverstone East Precinct (refer to **Figure 16** below). As illustrated in **Figure 16** below, new bus services would operate along Tallawong Road and Guntawong Road, less than 250 m walking distance to the Subject Site, providing increased connectivity to the Site and surrounding area, including the Sydney Metro network at Tallawong Station.

Further to road and public transport network upgrades, the delivery of active transport improvements for both pedestrians and cyclists would also be facilitated in the future. The future bicycle and pedestrian network (noting all roads would include at least one (1) all-weather footpath in all streets) is shown in **Figure 17** below. As shown in **Figure 17** a new shared pedestrian / bicycle pathway is proposed along Tallawong Road, which is directly adjacent to the eastern boundary of the Subject Site.

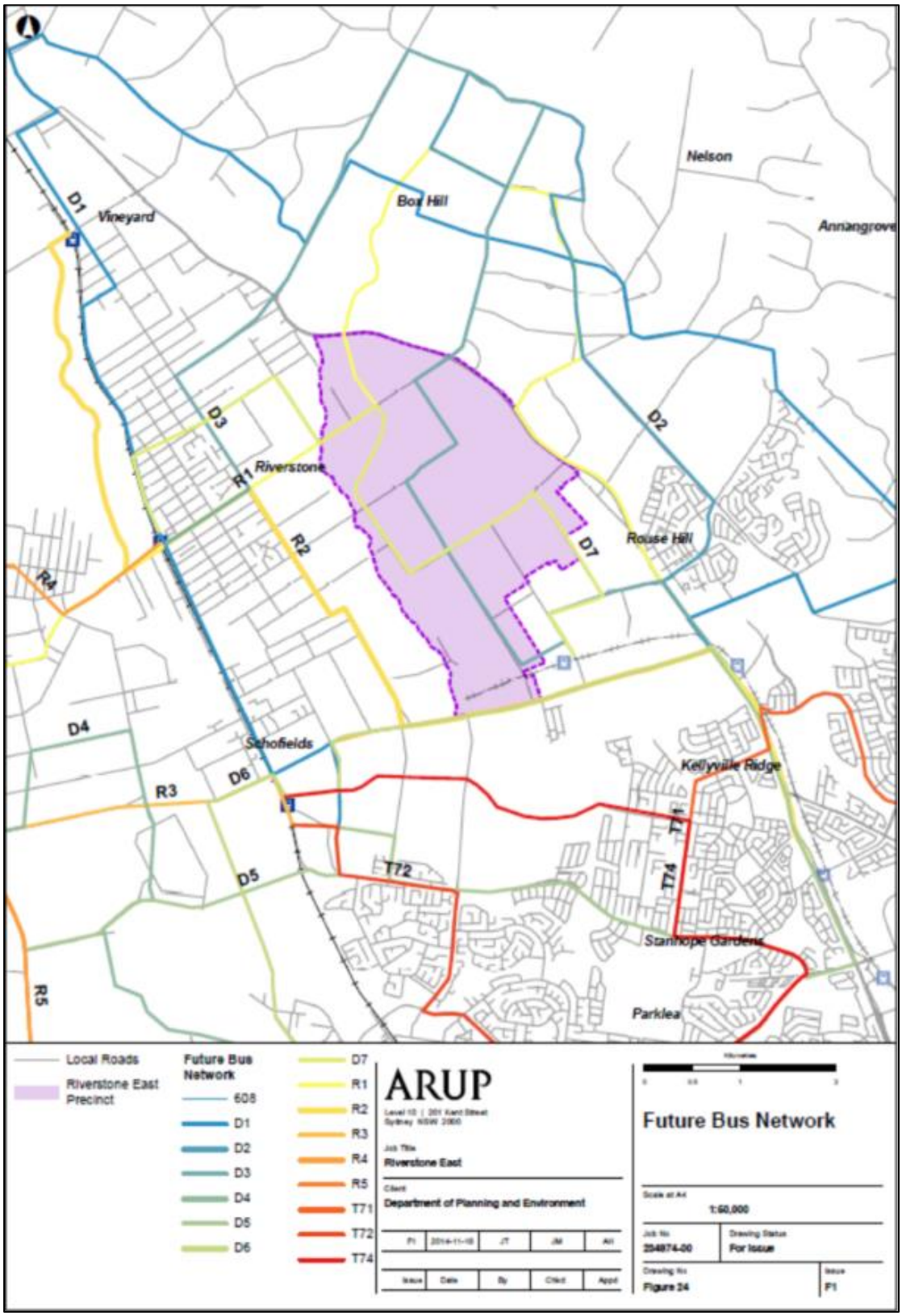


Figure 16 Proposed Future Bus Corridors Surrounding the Subject Site (Source: ARUP, 2015)

Figure 17 Proposed Future Bicycle and Pedestrian Links for the Subject Site and Surrounding Area within the Riverstone East Precinct (Source: ARUP, 2015)

7.4.2 Construction Traffic Impact Assessment

A Preliminary Construction Traffic Management Plan (CTMP) has been prepared by Positive Traffic (2019) to address the construction stages of the Proposed Development (refer to **Appendix 20** of this EIS). Positive Traffic notes, that at this stage in the design, without a construction company formally commissioned to undertake any staged of the Proposal, finer grain details of expected construction traffic demands are not known.

These details typically include volumes of materials removed from the Site and taken to the Site for each construction stage; the number of construction workers; and all relevant information which would underpin construction traffic demand forecasts.

It is noted, that for each individual construction stage, a separate CTMP / Pedestrian Management Plan would be prepared and submitted prior to the issue of a Construction Certificate.

7.4.2.1 Vehicle Access

- No vehicle access would be permitted via the Tallawong Road site frontage at any stage of the construction program;
- It is anticipated that the construction contractors will update the CTMP and Pedestrian Management Plan for each stage of the Proposal, prior to obtaining a Construction Certificate;
- The contractor will monitor and coordinate all vehicles entering and exiting the Construction sites.
- No road closures of any kind are envisaged throughout the life of the construction of the School.
- Appropriate traffic controls will be implemented during construction to separate construction activities from the public. In addition, traffic controllers will be engaged to manage the interface between pedestrians and to direct vehicles entering and exiting the Site.
- Any work from neighbouring properties will be managed and coordinated with these
- stakeholders to maintain access and amenity.
- The number and path of vehicle movements will vary during the construction period of the Proposed Development. The majority of construction vehicles will have direct access to the Site.

7.4.2.2 Construction Vehicle Routes of Travel

The northern and southern local street boundary roads of the School would be utilised throughout the development of the School. The placement of the bus facilities directly along Tallawong Road enables construction activities to occur around the school's operations without the need to impact on pedestrian access to the bus operations.

All construction vehicles would utilise the proposed routes, articulated in **Figures 18** & **19** below.

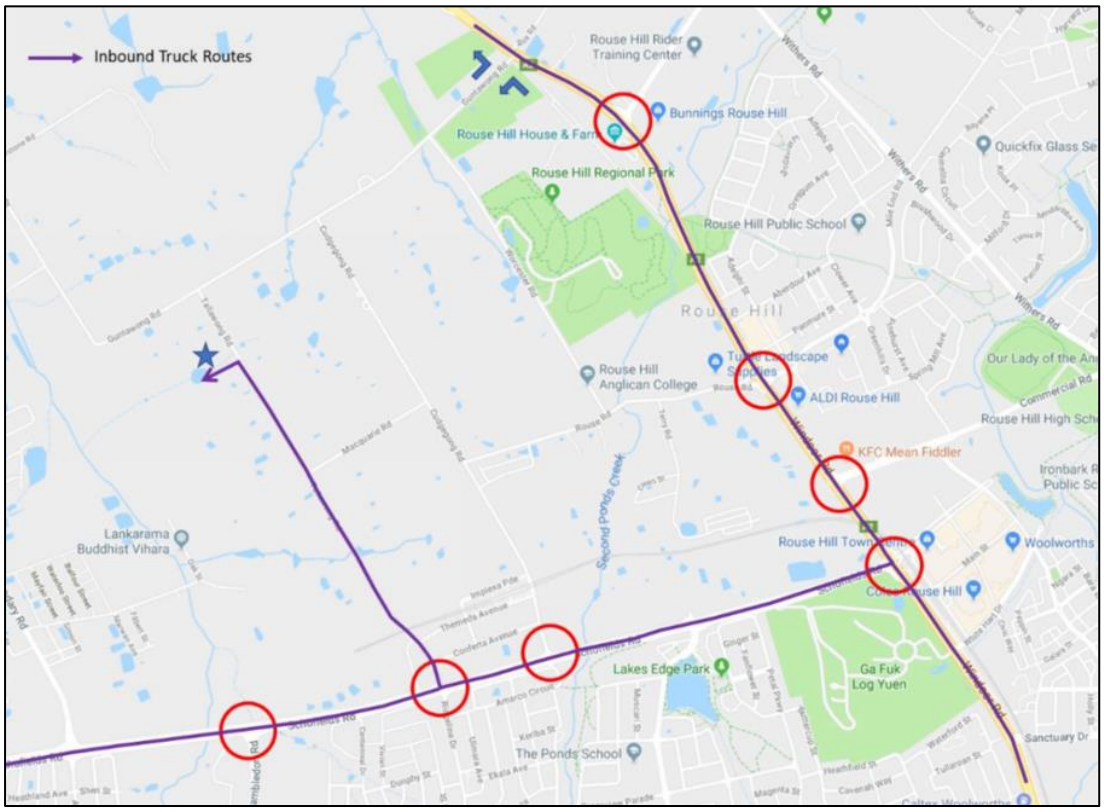


Figure 18 Proposed Inbound Truck Routes (Source: Positive Traffic, 2019)

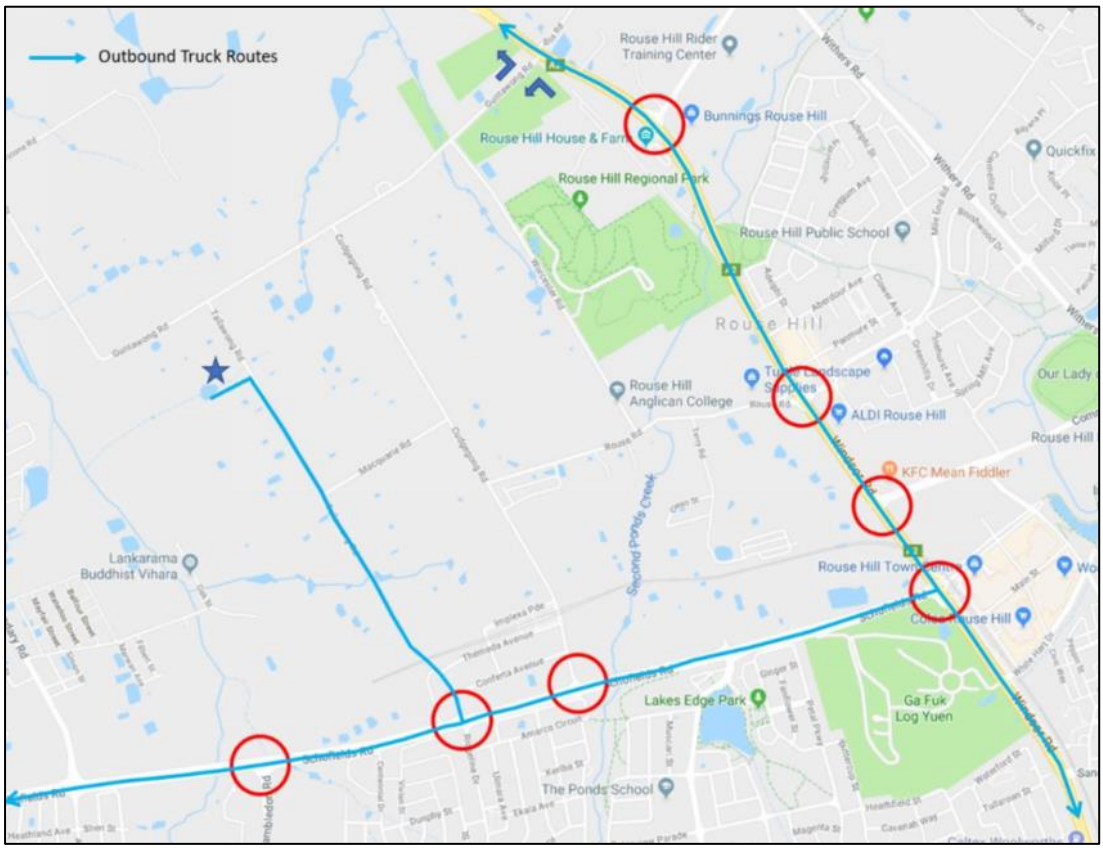


Figure 19 Proposed Outbound Truck Routes (Source: Positive Traffic, 2019)

- The Site manager will ensure that the route map is prominently displayed on the Site and that all contractors and employees are given a copy of the route map and understand their obligations as part of their Site induction procedure.
- Light traffic roads and those subject to load or height limits will be avoided, as well as minimising heavy vehicle movements during school peak periods.

7.4.2.3 Loading / Unloading

- No loading or unloading of any vehicle would occur via the Tallawong Road frontage during any stage of the construction stages of the Proposed Development.
- Whilst working on-site can occur during the abovementioned construction hours, the Site Manager will endeavour to restrict truck loading/unloading outside peak school drop-off/pick-upperiods.
- Construction material delivery trucks, including concrete pumping, will occur within the Site where possible or from potential Works Zones typically using small and medium rigid trucks.
- As necessary, RMS-accredited traffic controllers will be in place at all times during truck movements to ensure the safety of pedestrians and minimise disruption to local traffic.
- The Site Manager will co-ordinate the work, such that two (2) deliveries do not occur at the same time, unless they can be both accommodated on-site or within the potential Works Zones.
- All materials are to be stored on-site. At no time are materials to be stored on any road or Council property unless prior approval is granted by Blacktown City Council.

7.4.2.4 Neighbouring Properties

- All neighbouring properties are to have their access maintained at all times.
- All nearby residents and businesses will be updated on a regular basis and at key construction stages with respect to the construction process, particularly in relation to construction vehicles movements, and be provided with a phone number to contact the Site Manager.
- Furthermore, the Site Manager must liaise with the Site Managers of any nearby construction sites to ensure that appropriate measures are in place to prevent the combined impact of construction activities, such as (but not limited to) concrete pours, crane lifts and spoil truck routes.
- Along with Council's and other statutory requirements, a minimum seven (7) days notification should be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.

7.4.2.5 General Matters

Site Fencing, Hoardings and Accommodation

- Temporary Site fencing and gates will be installed around all internal and external construction site areas.
- Temporary B-Class hoardings and scaffold systems will be installed to boundaries adjoining the Demolition and overhead Construction site areas.
- Site accommodation will be established subject to the amount of personnel working on site by stage.
- Temporary hoardings and signage will be adopted in working areas at all times during construction.

Temporary Utilities and Services

- All existing services in the construction area will be identified and located to minimise disruption to the construction works and to adjacent facilities. Thorough investigation

and staging of works will be undertaken to ensure that any capping and removal of services does not affect other Stages of the School.
- All existing services and utilities shall be disconnected and /or diverted around building work areas prior to demolition or construction works commencing. These services works will be carried out with the relevant utilities or services provider.
- Reticulated power and lighting installations will comply to the requirements of the WH&S Regulations, Electricity Supply Authority and the Code of Practice for Temporary Electrical Installations on Building and Construction Sites.
- Noise, air and vibration monitoring units will be established to manage air quality and vibration movement during the demolition and construction of the Project.

Cranage and Materials Handling

- It is expected that Mobile cranes will also be intermittently required to facilitate some of the loading of materials on to the Site.
- Although lifting will most likely be from construction delivery vehicles and contractor laydown areas within the site, in some instances, crane(s) will need to be capable of lifting from construction vehicles from approved work zones.
- Demolition and Excavation material disposal and delivery of small items will be undertaken via designated gates at site boundaries for each stage of construction.
- Delivery of Structural Steel frames and beams will most likely occur using a table to semi-trailer, prime mover.
- Smaller building elements can be lifted from within the site or approved work zones, delivered via smaller table top trucks.

Site Safety Management and Work Method Statements

- A Site Safety Plan and safe work method statements will be developed by the Construction Contractor to demonstrate the commitment to Work Health & Safety (WH&S) prior to construction of any stage of the project.
- The Site Safety Plan is required to identify the scope of work to be undertaken, the hazards associated with the work and the risk assessment processes and risk control measures to be used in the execution of the project activities.

7.4.3 Operational Traffic Impact Assessment

The Traffic Impact Assessment (TIA) concerning potential traffic impacts, as a result of the Proposed Development has been based on the full the development of the Subject Site in approximately ten (10) years (2028). In turn, this has been compared with the traffic forecasts of the Riverstone East Traffic Report (ARUP, 2015), which provides ultimate traffic forecasts for the Riverstone East Precinct for the year 2036, as discussed in **Section 7.4.1** above. The three (3) building components under the Proposed Development, that are considered to generate traffic include:

1. Early Learning Centre.
2. K-12 School (Primary and Secondary School).
3. Gurdwara & Langar (Place of Public Worship).

The RTA *Guide to Traffic Generating Developments* does not provide traffic generation rates for either a school of Place of Public Worship; therefore, the potential traffic generation of these uses has been determined from both a first principle assessment and a survey of an existing Place of Public Worship.

7.4.3.1 Early Learning Centre

The RTA *Guide to Traffic Generating Developments* recommends the following traffic generation rates for an Early Learning Centre (which has been assumed to operate as a Long Day Care Centre):

- 7:00am – 9:00am = 0.8 trips;
- 2:30pm – 4:30pm = 0.3 trips; and
- 4:00pm – 6:00pm = 0.7 trips.

Therefore, during the morning and afternoon road network peak periods, it is estimated, that the estimated 86 attendees at the Early Learning Centre would generate 69 AM peak and 60 PM peak trips two-way.

7.4.3.2 K-12 School

The traffic generated by a school is heavily dependent on the availability of public / private bus services and the proximity to residential areas. To inform the proposed Masterplan for the Proposed Development, mode of travel surveys were undertaken for a number of schools with a range of public transport accessibility to inform the traffic and parking assessment for the proposed Sikh Grammar School. School examples included:

- Sydney Secondary College Leichardt;
- JJ Cahill Memorial High School; and
- South Sydney High School.

Sydney Secondary College Leichardt

The school includes a secondary school, with a student population of approximately 950 students and only includes Years 7-10. The school is located within 500 m of four (4) bus stops and 950 m to the Leichardt Light Rail Station. Parking around the school is generally restricted to two (2) hours along Balmain Road and is unrestricted along the side streets. A summary of the mode of travel survey undertaken for the school is outlined in **Table 23** below.

Table 23: Sydney Secondary College Leichhardt Mode of Travel Survey Results

						How did you travel to school today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**
Year 7	0%	0%	0%	15%	0%	38%	38%	4%	0%	0%	4%
Year 8	0%	5%	0%	14%	0%	29%	38%	5%	0%	10%	0%
Year 9	0%	0%	0%	0%	0%	64%	27%	0%	0%	9%	0%
Year 10	0%	16%	0%	8%	0%	36%	16%	4%	0%	20%	0%
Avg.	0%	5%	0%	9%	0%	42%	30%	3%	0%	10%	1%
Staff	0%	0%	85%	0%	4%	4%	8%	0%	0%	0%	0%
						How will you travel home today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**

Year 7	0%	4%	0%	8%	0%	46%	35%	4%	0%	0%	4%
Year 8	0%	5%	0%	5%	0%	48%	33%	0%	0%	10%	0%
Year 9	0%	0%	0%	0%	0%	59%	32%	0%	0%	9%	0%
Year 10	0%	16%	0%	4%	0%	32%	20%	0%	0%	28%	0%
Avg.	0%	6%	0%	4%	0%	46%	30%	1%	0%	12%	1%
Staff	0%	0%	85%	0%	4%	4%	8%	0%	0%	0%	0%

From **Table 23** it can be assumed, that no students of this school drove (having regard to their ages) and only 4-9% travelled by car with 92% travelling by either public transport or walking. In contrast, 85% of staff drove to and from the school, which reflects the availability of all-day parking within easy walking distance to the school.

JJ Cahill Memorial High School

This school caters for Years 7-10 and is located south of the Sydney CBD near the Sydney Domestic Airport. It is noted, that public transport availability is confined to bus services on a number of streets surrounding the school within 50-500 m walking distance of the school site. A summary of the mode of travel survey results are outlined in **Table 24** below.

Table 24: JJ Cahill Memorial High School Mode of Travel Survey Results											
						How did you travel to school today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**
Year 7	0%	2%	0%	36%	0%	14%	48%	0%	0%	0%	0%
Year 8	0%	0%	0%	8%	0%	31%	62%	0%	0%	0%	0%
Year 9	0%	3%	0%	37%	0%	18%	39%	3%	0%	0%	0%
Year 10	0%	8%	0%	18%	0%	21%	51%	3%	0%	0%	0%
Avg.	0%	3%	0%	25%	0%	21%	50%	1%	0%	0%	0%
Staff	0%	6%	0%	16%	0%	26%	52%	0%	0%	0%	0%
						How will you travel home today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**
Year 7	2%	0%	22%	17%	0%	59%	0%	0%	0%	0%	2%
Year 8	0%	0%	0%	38%	0%	62%	0%	0%	0%	0%	0%
Year 9	3%	0%	29%	26%	0%	39%	3%	0%	0%	0%	3%
Year 10	8%	0%	15%	15%	0%	59%	3%	0%	0%	0%	8%
Avg.	3%	0%	17%	24%	0%	55%	1%	0%	0%	0%	3%
Staff	13%	0%	13%	25%	0%	50%	0%	0%	0%	0%	6%

Despite having a lower public transport accessibility index than the Sydney Secondary School (refer to **Table 24** above), there were no car driver trips by staff recorded.

South Sydney High School

As is the case with JJ Cahill Memorial High School, public transport options for the South Sydney High School are confined to the available bus network. The South Sydney High School caters for Years 7-12 and is located south of the Sydney CBD near Eastgardens Shopping Centre, with a student population of approximately 520 students. In contrast, the school has a lower public transport accessibility index compared with Sydney Secondary College, given students / staff do not have access to rail as a transport mode option and a similar accessibility index to that of JJ Cahill Memorial High School.

It is noted, that there is little to no parking restrictions on the road network surrounding the school and thus, there is an opportunity to students / staff to drive and park all day near the school. A summary of the mode of travel survey results are outlined in **Table 25** below.

Table 25: JJ Cahill Memorial High School Mode of Travel Survey Results											
						How did you travel to school today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**
Avg.	0.0%	0.3%	9.5%	29.1 %	2.1%	31.8 %	23.7 %	0.0%	1.8%	1.8%	0.0%
						How will you travel home today?					
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Ferry**	**Light Rail**	**Other**
Avg.	0.0%	0.9%	9.1%	17.3 %	2.1%	40.1 %	28.4 %	0.0%	0.6%	1.8%	0.0%

It is noted, that the school included a proportion of car drivers to and from the school; however, despite the fact, that streets surrounding the school did not include timed parking restrictions, the proportion of car drivers was still less than 10%.

Based on the Mode of Travel Surveys outlined above in **Tables 23 - 25**, the findings of the surveys for South Sydney Secondary School are considered appropriate to represent the traffic and trip rate assumptions of the Proposed Development. It is noted, that the proportion of bicycle trips to the school was zero in both peak periods, which is not expected to be the case for the Proposed Development.

As the Proposed Development does not include any access to Ferry or Light Rail, these proportions have been included within the 'car drop off' category for a conservative estimate of potential traffic generation. The Proposed Development, with a population capped at 1,260 students and 120 staff would generate the following trips by mode (refer to **Table 26** below).

Table 26: JJ Cahill Memorial High School Mode of Travel Survey Results										
						How did you travel to school today?				
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Other**	**Total**
Avg.	0.0%	0.3%	9.5%	32.6 %	2.1%	31.8 %	23.7 %	0.0%	0.0%	

No. Trips	0	4	130	444	28	434	323	0	0	1,363
Year / Staff	**Boarder**	**Train**	**Self Drive**	**Car Drop Off**	**Motor-cycle**	**Bus**	**Walk**	**Bike**	**Other**	**Total**
Avg.	0.0%	0.9%	9.1%	19.4 %	2.1%	40.1 %	28.4 %	0.0%	0.0%	
No. Trips	0	13	124	265	28	546	387	0	0	1,363

From **Table 26** above, it is estimated, that 444 person trips in the AM peak and 265 trips in the school afternoon peak would be generated by the Proposed Development. Furthermore, some 124-130 single trips to / from the school by self-drive modes would occur.

It is important to note, that each of the 444 and 265 drop off trips would not be single persons in each car as vehicle occupancy rates for school are generally high (accounting for travelling with siblings). Assuming a vehicle occupancy of approximately 1.5 students per vehicle would equate to approximately 296 vehicle trips two-way in the AM peak and approximately 176 vehicle trips two-way in the school afternoon peak (prior to the road network peak). Morning and afternoon start and finish times would be staggered, which would assist in spreading the anticipated vehicle demands during these times over longer periods.

7.4.3.3 Gurdwara and Langar

As mentioned above in **Section 7.3.6**, the existing 'Gurdwara Sahib Sikh Temple', identified at 8-26 Meurants Lane, Glenwood, provides a direct comparison (noting it is a slightly larger scale (2,755 m^2) than the proposed Gurdwara and Langar) of the potential traffic generation likely to occur, as a result of the Proposed Development, specifically, the proposed Gurdwara and Langar.

The existing 'Gurdwara Sahib Sikh Temple', includes an open-air car parking area, with approximately 289 car parking spaces. To gauge and understand, both traffic and parking demands of this particular development, traffic and parking demand surveys were undertaken on a Friday, between the hours of 8:00am – 6:00pm and on a Saturday between 2:00pm to 8:00pm. A summary of the survey results are outlined below:

- A total of 793 persons were recorded to enter the temple between 9:00am – 6:00pm on a Friday.
- A total of 607 persons were recorded to exit the temple between 9:00am – 6:00pm on a Friday.
- A total of 2,495 persons were recorded to enter the temple between 2:00pm – 8:00pm on a Saturday.
- A total of 1,507 persons were recorded to exit the temple between 9:00am – 6:00pm on a Saturday.
- A total of 327 vehicles were recorded to enter the car park between 9:00am – 6:00pm on a Friday.
- A total of 300 vehicles were recorded to exit the car park between 9:00am – 6:00pm on a Friday.
- A total of 753 vehicles were recorded to enter the car park between 2:00pm – 8:00pm on a Saturday.
- A total of 552 vehicles were recorded to exit the temple between 9:00am – 6:00pm on a Saturday.
- The weekday AM peak hour traffic generation of the temple occurred between 9:15am – 10:15am and included 28 vehicles entering and 28 vehicles exiting.

- The weekday PM peak hour traffic generation of the temple occurred between 12:45pm – 1:45pm and included 53 vehicles entering and 64 vehicles exiting.
- The Saturday PM peak hour traffic generation of the temple occurred between 7:00pm – 8:00pm and included 204 vehicles entering and 192 vehicles exiting.

With regard to the above, it is noted, that the existing Gurdwara and Langar generates rather benign to no amounts of traffic during the morning or afternoon road network peaks. It is anticipated, that a similar scenario would result from the proposed Gurdwara and Langar with the proposed Sikh Grammar School. As the proposed Place of Public Worship would operate only in the PM weekday peak and the weekends, only the PM peak traffic generation would apply, which accrued to approximately 90 trips in the road network during the 5:00pm – 6:00pm peak period, which is considered an acceptable level of traffic generation.

7.4.3.4 Overall Traffic Generation

Table 27 below outlines the estimated weekday AM and PM peak hour traffic generation of the proposed Sikh Grammar School.

Table 27: School / Road Network Peak Traffic Generation Estimates			
Use	**AM Peak Hour Traffic Generation (8:00 am – 9:00 am)**	**School PM Peak Hour Traffic Generation (3:00 pm – 4:00 pm)**	**Road Network PM Peak Hour Traffic Generation (5:00 pm – 6:00 pm)**
Early Learning Centre	69	60	61[1]
Sikh Grammar School – Self Drive	130 (one way)	62 (one way)[2]	62 (one way)[3]
Sikh Grammar School – Drop Off	296 (one way)	176 (two way)	0
Gurdwara & Langar	0	0	0
Total	**791**	**474**	**213**

1. RTA Guide 0.7 trips per child between 4:00 pm – 6:00 pm.
2. Assumes driving age students leave during school afternoon peak hours.
3. Assumes staff leave during road network peak hours.

As discussed in **Section 7.4.1** of this EIS, Tallawong Road is expected to be upgraded to a 'collector road', for which (according to the RMS Guidelines) it would include an environmental capacity for some 2,000-10,000 vehicles per day.

On a conservative basis, that all traffic generated by the development used Tallawong Road evenly from the north and south (which would not be the case, as the school would be supported by a surrounding local road network), the future traffic flows anticipated on Tallawong Road (north) would increase to the following peak flow rates, as confirmed within **Table 28** below.

Table 28: Tallawong Road N/S 2036 Traffic Flows + Sikh Grammar School Net Traffic Generation				
Direction	**ARUP 2036 Forecast AM Peak Flows**	**ARUP 2036 Forecast PM Peak Flows**	**ARUP 2036 Forecast AM Peak Flows + School**	**ARUP 2036 Forecast PM Peak Flows + School**
Tallawong Road North	343	451	688[1]	504[2]
Tallawong Road South	453	179	798[1]	232[2]

1. 50% of net school AM road network peak traffic generation.

2. 50% of net school PM road network peak traffic generation.

It is noted, that peak hour traffic flows typically equate to approximately 8-12% of the daily flows, or 10% as an average. Accordingly, the forecast peak hour traffic flows for Tallawong Road (north and south) would be between 6,880 and 7,980 vehicles per day, respectively for the AM peak period. These projected forecasts (with the additional traffic generated by the Proposed Development), would still be well below the environmental capacity of the future Tallawong Road.

Notwithstanding, the Report prepared by Positive Traffic notes, that the traffic impacts of the Proposed Development are considered acceptable and would be accommodated within the delivery of the future road network of the Riverstone East Precinct as currently planned.

7.4.4 Parking

The Report prepared by Positive Traffic utilised the relevant provisions outlined within the BCC Growth Centres Precinct DCP to calculate the parking requirements for the Proposed Development.

It is noted, that all elements of the proposed car parking areas have been designed and reviewed in accordance with complying

7.4.4.1 Early Learning Centre

The following car parking provisions apply to Child Care Centres, pursuant to the BCC Growth Centres Precinct DCP:

- One (1) per employee based on the following ratio of primary contact staff to children being provided, as stipulated in the Children's Services Regulation 2004:
  - 1:5 in respect of all children who are under the age of 2 years;
  - 1:8 in respect of all children who are 2 or more years of age but under 3 years of age; and
  - 1:10 in respect of all children who are 3 or more years of age but under 6 years of age.
- One (1) designated space for disabled parking / service vehicles located close to the main entrance;
- Possible dwelling component: min. two (2) spaces – at least one (1) space needs to be covered; and
- Visitor parking should be provided in accordance with one (1) space per every six (6) children.

Based on an average employee parking rate of one (1) space per 7.5 children, the 86 place Early Learning Centre would require approximately twelve (12) car parking spaces for staff. Furthermore, application of the DCP rate for visitors would require 15 spaces for visitors, accruing to a total of approximately 27 on-site car parking spaces.

It is noted, that the Early Learning Centres makes provisions for approximately 33 on-site (off-street) car parking spaces, exceeding the minimum requirements stipulated within the DCP. Accessible parking has also been provided, further complying with the DCP controls.

7.4.4.2 Sikh Grammar School (K-12)

As noted throughout this EIS, the Sikh Grammar School would include a student population of approximately 1,260 students (680 primary school children and 580 secondary school children). Although exact figures are not yet known, a conservative assumption of

approximately 96 Year 12 students has been utilised within the Traffic and Parking Assessment. For schools, the DCP outlines the following parking provisions:

- Primary and Secondary Schools:
  - One (1) space per staff member; plus
  - One (1) space per 100 students.
- Senior High School:
  - One (1) space per staff member; and
  - One (1) space per five (5) students in Year 12.

In accordance with the above-mentioned rates, the proposed Sikh Grammar School would require the following car parking spaces:

- Primary / Secondary School:
  - 102 staff spaces; and
  - 13 student spaces.
- Senior High School:
  - Zero (0) staff spaces (accounted for above); and
  - 20 student spaces.

Whilst this would accrue to approximately 135 car parking spaces required, it is important to note, that the Proposed Development would provide basement park for approximately 162 car parking spaces, plus eleven (11) 'Kiss and Drop' parking spaces; therefore, complying with the DCP controls.

7.4.4.3 Gurdwara and Langar

The proposed Gurdwara and Langar would not be open to the public during school hours, including morning and afternoon school peak periods. For Places of Public Worship, the DCP requires the following parking provisions:

- One (1) space per four (4) seats; or
- One (1) space per 10 m^2 of seating area (whichever is greater).

It is noted, that the Gurdwara and Langar is not a seated venue, with parishioners sitting on the ground in generally ordered fashion. The available space for the seating or parishioners is approximately 954 m^2. Thus, by applying the DCP rate of one (1) space per 10 m^2 of seating area, the Gurdwara and Langar would require 96 car parking spaces.

As the parking available to the Gurdwara and Langar would be approximately 162 car parking spaces, the parking provisions are considered satisfactory and compliant with the DCP controls.

7.4.4.4 Other Parking Provisions

It should be noted, that the DCP does not require any bicycle and motorcycle parking for an Educational Establishment or Place of Public Worship. Therefore, further consideration is not considered warranted in this respect.

7.4.4.5 Bus Parking

The Proposed Development includes provisions for an indented bus bay, which can accommodate up to three (3) full sized buses along the eastern boundary of the Site within Tallawong Road.

The strategy involved with placing the indented bus bay along this area is to provide not only a bus facility which can accommodate school specific services, but one which can also

accommodate local and regional bus routes, which would utilise Tallawong Road as identified in the ARUP 2036 Report.

The positioning of the idented bus bay along Tallawong Road also facilitates the corralling of students within the school grounds on all weather services and provides access to building awnings during inclement weather. Furthermore, the location of the indented bus bay negates the need for any bus to travel within adjacent residential streets to service the Subject Site.

Accordingly, the proposed bus arrangements for the Proposed Development are considered satisfactory.

The conclusions drawn from the Traffic and Parking Assessment prepared by Positive Traffic include the following six items:

1. Whilst the Proposed Development would increase the net traffic generation of the Subject Site, compared with a residential proposal, the indicative improvements to the road network within the Riverstone East Precinct would more than cater for the expected traffic demands of the Proposed Development.
2. The Proposed Development provides adequate parking provisions for compliance with the DCP for all components of the Proposed Development.
3. The restriction concerning the operation of the Gurdwara and Langar during school hours ensures adequate parking provision for the Place of Public Worship during the later evening periods when peak operation would occur.
4. The Proposal facilitates good access for buses, whether this is for the specific school route, or local and / or regional bus services through the provision of a three (3) bus indented bay along Tallawong Road.
5. The proposed parking provision for the Early Learning Centre exceeds the minimum requirements of the DCP and is considered satisfactory.
6. The design of the car parking areas and access arrangements complies with AS2890.1 and is considered satisfactory.

Overall the traffic impacts of the Proposal are considered acceptable.

7.5 SOILS AND WATER

The engineering objectives for the Proposed Development are to create a site that responds to the local topography and constraints of the land, whilst meeting any specified flood planning requirements and providing a satisfactory stormwater management system incorporating best practice measures in Water Sensitive Urban Design (WSUD). In order to achieve these objectives, ensure a suitable development of the Site and respond to the SEARs, a Civil Engineering Strategy, a Stormwater Quantity and Quality Management Strategy and a Sediment and Erosion Control Plan have been prepared. The following subsections provide an overview of the content and recommendations of the applicable reports. Accordingly, the Civil Engineering Report, prepared by Martens is located within **Appendix 15** of this EIS.

The Civil Engineering Report (2019), which includes Civil Plans, shows the proposed infrastructure design, road geometry, site levels, retaining walls, batter treatment and the proposed stormwater drainage layout. The content of this Report is summarised below:

7.5.1 Infrastructure Services

Developing a Water Cycle Management Strategy (WCMS) at this stage of the Proposed Development provides guidance with regard to urban water management issues to be addressed for the Proposed Development and the corresponding construction stages of development. Essentially, the WCMS for the Proposed Development has been prepared to inform the NSW DPIE and Blacktown City Council, that the Proposed Development is able to

provide and integrate appropriate Stormwater Treatment Measures (STMs) into the overall stormwater management strategy proposed for the Subject Site.

Notwithstanding, the Site Infrastructure Assessment Report (Umow Lai, 2019) provides an overview of all existing and proposed infrastructure services required for the Site, including:

- Sydney Water: Potable and Waste Water Infrastructure;
- Endeavour Energy: Electrical assets;
- NBN Co: Telecommunications assets; and
- Jemena: Gas supply.

Conclusions are drawn from the Service Infrastructure Assessment, which indicate, that the Proposed Development can be satisfactorily serviced regarding the abovementioned infrastructure services. The complete Site Infrastructure Assessment prepared by Umow Lai can be located within **Appendix 28** of this EIS.

7.5.2 Site Works

As mentioned in **Section 3.2.2** of this EIS, bulk earthworks are proposed across the whole site, to complete all the site preparatory works. Detailed analysis of the cut and fill, is outlined in **Table 29** below. The total quantum of cut/fill is proposed as follows:

Table 29: Cut/Fill Balance	
Topsoil Volume	
1,638 m^3 (50 mm topsoil depth)	
Earthworks Volume	
Cut	19,581 m^3
Detailed Excavation	5,979 m^3/ha
Fill	46,022 m^3
Balance	26,441 m^3

Cut earthworks over the Site has been estimated to be minor (fill is required). Investigations show, that no impacts are expected to groundwater levels, or soil quality, as a result of these works. Additionally, all geotechnical testing and inspections performed during earthworks, would be undertaken via a Level 1 Geotechnical Engineer in accordance with the Site earthworks specification and in accordance with AS3798-1996.

It should be noted, that the volumes outlined in **Table 29** above are based on the final ground surface at the ultimate development stage. Boxing has not been included within the investigations undertaken, for which is expected to be completed at the CC stage.

7.5.3 Stormwater Management

In the *Concept Stormwater Management Plan and Preliminary Flood Study* prepared by Martens (2019), they note, that temporary stormwater quality treatment and On-site Stormwater Detention (OSD) systems are proposed for this SSD Application, prior to the downstream regional basin being fully constructed and development by Council. At the time of the assessment undertaken Martens have proposed two (2) temporary systems with regard to Stage 1 and Stages 2-9 of the Proposed Development.

7.5.3.1 Stage 1 Development Scenario

A temporary aboveground OSD (300 m^3) and bio-retention (130 m^2) basin are to be located near the western end of the Village Green area, which is to proposed to treat the Stage 1 development in accordance with the construction stage drawings prepared by PMDL (refer to **Appendix 9** & **10**). It is noted, that preliminary sizing of the basin is based on the Blacktown

City Council's deemed to comply requirements of 2% of the development area for the bio-retention area and 455 m^3/ha for the OSD volume. Martens suggest, that the detailed design of the basin is to be provided at the future development stage.

7.5.3.2 Stage 2 to Stage 9 Development Scenario

Stage 2 to Stage 9 will be reliant on a temporary below ground OSD tank, with a total detention volume of approximately 1,600 m^3. For temporary stormwater quality treatment, a 'Model for Urban Stormwater Improvement Conceptualisation' (MUSIC) was utilised to evaluate Treatment Train Effectiveness (TTE), based on the proposed design at the ultimate development scenario stage, including water quality treatment devices required to achieve the minimum pollutant removal targets of Part J of Council's BDCP2015, including:

- 85% reduction in Total Suspended Solids (TSS);
- 65% reduction in Total Phosphorus (TP);
- 45% reduction in Total Nitrogen (TN); and
- 90% reduction in Gross Pollutants (GP).

A combination of 'at-source' and 'end-of-line' stormwater controls will be implemented to ensure treatment objectives are satisfactorily addressed. Individual Stormwater Quality Improvement Devices (SQIDs) are outlined below:

- '13 Ocean Guards' are to be installed inside the proposed pits to treat Gross Pollutants in stormwater, prior to entering the proposed 'StormFilter' system.
- The eastern portion of the Proposed Development will be conveyed by way of pit and pipe to an 85 m^2 raingarden. The raingarden will provide treatment through filtration, evapotranspiration and detention.
- A 'StormFilter' system including a 20 m^2 chamber and 50 'StormFilter' cartridges are to be installed within the proposed temporary belowground OSD tank. The system will provide a reduction in nutrient pollutant loads through propriety media filtration.

MUSIC modelling undertaken for the Site (refer to MA planset P1806439PS05 of **Appendix 15**) indicate, that Council's minimum pollutant removal objective will be met by the proposed SQIDs mentioned above. Accordingly, the OSD and Water Sensitive Urban Design (WSUD) outcomes for the Proposal have been designed to comply with Blacktown City Council's engineering requirements.

7.5.4 Flooding

It is noted, that the Site is located within the First Ponds Creek Catchment and is affected by a local upstream catchment of approximately 6.39 ha (refer to **Figure 20** below). With respect to the Sydney Region Growth Centres SEPP mapping, a portion of the Site is identified as being flood prone and susceptible to inundation. Upstream overland flows running in a southwesterly direction are collected by Tallawong Road and conveyed towards the existing low point fronting the Subject Site.

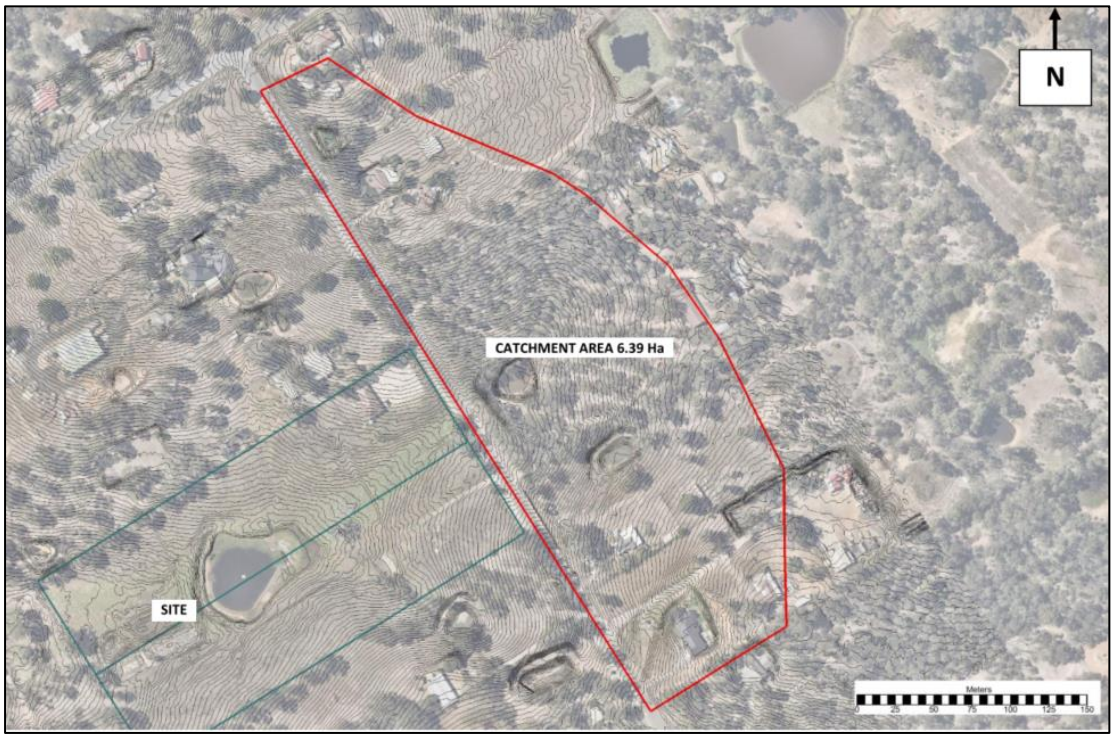


Figure 20 Existing Catchment Area Adjoining the Subject Site (Source: Martens, 2019)

Martens note, that stormwater infrastructure and drainage upgrade works are currently being undertaken along Tallawong Road. The works entail a 1.8 x 0.6 m box culvert being constructed at the sag point of Tallawong Road, with a headwall outlet discharging into the Site.

Accordingly, a DRAINS model has been developed to simulate the upstream catchment flows discharging into the Site. Results of the peak flow rates are outlined in **Table 30** below. The 1% AEP flow is consistent with the flow rates documented in the approved construction certification plan, with respect to 154 Tallawong Road, Rouse Hill, located to the south of the Site.

Table 30: Peak 1% AEP with and without Climate Change and PMF Flow Rates for Critical Duration Storms Estimated by DRAINS Modelling for Upstream Catchments Arriving at the Site

Flood Event	Critical Storm Duration (mins)	Peak Catchment Flow Rates (m^3/s)
1% AEP[1]	10	3.22
1% AEP Climate Change[2]	10	3.86
PMF	15	13.75

Notes:
1. 1% AEP flow-rate is consistent with construction certification plan (154 Tallawong Road, Rouse Hill) CC 133-03 prepared by Mepstead and Assoociates (2018).
2. Based on 18.6% increased rainfall intensity in accordance with ARR 2016.

Proposed flood mitigation works to be implemented in the first stage of the Proposed Development (Stage 1), which would protect the Site from flood waters for events up to and including the PMF throughout all stages of the Proposed Development, include the following:

- The drainage system on the low point along Tallawong Road, adjacent to the northern site boundary is to be upgraded with five (5) 900 x 900 mm V-grate pits and 1.5 m diameter pipes to completely capture 1% AEP flows.

- 1% AEP flood waters collected from Tallawong Road are to be conveyed by a 2 m wide and 1.8 m deep box culvert under the proposed basement car parking area, along the north eastern corner of the Site and discharged into the 1.5 m diameter trunk drainage pipe under the northern boundary road, which would be constructed as parts of the subdivision works, currently being assessed by Blacktown City Council.
- An emergency overland flow path is provided through the proposed carpark to direct PMF flows towards the northern boundary road.
- The Site is generally flood free for all events up to and including the PMF event from Stages 1-9 for the Proposed Development, with the specified mitigation measures and design measures implemented.

The TUFLOW hydraulic model was utilised to determine flood characteristics including flood extents; levels; depths; velocities; and hydraulic hazard for the critical 1% AEP flood event (with and without climate change) and PMF events for existing and proposed conditions.

It is noted, that the flood mapping results (i.e. flood levels, depths, velocities and provisional hazard categories) for the critical duration 1% AEP flood event with and without climate change and PMF events in existing and proposed conditions are provided in Attachment A of **Appendix 15** of this EIS. Within the flood study prepared by Martens (2019), they note, that provisional hydraulic hazard categories are based on the *NSW Floodplain Development Manual* (2005) definitions.

Martens suggest the following, with regard to the existing conditions of modelled flood behaviour:

- The primary source of flooding on the Subject Site is the discharge from the headwall recently constructed at the sag point of Tallawong Road fronting the Site.
- Floodwaters primarily flow across the Site from the northeast to the southwest along the existing drainage depression and discharge to the southwest of the Site (Lot F DP 407863).
- Water velocities are generally between 1 m/s and 4 m/s.
- Areas of high hydraulic hazards are observed in the drainage depressions and dam.

Martens suggest the following, with regard to the proposed conditions of modelled flood behavior:

- The proposed pit and pipe system has been designed to completely capture and convey the 1% AEP flood flows with and without climate change.
- PMF water on Tallawong Road will be ponded up to a level of 52.4 m AHD and would travel through the northeastern car parking area towards the northern boundary access road.
- The proposed Gurdwara & Langar (multi-purpose hall) and arrival forecourt near the front of the Site are to be raised to 52.5 m AHD to avoid PMF water from entering the buildings on the Subject Site.

7.5.5 Erosion and Sediment Control

The Civil Engineering Drawings located within **Appendix 13** of this EIS Submission include soil erosion and sediment control measures, including (but not limited to):

- Sediment fencing;
- Earth bank with geotextile lining for upstream stormwater diversion;
- Earth bank for site stormwater diversion;
- Mesh and gravel inlet filter;
- Straw bale filter;
- Designated stockpile locations;

- Stabilised site access with shaker pad.

Measures to mitigate offsite impacts associated with the Proposed Development are also provided within the Civil Engineering Drawings, located within **Appendix 13** of this EIS.

7.5.6 Geotechnical Assessment and Salinity

The *Preliminary Salinity and Geotechnical Assessment: The Sikh Grammar School – 151 and 161 Tallawong Road, Rouse Hill* (Martens, 2018) provides a comprehensive geotechnical assessment of the Subject Site, through analysis of eleven (11) Dynamic Cone Penetrometer (DCP) tests, that were undertaken during the site survey.

7.5.6.1 Geotechnical Assessment

Pursuant to the site survey undertaken, the following geotechnical parameters were analysed, including:

- Soil Reactivity;
- Preliminary soil and rock strength properties; and
- Risk of slope instability.

Soil Reactivity

A summary of the Soil Reactivity for the Subject Site is provided in **Table 31** below.

Table 31: Summary of Laboratory Soil Reactivity Test Results

BH ID / Depth	Material	Atterberg Limits (%)				Plasticity Classification	Potential Volume Change[2]
		LL[1]	PL[1]	PI[1]	LS[1]		
BH103/0.5	Silty Clay	55	18	37	11.5	High	Medium
BH108/0.5	Silty Clay	46	16	30	13.5	Medium	Medium
BH108/1.3	Clay	60	18	42	17.5	High	Medium

Notes:
1. LL = Liquid Limit, PL = Plastic Limit, PI = Plasticity Index, LS = Linear Shrinkage.
2. Based on Hazelton and Murphy, 2016.

The laboratory test results examined by Martens, indicate that the tested soil samples are generally indicative of a medium and high plasticity and will likely experience moderate ground movement due to soil moisture changes.

Preliminary Soil and Rock Strength Properties

Table 32 below summarises the preliminary soil and rock strength properties, estimated from field test results in conjunction with borehole derived soil / rock profile data, as well as engineering assumptions.

Table 32: Preliminary Material Properties

Layer	Material	$\gamma_{in\text{-}situ}$[1] (kN/m^3)	UCS[2] (MPa)	Ø'[3] (deg)	Cu[4] (kPa)	E'[5] (MPa)
Topsoil	Silt / Clayey Silt	15-17	NA[6]	NA[6]	NA[6]	NA[6]
Residual	Silty Clay / Clay (stiff to very stiff)	17-18	0.1-0.2	NA[6]	50-100	10-20

Residual	Silty Clay / Clay (hard)	19	0.4	NA[6]	200	30-40
Weathered Rock	Shale (very low to low strength)	22	0.5-1.0	28	NA[6]	50-100
	Shale (low strength)	23	1.0-3.0	28	NA[6]	100-300
	Shale (medium strength)	23	3.0-10.0	32	NA[6]	300-500

Notes:

1. Material in-situ unit weight based on visual assessment (±10%).
2. Expected range of unconfined compressive strength of intact material.
3. Effective internal friction angle (±2º) estimate, assuming drained conditions; may be dependent on rock defect conditions.
4. Undrained shear strength (±5 kPa) estimate assuming normally consolidated clay.
5. Expected range of effective elastic modulus (±10%).
6. Not applicable.

Risk of Slope Instability

Martens suggest, that evidence of extensive subsidence or recent gross slope instability was not observed on-site. Martens consider, that the risk to the Subject Site and loss of life by potential slope instability, such as landslide or soil creep, is very low, subject to the recommendations stipulated below. It is noted, that a detailed slope risk assessment, was not undertaken in accordance with the *Australian Geomechanics Society's Landslide Risk Management Guidelines* (2007).

Martens have provided the following recommendations for the Proposed Development, which include:

1. **Footings and Foundations:** Shallow footings, such as pad and strip footings, or slab-on-ground may be adopted founding on residual soil or underlying rock, depending on foundation level. Individual pad footings and all footings within building footprints should not span the interface between different foundation materials. Alternatively, inclusion of movement joints may mitigate impacts of differential movements. Shallow footings may be designed adopting allowable end bearing capacities of 100 kPa for stiff to very stiff residual soil or "engineered fill' (refer earthworks below), 250 kPa for hard residual soil and 350 kPa for very low to low strength shale.

   Deepened footings such as piles founding in rock may be considered to accommodate higher end bearing pressures. Estimates of safe end bearing pressure and shaft friction for piles founding in very low to low strength rock are 700 kPa and 60 kPa, and for medium strength rock are 1500 kPa and 250 kPa, respectively. For uplift resistance, we recommend reducing allowable shaft friction by 50% and checking against 'piston' and 'cone' pull-out mechanisms in accordance with AS2159 (2009).

   Provided bearing capacities assume an embedment of at least 0.3 m into the design unit. Bearing capacity values should be confirmed by a geotechnical engineer on site during construction. It is noted, that further testing is required for higher bearing pressures.

2. **Earthworks:** All earthworks, including filling of dam, should be carried out following removal of topsoil and other unsuitable materials, such as uncontrolled fill and soft soils, in accordance with AS3798 (2007) and BCC's requirements. A qualified

geotechnical engineer should inspect the condition of the exposed material to assess suitability of the prepared surface as foundation for footings or fill placement. Further geotechnical advice can be provided by MA related to earthworks requirements, including site filling, dependent on final design and proposed construction methodologies.

3. **Drainage Requirements:** Appropriate surface drainage measures should be provided to divert overland flows away from structures and discharge into council approved discharge points.

4. **Site Classification:** A preliminary site classification of 'H1' should be adopted for design of lightly loaded shallow footings, in accordance with AS 2870 (2011), subject to the recommendations presented in this report and CSIRO guidelines (CSIRO BTF 18, 2003). A preliminary site classification of 'P' should be adopted, where footings are likely to be impacted by the presence of uncontrolled fill or soft foundation material, by cutting and filling of > 0.4 m thickness or by environments that could lead to exceptional moisture condition variations within foundation material, such as areas impacted by dam and drainage depression.

5. **Trafficability and Construction Access:** Trafficability across exposed soil/subgrade materials is expected to be adequate in dry weather for most construction plant such as conventional rubber tyre plant, four-wheel drive plant and track mounted plant.

   During wet weather, trafficability of all heavy machinery on exposed soil/sub-grade materials, particularly residual clay / silty clay, may be reduced. Provision for site grading, temporary open drains or toe/crest drains is suggested to collect any overland flow, prevent water ponding and hence minimise potential for any further soil/sub-grade softening or erosion, and to help improve trafficability. The use of granular fill or aggregate for temporary construction roads may be necessary to allow works during and immediately following wet weather.

Salinity

The *Preliminary Salinity and Geotechnical Assessment: The Sikh Grammar School – 151 and 161 Tallawong Road, Rouse Hill*, prepared by Martens (2018), notes, that the 1:100,000 *Salinity Potential in Western Sydney Map* (DIPNR, 2002) maps the Site in an area of moderate salinity potential, with high salinity potential being identified along surface drainage lines, e.g. creeks and at the lower slopes in Wianamatta shales (refer to Figure 2 within **Appendix 16** of this EIS).

Pursuant to a site survey undertaken, no visual observations of potential saline existing within the soil were assumed to exist. Assumptions were based on the following:

- No water marks or salt crystals were observed on the ground surface;
- Site surface drainage appeared generally 'good';
- No evidence of concentrated surface erosion was observed; and
- Grass appeared healthy and uninhabited.

Table 33 below considers the likelihood of salinity occurring at the Subject Site, based on site observations and investigations findings, stipulated by Martens.

Table 33: Potential for Broad Scale Salinity Processes at the Site		
Key Salinity Process	**Description**	**Potential at Subject Site**
Localised Concentration of Salinity	Localised concentration of salts due to relatively high evaporation rates. Usually associated with waterlogged soil and poor drainage. Exacerbated by increased water use and / or blocking of surface and subsurface water flow associated with urban development.	Moderate to High – there was no evidence of localised salt concentration and waterlogged soil and poor drainage, that were observed. However, the site dam; drainage depression; irrigation of gardens; as well as dams nearby the Site may have influenced site soil salinity.
Shale Soil Landscapes	In poorly drained duplex (texture contrast) soils, shallow subsurface water flows laterally across a clayey upper B-Horizon with salt usually accumulating in the clayey subsoil. Salt concentrations may increase where subsurface water accumulates and evaporates, e.g. on lower slopes or natural and constructed flats in mid-slope. Exacerbated by subsoils exposure through deep cutting, by installing buildings into the B-horizon and by impeding subsurface water flows. Highly dispersive, erodible and poorly draining sodic soils due to salinity.	Moderate to High – The Site is underlain by low permeable clays, overlying shale. Water accumulation and evaporation of perched water in the existing dam and drainage depression on-site, as well as nearby dams may have resulted in salt accumulation in clays.
Deep Groundwater Salinity	Brackish or saline groundwater rises to a level where, through capillary action in the soil, the water with dissolved salts reaches the ground surface and evaporates, resulting in localised salt concentration. Groundwater rises are typically caused by increased water infiltration, e.g. above average rainfall, vegetation loss, irrigation, increased water use in urban areas, construction of surface pits. Exacerbated by buildings or infrastructure intercepting the zone of groundwater level fluctuation.	Low – Groundwater was not encountered in boreholes until 4.0 m Below Ground Level (BGL). The proposed development is not expected to intercept or raise groundwater levels. Proposed structures are to be constructed with appropriate drainage measures installed.
Deeply Weathered Soil Landscape	High salt loads with high sulphate levels related to un-mapped deeply weathered soil landscapes beneath fluvial gravel, sand and clay. Usually in mid-slope or on hilltops affected by perched saline groundwater.	Moderate – No evidence of deeply weathered soils beneath alluvial soils were observed. Encountered soils on-site are residual. Deeper weathering is likely to be present within / nearby existing drainage depression and the dam. Perched saline groundwater may have influenced site soil salinity.

During the field investigation, undertaken by Martens, eleven (11) boreholes (BH101 to BH111) were drilled up to 4.0 m BGL, for which samples were taken back to the laboratory for further analysis and chemical testing. The chemical testing undertaken, analysed parameters

concerning the following three (3) soil characteristics to determine the overall salinity classification:

1. Electrical Conductivity (EC);
2. pH; and
3. Soluble Sulphate (SO_4).

The parameters investigated through analysis of samples, describes the exposure classification for the design of concrete structures. It is noted, that sampling was targeted to achieve a representative coverage of the Site conditions in line with assessed subsurface profiles and the scope of works. The salinity test results are described in **Table 34** below, whilst the Sulphate and pH are described in **Table 34** below.

Table 34: Salinity Test Results

Sample ID[1]	Material	$EC_{(1:5)}$ (dS/m)	EC_e (dS/m)[2]	Salinity Classification[3]
6439/BH101/0.1/S/1	Silt	0.100	1.00	Non-Saline
6439/BH101/0.3/S/1	Silty Clay	0.044	0.308	Non-Saline
6439/BH102/0.1/S/1	Clayey Silt	0.089	0.801	Non-Saline
6439/BH102/0.3/S/1	Silty Clay	0.061	0.427	Non-Saline
6439/BH102/0.8/S/1	Silty Clay	0.180	1.260	Non-Saline
6439/BH103/0.1/S/1	Clayey Silt	0.088	0.792	Non-Saline
6439/BH103/0.5/S/1	Silty Clay	0.200	1.400	Non-Saline
6439/BH105/0.1/S/1	Clayey Silt	0.082	0.738	Non-Saline
6439/BH105/0.5/S/1	Silty Clay	0.084	0.588	Non-Saline
6439/BH105/1.5/S/1	Silty Clay	0.290	1.740	Non-Saline
6439/BH106/0.1/S/1	Clayey Silt	0.056	0.504	Non-Saline
6439/BH106/0.6/S/1	Silty Clay	0.042	0.294	Non-Saline
6439/BH107/0.1/S/1	Silt	0.051	0.510	Non-Saline
6439/BH107/0.5/S/1	Silty Clay	0.030	0.210	Non-Saline
6439/BH107/1.0/S/1	Silty Clay	0.059	0.413	Non-Saline
6439/BH108/0.1/S/1	Silt	0.022	0.220	Non-Saline
6439/BH108/0.5/S/1	Silty Clay	0.091	0.637	Non-Saline
6439/BH108/1.3/S/1	Clay	0.430	2.580	Slightly Saline
6439/BH109/0.1/S/1	Silt	0.120	1.200	Non-Saline
6439/BH109/0.5/S/1	Silty Clay	0.026	0.182	Non-Saline
6439/BH110/0.1/S/1	Clayey Silt	0.086	0.774	Non-Saline
6439/BH110/0.5/S/1	Silty Clay	0.028	0.196	Non-Saline
6439/BH110/1.0/S/1	Clay	0.028	0.168	Non-Saline
6439/BH110/2.0/S/1	Clay	0.057	0.342	Non-Saline

Notes:

1. Project # / Borehole # / Depth (mBGL).
2. Based on EC to EC_e multiplication factors from Table 6.1 in DLWC (2002).
3. Based on Table 6.2 of DLWC (2002) where EC_e <2 dS/m = non-saline, EC_e of 2-4 dS/m = slightly saline, EC_e of 4-8 dS/m = moderately saline, EC_e of 8-16 dS/m = very saline and EC_e of >16 dS/m = highly saline.

The results from **Table 34** indicate, that residual silty clay identified at the sampled locations, can be generally categorized as non-saline, for which only one (1) sample was identified as containing slightly saline results (BH108 at 1 m BGL).

Table 35: Salinity Test Results				
Sample ID[1]	**EC_e (dS/m)[2]**	**pH**	**Sulphate (SO_4) (mg/kg)**	**Exposure Classification[3]**
6439/BH101/0.1/S/1	1.00	6.1	25	A1
6439/BH101/0.3/S/1	0.308	5.9	20	A1
6439/BH102/0.1/S/1	0.801	5.6	22	A1
6439/BH102/0.3/S/1	0.427	5.7	40	A1
6439/BH102/0.8/S/1	1.260	6.7	70	A1
6439/BH103/0.1/S/1	0.792	7.6	<10	A1
6439/BH103/0.5/S/1	1.400	6.2	190	A1
6439/BH105/0.1/S/1	0.738	6.4	30	A1
6439/BH105/0.5/S/1	0.588	6.4	120	A1
6439/BH105/1.5/S/1	1.740	5.2	<10	A2
6439/BH106/0.1/S/1	0.504	7.6	10	A1
6439/BH106/0.6/S/1	0.294	7.9	<10	A1
6439/BH107/0.1/S/1	0.510	5.9	22	A1
6439/BH107/0.5/S/1	0.210	5.8	37	A1
6439/BH107/1.0/S/1	0.413	5.8	69	A1
6439/BH108/0.1/S/1	0.220	5.9	10	A1
6439/BH108/0.5/S/1	0.637	5.6	61	A1
6439/BH108/1.3/S/1	2.580	5.4	<10	A2
6439/BH109/0.1/S/1	1.200	5.8	22	A1
6439/BH109/0.5/S/1	0.182	6.1	10	A1
6439/BH110/0.1/S/1	0.774	6.7	39	A1
6439/BH110/0.5/S/1	0.196	6.7	20	A1
6439/BH110/1.0/S/1	0.168	6.6	26	A1
6439/BH110/2.0/S/1	0.342	5.8	63	A1

Notes:

1. Project # / Borehole # / Depth (mBGL).
2. Results from Column 4 in **Table 34** above.
3. Exposure classification for buried reinforced concrete based on Tables 4.8.1 and 4.8.2 of AS 3600 (2009).

The following exposure classifications should be adopted for the preliminary design of future development, which proposes to include buried concrete structures in accordance with AS 3600 (2009):

- A1 for buried concrete structures up to 1 m BGL.
- A2 for buried concrete structures below 1 m BGL.

The following conclusions and recommendations are made with regard to salinity at the Subject Site:

- Subsurface materials identified at the eleven (11) sampled locations are generally categorized as non-saline with the exception of one (1) sample in BH108, which was identified as slightly saline. Martens (2018) suggest, that no specified saline soil management strategies are considered to be required.
- Exposure classifications of 'A1' and 'A2' should be adopted for any future development concerning the preliminary design of buried concrete structures up to 1 m BGL and below 1 m BGL, respectively, in accordance with AS 3600 (2009). It is noted, that no built-form is proposed under this Development Application.
- Further assessment is recommended to be carried out (including laboratory testing), with regard to any future Development Applications to confirm characterisation of the

Site's salinity conditions, as well as assess any potential ensuing implications following consideration of final development details.

7.5.7 Groundwater

In the Geotechnical Report prepared by Martens (2019), they suggest, that groundwater inflow was not encountered during drilling of the boreholes up to 4.0 m BGL. Ephemeral perched groundwater may be encountered in the soil profile and / or at the soil / rock interface originating from infiltration of surface water during prolonged or intense rainfall events.

7.5.8 Water and Wastewater

Immediate potable water supply can be obtained from a new connection to the existing Sydney Water main identified along Tallawong Road. The proposed sewer (wastewater) infrastructure for the Proposed Development features a new 150 mm main sewer line collecting school buildings' waste water and gravitating collected supplies south to connect and discharge through the existing Sydney Water sewer line traversing the southern boundary of the Subject Site.

A Site Infrastructure Assessment Report has been prepared by Umow Lai and is provided at **Appendix 28** of this EIS.

7.5.9 Contamination

Contamination has been previously discussed throughout this EIS in **Section 4.2.10**, regarding the Proposed Development's compliance, concerning SEPP 55. Based on the scope of the investigation undertaken by DLA Environmental Services (refer to **Appendix 17** & **18** of this EIS) and the land use proposed for the Site (educational purposes), the following conclusions and recommendations are provided. These include:

- The historical use of the Subject Site comprised primarily of agriculture use until the 1970's, after which the premises transitioned into rural / residential properties which they have been currently identified as;
- Due to the historical nature of the still-standing erected residence, the potential for asbestos should be considered throughout the demolition stage of the proposed development. It is noted, that four (4) Areas of Environmental Concern (AECs), namely areas associated with the fill around the residential dwelling and the dam were identified as part of the results recorded in the contamination report;
- The investigations entailed throughout the contamination report included soil and surface water testing at six (6) various locations which were identified as potential AECs. From the identified locations, contaminants of potential concern that may have occurred as a result of the prior land use, as-well-as the associated fill material on the Subject Site were sampled and tested; however, no such exceedances were recorded in any of the soil samples gathered;
- Surface water of the associated dam traversing the properties should be chemically treated prior to discharge, and safe application to the land should be ensured so that no run-off would leave the Subject Site;
- Advised that a hazardous materials survey may be conducted on the existing residential dwelling prior to demolition to account for the management of any potential risks, namely, asbestos and polychlorinated bi-phenyls (PCBs); and,
- A contaminated land professional should be consulted with should any unexpected finds concerning stained or odorous material be uncovered during the demolition and construction phases of development.

In accordance with the requirements of SEPP 55 and adherence to the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011), the Report

undertaken by DLA Environmental Services (2017) concludes, that there is a low likelihood of unacceptable contamination to be present on the Subject Site due to the historical past and present status of the associated land use activities. No further consideration with regard to contamination is considered warranted under this SSD Application.

The complete Contamination Report undertaken by DLA Environmental Services (2017) can be located within **Appendix 17** & **18** of this EIS Submission.

7.5.10 Acid Sulphate Soils

Martens (2019) note, that with reference to the NSW Government Planning Portal mapping, the Subject Site is not mapped as containing a potential risk of Acid Sulphate Soils across the Subject Site. Additionally, the Site is underlain with residual soils of the Bringelly Shale group. Such soils do not typically contain traces of Acid Sulphate Soil materials and properties. Subsequently, Martens suggest, that there is no need to proceed with further investigations or the requirement to provide an Acid Sulphate Soils Management Plan for the Proposed Development.

7.6 WASTE

The *Waste Management Plan: The Sikh Grammar School – 151-161 Tallawong Road, Rouse Hill* prepared by Martens (2019) considers the construction and operational waste anticipated, as a result of the Proposed Development (refer to **Appendix 24**). The Waste Management Plan (WMP) has been prepared in accordance with the indicative construction staging, subject to the Proposal.

In accordance with the SEARs, the WMP was prepared with respect to the following legislative framework and relevant planning controls, including:

- Education SEPP;
- POEO Act;
- Sydney Region Growth Centres SEPP;
- BCC Growth Centres DCP;
- BDCP2015; and
- *Waste Avoidance and Resource Recovery Act 2001.*

7.6.1 Construction Waste

It is noted, that a Project Manager will administer a number of general waste management procedures, including:

- At the time of contract negotiation and tendering, all subcontractors and suppliers will be advised of the requirement to minimise waste, where possible. Bulk handling and use of reusable and returnable containers will be encouraged across the Site.
- Subcontractors will be informed, that their waste generation will be monitored and, that the generation of excessive quantities will be considered non-conforming.
- The waste disposal subcontractor and the waste processing and disposal facilities will be licensed to receive the waste expected to be generated on-site.
- Removal will be carried out to comply with relevant legal requirements, for which records in the form of a waste register will be maintained.

A number of general waste management procedures will also be administered by an indicative site supervisor at the time of construction, including:

- Establishing areas for recycling and waste storage;

- Informing employees and subcontractors of the Site's waste management and recycling policy during site inductions, i.e. 'Toolbox Talks';
- Receiving and holding waste disposal licenses and records;
- Recording quantities and types of waste and forwarding the information each month to the Project Manager for the Site;
- Maintain records of any soil being removed from the Site; and
- Monitoring stockpile levels and locations.

The demolition proposed (Stages 1 & 7) and indicative construction stages (all stages identified in **Figure 21** of this EIS) of the Proposed Development are anticipated to generate waste in excavation stream and construction stream. It is noted, that *The Hills Development Control Plan 2012* waste types were utilised, due to Blacktown City Council's waste types and rates being absent for the public record. **Table 36** and **Figure 21** below demonstrate the types and estimated volumes of waste, that are likely to be generated during the demolition and construction phases of the Proposed Development.

Table 36: Potential Waste Types, Classification and Quantity – Demolition

	Estimated Volume (m^3)[1]		
Waste Types	**Stage 1**	**Stage 7**	**Destination / Reuse / Recycling**
Sandstone	953	N/A	Reuse on-site for landscaping. The remainder is to be distributed to a landfill site by the appointed waste contractor.
Concrete	65	16,228[2]	Offsite disposal to a chosen crushing and recycling company.
Bricks	1,317	3,253	Clean and reuse on-site where possible for internal walls. Otherwise offsite disposal to crushing and recycling company.
Timber / Gyprock[3]	138	272	Chip timber and reuse onsite in landscaping. Remainder offsite to landscape suppliers.
Steel	8	64	Offsite to metal recyclers and remainder to landfill.
Roof Tiles	96	N/A	Disposal offsite to a crushing and recycling company.
Other	0	340	Reuse and recycle where possible. Otherwise removal by waste contractor to landfill.

Notes:

1. Estimated volume calculated based on areas provided in Staging Plan (PMDL, Feb 2019) and Waste Quantities Estimates provided in *Hills Shire Council DCP 2012: Appendix A Waste Management Plan*
2. Value is likely an overestimate. Demolition works are for the temporary hall and south eastern carpark which are not expected to produce a significant amount of concrete waste.
3. Hills Shire Council do not distinguish between timber and gyprock for waste quantities estimates generated during demolition works.
4. Waste types are to be classified in accordance with EPA NSW (2014) prior to offsite disposal.

Estimated Volume (m³) per Stage [1]										
Waste Types	1	2	3	4	5	6	7	8	9	Destination/ Reuse/Recycling
Timber	25	60	167	94	167	171	164	247	TBC	Chip timber and reuse onsite in landscaping. Remainder offsite to landscape supplies.
Concrete	90	222	617	345	616	630	604	911	TBC	Offsite disposal to crushing and recycling company.
Bricks	41	100	279	156	279	285	273	412	TBC	Clean and reuse onsite where possible for internal walls. Otherwise offsite disposal to crushing and recycling company.
Gyprock	41	102	282	158	282	288	277	417	TBC	Offsite disposal to landfill site by waste contractor.
Sand/Soil	42	104	289	162	288	295	283	426	TBC	Reuse onsite for landscaping. Remainder to landfill site by waste contractor.
Metal	13	33	90	51	90	92	88	133	TBC	Offsite to metal recyclers and remainder to landfill.
Other	24	59	164	92	164	168	161	242	TBC	Reuse and recycle where possible. Otherwise removal by waste contractor to landfill.

Notes

[1] Estimated volume calculated based on areas provided in Staging Plan (PMDL, Feb 2019) and Waste Quantities Estimates provided in Hills Shire Council DCP 2012: Appendix A *Waste Management Plan*

[2] Waste types are to be classified in accordance with EPA NSW (2014) prior to offsite disposal.

Figure 21 Potential Waste Types, Classifications and Quantity – Construction (Source: Martens, 2019)

7.6.1.1 Waste Handling

Excavation Waste

In the Contamination Report prepared by DLA Environmental Services (refer to **Appendix 17** & **18** of this EIS), they recommend remediation of any identified ACM / soil prior to commencing works for the Proposed Development. Formal waste classification in accordance with the NSW EPA (2014) Waste Classification Guidelines is required in such instances, for which samples are to be collected at a rate determined by the appointed supervising engineer, and / or in accordance with a Remediation Action Plan (RAP) (if available) to adequately assess the material, in accordance with the NSW EPA Guidelines.

It is noted, that the proposed earthworks and landscaping shall be designed to minimise the amount of waste generated. With regard to excavated material, that is free from contamination, a designated stock piling area should be maintained. Storage piles are to be grass seeded with Hydromulch (or similar products) between stages for protection from water and wind erosion. Any excess excavation waste shall be classified in accordance with the NSW EPA Guidelines and transported to licenced processing facilities.

7.6.1.2 Waste Management and Minimisation

The construction phase of development is anticipated to produce materials, that will be stockpiles for either reuse on-site, or wastes for offsite disposal. It is noted, that specific site stockpiles are required for varied construction materials (comprising aggregates; concrete; fencing; prefabricated structural elements; and erosion protection materials), construction wastes and any spoil.

The location of stockpiles should be determined on-site to allow ease of access, whilst ensuring they are relatively clear of overland flow paths and to minimise the impact of on-site amenity. Stockpiles should be appropriately designed to incorporate sediment and erosion controls in accordance with the ESCP prepared by Martens (2019).

During the construction phase, skip bins will be utilised to manage any generated solid waste. These bins will be covered overnight and during windy conditions to prevent dust and material being lost and spread over the Subject Site.

Access for waste management service vehicles is proposed to be via Tallawong Road and (once constructed) the indicative access road traversing the northern boundary of the Site. The removal of waste is anticipated to be carried out during approved construction hours.

7.6.2 Operational Waste

Operation of the proposed school and relevant components is anticipated to generate the following waste streams, including:

- Cardboard and paper recycling;
- Commingled recycling;
- Food and organics; and
- General waste.

Additional smaller waste streams may include toner cartridge and e-waste recycling, light tube / globe recycling and battery recycling.

As Council's Guidelines do not provide waste generation rates fir schools, rates from Randwick City Council were adopted, which was identified as the most accurate assumption for the Proposed Development's operational phase, which recommended the following:

- 1.5 L/day/student for garbage; and
- 0.5 L/day/student for recycling.

Given, the proposed Student Accommodation is anticipated to be occupied full-time by students and staff, the following generation rates should be applied:

- 9 L/day/student for garbage; and
- 3 L/day/student for recycling.

Based on the predicted school populations (identified in **Table 37** of this EIS), anticipated waste volumes produced by each component of the Subject Site are outlined in **Table 37** below. It is assumed, that full-time staff waste generation rates are the same as that for students. Additionally, it is noted, that anticipated waste generated for each stage of the Proposed Development is to be confirmed upon issue of a Construction Certificate, based on the maximum stage population and generation rates adopted above.

Table 37: Potential Waste Types and Estimated Quantity - Operation

	Estimated Volume (L/day)			
Waste Types	**Early Learning Centre**	**Primary School**	**Secondary School**	**Student Accommodation**
Garbage	156	927	1,079	1,107
Recycling	52	309	360	369

7.6.2.1 Waste Management Systems

Waste Collection

Estimated waste management facility requirements for each component of the proposed school are outlined in **Table 38** below.

Table 38: Recommended Waste Management Facility Requirements							
Waste Types	**Estimated Waste per Week (L)**	**Bin Type (L)**	**Number of Bins**	**Weekly Clearance Frequency**	**Capacity (weekly) (L)**	**Footprint per bin (m^2)**	**Total Footprint (m^2)**
Early Learning Centre							
Garbage	780	240	4	1	960	0.43	1.72
Recycling	260	240	2	1	480	0.43	1.72
Total	1,020				1,440		3.44
Primary School							
Garbage	4,635	1,100	2	2	4,640	1.37	2.74
		240	1	1		0.43	0.43
Recycling	1,545	1,100	1	1	1,580	1.37	1.37
		240	2	1		0.43	0.86
Total	6,180				6,220		5.40
Secondary School							
Garbage	5,393	1,100	2	2	5,840	1.37	2.74
		240	3	2		0.43	1.29
Recycling	1,798	1,100	1	1	1,820	1.37	1.37
		240	3	1		0.43	1.29
Total	7,190						6.69
Student Accommodation							
Garbage	7,749[1]	1,100	3	2	8,040	1.37	4.11
		240	3	2		043	1.29
Recycling	2,583[1]	1,100	1	2	2,680	1.37	1.37
		240	2	1		0.43	0.86
Total	10,332				10,720		7.63

Waste Diversion Opportunities

Martens recommend, that on-site composting facilities be created during Construction Stage 7 for the Proposed Development, once landscape works are undertaken and Gurdwara and Langer is constructed accordingly. It is noted, that such efforts contribute to best practice waste management and reduces the overall total waste generation anticipated.

Other Waste

The following waste streams will be collected on call as required, including:

1. Green Waste / Vegetation – a bulk 3 m^2 front lift bin is recommended for the management of this particular stream, which could be located adjacent to the indicative waste storage area toward the north eastern end of the Site (refer to **Figure 22** below).
2. Battery Recycling.
3. E-waste, toner and cartridge recycling.

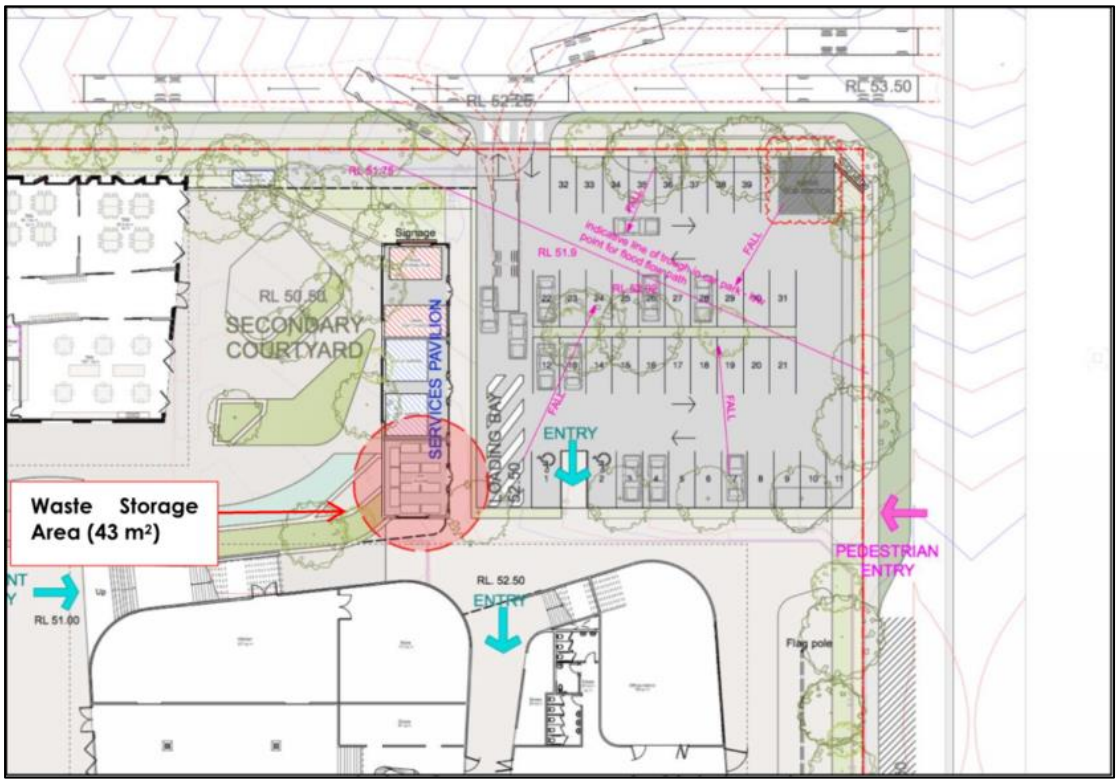


Figure 22 Location of Waste Storage Area for the Primary and Secondary School (Source: PMDL, 2019)

7.7 NOISE AND VIBRATION

A Noise and Vibration Impact Assessment has been undertaken and prepared by Resonate for the Proposed Development (refer to **Appendix 21**), which has considered:

- Noise and vibration generated from the relevant earthworks, construction and operational phases of the Proposed Development;
- The location of sensitive residential noise receptors / receivers;
- Potential noise sources;
- Relevant acoustic criteria from Council and the NSW EPA; and
- Controls and recommendations necessary to ensure compliance with relevant noise emission goals.

Resonate note, that the Site currently has sparsely located sensitive residential receivers adjacent; however, the area is earmarked for future residential development and will consist of more residential receivers in proximity to the Site in the future. The nearest sensitive receiver locations are identified in **Figure 23** and **Table 39** below, for which 163 Tallawong Road represents the nearest identified sensitive receiver.

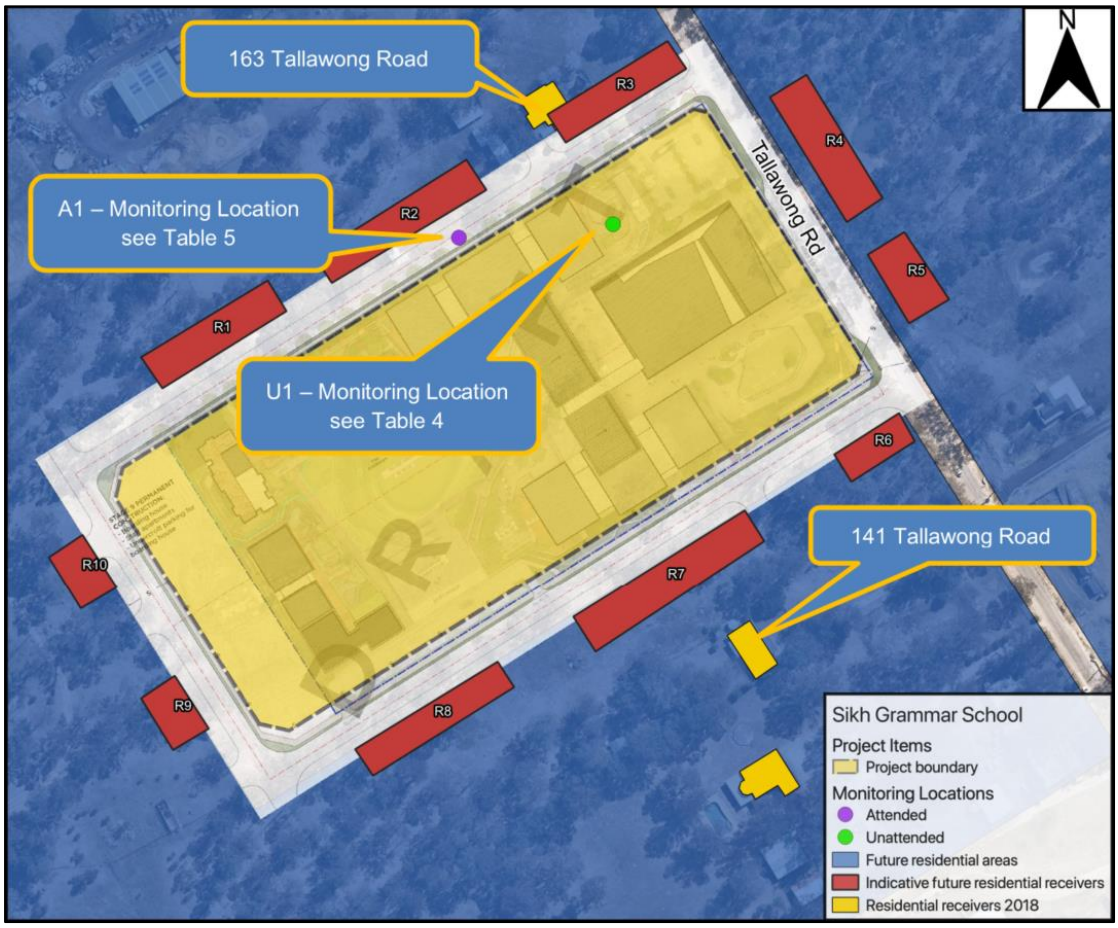


Figure 23 Receiver and Noise Monitoring Locations (Source: Resonate, 2019)

Table 39: Noise and Vibration Sensitive Residential Land Uses	
Reference	**Description**
R1	Future residential development
R2	Future residential development
R3	Future residential development
R4	Future residential development
R5	Future residential development
R6	Future residential development
R7	Future residential development
R8	Future residential development
R9	Future residential development
R10	Future residential development

Unattended noise monitoring was undertaken between 25 – 31 October 2018 to measure existing ambient noise levels. It is noted, to accurately determine the environmental noise, a 15-20-minute measurement is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters. The resultant unattended noise monitoring levels are outlined in **Table 40** below, whilst the attended noise monitoring levels are outlined in **Table 41**.

Table 40: Unattended Noise Monitoring Results						
Location	**Rating Background Level, dB(A) L_{90}[1]**			**Ambient Noise Level, dB(A) L_{eq}**		
	Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am	Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am
U1 – On-site	37	38	32	49	49	43

1. The rating background level is a measure of the typical minimum steady background noise level for each time of day.

Table 41: Attended Noise Monitoring Results					
Location	**Measured Noise Level, dB(A), 15 min**				**Description**
	L_{Max}	**L_{10}**	**L_{eq}**	**L_{90}**	
A1 – On-site	67	52	50	47	Located near the unattended logger site. Largely representative of ambient levels. Low levels of road traffic on Tallawong Road and distant construction noise audible. Construction noise controlling the higher L_{90} background during this measurement compared with the logger L_{90} over the day time period for each day during the logging period.

7.7.1 Construction Noise

To satisfactorily address the various construction stages of the Proposed Development, the construction staging has been broken down into the following subheadings as outlined in **Table 42** by Resonate. It is noted, that the assessment undertaken includes consideration of standard hours and outside of the standard hours of work.

Table 42: Anticipated Typical Construction Activities	
Stage	**Description**
A) Site Establishment	Bulk excavation and preparation for substructures.
B) Substructure	Piling works, followed by the creation of substructures.
C) Installation of temporary structures	Crane work and power tools.
D) Superstructure and facades	Creation of building superstructures and installation of building façade progressively.
E) External landscaping	Landscaping works around the Site precinct.
F) Paving / asphalting	Delivery of raw materials, placement of surface material.
G) Demolition	Demolition with excavator and jackhammer.

Construction noise in NSW is assessed using the NSW Environment Protection Authority (EPA) *Interim Construction Noise Guideline* (ICNG). It is noted, that the ICNG aims to manage noise from construction works that are regulated by the NSW EPA.

The ICNG prescribes $L_{eq,\ 15\ min}$ Noise Management Levels (NML) for sensitive receivers as part of a quantitative construction noise assessment. **Table 43** below outlines the NMLs applicable

to the sensitive land uses surrounding the Subject Site, during the construction phase of development.

Table 43: Project Specific Noise Management Levels				
Land Use	**Noise Management Level, dB(A)**			
	Standard Working Hours RBL + 10 dB	Outside of Standard Working Hours RBL + 5 dB		
		Day	Evening	Night
Residential Land Uses	47	42	43	37

It is noted, that ground vibration generated by construction can have a range of effects on buildings and building occupants. The main effects are generally classified as:

- Human disturbance – disturbance to building occupants, for which vibration inconveniences or interferes with the activities of the occupants or users of the building; and
- Effects on building structures – vibration which may compromise the condition of the building structure itself.

With regard to the Proposed Development, construction vibration criteria have been adopted from the following two (2) sources:

1. Cosmetic and structural damage to buildings: German Standard DIN 4150-3[1].
2. Human comfort: *Assessing Vibration – A Technical Guideline* (the Vibration Guideline).

Table 44 below summarises the assumed power levels (L_W) for the major construction noise sources, which would reasonably be expected to be on-site during each phase. The sound power levels have been based on data obtained from previous measurements undertaken by Resonate and those outlined within BS 5228-1[2], AS2436[3] and CNVG:2016[4]. A worst-case scenario sound power level has been adopted for the assessment undertaken.

Table 44: Construction Noise Source Power Levels				
Stage	**Plant and Equipment**	**Plant Items**	**Lw, dB(A)**	**Reference**
A) Site Establishment	Tracked excavator 21 t	1	110	BS 5228-1:2009
	Roller (vibratory)	1	109	AS2436
	Dozer 41 t	1	108	BS 5228-1:2009
	Dump truck	1	110	CNVG:2016
	Total Lw		115	
	Total Lw including operating time per 15 min		115	
B) Substructure	Piling Rig (Bored)	1	111	AS2436
	Wheeled Mobile Crane	1	98	BS 5228-1:2009
	Excavator (tracked) 35 t	1	110	CNVG:2016
	Concrete agitator	1	109	AS2436

[2] BS 5228-1: 2009 *Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise.*
[3] AS 2436: 2010 *Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites.*
[4] CNVG: 2016 *NSW RMS – Construction Noise and Vibration Guideline*

	Concrete pump truck	1	109	AS2436
	Water cart	1	107	AS2436
	Total Lw		116	
	Total Lw including operating times		114	
C) Installation of Temporary Structures	Wheeled mobile crane	1	98	BS 5228-1:2009
	Portable generator 2.5 kV*A	1	98	BS 5228-1:2009
	Franna Crane	1	98	CNVG:2016
	Power tools	1	94	-
	Diesel scissor lift	1	106	BS 5228-1:2009
	Ute / crew truck	1	103	AS2436
	Dump truck	1	110	CNVG:2016
	Total Lw		113	
	Total Lw including operating times		111	
D) Superstructure and Facades	Concrete agitator	1	109	AS2436
	Concrete pump truck	1	109	AS2436
	Wheeled mobile crane	1	98	BS 5228-1:2009
	Hand tools	1	94	-
	Water cart	1	107	AS2436
	Dump truck	1	110	CNVG:2016
	Total Lw		115	
	Total Lw including operating times		111	
E) External Landscaping	Tracked excavator 21 t	1	110	BS 5228-1:2009
	Grader	1	113	CNVG:2016
	Dump truck	1	110	CNVG:2016
	Total Lw		116	
	Total Lw including operating times		113	
F) Paving / asphalting	Pavement laying machine	1	114	CNVG:2016
	Dump truck	1	110	CNVG:2016
	Asphalt truck & sprayer	1	106	CNVG:2016
	Concrete agitator	1	109	AS2436
	Smooth drum roller	1	107	CNVG:2016
	Total Lw		117	
	Total Lw including operating times		116	
G) Demolition	Excavator (tracked) 35 t	1	110	CNVG:2016
	Jackhammer	1	121	AS2436
	Dump truck	1	110	CNVG:2016
	Water cart	1	107	AS2436
	Total Lw		122	

	Total Lw including operating times		118	

7.7.1.1 Stage 1 – Primary School

Table 45 outlines the anticipated construction noise during Stage 1 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R1 – during site establishment, substructure and installation of temporary structures for the relocation of temporary primary school buildings;
- R1 – during site establishment for the Gurdwara & Langar / multi-purpose hall;
- R1 – during site establishment and paving / asphalting for the temporary on-ground parking;
- R3 & R4 – during the proposed demolition of the existing house located on 161 Tallawong Road; and
- R3 & R4 – during the demolition of temporary on-ground parking.

Table 45: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 1

Stage 1	**Relocate Primary School Building (Temporary) – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	81	66	58	58	57	57	61	64	63	67
	B) Substructure	80	65	57	57	56	56	60	63	62	66
	C) Installation of Temporary Structures	77	62	54	54	53	53	57	60	59	63
	Multi-purpose Hall (Temporary) – NML 47 dB(A)										
	A) Site Establishment	75	72	60	60	60	59	62	62	61	64
	B) Substructure	74	71	59	59	59	58	61	61	60	63
	C) Installation of Temporary Structures	71	68	56	56	56	55	58	58	57	60
	On-ground Parking (Temporary) – NML 47 dB(A)										
	A) Site Establishment	81	63	57	57	57	57	61	65	66	72
	F) Paving / Asphalting	82	64	58	58	58	58	62	66	67	73
	Play Space (Temporary) – NML 47 dB(A)										
	E) External Landscaping	73	66	58	57	58	58	62	63	61	63
	Existing House (Demolition) – NML 47 dB(A)										
	G) Demolition	61	71	87	80	69	67	65	60	59	60
	Temporary On-Ground Car Park (Demolition) – NML 47 dB(A)										
	G) Demolition	69	69	91	82	69	67	65	61	58	59

7.7.1.2 Stage 2 – Primary School

Table 46 outlines the anticipated construction noise during Stage 2 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R7 – during site establishment and building of the substructure for the primary school block; and
- R8 – during paving / asphalting for the multipurpose court and cricket nets.

Table 46: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 2											
Stage 2	**Primary School Block – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	62	64	62	62	60	63	78	64	60	58
	B) Substructure	61	63	61	61	59	62	77	63	59	57
	D) Superstructure and Facades	58	60	58	58	56	59	74	60	56	54
	Village Green – NML 47 dB(A)										
	E) External Landscaping	67	63	57	57	56	57	64	66	62	63
	K-2 Play Space – NML 47 dB(A)										
	E) External Landscaping	62	63	59	59	59	60	72	66	60	58
	Multipurpose Court and Cricket Nets – NML 47 dB(A)										
	E) External Landscaping	63	60	57	57	57	57	65	73	62	62
	F) Paving / Asphalting	66	63	60	60	60	60	68	76	65	65

7.7.1.3 Stage 3A – Primary School

Table 47 outlines the anticipated construction noise during Stage 3A of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R7 – during the site establishment, building of the substructure and superstructure and facades for the primary school block;
- R7 – during the external landscaping for the part civic heart construction; and
- R7 – during the site establishment and paving / asphalting of the southern entry to future underground parking proposed.

Table 47: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 3A											
Stage 3A	**Primary School Block, including Library and Staff Room on 3rd and 4th Floors – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	61	65	62	62	63	66	80	62	58	59
	B) Substructure	60	64	61	61	62	65	79	61	57	58
	D) Superstructure and Facades	57	61	58	58	59	62	76	58	54	55
	Part Civic Heart Construction under Library Building – NML 47 dB(A)										
	E) External Landscaping	59	63	60	60	61	64	78	60	56	57
	Southern Entry to Future Underground Parking – NML 47 dB(A)										
	A) Site Establishment	60	63	62	62	64	67	78	60	56	58
	F) Paving / Asphalting	61	64	63	63	65	68	79	61	57	59
	Southern Half-Road Construction – NML 47 dB(A)										
	A) Site Establishment	62	62	63	65	74	89	89	90	72	64
	F) Paving / Asphalting	63	63	64	66	75	90	90	91	73	65

	Western Half-Road Construction – NML 47 dB(A)										
	A) Site Establishment	68	60	56	55	55	56	60	70	92	90
	F) Paving / Asphalting	69	61	57	56	56	57	61	71	93	91
	Play Space to Southwest Corner (Temporary) – NML 47 dB(A)										
	E) External Landscaping	58	61	62	62	65	70	74	57	55	56

7.7.1.4 Stage 3B – Early Learning Centre

Table 48 outlines the anticipated construction noise during Stage 3B of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R8 – during the site establishment, substructure and facades for the ELC; and
- R8 – during the site establishment and paving / asphalting of the ELC car park and kiss & drop.

Table 48: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 3B											
Stage 3B	**Early Learning Centre (ELC) – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	68	61	56	55	57	57	63	78	69	70
	B) Substructure	67	60	55	54	56	56	62	77	68	69
	D) Superstructure and Facades	64	57	52	51	53	53	59	74	65	66
	ELC Outdoor Play Area – NML 47 dB(A)										
	E) External Landscaping	67	60	54	53	55	55	60	71	64	65
	ELC Car Park and Kiss & Drop – NML 47 dB(A)										
	A) Site Establishment	62	61	59	60	60	61	73	83	69	64
	F) Paving / Asphalting	63	62	60	61	61	62	74	84	70	65

7.7.1.5 Stage 4 – Secondary School

Table 49 outlines the anticipated construction noise during Stage 4 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R2 – during the Site establishment and substructure for the secondary school block.

Table 49: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 4											
Stage 4	**Secondary School Block with Specialist Science Facilities – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	68	78	62	60	61	60	63	61	58	62
	B) Substructure	67	77	61	59	60	59	62	60	57	61
	D) Superstructure and Facades	64	74	58	56	57	56	59	57	54	58
	Part Village Green Construction – NML 47 dB(A)										
	E) External Landscaping	65	70	59	59	59	59	66	62	58	60

7.7.1.6 Stage 5 – Secondary School

Table 50 outlines the anticipated construction noise during Stage 5 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R2 – during the site establishment, substructure, superstructure and facades for the secondary school block; and
- R5 & R6 – during paving / asphalting for the temporary on-ground kiss & drop car park.

Table 50: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 5											
Stage 5	**Secondary School Block with Café, TAS, Performing Visual Arts, Secondary Library and Staff Room – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	64	82	65	63	63	63	67	60	58	60
	B) Substructure	63	81	64	62	62	62	66	59	57	59
	D) Superstructure and Facades	60	78	61	59	59	59	63	56	54	56
	Part Civic Heart Construction – NML 47 dB(A)										
	A) Site Establishment	63	72	65	65	64	64	68	61	59	60
	B) Substructure	62	71	64	64	63	63	67	60	58	59
	D) Superstructure and Facades	59	68	61	61	60	60	64	57	55	56
	On-ground Kiss & Drop (Temporary) – NML 47 dB(A)										
	F) Paving / Asphalting	59	63	67	69	78	82	70	59	57	58

7.7.1.7 Stage 6 – Secondary School

Table 51 outlines the anticipated construction noise during Stage 6 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R2 – during the site establishment and substructure for the secondary school block extension.

Table 51: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 6											
Stage 6	**Secondary School Block with Specialist TAS Facilities and Remaining Homebased – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	61	77	70	66	63	63	62	59	57	56
	B) Substructure	60	76	69	65	62	62	61	58	56	55
	D) Superstructure and Facades	57	73	66	62	59	59	58	55	53	52
	TAS Outdoor Workshops – NML 47 dB(A)										
	E) External Landscaping	57	69	73	66	63	62	60	56	55	55
	Services Pavilion – NML 47 dB(A)										
	B) Substructure	57	66	75	68	63	62	60	55	55	56
	D) Superstructure and Facades	54	63	72	65	60	59	57	52	52	53

7.7.1.8 Stage 7 – Multi-purpose Hall and Gurdwara & Langar

Table 52 outlines the anticipated construction noise during Stage 7 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R4 – during the site establishment for the multi-purpose hall and Gurdwara & Langar;
- R4, R5 & R6 – during site establishment and substructure of the underground car park;
- R6 – during the superstructure and facades for the underground car park;
- R5 & R6 – during the demolition of the temporary parking to the southeast corner of the Site; and
- R1 – during the demolition of the temporary multi-purpose hall.

Table 52: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 7

Stage 7	**Multi-purpose Hall & Bridge Link / Gurdwara & Langar – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	60	68	71	75	74	70	67	60	57	58
	B) Substructure	59	67	70	74	73	69	66	59	56	57
	D) Superstructure and Facades	56	64	67	71	70	66	63	56	53	54
	Finish Civic Heart Construction – NML 47 dB(A)										
	A) Site Establishment	60	65	67	68	70	70	69	59	55	58
	B) Substructure	59	64	66	67	69	69	68	58	54	57
	D) Superstructure and Facades	56	61	63	64	66	66	65	55	51	54
	Landscaping along Tallawong Road – NML 47 dB(A)										
	E) External Landscaping	56	62	72	78	79	79	62	55	53	55
	Secondary School Courtyard – NML 47 dB(A)										
	E) External Landscaping	73	71	58	58	58	57	60	60	59	62
	Underground Car Park – NML 47 dB(A)										
	A) Site Establishment	60	65	67	70	78	81	77	60	57	58
	B) Substructure	59	64	66	69	77	80	76	59	56	57
	D) Superstructure and Facades	56	61	63	66	74	77	73	56	53	54
	Temporary Parking to the Southeast Corner (Demolition) – NML 47 dB(A)										
	G) Demolition	61	65	69	71	81	84	72	61	59	60
	Temporary Multi-purpose Hall (Demolition) – NML 47 dB(A)										
	G) Demolition	79	75	63	63	63	62	65	65	64	67

7.7.1.9 Stage 8 – Administration Building & Forecourt

Table 53 outlines the anticipated construction noise during Stage 8 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R1 – during the demolition of relocatable classrooms and temporary car park, located to the northwest.

Table 53: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 8											
Stage 8	**Administration Building / Final 3 GLAs for Primary School / School Reception and Sick Bay / Principal and Support Staff Office – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	61	65	62	62	63	65	73	61	58	59
	B) Substructure	60	64	61	61	62	64	72	60	57	58
	D) Superstructure and Facades	57	61	58	58	59	61	69	57	54	55
	Temporary Car Park to the Northwest Corner (Demolition) – NML 47 dB(A)										
	G) Demolition	84	66	60	60	60	60	64	68	69	75
	Relocatable Classrooms (Demolition) – NML 47 dB(A)										
	G) Demolition	85	69	61	61	60	60	64	67	66	70

7.7.1.10 Stage 9 – Student Boarding House (Student Accommodation)

Table 54 outlines the anticipated construction noise during Stage 9 of the construction phase of the Proposed Development. It is noted, that the highly affected receivers are as follows:

- R1 – during the site establishment and substructure for the proposed Student Accommodation.

Table 54: Typical Worst-case Predicted External Construction Noise Levels During Construction Stage 9											
Stage 9	**Boarding House / Staff Apartments / Undercroft Parking for Boarding House – NML 47 dB(A)**										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
	A) Site Establishment	79	67	58	58	59	57	61	65	66	71
	B) Substructure	78	66	57	57	58	56	60	64	65	70
	D) Superstructure and Facades	75	63	54	54	55	53	57	61	62	67

It is noted, that due to the low existing background noise environment at the Subject Site, the NML is considered to relatively low for construction noise, for which it is identified as 47 dB(A). The existing noise sensitive receivers close to the Site at 163 and 141 Tallawong Road are noted as being further away than Resonate modelled the future residential receivers adjacent to the Site. Therefore, predicted construction noise levels at the existing residential properties will be similar to R3 for Tallawong Road and lower at 141 Tallawong Road.

Table 55 below summarises recommended safe working distances for key vibration-generating activities that would be expected during the construction phase of development.

Table 55: Recommended Safe Working Distances for Key Vibration Generating Activities					
Plant	**Rating**	**Typical Safe Working Distance for Occupant Comfort (m)**		**Typical Safe Working Distance for Building Damage (m)**	
		Preferred Vibration Target	Maximum Vibration Target	Heritage Structure	Commercial Buildings
	<7 t	≥35	≥20	≥10	≥2

Vibratory Roller	7 t – 12 t	≥50	≥30	≥15	≥5
	≥13 t	≥75	≥40	≥20	≥10
Excavator	Large Excavator Digging	≥25	≥15	≥5	≥1
Bored Piling	≤800 mm	≥20	≥10	≥2	≥1
Jackhammer	Handheld	-[1]	-[1]	≥3	≥1

1. Avoid contact with structure.

Based on the safe working distances listed above, occupant comfort vibration impacts on buildings may be expected at locations in line with R1-R7, whilst construction work is being undertaken.

To combat any anticipated noise and vibration impacts during the construction phase of development, the following recommendations and mitigation measures should be adopted for the Proposed Development:

1. **Construction Noise and Vibration Management Plan:** prior to the commencement of major construction works, the contractor should develop and implement a Construction Noise and Vibration Management Plan (CNVMP). The CNVMP should:
    - Identify relevant construction noise and vibration criteria as detailed in this report.
    - Identify neighbouring sensitive land uses for noise and vibration.
    - Summarise key noise and vibration generating construction activities and the associated predicted levels at neighbouring land uses.
    - Identify reasonable and feasible work practices to be implemented during the works.
    - Summarise stakeholder consultation and complaints handling procedures for noise and vibration.
2. **Stakeholder Consultation:** nearby stakeholders should be consulted prior to the works and kept regularly informed of potential noise and vibration impacts from the works.
3. **Work Programming:** Construction works should be limited to the following hours per day to maintain acceptable levels of acoustic amenity across the Site and surrounding area:
    - Monday to Friday: 7am to 6pm.
    - Saturday: 8am to 1pm.
    - No work on Sundays and public holidays.
    - Schedule construction works during school holidays.
    - Implementation of respite hours agreed with residents if necessary.
4. **Respite Periods:** Are to be agreed with the community.
5. **Truck Movements and Site Access:** The design and selection of site access routes shall consider the potential disturbance to residents. In particular:
    - Site access and delivery points shall be located as far away from residences as possible.
    - Truck movements shall use arterial roads and be diverted away from residential streets (where feasible).
    - Deliveries to / from the Site shall not occur during the night time period and outside of standard working hours, where possible.
6. **Site Management:** Site management procedures to be implemented, should include:
    - Processes that generate lower noise/vibration levels should be selected where feasible. In particular small vibratory rollers <7 t should be used along the Site boundary as the larger models exceed the safe working distance criteria for vibration.
    - Noisy plant should be located as far away from residences as is practical to allow efficient and safe completion of the task.
    - Site compounds should be located as far away as possible from residences.
    - Equipment that is used intermittently should be shut down or throttled down to a minimum during periods where it is not in use.

- Works should be planned to minimise the noise from reversing signals.
- Warning horns should not be used as signalling devices.
- Two way radios should be set to the minimum effective volume.
- Noise associated with packing up plant and equipment at the end of works should be minimised.
- Potential shielding provided by site topography and intervening buildings should be considered in locating equipment.
- It is recommended to use mobile noise barriers/enclosures when possible.

7. **Equipment Management:**
   - Selection of low-noise plant and equipment (where possible).
   - Equipment should be well maintained.
   - Equipment should have quality mufflers and silencers installed where relevant.
   - Equipment not in use on site should be shut down.
   - Tasks should be completed using the minimum feasible power and equipment.
8. **Vibration Monitoring:** Resonate recommend conducting vibration monitoring when construction work is being undertaken inside or close to the safe working distances, to account for any complaints, should they be received.

7.7.2 Operational Noise

From an operational standpoint, noise emissions from the Proposed Development should comply with the requirements of the NSW Noise Policy for Industry (NPI). The NPI applies to noise emissions from rooftop plant and the like at the Subject Site.

The NPI sets two (2) separate noise criteria to meet desirable environmental outcomes:

1. Intrusiveness – steady-state noise from the Site should be controlled to no more than 5 dB(A) above the background noise level in the area. In this case, the steady-state L_{eq} noise level should not exceed the RBL measured for different time periods in the environment. The intrusiveness criteria is measured over a 15 minute period.
2. Amenity – amenity criteria are set based on the land use of an area. It requires noise levels from new industrial noise sources to consider the existing industrial noise levels, such that the cumulative effect of multiple sources does not produce noise levels, that would significantly exceed the amenity criteria. As the amenity criteria is provided in the NPI document as a period level (between 7am and 6pm for day time activities), 3 dB is added to the amenity noise level to approximately represent a 15 minute period for direct comparison to the intrusiveness criterion.

Table 56 outlined below provides the NPI noise emission criteria for residential land uses for the day, evening and night time periods, respectively.

Table 56: NPI Noise Emission Criteria for Residential Land Uses

Location	**NPI Noise Level (dB re 20 µPa) during Period**		
Residential Receivers	**Daytime 7am – 6pm**	**Evening 6pm – 10pm**	**Night 10pm – 7am**
Rating Background Level (RBL)	37	38	32
Intrusive Criterion (RBL + 5 dB)	42	43	37
Amenity Criterion (NPI amenity level – 5 dB + 3 dB) (Rural[1])	48	43	38
NPI Project specific criteria for residential land uses[2]	42	43	37

1. A rural classification has been adopted for the Site, described as an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic.
2. The project-specific criteria are the lowest of the intrusive criterion and the amenity criterion for new sources for each time period.

Noise impacts anticipated from the general operation of the proposed School are to be assessed in accordance with the site-specific noise criteria outlined in **Table 56** above.

Table 57 below provides the intrusiveness criteria for all surrounding residential receivers areas. Furthermore, noise criteria for children playing is typically background + 10 dB(A). For the purposes of the Noise and Vibration Impact Assessment undertaken by Resonate, the assumption has been made, that outdoor recreation areas will generally be utilised for up to two (2) hours per day and have therefore used the Association of Australian Acoustical Consultants (AAAC) Guidelines for Child Care Centre Acoustic Assessment (2013) approach to set the noise targets (RBL + 10 dB(A)) for the Proposed Development.

Table 57: Outdoor Recreation Noise Criteria			
Location	**NPI / AAAC Noise Level (dB re 20 µPa) during Period**		
Residential Receivers	**Daytime 7am – 6pm**	**Evening 6pm – 10pm**	**Night 10pm – 7am**
Rating Background Level (RBL)	37	38	-
NPI Intrusive Criterion (RBL + 5 dB)	42	43	-
AAAC Guidelines – Intrusive criterion for up to 2 hours (total) per day (RBL + 10 dB)	47	48	-
Project specific criteria for residential land uses	47	48	-

The following noise generating activities associated with the Proposed Development, include:

- External mechanical plant;
- Public Address (PA) system; school bells; and non-emergency alarms;
- Use of grounds by students and staff as outdoor recreation / play and teaching areas;
- On-site car park activity noise; and
- Use of the Gurdwara for performance and sporting events, particularly outside of regular operating hours (special events).

7.7.2.1 Mechanical Services Plant

It is understood, that external mechanical services for school buildings would typically operate during the daytime period. Mechanical services for the proposed Gurdwara and Langar would operate during the daytime and evening period and night time during the occasional events anticipated (refer to **Figure 24** for proposed plant locations).

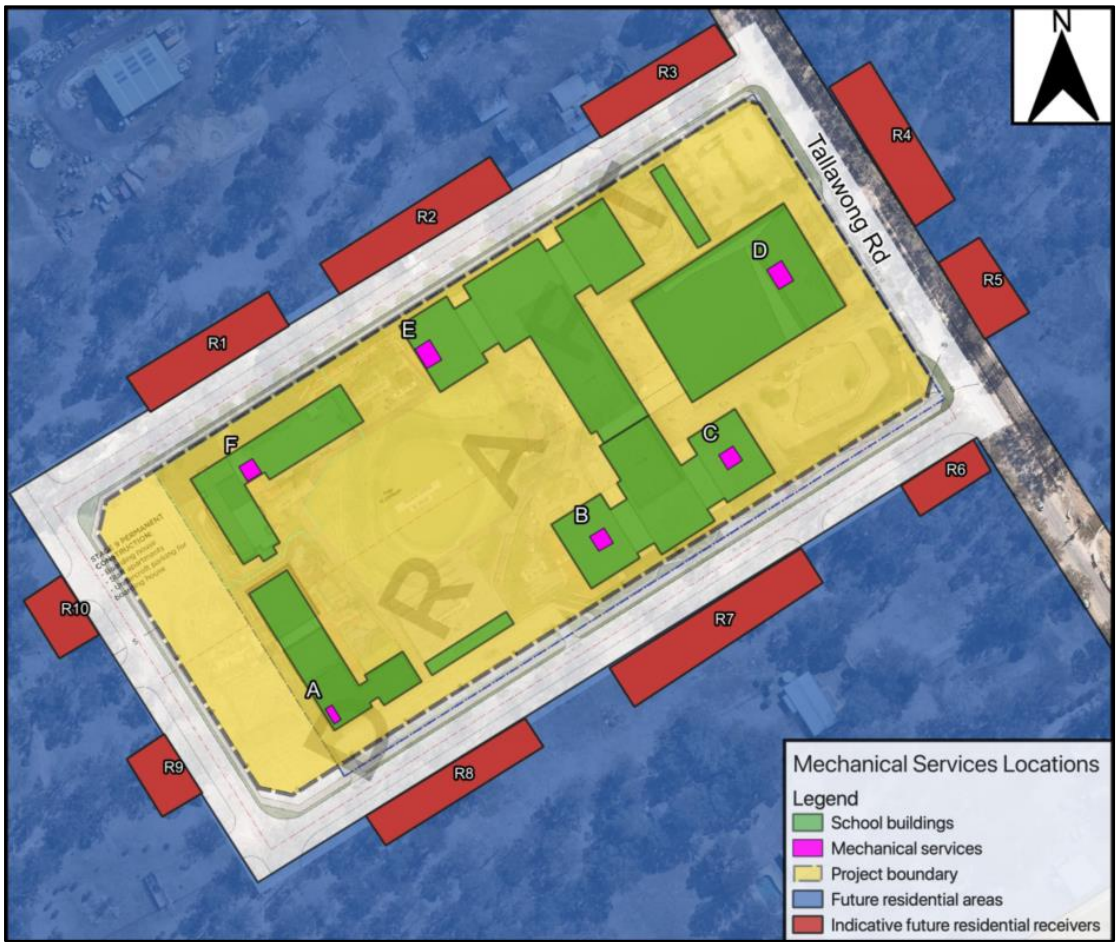


Figure 24 Proposed Mechanical Plant Locations – Sikh Grammar School (Source: Resonate, 2019)

The assessment undertaken by Resonate did not consider the erection of noise barriers around the plants areas; however, the addition of noise barriers around the plant would likely increase the maximum predicted acceptable noise emission levels by an additional 10 dB(A). It is noted, that an adverse noise impact to the surrounding noise sensitive receivers is unlikely and the option for further noise reduction, via means of noise barriers could be considered as a practical noise control method. The overall risk of any adverse noise impacts to the immediate surrounding receivers is considered to be negligible; however, detailed review is recommended to be undertaken during the relevant detailed design phases of the Proposed Development.

7.7.2.2 Public Address System (Internal)

The Resonate Report notes, that to achieve an acceptable level of speech intelligibility needed for effective communication, PA sound levels must exceed background levels by at least 10-15 dB (10-15 dB Signal no Noise Ratio (SNR)) across all zones.

Occupational noise levels in the school areas where the PA is installed are not expected to be greater than 60 dB(A) during normal school activities. To achieve a SNR of 15 dB, the perimeter of each zone will not exceed 75 dB(A). **Figure 25** below illustrates the nearest sensitive receivers to possible PA zones, for which are located within all proposed buildings on-site.

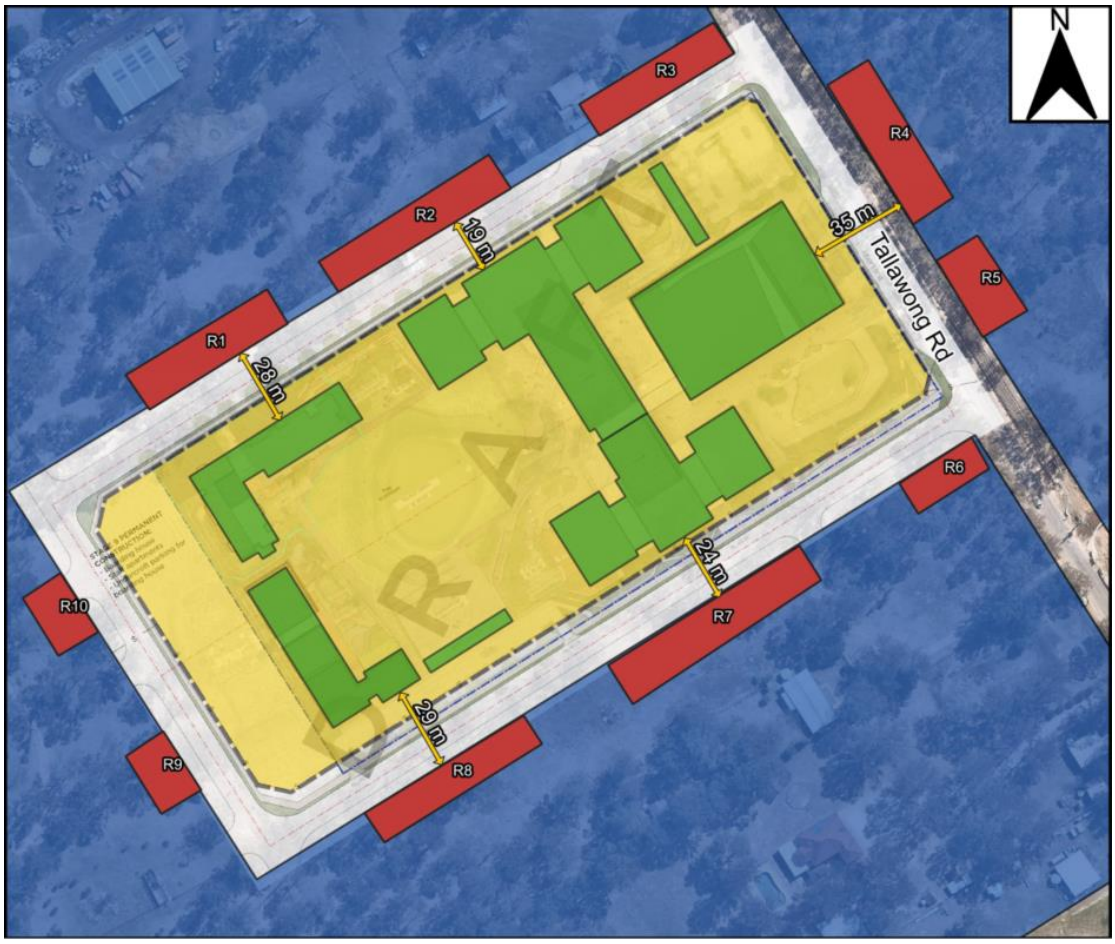


Figure 25 Closest Sensitive Receivers (R1, R2, R4, R7 and R8) in Proximity to the Internal PA Loudspeakers (Source: Resonate, 2019)

Table 58 outlined below examines the predicted PA noise levels against the relevant criteria to determine the overall compliance, with regard to the PA system proposed.

Table 58: Predicted PA Noise Levels at Most Affected Sensitive Receivers

Receiver	Description	Approx. Distance to Receiver (m)	NPI Criterion $L_{Aeq,\ 15\ min}$ dB(A)	Predicted Noise Level dB(A)	Meets Criterion?
R1	Residential External	28	Day 42 dB	28	Yes
			Evening 43 dB	28	Yes
			Night 37 dB	28	Yes
R2	Residential External	19	Day 42 dB	31	Yes
			Evening 43 dB	31	Yes
			Night 37 dB	31	Yes
R4	Residential External	35	Day 42 dB	26	Yes
			Evening 43 dB	26	Yes
			Night 37 dB	26	Yes
R7	Residential External	24	Day 42 dB	29	Yes
			Evening 43 dB	29	Yes
			Night 37 dB	29	Yes
R8	Residential External	29	Day 42 dB	27	Yes
			Evening 43 dB	27	Yes
			Night 37 dB	27	Yes

7.7.2.3 School Bells

At this stage in the Proposed Development, there are no external school bells planned. Should external school bells be proposed at a later date, then the following best practice measures should be adhered to accordingly:

- Electronic sounders or loudspeakers should be used in preference to traditional mechanical 'ringing' school bells because sound type and directivity can be better controlled to minimise unnecessary noise spill.
- Loudspeakers should be located and orientated to provide good coverage of the school areas while being directed away from residences. The coverage of the system should be subject of the detail design of the sound system, which is often under the remit of the electrical engineer.
- The volume of the system should be adjusted on site so that announcements and sounders are clearly audible over the required coverage areas on the school site without being excessive maintaining a 10-15dB(A) signal to noise ratio. This should not result in noise at surrounding residences exceeding the ambient noise levels by more than 5 dB(A). It may need to be reduced further if complaints are received.
- Loudspeakers should be small, low-power units located in areas close to the listener position. It is recommended to have a higher number of smaller loudspeakers distributed to be close to the listeners rather than fewer more powerful loudspeakers that are required to project the sound large distances to reach the listeners.
- Once the appropriate level has been determined on site, the system should be limited to the acceptable level so that staff cannot increase noise levels. A sound level limiting circuit is an option to be incorporated in the amplifier to control the signal amplitude to a fixed level, regardless of the loudness of the operator's voice.
- The system bell should be set so that it only occurs on school days.

7.7.2.4 Outdoor Recreation

The main outdoor recreation / learning activities are expected in the following areas:

- Multi-purpose Playing Court (Stage 2: Primary School);
- K-2 Play Space (Stage 2: Primary School);
- Temporary Play Space (Stage 3: Primary School until Stage 6: Secondary School); and
- Outdoor learning pods and innovation work rooms (Stage 7).

Figure 26 below illustrates the operational locations assumed for the assessment of noise emitted from children at play or in outdoor learning environments during the daytime period (7am to 6pm). Resonate have assumed that each outdoor recreation area will be used for up to two (2) hours per day, which allows for a higher noise criterion (RBL + 10 dBA) as per the AAAC Guideline.

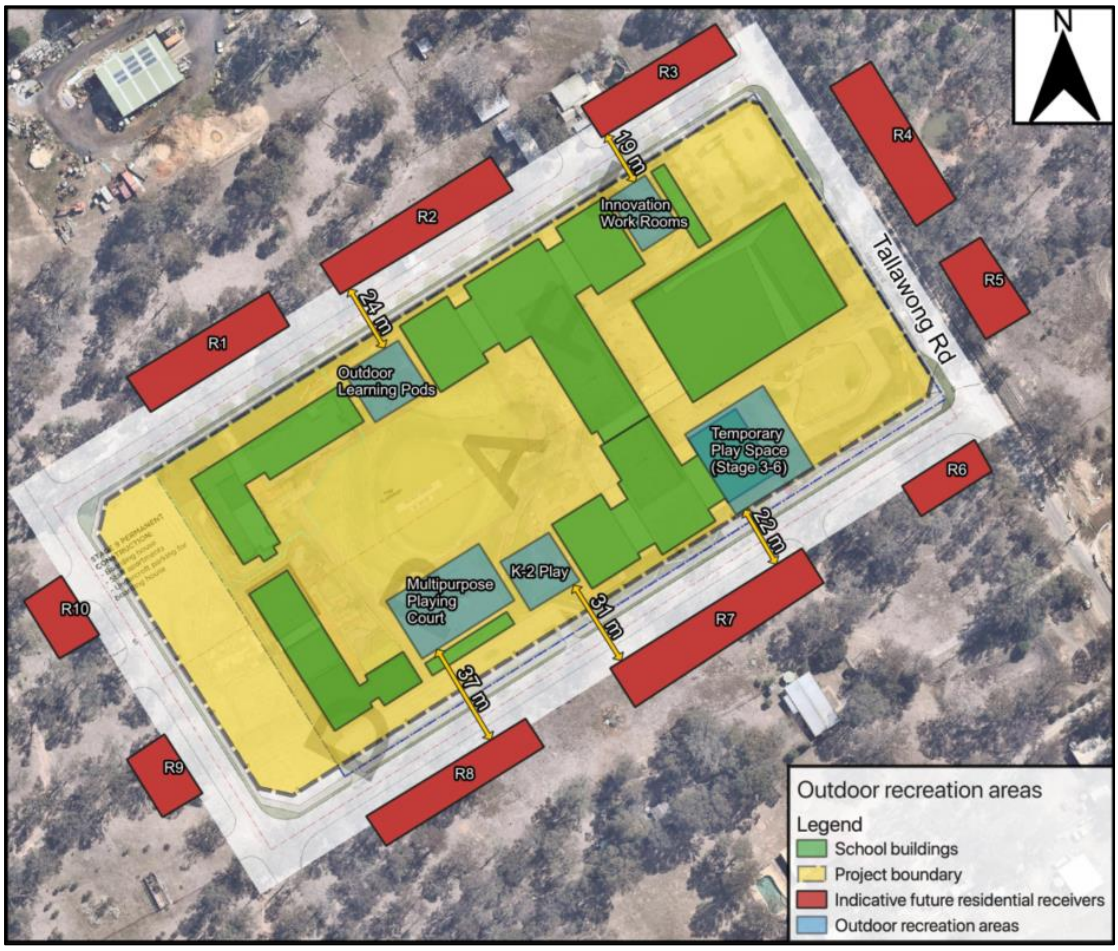


Figure 26 Site Plan Showing the Areas for Noise Assessment Purposes (Source: Resonate, 2019)

Stage 2 – Multi-purpose Court:

It is noted, that during sporting games, there will be up to including 30 children, which could result in a sound power level of up to approximately 95 dB(A). The nearest residential receiver is located at a distance of 37 m. The sporting area will have a noted beneficial shielding effect as it acts as a barrier to the nearest residents identified to the south of the Site.

Due to the shielding benefit offered, the multipurpose area is considered to comply at the nearest ground floor receiver; however, the first floor is predicted to exceed the criterion by a marginal 1 dB(A) as the shielding effect is reduced at higher house levels. Notwithstanding, Resonate note, that a 1 dB(A) exceedance with regard to the relevant criteria will not be noticeable to residents. Therefore, Resonate consider this to be a marginal compliance.

Stage 2 – K-2 Play Area:

The K-2 play area will include approximately 20 children at play which could result in a sound power level of up to 93 dB(A). The nearest residential receiver is located at a distance of 31 m. Without mitigation measures being implemented, this would lead to an exceedance of the operational noise criterion by approximately 5 dB(A) on the first floor and 4 dB(A) on the ground floor.

Resonate recommend that a 3.5 m high acoustic barrier be implemented to counteract any potential acoustic impacts occurring to nearby residents. **Table 59** outlined below summarises the predictions for the Multipurpose court and K-2 play area.

Table 59: Predicted Noise Levels Due to Outdoor Recreation						
Outdoor Recreation Source	**Nearest Receiver**	**AAAC Criterion $L_{Aeq,\ 15\ min}$ Day dB(A)**	**Predicted Noise Level dB(A)**	**Meets Criterion ?**	**Predicted Noise Level with Mitigation dB(A)**	**With Mitigation Meets Criterion**
Multipurpose Playing Court Lw 95 dB(A)	R7/R8	47	Floor 1 = 48	No	-	-
			Ground Floor = 47	Yes	-	-
K2 Play Space Lw 93 dB(A)	R7/R8	47	Floor 1 = 52	No	Floor 1 = 47	Yes
			Ground Floor = 51	No	Ground Floor = 45	Yes

Stage 3-6 – Temporary Play Space:

The closest residential receiver is located at a distance of 22 m. Assuming 20 children play at any given time would accrue a sound power level up to 93 dB(A). Without a noise barrier, both nearest receivers R6 and R7 exceed the sound power level by 1-6 dB(A). It is noted, that compliance could be achieved by incorporating a 3.5 m high acoustic wall in the identified play space. **Table 60** below summarises the predictions for the temporary play space.

Table 60: Predicted Noise Levels Due to Temporary Play Space						
Outdoor Recreation Source	**Nearest Receiver**	**AAAC Criterion $L_{Aeq,\ 15\ min}$ Day dB(A)**	**Predicted Noise Level dB(A)**	**Meets Criterion ?**	**Predicted Noise Level with Mitigation dB(A)**	**With Mitigation Meets Criterion**
Temporary Play Space Lw 93 dB(A)	R7	47	F1 = 53	No	F1 = 48	No
			GF = 52	No	GF = 46	Yes
K2 Play Space Lw 93 dB(A)	R6	47	F1 = 49	No	F1 = 47	Yes
			GF = 48	No	GF = 45	Yes

Stage 3B – ELC Play Space (Stage 3B: Early Learning Centre)

There is a play space proposed within the ELC to give students the opportunity to venture in outdoor recreational activities. It is noted, that the play space location makes excellent use of the ELC building itself, as a noise shield between the play area (noise source) and adjoining sensitive residential receivers to the west and south of the Site.

By assuming 20 children are playing at any given time, this could lead to a sound power level of up to 93 dB(A). **Table 61** below outlines, that the resultant sound pressure level at the nearest receivers (R8 and R10), complies with the relevant criterion. The report notes (from a theoretical perspective), that an additional 60 children at play would still comply with the relevant criterion, due to the ELC building working as an acoustic barrier, providing a satisfactory screening measure.

Table 61: Predicted Noise Levels Due to ELC Play Space						
Outdoor Recreation Source	**Nearest Receiver**	**AAAC Criterion $L_{Aeq,\ 15\ min}$ Day dB(A)**	**Predicted Noise Level dB(A)**	**Meets Criterion?**	**Predicted Noise Level with Mitigation dB(A)**	**With Mitigation Meets Criterion**
ELC Play Space Lw 93 dB(A)	R8	47	F1 = 41	Yes	-	-
			GF = 40	Yes	-	-
	R10		F1 = 27	Yes	-	-
			GF = 26	Yes	-	-

Stage 6 – Innovation Work Rooms:

The nearest residential receiver noted as R3 is located at a distance of 19 m from the closest part of the proposed Innovation Work Rooms, located adjacent to the Secondary School. Resonate have assumed a total of 40 students in the innovation rooms at any given time, for which it is anticipated a sound power level of 81 dB(A) would occur during the 15-minute period. **Table 62** outlines the resultant sound levels at the nearest receiver (R3), which is noted to comply with the relevant criteria.

Table 62: Predicted Noise Levels Due to Innovation Works Rooms						
Outdoor Recreation Source	**Nearest Receiver**	**AAAC Criterion $L_{Aeq,\ 15\ min}$ Day dB(A)**	**Predicted Noise Level dB(A)**	**Meets Criterion?**	**Predicted Noise Level with Mitigation dB(A)**	**With Mitigation Meets Criterion**
Innovation Work Rooms Lw 84 dB(A)	R3	47	F1 = 44	Yes	-	-
			GF = 44	Yes	-	-

Stage 7 – Outdoor Learning Pods / Natural Search & Discovery Forest

The nearest residential receiver (R2) is located at a distance of approximately 24 m. The identified area would result in a sound power level of approximately 81 dB(A) during the 15-minute period. **Table 63** outlined below, demonstrates that the resultant sound pressurelevel at the nearest residential receiver (R2) complies with the relevant criteria.

Table 63: Predicted Noise Levels Due to Outdoor Learning Pods / Natural Search and Discovery Forest						
Outdoor Recreation Source	**Nearest Receiver**	**AAAC Criterion $L_{Aeq,\ 15\ min}$ Day dB(A)**	**Predicted Noise Level dB(A)**	**Meets Criterion?**	**Predicted Noise Level with Mitigation dB(A)**	**With Mitigation Meets Criterion**
Innovation Work Rooms Lw 84 dB(A)	R2	47	F1 = 43	Yes	-	-
			GF = 43	Yes	-	-

Resonate note, that by utilising the AAAC criterion, compliance is predicted to be achieved without further attenuation required for the multi-purpose court; innovation work rooms; and outdoor learning pods. However, for the K-2 play space and temporary play space, additional

noise reduction measures are required to be implemented, such as incorporating a 3.5 m high acoustic barrier to combat any anticipated acoustical sounds above the permitted noise criteria.

7.7.2.5 Car Park Activity Noise Assessment

Resonate conducted an assessment of on-site activities associated with the proposed car parking areas to determine any potential acoustic impacts at the nearest sensitive receivers. **Figure 27** below illustrates the proposes car parking areas, whilst **Table 64** outlines an overview of typical noise sources associated with the operational use of each car parking area.

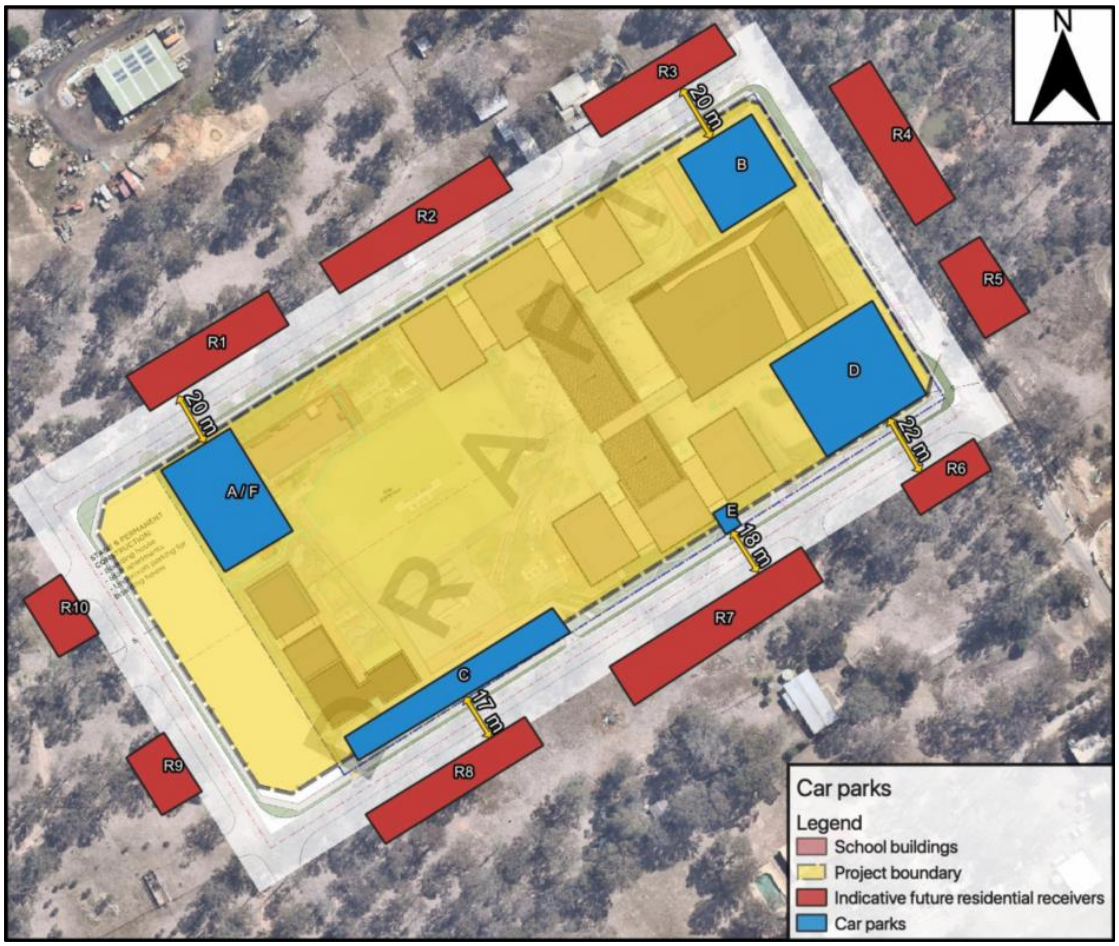


Figure 27 Proposed Car Parking Area Locations Across the Subject Site (Source: Resonate, 2019)

Table 64: Typical Noise Sources Associated with Each Car Park

Parking Area / Stage	ID on Map	Nearest Receiver	Distance to Receiver (m)	Number of Car Spaces	Noise Sources During Parking Process (Yes / No)		
					Car Door Closure	Car Engine Start	Car Pass-by
Stage 1 – Temporary on-ground parking and kiss & drop for School (Stage 1-7)	A	R1	20	49	Yes	Yes	Yes

Stage 1 – Permanent on-ground parking for school (northeast)	B	R3	20	34	Yes	Yes	Yes
Stage 3B ELC Parking and Kiss & Drop	C	R8	17	23	Yes	Yes	Yes
Stage 6 Temporary on-ground parking for school (Stage 6 only and demolished during Stage 7)	D	R6	22	90	Yes	Yes	Yes
Stage 7 underground car park	E	R7	18	200	No	No	Yes
Stage 9 student boarding house – undercroft car park	F	R1	20	14	No	No	Yes

Table 65 outlined below demonstrates the noise source levels and the number of events estimated for a peak 15-minute period, which represents a conservative 'worst-case scenario'. The car parking areas are not expected to be utilised during the night time period after 10pm, except for the proposed Gurdwara & Langar, that would typically use the underground car parking area (E) any may run until 11pm. Notwithstanding, the worst-case scenario has been assessed against the day time and evening NPI criteria for all car parking areas (except car park 'E' – which has been assessed against the NPI night time criterion.

Table 65: Typical Car Park Noise Sources Measured at 1 m

Noise Source	Location	Measured Duration (s)	$L_{eq,T}$ dB	L_{AE} dB	Assumed Maximum Events per 15 Minutes					
					A	B	C	D	E	F
Car door closure	1 m from source	2	75	78	32	24	18	60	-	-
Car engine start	1 m from source	3	72	77	8	8	6	20	-	-
Car passby	1 m from source	15	76	58	16	12	6	20	110	5

Resonate note, that the proposed car parking areas over the relevant construction stages of the Proposed Development, will meet the relevant day and evening criteria, based on the number of predicted car passersby (arrivals and departures), car door closures and car ignition events in a worst case 15-minute period.

It is noted, that the only car parking areas that exceeded the relevant criteria to a minimal degree, includes Carpark D (temporary) and the underground Carpark E. Carpark D exceeds

the daytime criterion by a marginal 1 dB(A), which is considered a negligible impact. No further noise mitigation is recommended for Carpark D.

Carpark E is an underground carpark and therefore, noise from car door closures and ignition events will take place underground and not pose an impact to adjoining residents. Cars entering and exiting the car park entrance are predicted to exceed the day, evening and nighttime criteria by 5 dB(A), 6 dB(A) and 10 dB(A) respectively. Due to the low number of occasions, that this worst-case scenario may occur there may be justification in relaxing the criteria. It may be possible to mitigate and manage any potential noise impacts by reducing car movement numbers by directing traffic to use other car parks throughout the Site, or by having separate entrances / exits to the car park separating and sharing the noise during busy periods.

Notwithstanding, the noise impact anticipated from the car parking areas located across the Site are expected to be minor in nature.

7.7.2.6 Gurdwara & Langar / Multi-Purpose Hall

Stage 1 – Temporary Multi-purpose Hall:

Stage 1 involves the construction of a temporary multi-purpose hall, which will be demolished upon the completion of the Gurdwara & Langar building during Stage 7 of the Proposed Development. The nearest sensitive residential receiver (R2) is located approximately 19 m from the building, as shown in **Figure 28** below.

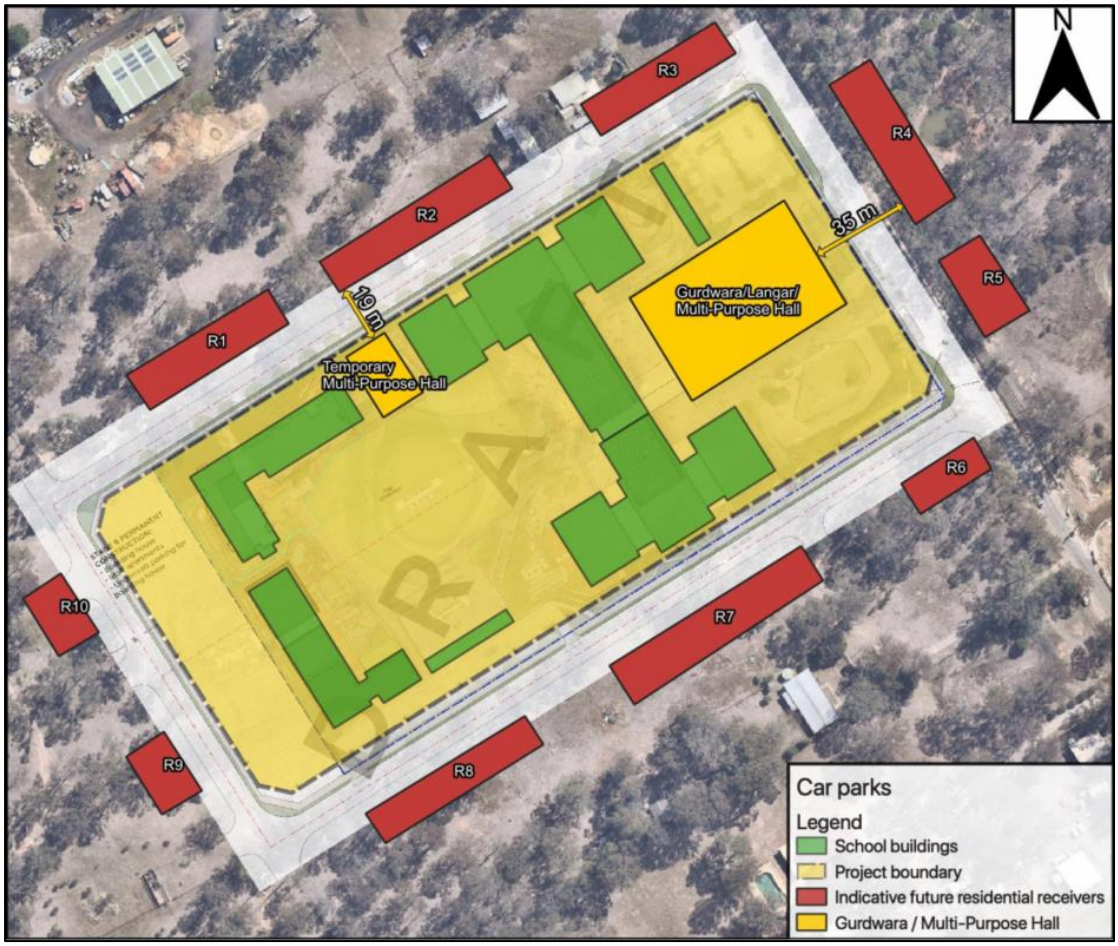


Figure 28 Subject Site Identifying the Temporary Multi-Purpose Hall and Gurdwara & Langar During the Respective Construction Stages (Source: Resonate, 2019)

To comply with the daytime / evening criteria of 42 / 43 dB(A), internal reverberant sound pressure levels of up to approximately 86 dB(A) with the hall windows open could be considered acceptable. During the nighttime period, the internal sound pressure levels in the hall must not exceed 81 dB(A) (with opened windows). Resonate recommend, that external windows and doors are closed for the night time events after 10pm.

The predicted noise levels and recommended maximum allowable internal sounds levels are outlined in **Table 66** below.

Table 66: Maximum Sound Pressure Level Present in Temporary Multi-Purpose Hall with Open / Closed Windows to Comply with the NPI Criteria

Source	Indoor Sound Pressure Level dB(A) (Windows Open)	Indoor Sound Pressure Level dB(A) (Windows Closed)	Receiver	Approx. Distance to Receiver (m)	NPI Criterion $L_{Aeq, 15\ min}$ dB(A)	Predicted Noise Level dB(A)	Meets Criterion?
Multi-purpose Hall	Daytime / Evening 86	Daytime / Evening 96	R2	19	Day 42 dB	42	Yes
					Evening 43 dB		Yes
	Nighttime 81	Nighttime 91		19	Night 37 dB	37	Yes
							Yes
							Yes

Stage 7 – Gurdwara, Langar and Multi-Purpose Hall:

The nearest sensitive receiver (R4) is located approximately 35 m (refer to **Figure 28** above) from the proposed building. To comply with the daytime / evening criteria of 42 / 43 dB(A), internal noise pressure levels can be recorded up to 91 dB(A) with the windows open. During the nighttime period, the internal sound pressure levels in the Gurdwara, Langar and Multi-purpose Hall, must not exceed 86 dB(A) with the windows open. With all external windows and doors closed, these maximum internal sound pressure levels may be increased by approximately 10 dB(A).

Table 67: Maximum Allowable Reverberant Sound Pressure Level in Gurdwara, Langar and Multi-Purpose Hall with Open / Closed Windows to Comply with the NPI Criteria

Source	Indoor Sound Pressure Level dB(A) (Windows Open)	Indoor Sound Pressure Level dB(A) (Windows Closed)	Receiver	Approx. Distance to Receiver (m)	NPI Criterion $L_{Aeq, 15\ min}$ dB(A)	Predicted Noise Level dB(A)	Meets Criterion?
Gurdwara, Langar and Multi-Purpose Hall	Daytime / Evening 91	Daytime / Evening 101	R4	35	Day 42 dB	42	Yes
					Evening 43 dB		Yes
	Nighttime 86	Nighttime 96		35	Night 37 dB	37	Yes
							Yes
							Yes

The Noise Impact Assessment undertaken by Resonate has considered the effect on the future residential developments earmarked for the surrounding properties adjoining the Subject Site. By being positioned away from major arterial roads and located within a future urbanised residential area, Resonate conclude, that any adverse noise impacts anticipated on the surrounding community, from the environment on the operations of the School and associated building components are considered highly unlikely.

A full copy of the Noise and Vibration Impact Assessment is located within **Appendix 21** of this EIS.

7.8 BIODIVERSITY

The *Aquatic and Terrestrial Ecology Assessment* was prepared by NGH Environmental (2019), which assesses the current condition and ecological significance of the Subject Site, regarding flora and fauna present at the Site and aquatic ecosystems and downstream waterways, as well as determining any potential impacts, that are likely to arise as a result of the Proposed Development (refer to **Appendix 23**).

7.8.1 Flora and Fauna

It is noted, that as the Subject Site is identified on a land portion, that has been Biodiversity Certified, the requirement for a Biodiversity Development Assessment Report (BDAR) under Part 7, Section 7.9, Division 2 of the BC Act 2016 does not apply to the Proposed Development.

Desktop searches were undertaken to determine whether any threatened flora and fauna species; populations; ecological communities; migratory species; and critical habitats, as detailed in Commonwealth and State legislation occur, or are likely to occur within the Subject Site. The results of the desktop analysis undertaken are outlined below in **Table 68** below.

Table 68: Desktop Search Summary

Resource	Target	Search Date	Search Area
OEH Wildlife Atlas Data (Bionet)	Threatened flora and fauna species, populations and ecological communities listed under the BC Act	4/2/2019	Study locality
EPBC Act Protected Matters Search	Threatened flora and fauna, endangered populations and ecological communities and migratory species	4/2/2019	Study locality
Bureau of Meteorology National Atlas of Groundwater Dependant Ecosystems	Vegetation communities that are likely to rely on groundwater.	8/2/2019	5 km radius of the proposed works area.
DPI WeedWise	Declared weed species.	8/2/2019	Greater Sydney Local Lands Services region
DPI Fisheries	Freshwater fish community status	25/03/2019	Study Locality
NSW Planning Portal	Acid Sulfate Soils (ASS), drinking water catchments, areas of groundwater vulnerability, riparian lands and watercourses, wetlands	8/2/2019	Study area

A Biodiversity Survey was undertaken within the Subject Site on 13 & 14 February 2019 and a botanical survey was undertaken on 6 March 2019. A detailed plot survey in accordance with the Biodiversity Assessment Methodology (BAM) was undertaken to assist with Plant Community Types (PCT) identification.

For those threatened flora species, that the desktop analysis indicated, that there is a potential for the species to occur within the Subject Site, targeted searches were undertaken in areas of suitable habitat. These searches were incorporated into the random meander or plot survey as applicable. Accordingly, targeted searches were undertaken for the following two (2) threatened flora and Endangered Ecological Communities (EECs):

1. Cumberland Plain Woodland in the Sydney Basin Bioregion BC Act – CE, EPBC Act – CE; and,
2. Juniper-leaved Grevillea *Grevillea juniperina subsp. Juniperina* BC Act – V.

In the field survey undertaken, in the areas where potential impacts to vegetation are expected to occur, the following observation were made:

- Fauna habitat was noted as present (e.g. nests, hollow-bearing trees);
- Opportunistic sightings of fauna or fauna signs (e.g. scats, diggings etc.);
- Current habitat corridors; and
- The habitat value of any waterways (i.e. habitat sensitivity and classification of waterways for fish passage) were characterised in accordance with NSW DPI (Fisheries) document Policy and Guidelines for fish habitat conservation and management (2013 update).

NGH Environmental (2019) note, that the Subject Site is located within the Sydney Basin IBRA bioregion and the Cumberland IBRA subregion. Additionally, the Subject Site is within the Cumberland Plain Mitchell Landscape, situated on Triassic shales and lithic sandstones with Quaternary alluvium along streams.

The Subject Site is described as being highly modified and cleared of all native vegetation, except for two (2) remnant trees within the Subject Site and identified macrophytes around the dam's edge. Terrestrial fauna habitat features recorded at the Subject Site, included one (1) large hollow bearing tree containing one (1) large hollow and decorticating bark.

By utilising existing vegetation mapping (OEH, 2013), one (1) Plant Community Type (PCT) was considered to occur: PCT 849 – Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Woodland Plain, Sydney Basin Bioregion (aka Cumberland Plain Woodland). This PCT was considered to be present where there is an identified native canopy present, including two (2) paddock trees within the Subject Site. This PCT was found to conform to the BC Act definition of the Cumberland Plain Woodland in the Sydney Basin Bioregion CEEC. However, this PCT does not conform to the EPBC Act listed form of the community. It is noted, that all other areas where vegetation consists of exotic or non-indigenous native species have been mapped as 'Exotic / Pasture' (refer to **Figure 29** below).

Figure 29 Ground-truthed Vegetation Survey (Source: NGH Environmental, 2019)

The Proposed Development will involve the removal of groundwater vegetation and two (2) remnant native trees identified on the Subject Site. The amount of vegetation to be potential impact is approximately 2.47 ha. Of this portion, only 0.07 ha constitutes remnant native vegetation, whilst the remaining 2.4 ha consists of exotic vegetation / pasture.

The local occurrence of PCT 849 within the Study Area is approximately 11.87 ha, for which the Proposed Development works would impact a total of 0.07 ha of the identified community (or the removal of approximately 0.6% of its local occurrence). The small area of reduction in the locality is not considered likely to impact the abundance or diversity of flora and fauna in the region in the long-term.

As mentioned above, as the Subject Site is identified on a land portion, that has been Biodiversity Certified, the requirement for a BDAR under Part 7, Section 7.9, Division 2 of the BC Act 2016 does not apply to the Proposed Development.

Further, one (1) priority weed for Greater Sydney was identified within the Subject Site (*Rubus fruticosus*), for which a Construction Environmental Management Plan (CEMP) should provide protocols for the management of weed spread and be implemented during all works.

As the Subject Site contains limited fauna habitat value, connectivity is not considered to be reduced as a result of the Proposed Development. The Site occurs within a fragmented semi-rural landscape and it is not considered likely, that the Proposal will increase the degree of this fragmentation to the effect that it would significantly reduce the connectivity of habitat for threatened or common flora and fauna. Additionally, increased noise, light, dust and vibration impacts are expected to occur during the proposed construction works. These impacts are considered to be rather temporary in natures and will not significantly impact fauna with the Subject Site.

7.8.2 Aquatic Impacts

During the construction phase of the Proposed Development, the hydrology of the Site would be completely altered. The Site is proposed to be cleared of vegetation and levelled, following proposed earthworks taking place, creating a refined and suitable platform for the Proposed Development to take place.

The construction phase includes provisions to dewater the dam identified on the Subject Site by pumping approximately 1 ML of water out onto the ground downslope. As the water would not be released directly into another waterbody, the low levels of oxygen would not have an impact. The water would be significantly oxygenated through the pumping and discharging process. It is noted, that there were no exotic flora or water weeds present in the dam and the dewatering process would not impact aquatic biodiversity downstream by dispersing potentially invasive species.

The impacts anticipated on aquatic life would be a minor short-term impact, appropriately managed through mitigation and protection measures.

Furthermore, the operational impacts of the Proposed Development would include contamination of stormwater from fertilisers, herbicides and hydrocarbons. These impacts would occur intermittently depending on rainfall events and the quantity of chemicals used in landscape maintenance. Accordingly, the proposed landscape design would seek to minimise maintenance, watering and application of chemical additives by selecting native species from the vegetation communities, that are identified throughout the surrounding area. It is noted, that these impacts would be minor to moderate and intermittent, for which mitigation measures would account for any impacts anticipated.

A summary of the impacts anticipated to the Subject Site is outlined in **Table 69** below.

Table 69: Summary of Flora and Fauna Impacts

Category of Impact	Significance of Impacts		
	Extent and Duration	**Nature**	**Impact on Sensitive Features**
Flora Impacts			
	Removal of 2.47 ha of vegetation and two (2) trees during construction.	Permanent	Removal of one (1) hollow bearing tree.
Threatened Communities			
	Removal of up to 0.07 ha of PCT 849 during construction.	Permanent	Removal of 0.07 ha of CPW CEEC (BC Act).
Fauna Impacts			
Construction	Increased noise, dust, light, vibration	Temporary	
Operation	Loss of 1 hollow bearing tree	Permanent	Potential impact on threatened microbat species
Aquatic Impacts			
Construction	Dewatering of dam, potential for spills	Temporary	Potential for impacts downstream
Operation	Removal of dam, increased impermeable surface area	Permanent	Potential impacts to surrounding vegetation

			Loss of foraging habitat for migratory birds
Regional and Cumulative Impacts			
	Loss of 0.06% of PCT 849 within study area	Permanent	Reduction of local occurrence of CPW CEEC (BC Act)

NGH Environmental provided the following mitigation measures concerning terrestrial and aquatic safeguards, which are outlined in **Tables 70 - 72** below.

Table 70: Terrestrial Safeguards – Construction and Operation	
Impact	**Safeguards and Mitigation Measures**
Removal of native vegetation	▪ Native vegetation removal to be minimised through detailed design; and ▪ Arboricultural assessment of canopy trees prior to removal to determine if trees can be retained.
Removal of threatened species habitat	▪ Habitat removal will be minimised through detailed design; and ▪ Replace or re-install any habitat features removed in nearby bushland.
Injury and mortality of fauna	▪ Habitat tree clearing to be supervised by ecologist; and ▪ If unexpected threatened fauna or flora species are discovered, stop works immediately and consult project ecologist.
Invasion and spread of weeds/edge effects	▪ Exclusion zones to be set up at clearing limits to prevent spread of weeds into adjacent native vegetation; and ▪ Hygiene protocols preventing spread of weed seed and propagules to be detailed in CEMP and followed during construction.
Invasion and spread of pathogens and disease	▪ Hygiene protocols managing introduction and spread of soil borne pathogens, such as *Phytophthora cinnamomi* to be detailed in CEMP and followed during construction.
Noise, light and vibration	▪ Temporary impacts as a result of construction works to be managed as per CEMP requirements.

Table 71: Aquatic Safeguards – Construction	
Impact	**Safeguards and Mitigation Measures**
Flooding	▪ As part of the construction environmental management plan (CEMP), a procedure will be prepared to identify potential flood threats and an evacuation procedure for dispersible materials, hazardous materials and equipment containing such materials. The procedure will include: ○ Regular consultation of the Bureau of Meteorology website for weather forecasts and flood warnings; ○ Where possible, schedule activities on land subject to flooding to avoid high flow periods; and

	○ A process for removing equipment and materials off site and out of flood risk areas quickly. ▪ Storing and use of fuels, chemicals and extracted materials away from the water's edge, in bunded areas.
Water contamination	▪ Protection (e.g. sedimentation fencing) shall be provided for the works to minimise runoff from the construction site into waterways and waterbodies.
Soil management, erosion and sediment control	▪ An Erosion and Sediment Control Plan (ESCP) is to be prepared. The plan will be site-specific, taking into account the specific nature of the works and surrounding environment at each alignment section. The plan will be prepared in accordance with the Blue Book (Landcom, 2004). ▪ Sediment and erosion controls will be maintained during the construction works and adapted if required to ensure the objectives of the Blue Book (Landcom, 2004) are met. ▪ Construction works should not be carried out in periods of forecast heavy rains or strong/gale wind warnings. ▪ Where possible, topsoils and subsoils will be removed and stockpiled without mixing the two, in a location or manner that will facilitate the return of soils to a location as close as possible to their original sources. Disturbed areas will be dressed with top soil to assist rapid revegetation of the disturbed surfaces. ▪ Stockpiles will be covered within 10 days in accordance with the Blue Book (Landcom, 2004). ▪ Vehicle and machinery movements will be restricted to access tracks as far as possible. ▪ Vehicles and machinery must not be parked on native vegetated areas. Staff shall park at designated parking areas , existing cleared areas or exotic vegetated areas.

Table 72: Aquatic Safeguards – Operation	
Impact	**Safeguards and Mitigation Measures**
Flooding	▪ Stormwater retention and management devices will be installed to reduce the 1% AEP peak flow to pre-development flows.
Stormwater management and contamination	▪ Stormwater systems will be designed and managed in accordance with the control measures and guidelines specified in section 2.3.1 of the NWGCDCP. ▪ Stormwater systems will be fitted with grating and oil-water separators to capture contaminants. ▪ All filtration systems fitted to stormwater will be maintained in accordance with design guidelines to ensure their effectiveness is maintained.
Water use	▪ Landscaped areas will be designed and managed in accordance with section 4.2.6 of the NWGCDCP, which includes measures to reduce

	water use, water runoff and maintenance requirements, including fertiliser and herbicide application rates

The Ecological Report notes, that clearing of exotic groundcover vegetation and two (2) remnant native trees will occur at the Subject Site. Further, the Proposed Development is considered unlikely to have a significant impact on the extent of Cumberland Plain Woodland Critically Endangered Ecological Community (CEEC), such that the local occurrence of the communities is likely to be place at further risk of extinction.

Additionally, four (4) species of threatened microchiropteran bat species were identified during the during the field survey undertaken by NGH Environmental, as well as two (2) species of migratory birds. The removal of foraging habitat and the removal of a hollow-bearing tree will generate a long-term reduction in habitat for these species; however, the impacts are not considered significant, for which the populations of the species would no longer remain viable within the locality. Furthermore, the Proposed Development would not have any significant impact on any threatened aquatic species.

It is noted, that the Proposed Development would alter the hydrology and aquatic ecosystems of the Site. The dam on-site would be drained and earthworks (cut and fill) would be undertaken to establish the correct levels for the School site. Existing aquatic habitat provided by the dam and irrigation structure would be removed and surface water flows would be redirected through stormwater infrastructure. Additionally, groundwater infiltration would be greatly reduced due to the large area of impermeable surfaces required under the Subject Site. Furthermore, the major local impact anticipated would be distinguished as rather minor, once the consequences of the precinct-wide strategy and hydrological changes anticipated are considered.

Notwithstanding, the environmental protections safeguards / recommendations stipulated above in **Tables 70 - 72** will be implemented during construction, including (but not limited to) establishment of exclusion zones; erosion and sediment control; and weed management.

7.9 ECONOMIC IMPACTS

In 2016, Council produced *Our Blacktown 2036* (Community Strategic Plan), which identifies ways of creating and supporting a vibrant and sustainable local working environment and economy, through smart and innovative commitment and service. This includes encouraging a diverse range of permissible developments across the North West Priority Growth Area Precinct, which is earmarked for significant revitalisation and urban development and infrastructure planning. The Community Strategic Plan is considered to be supportive in principle, with regard to the Proposed Development.

There are three (3) reasons as to why the Proposed Development should be facilitated, including:

1. There is an adequate stock of undeveloped and zoned residential and urban land under the *Central City District Plan* (Greater Sydney Commission); hence, this land should be developed for its intended use to provide an Educational Establishment to an area earmarked for significant regional and local economic growth and enhanced urban transformation, within the Central City District, particularly the North West Priority Growth Area.
2. There is significant Government and market demand to increase the available accessible infrastructure and services that service the day-to-day needs and requirements of its residents. The Proposed Development has been specifically chosen, based on its close proximity to where people live, as well as being highly accessible to available public transport infrastructure.

3. The size and location of the Site is considered suitable for the intended and proposed use. It will also generate employment-generating opportunities throughout the construction and operational phases of development, which contributes to positive social and economic outcomes for the local community and wider locality.

The Proposed Development, for the purposes of an Educational Establishment (including an Early Learning Centre, Student Accommodation and Place of Public Worship) is considered consistent with the strategic direction of both the *Central City District Plan* (Greater Sydney Commission, 2019) and Blacktown City Council's – *Our Home 2036* (2016). Additionally, the Proposed Development will further contribute to the growth of the Education Sector by creating a new infrastructure service, including the provision jobs during the construction and operational phases of development within the Central City District; hence, contributing to the Central City District's economic growth.

It is noted, that the Proposed Development would deliver an employment outcome accommodating approximately 120 operational jobs. Whilst, the construction phase of the Proposed Development would be in the order of approximately 280 jobs.

Additionally, the Proposed Development would generate a range of community benefits / drivers, including:

- Increased availability for choice of educational enrolment for students;
- Reduced travel distances – which, would generate benefits including, reduced vehicle wear and tear; reduced fuel costs; reduced pollution; reduced traffic congestion; and reduced risks of car accidents;
- New employment opportunities; and
- Providing an Educational Establishment close to people's homes.

It should be noted, given the scale and nature of the Proposed Development, it will have a minimal impact on existing community and social facilities. Further, the Proposed Development incorporates a proposed Place of Public Worship, which will provide significant community benefit to the wider Sikh Community group when the School is not in its standard operating hours.

Notwithstanding, the Proposed Development provides an Educational Establishment, that would positively contribute to both the local and regional economies through the integration of a new infrastructure service, that would meet the requirements of a rapidly expanding urban area.

7.10 SOCIAL IMPACTS

The *Social Impact Assessment* (Sarah George Consulting, 2019) considers the social impacts anticipated as a result of the Proposed Development, for the purposes of an Educational Establishment (refer to **Appendix 27**). A social impact can be interpreted and defined as the net effect of an activity on a community and the wellbeing of individuals and families.

The Social Impact Assessment (SIA) provides and evaluates potential changes to existing social conditions, due to the Proposed Development. This included the assessment of direct and indirect benefits and impacts, as well as consideration of any cumulative impacts. Additionally, the Social Impact Assessment details the level of community consultation undertaken to gauge the overall community attitude regarding the Proposed Development and the outcomes of the consultation undertaken.

The SIA anticipates, that the socio-economic and demographic characteristics of the area are likely to change significantly in terms of population size and characteristics, in line with the Riverstone East Precinct.

In the socio-economic and demographic characteristic data (SAL1) interpreted by Sarah George Consulting (2019), the existing demographic of residents are considered to be slightly older, than other parts of the Rouse Hill area; on slightly low incomes; more likely to families with dependent children, or couple families with no dependent children; and own their own home. It is noted, that characteristics are likely to be significantly altered, as a result of the large number of sites being consolidated and redeveloped as low and medium density residential developments along Tallawong Road, which is consistent with the planned future character and strategic direction for the area. The Proposed Development would only impact on existing residents in the early stages of the Development.

The Proposed Development is considered against the following criteria:

7.10.1 Population Change

The Proposed Development, for the purposes of a school, is unlikely to generate any significant changes to resident population of the suburb of Rouse Hill. It is noted, that the proposed student accommodation on-site will generate a minor increase in residential population (accounting for a combined total of approximately 117 staff and students). However, this increase is not considered to be significant in the context of the desired future character of the area, nor is it likely to result in any significant changes to the socio-economic and demographic characteristics of the suburb of Rouse Hill.

The Subject Site would also experience a temporary population increase during school hours and on the weekends, with the Gurdwara being utilised. However, as mentioned, this increase is only temporary in nature and is unlikely to generate any discernible or long-term social impacts.

7.10.2 Housing

The Proposed Development would result in a loss of one (1) dwelling (that is currently vacant) on the Subject Site. This minor loss is offset by the provision of student accommodation on the Site, as well as the provision of other school building components, which will support the education needs and requirements of the future population of the area.

It is noted, that in a concurrent Development Application, the western portion of the Subject Site will be subdivided for residential purposes, further increasing the availability of residential stock and land supply in the area.

7.10.3 Access and Mobility

Accessibility in and around the Site is considered in **Section 7.16** of this EIS, which Vista Access Architects conclude, that by complying with the recommendations stipulated within their Access Compliance Report, the Proposed Development would comply with the requirements of the Access Code of Disability (Access to Premises-Building) Standards 2010, and the Disability Access sections of the BCA, which are relevant to the Proposal.

7.10.4 Community Recreation, Facilities and Services

The Proposed Development does not remove any community or recreation facilities or services from the area.

The proposed Sikh Grammar School represents a community facility and service through the provision of education services for the future population of the area. The School will welcome students and staff from a variety of faiths and backgrounds, providing education and employment for the community. Additionally, the School will provide opportunities for

recreation for students on-site, within the multi-purpose hall, sporting courts and playground areas.

In addition to the proposed Gurdwara being utilised as a Place of Public Worship out of school hours by the community, it will be utilised during the weekday periods by the School for both educational and recreational purposes. The Gurdwara can also be used by the wider community when not in use by the School, subject to the implementation of the Operational Plan of Management.

Furthermore, the Langar (communal kitchen) will provide a community service through the Sikh tradition of providing and serving food through the Langar, to those attending the Gurdwara.

The proposed ELC represents a community service and facility through the provision of a day care service for the future population of the area in direct connection to the wider Sikh Grammar School, formulating the early educational connections prior to commencing primary school.

With regard to the abovementioned, the School building components would represent a positive social impact in terms of the provision of education, spiritual, recreation and community facilities for the community.

7.10.5 Cultural Values and Beliefs

Sarah George Consulting note, that there is nothing about the Proposed Development that is likely to generate any negative impacts on cultural values or beliefs.

It is noted, that as the only Sikh Grammar School in the southern hemisphere, the Proposed Development will provide a significant focal point for the local Sikh community and provide a purpose-built facility, that has an emphasis on Sikh cultural values, while welcoming all community members as staff and students.

7.10.6 Community Identity and Connectedness

School's form part of a community's identity and as such, the Proposed Development would contribute to the emerging character and future identity of the suburb of Rouse Hill.

It is important to note, that while the Proposed Development represents an intensification of the use of the Site, there is nothing about it that is likely to generate any impact in terms of social cohesion and integration within the community, particularly in the context of the changing nature of development around the school, as well as the future character intended for the area.

With regard to the concept of connectedness, the School would be located close to new residential dwellings; recreation facilities; Cudgegong Metro Railway Station; and the Rouse Hill Town Centre, providing enhanced access and connectivity to the School and the wider community.

7.10.7 Health and Wellbeing

The School includes provisions for outdoor recreation areas for students, for which can be seen as a direct correlation to contributing to and improving the overall health and wellbeing of students.

The proposed school would generate a positive impact in the local community in terms of attracting more families to the area who may wish to live closer to the proposed facility. This

potential increase in population would benefit the local community in terms of providing support to local businesses and attracting improved provision of services.

7.10.8 Crime and Safety

This EIS has previously considered the principles of CPTED, for which the Proposed Development would adhere to accordingly, by virtue of including lighting along antraces, pathways and car parking areas, which would minimise the number of areas across the Site where people could not be identified; security fencing; and territorial reinforcement in the form of distinct and secure fencing and signage. Notwithstanding, the School will implement a fully operational 24-hour surveillance that will be used to ensure the safety of the students, staff and local community.

It should be noted, that the suburb of Rouse Hill has relatively low rates and low densities of all crimes. No 'hotspots' for any crimes were identified in the suburb of Rouse Hill. There is nothing about the Proposed Development that is likely to result in any increase in crime rates in the suburb of Rouse Hill or in the Blacktown LGA.

7.10.9 Local Economy and Employment

Not only will the Proposed Development provide employment-generating opportunities throughout the construction and operational phases of development, it will also result in a boost to the local economy through parents and carers accessing the Site, then potentially visiting local shops within close proximity to the School.

7.10.10 Amenity

To the extent that amenity can be addressed in social impact terms, the operation of the School and the increase in population and activity on the Site has the potential to result in some impacts in terms of:

- Traffic and Parking;
- Noise; and
- Littering / Vandalism / Anti-social Behaviour.

It is noted, that mitigations measures and recommendations articulated within the relevant consultant reports would be implemented; thereby, not impacting on the amenity of the immediate vicinity, as well as the wider locality.

7.10.11 Public Interest Benefits

The Proposed Development provides a number of public interest benefits, including:

- Provision of a modern Educational Establishment for the existing and future population, which would positively impact on both the immediate community and the wider locality;
- Provision of a place for community gatherings, meals for the community and Place of Public Worship for the local Sikh community;
- The provision of employment opportunities in the construction and operation of the proposed school; and
- Improvements to the existing site and the presentation of the Site to the street, which includes provisions for extensive landscaping along Tallawong Road and the proposed access roads surrounding the Site.

Sarah George Consulting note, that the Proposed Development is unlikely to generate any negative social impacts that requires mitigation. Any impacts generated by the intensification

of the use of the Site are likely to be associated with noise and traffic, which have been separately addresses in the consultant reports discussed throughout this EIS, which include recommendations designed to minimise noise and traffic impacts, including:

- Restricting the operation of the Gurdwara during school hours to ensure the parking provision for the school uses during operating hours and adequate parking for the Place of Public Worship, while operating;
- Works programming and respite periods to minimise disturbances during construction;
- Site access to be located away from residences during construction and trucks diverted away from residential streets where possible; and
- Noise attenuation measures during the operation of the School, Gurdwara and Langar to minimise disturbances.

Negative short-term impacts that may be generated as a result of the Proposed Development are likely to arise through the construction and fitout of the proposed school buildings, throughout the respective construction stages. It is noted, that any potentially negative impacts, could be mitigated appropriately through Conditions of Consent, subject to the approval of this SSD Application.

Sarah George Consulting conclude, that the Proposed Development is unlikely to generate any materially adverse social impacts for the surrounding area. Additionally, given the minimal feedback received from the local community during the consultation process, it is reasonable to assume that the proposed school is generally supported by the local community. As such, it is considered, that the Proposed Development is supportable in terms of social impacts.

7.11 HISTORIC HERITAGE

There are no items of heritage significance, concerning Historic (European) Heritage items, identified as being within or within close proximity to the Subject Site. No further consideration is considered warranted in this respect.

7.12 ABORIGINAL CULTURAL HERITAGE

the *Aboriginal Cultural Heritage Assessment* Report prepared by NGH Environmental (2019), considers the potential for presence, extent and nature of Aboriginal Cultural Heritage on the Subject Site (refer to **Appendix 25**).

It is noted, that during an extensive search of the Aboriginal Heritage Information Management System (AHIMS), which is maintained by the NSW Office of Environment and Heritage (OEH), 19 previously recorded Aboriginal heritage sites were identified within a 1 km buffer zone of the Subject Site, with no registered sites located within the Subject Site (refer to **Figure 30** below).

The purpose of the Aboriginal Cultural Heritage Assessment Report (ACHAR) is to investigate the presence and extent of any Aboriginal sites and to assess their significance and possible impacts from the proposed works and to provide management strategies that may mitigate any impact.

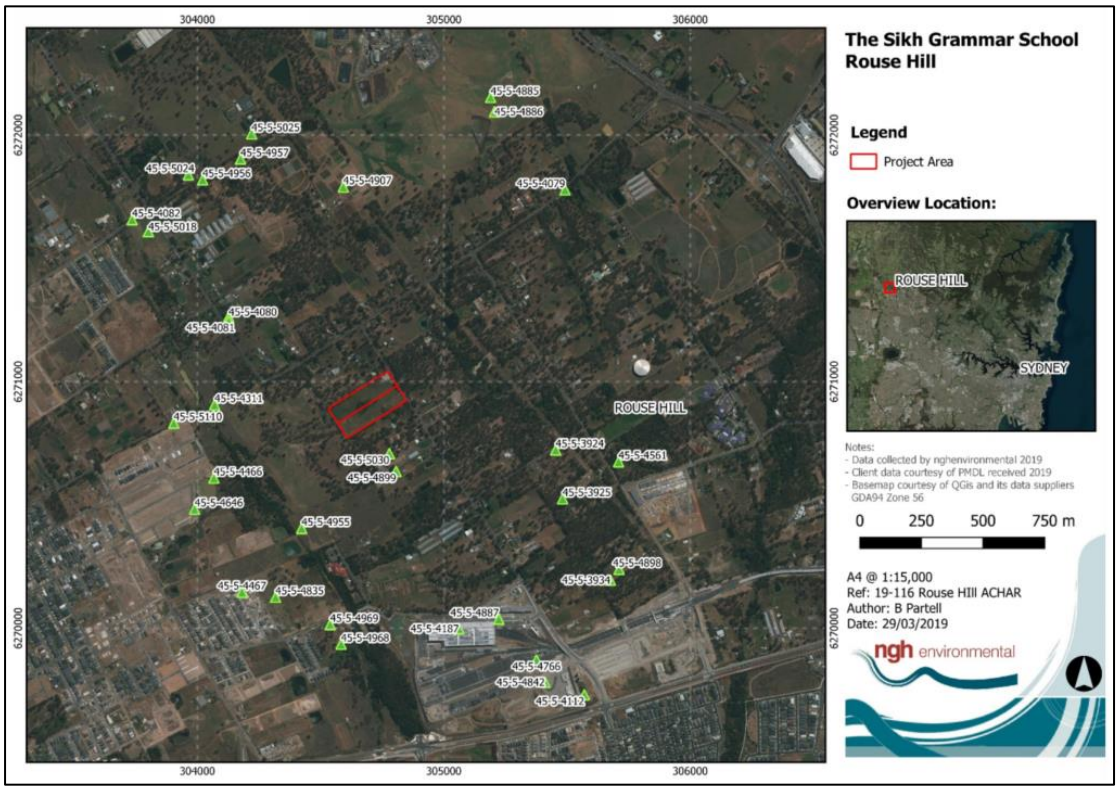


Figure 30 Location of AHIMS Site within 1 km of the Subject Site (Source: NGH Environmental, 2019)

It is noted, that consultation with Aboriginal stakeholders was undertaken in accordance with Clause 80C of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010*, following the consultation steps outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRP) Guide provided by the NSW OEH.

Furthermore, in the site survey undertaken by NGH Environmental, there were no new Aboriginal site or areas of potential concern, that were located. It is noted, that the vegetation across the Site significantly reduced the surface visibility of the proposal area.

The previous historical practices undertaken on the Subject Site, including the construction of dwellings; the introduction of fill; the construction of a dam; the introduction of a sub-surface sewerage line; and historical farming practices, has characterised the Site as being highly modified. Due to the level of modification of the Subject Site landscape setting, the likelihood of locating any cultural material across the Site is considered to be low.

NGH Environmental note, that mitigation of harm to cultural heritage sites generally involves some level of detailed recording to preserve the information contained within the Site. Mitigation can be in the form of minimising harm through slight changes in the development plan, or through direct management measures of the artefacts.

Accordingly, as there are no previously recorded AHIMS sites within the Subject Site, and no sites identified during the Site survey, mitigation measures including salvage, detailed recording, or changes to the design footprint of the proposed development are not considered necessary. The Subject Site is located on a site of historical ground modification, minimising the potential for locating in-situ surface and subsurface artefacts.

As a result of the field survey and consultation with the local Aboriginal community, it is recommended that:

1. The Proposed Development does not require further investigation and the proposed construction works can proceed with caution, subject to approval.
2. As an SSD Application, an AHIP permit would not be required if works were to uncover Aboriginal material. However, in the unlikely event, that previously undiscovered Aboriginal finds are identified during construction, works in the vicinity of the find should cease and a qualified archaeologist / heritage consultant called in to inspect the find and provide recommendation on proceeding.
3. In the unlikely event, that human remains are discovered during the construction, all work must cease. The NSW OEH, the local police and Deerubbin LALC should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
4. Further archaeological assessment would be required if the proposed development extends beyond the area currently investigated. This would include consultation with the RAPs for the project and may include further field survey and / or test excavation.
5. Continued consultation with the RAPs for the proposed development should be undertaken if there are any major changes in project design or scope, further investigation or finds.

7.13 BUSHFIRE

A *Bushfire Assessment Report* has been prepared by Building Code & Bushfire Hazard Solutions Pty Limited (2019) for the Proposed Development (refer to **Appendix 26**).

The Report notes, that the Subject Site is not mapped as being bushfire prone land pursuant to Section 100B of the Rural Fires Act; therefore, the Proposed Development does not trigger and warrant any further consideration with regard to a Special Fire Protection Purpose, bestowed under Section 100B of the Rural Fires Act.

Notwithstanding, consultation has occurred with the NSW Rural Fire Service (NSW RFS), whom have reviewed the Proposal and confirmed, that the Site is not located on land identified and mapped as being bushfire prone (refer to **Figure 31** below). However, the NSW RFS advised that a preliminary bushfire assessment be undertaken, concerning unmanaged vegetation, dispersed throughout the Site.

Figure 31 Bushfire Prone Land Map (Source: NSW Planning Portal, 2019)

It is noted, that properties affected and mapped as bushfire prone land are subject to the conditions outlined within *Planning for Bushfire Protection 2006* (PBP). Accordingly, setback distances for the purpose of creating Asset Protection Zones (APZs) must be applied and any

buildings must then conform to corresponding regulation detailed in Australian Standard 3959 – Construction of buildings in bushfire prone areas (2009).

To comply with the provisions outlined within PBP, the Proposed Development would be required to be classified as a Special Fire Protection Purpose; however, as mentioned above, the Subject Site is not mapped as being bushfire prone and therefore, Section 100B of the Rural Fires Act would not be triggered.

The vegetation identified by the NSW RFS as being a potential bushfire hazard, is located within vegetated allotments to the northeast and southwest of the Subject Site. It is noted, that the predominant vegetation within the Subject Site was identified as slashed / grazed paddocks. In accordance with the current zoning of the Site (R2 Low Density Residential) and the indicative layout plan articulated within the Riverstone East Priority Precinct, there will be no hazard located within the 140 m assessment area utilised for the assessment, concerning the Subject Site.

The slope, that would most significantly affect bushfire behavior within an identified hazard, must be assessed for at least 100 m from within the hazard to determine the required APZ. Although not directly affected by any indicative bushfire hazards, the effective slope to the southwest of the Subject Site was determined on-site, using an inclinometer and verified from topographic mapping to be:

- One (1) degree down slope to the southwest (refer to **Figure 32**).

Figure 32 1 metre Contours of the Subject Site and Surrounding Area (Source: Building Code & Bushfire Hazard Solutions, 2019)

It is noted, that APZs for new Special Fire Protection Purpose development are determined from Table A2.6 of PBP, or alternatively, bushfire design modelling, achieving a radiant heat

impact of no more than approximately 10 kW/m^2 at the closest point of the available building footprint.

By applying a conservative assessment and applying a Grassland or Woodland classification to the southwest, the minimum APZs for the Site would include:

- 10 metres from a Grassland to the southwest (Table A2.3); and
- 40 metres from a Woodland to the southwest (bushfire design modelling).

The closest proposed building, forming part of the School, is located approximately 41 m from the southwestern boundary and therefore, even by applying a Grassland or Woodland hazard, the corresponding minimum APZs would be exceeded. It is important to note, that the available APZ for the Site includes the western portion, which is subject to an eleven (11) lot Torrens Title Subdivision DA with Blacktown City Council.

In the instance that a fire occurs, hydrants are located along Tallawong Road and the surrounding road network, for the replenishment of attending fire services. Fire hydrants to be installed within the Subject Site must comply with AS2419.1-2005.

Fire services required to enter the Subject Site will have free pedestrian access around the building footprints. Access for fire services and opportunities for occupant evacuation is considered adequate for the Subject Site. With regard to the traditional fire paths; direction of travel; and low fire threat along the path of egress, the surrounding road network is considered acceptable to cater for the increased development anticipated for the area, during a bushfire emergency.

It is noted, that the Proposed Development was assessed against the requirements of PBP, noting the following:

- The building footprints exceed the minimum required APZs;
- Recommendations to maintain the APZs within the subject property can be included as part of the Development Consent; and
- Future water supply can satisfy the requirements for services.

Based on the assessment undertaken, the following recommendations have been provided within the Bushfire Assessment Report, as the minimum for maintaining compliance with the PBP and AS 3959 – Construction of buildings in bushfire prone areas (2009). Additional recommendations are provided to supplement these minimum requirements where considered necessary.

1. **Asset Protection Zones** – all grounds within the Subject Site, that are not built upon, must be maintained as an APZ (inner protection area) and in accordance with Appendix 5 of PBP. Accordingly, this will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering no more than 20% of the area.
2. **Construction** – At the time of construction for the proposed Student Accommodation and Early Learning Centre, if the neighbouring property to the southwest (Lot F DP 407863) is not developed, that these buildings shall comply with Section 5 (BAL 12.5); AS3959-2009 and Section A3.7 of PBP.
3. **Landscaping** – Any new landscaping is to comply with Appendix 5 of PBP.
4. **Emergency Management** – A bushfire emergency / evacuation plan is to be prepared and be consistent with the NSW RFS Guidelines for the *Preparation of Emergency / Evacuation Plan*.

The Bushfire Assessment Report concludes, that the Proposed Development complies with the relevant specifications and requirements of PBP and will provide a reasonable and satisfactory level of bushfire protection.

7.14 INFRASTRUCTURE REQUIREMENTS

The *Sikh Grammar School – Infrastructure Management Plan* prepared by Umow Lai (2019) considers the existing, required and proposed utilities, services and infrastructure for the Subject Site (refer to **Appendix 28**). The Service Infrastructure Assessment lists the following service authorities who provide infrastructure services for the area, for which the Subject Site is located. The authorities and applicable services include:

- Sydney Water: Potable and Waste Water Infrastructure;
- Endeavour Energy: Electrical assets;
- NBN Co: Telecommunications assets; and
- Jemena: Gas supply.

The abovementioned services and their relevance regarding augmentation and compatibility, with regard to the Subject Site, are discussed below. The services required will be designed to address the health; amenity; life safety; and energy performance criterion of the National Construction Code (NCC). It is noted, that all of the components of the Sikh Grammar School will provide an equivalent level of comfort and an equivalent range of services defined in the Educational Facilities Standards and Guidelines (EFSG) published by Schools Infrastructure NSW (SINSW) and the NSW Department of Education (DOE).

7.14.1 Potable Water

It is noted, that the closest Sydney Water Main to the Subject Site is a DN200 mm oPVC water main, located along Tallawong Road, servicing 136 Tallawong Road (refer to **Figure 33** below).

Figure 33 Sydney Water – Water Mains Infrastructure (Source: Umow Lai, 2019)

The anticipated potable water demands per each construction stage of the Proposed Development are detailed in **Figure 34** below.

Population / Water demand Assessment

Building	Gross floor Area (m2)	Population/stage										
		Demand per unit	Stage 1	Stage 2	Stage 3A	Stage 3B	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9
Primary school & Multipurpose Hall- Temporary	3000	20L/d/student	600	600	600	600	600	600	600	600	-	-
Primary School - Block 1	1000	20L/d/student	-	300	300	300	300	300	300	300	300	300
Primary School - Block 2 (including Library & Staff)	1000	20L/d/student	-	-	300	300	300	300	300	300	300	300
Early Learning Centre, ELC	1400	20L/d/student	-	-	-	80	80	80	80	80	80	80
Secondary School - Block 1	1500	20L/d/student	-	-	-	-	200	200	200	200	200	200
Secondary School - Block 2 (including Café)	1950	20L/d/student	-	-	-	-	-	272	272	272	272	272
Secondary School - Block 3 (including TAS facilities)	1500	20L/d/student	-	-	-	-	-	-	200	200	200	200
Gurdwara & Langar	2400	1.3L/m2/d	-	-	-	-	-	-	-	800	801	802
Administration Building (including staff offices)	1200	2.27L/m2/d									TBC	TBC
Boarding House	2775	360L/Room/d										110
Boarding House kitchen & Dining	600	2.48L/m2/d										110
Total population per stage	-	-	**600**	**600**	**600**	**680**	**880**	**1152**	**1352**	**2152**	**2153**	**2374**
Estimated water demand per stage (l/s),PSD	-	-	**0.14**	**0.14**	**0.14**	**0.16**	**0.20**	**0.27**	**0.31**	**0.35**	**0.38**	**0.56**
Estimated water demand per stage (l/Day)	-	-	**12000**	**12000**	**12000**	**13600**	**17600**	**23040**	**27040**	**30160**	**32884**	**48772**

Figure 34 Proposed Water Demands per each Indicative Construction Stage of the Proposed Development (Source: Umow Lai, 2019)

With regard to the above information articulated within **Figure 34**, the total water demand for the Site is outlined in **Table 73** below.

Table 73: Proposed Total Water Demands

Application	Demand
L/Day	48,800
PSD (l/s)	0.56

The proposed potable water supply to the Subject Site to service the proposed school includes provisions for a new connection to the identified Sydney Water main on Tallawong Road. The new connection would include a new authority meter and backflow assembly adjacent to Tallawong Road, located along the proposed access road, traversing the northern boundary.

From the proposed authority meter, the indicative potable water main would be extended to new cold water booster pumps, located to the southwest of the northeastern car parking area. From this point a discharge a new inground potable water line downstream of the water pumps will be installed to feed the proposed school buildings (refer to **Figure 35** below).

Figure 35 Potable Supply from Tallawong Road Water Main to the Proposed School Buildings (Source: Umow Lai, 2019)

It is noted, that spare capacity for existing water mains flow and pressure have been provided by Sydney Water (refer to Appendix A of **Appendix 28**) for a 250 mm water main, for fire-fighting purposes, located on the corner of Tallawong and Macquarie Roads. Accordingly, the anticipated fire water demands are outlined in **Table 74** below.

Table 74: Proposed Total Fire Water Demands

Fire System	Demand (l/s)
Fire Hydrant System	20
Fire Sprinkler System	20

The abovementioned demands are subject to further design development, for which any possible requirement for wall wetting sprinklers are to be incorporated into the Proposed Development.

As a result, the following fire systems are proposed for the Proposed Development:

- An internal sprinkler system is proposed, as detailed in the BCA Report (refer to **Appendix 34**) and Fire Safety Engineering Report (refer to **Appendix 30**), which include the following provisions:
  - New sprinkler booster at the main entrance facing Tallawong Road;
  - New fire sprinkler connection from the proposed Tallawong Road 200 mm diameter water main;
  - New backflow assembly to the new water connection;
  - New pipe reticulation to service the individual fire sprinkler systems within the buildings along with sprinkler control valve assemblies; and
  - One (1) fire sprinkler diesel pump set.
- A new hydrant system will be installed compliant with AS2419.1 (refer to **Figure 36** below). This will include:

- New hydrant booster at the main entrance along Tallawong Road;
- New fire water connection from the proposed Tallawong Road 200 mm diameter water main;
- New backflow assembly to the new water connection;
- New pipe reticulation to service the individual fire sprinkler systems within the buildings along with sprinkler control valve assemblies; and
- One (1) fire sprinkler diesel pump set.

Figure 36 Proposed Fire Water Supply Connections to Service the Proposed Development (Source: Umow Lai, 2019)

7.14.2 Waste Water

The nearest Sydney Water sewer / waste water main in proximity to the Subject Site, includes a 150 mm diameter uPVC sewerage line, located along the southern boundary of the Site (refer to **Figure 37**).

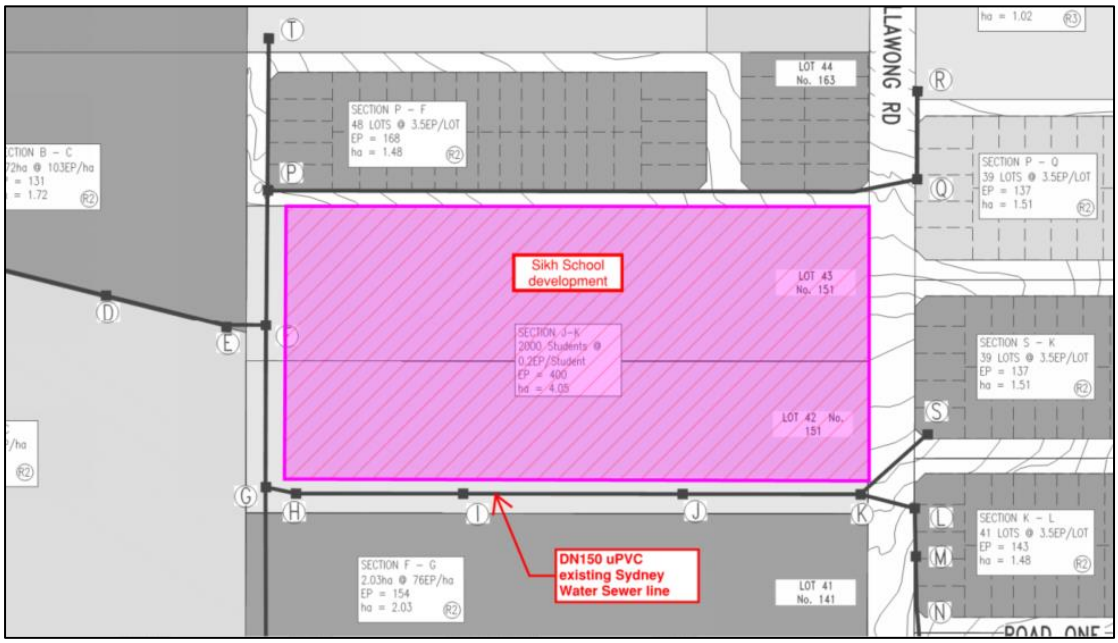


Figure 37 Sydney Water – Existing Waste Water Drainage Infrastructure (Source: Umow Lai, 2019)

The projected sewer flow demands for the Proposed Development are outlined in **Table 75** below.

Table 75: Projected Sewer Infrastructure Load	
Application	**Quantity**
EP (0.2/Student)	387
Average Dry Weather Flow (ADWF)	0.95 L/s

The proposed waste water infrastructure for the Proposed Development, includes provisions for a new 150 mm diameter main sewer line, which will be responsible for the collection of the School's waste water, which will gravitate south to connect and discharge to the existing Sydney Water sewer line. **Figure 38** below illustrates the preferred point of connection to the existing infrastructure.

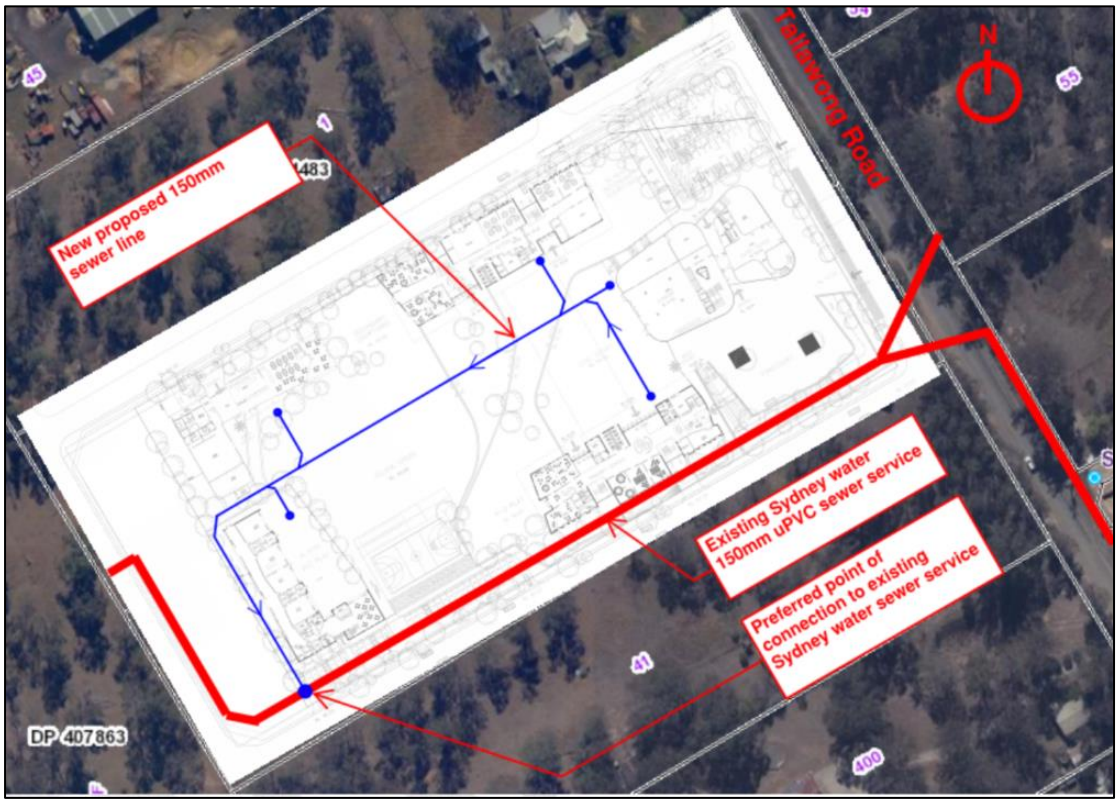


Figure 38 Proposed Development Waste Water Discharge Locations (Source: Umow Lai, 2019)

7.14.3 Gas (Jemena)

The closest Jemena Natural Gas main is located along Tallawong Road, south of the Subject Site, which includes a 50 mm diameter 7 kPa main (refer to **Figure 39** below).

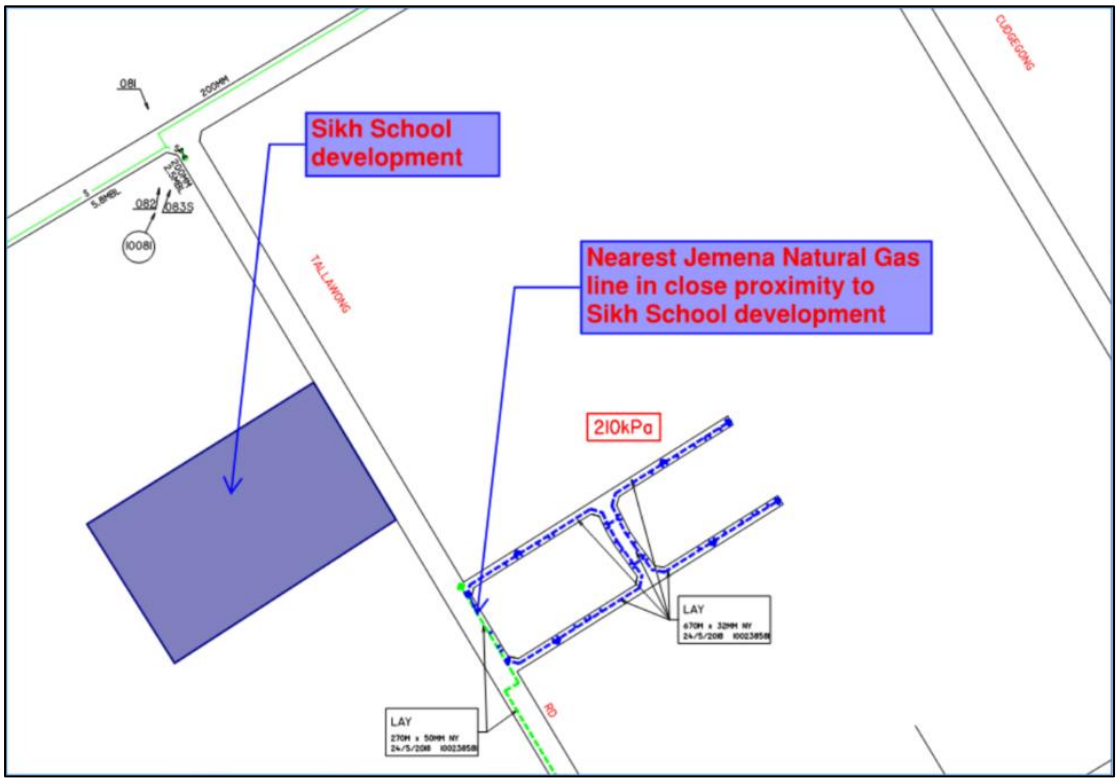


Figure 39 Existing Jemena Gas Mains Infrastructure (Source: Umow Lai, 2019)

The projected School gas demands are outlined in **Table 76** below.

Table 76: Projected Gas Infrastructure Load	
Item	**Demand**
Peak Maximum Demand	10,000 mj
Maximum Hourly Quantity	3,500 mj
Maximum Daily Quantity	25,000 mj

The proposed gas supply to the Subject Site, is via new connection to the identified Jemena main adjacent to the Site. It is noted, that as the design phase progresses, an application to Jemena will be made to extend the existing main toward the Subject Site. Furthermore, a secondary regulator is to be provided at each component within the Subject Site for internal gas reticulation (refer to **Figure 40** below).

Figure 40 Proposed Natural Gas Supply for the Proposed Development (Source: Umow Lai, 2019)

7.14.4 Electricity (Endeavour Energy)

The local electricity supplier is Endeavour Energy. It is noted, that overhead high voltage and low voltage power lines are installed along Tallawong Road, which form part of Endeavour Energy's power distribution network. The low voltage power connection currently serving 161 Tallawong Road would need to be commissioned.

The preliminary maximum demand anticipated for the Subject Site is approximately 1,495 kVA. The breakdown of electrical demand loads is outlines in **Table 77** below.

Table 77: Breakdown of Electrical Loads

Building / Load	No. Floors	Floor Area (m^2)	Max. Demand (kVA)
Gurdwara & Langar	2.5	4,700	305
Secondary + Library	3	6,798	448
Primary School	3	6,396	424
ELC Play	1.5	1,520	108
Student Accommodation	3	3,117	209
Total		22,531	1,495

The anticipated maximum demand figures articulated within **Table 77** above, suggest, that the Site will require two (2) 1,000 kVA kiosk substations. The substations must be located inside the Subject Site boundaries and will require an easement of approximately 5.5 x 5.5 m. Umow Lai recommend locating the substation along the perimeter of the Site to minimise the risk of high voltage cable easements crossing the Site. These two (2) substations will attain their power from the existing overhead high voltage powerlines, located along Tallawong Road.

7.14.5 Telecommunications (NBN Co)

Telecommunications infrastructure in the area is managed accordingly by NBN Co. NBN Co advised that the property at 161 Tallawong Road is already serviced by an active NBN connection; however, they have provided the following correspondence, outlined by Umow Lai in their Report, which stipulates:

> *"Please provide further details to submit an enquiry for NBN to recover the NBN™ supplied equipment. NBN will need to recover the equipment at the existing premises before you can complete this new development application."*

It is noted, that the Proposed Development will require a new fibre optic telecom service to provide connectivity to the Internet and Public Telephone Network. The Proponent will be required to lodge an application with NBN Co for the supply and installation of a new fibre optic service, including new underground pits and ducts along Tallawong Road, to house the infrastructure.

7.15 CONTRIBUTIONS

It is noted, that Special Infrastructure Contributions are not payable for the Proposed Development, as the Proposal constitutes a private school.

Therefore, the Proposed Development is subject to Section 7.11 Contribution Plans under the EP&A Act. The Subject Site is applicable to the *Section 94 Contributions Plan No. 20 – Riverstone & Alex Avenue Precincts*, for which the Proposed Development would be required to pay a Contribution Plan. Section 94 (now Section 7.11) contributions will be calculated by Council in accordance with the *Section 94 Contributions Plan No. 20 – Riverstone & Alex Avenue Precincts* (2015).

It is noted that the cost of constructing the proposed access road (proposed half-road construction and subdivision, subject to a DA running concurrently to this Application) would be borne by proponent, and would create an amenity improvement for all current and future inhabitants and users of the immediate surroundings as well as the wider locality.

Contributions payable for the Proposed Development have been calculated by Blacktown City Council and can be located with **Appendix 38** of this EIS.

7.16 ACCESS

An Access Compliance Report has been prepared by Vista Access Architects (refer to **Appendix 31**). The Access Compliance Report has utilised and assessed the following documentation for each component proposed under this SSD Application, including:

- Building Code of Australia (BCA) 2016, Volume 1 – Performance requirements of DP1, DP2, DP8, DP9, EP3.4, FP2.1 and Parts D2, D3, E3 and F2 (where applicable);
- Disability (Access to Premises-Building) Standards 2010;
- AS1428.1-2009 Part 1: General requirements for access, including any amendments;
- AS1428.4.1-2009 Part 4.1: Tactile Ground Surface Indicators (TGSIs);
- AS2890.6-2009 Part 6: Off-street parking for people with disabilities; and
- AS1735 Lift types included within the BCA, including Part 12: Facilities for persons with disabilities.

The Report notes, that the Proposed Development achieves the spatial requirements to provide access for people with a disability and it is assumed, that assessment of the detailed requirements, such as assessment of the internal fitout; details of stairs; ramps; and other features will occur at the Construction Certificate (CC) stage.

Vista Access Architects conclude, that by complying with the recommendations stipulated within their Access Compliance Report, the Proposed Development would comply with the requirements of the Access Code of Disability (Access to Premises-Building) Standards 2010, and the Disability Access sections of the BCA, which are relevant to the Proposal.

7.17 BUILDING CODE OF AUSTRALIA AND FIRE ENGINEERING

7.17.1 Building Code of Australia

As demonstrated within the *Building Code of Australia 2019* Report prepared by Group DLA, the Proposed Development, must be designed to comply with the relevant provisions of the BCA (refer to **Appendix 34**). Furthermore, the detailed design of the Proposed Development, would be designed in accordance with the BCA and would be further assessed prior to the issuance of a Construction Certificate (CC).

Group DLA note, that at this stage of the design, the Proposed Development requires further attention to be given to design amendments or potential BCA performance solutions, which are outlined in **Table 78** below.

Table 78: BCA Requirements – Performance Solutions

Item No.	DTS Non-Compliance	Nominated Resolution	BCA Clause	BCA Performance Requirements
1.	School Complex – Basement Carpark - The opening to the pedestrian ramp area servicing the Basement Carpark is positioned within 6 m of the Primary School complex which is a separate fire compartment. The openings to the carpark may be difficult / impossible to treat.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution is feasible. Fire separation to the adjacent wall of the Primary School building may or may not need to be fire rated as part of this review.	C3.3, C3.4	CP2
2.	Boarding House – The central exit stair contains the following non-compliances: a) Connects more than 3 storeys (actual: 5 Storeys) and is not fire isolated from the remainder of the building. b) Discharges internally to the building rather than direct to openspace. c) Lift and stair in the one shaft, rather than being fore separated form	The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible.	D1.3, D1.7, C2.12	DP4, DP5, EP2.2, CP2

	each other.			
3.	Boarding House – The eastern exit stair contains the following non-compliances: a) Discharges internally to the building rather than direct to open space.	The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible.	D1.3	DP5, EP2.2
4.	Extended travel distances to various areas as noted in Table 7 below. This item will be ongoing WIP until the plans are finalised via the DD Stage.	The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible. Some items require (and have been nominated for) architectural design changes to achieve compliance.	D1.4, D1.5	DP4, EP2.2
5.	School Complex – Undersized exit widths.	Design change required – additional exit doors to be illustrated. This can be readily achieved.	D1.6	DP4
6.	School Complex – Level 3 exit stairs – Secondary Study, Staff Lounge, Mezzanine – Contain the following non-compliances: a) Discharge at level 2, rather than ground level. b) Cause a travel distance more than 80 m to the ground floor external exits (openspace).	The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible.	D1.9	DP4, EP2.2
7.	School Complex – Level 2 & 3 - Horizontal exit doors – The following considerations have been noted: a) - b) - c) That the BCA deemed-to-satisfy provisions do not permit horizontal exits in a secondary or primary school building.	a) - b) - c) Fire Safety Engineer to review and confirm the feasibility of a justifiable Performance Solution. d) GDLA to advise at the DD stage.	D1.11	DP2, DP4

	d) The space on the opposite side of the door may contain shortfalls in terms of the number of permitted occupants – TBC by GDLA.			
8.	The following exit doors do not swing in the direction of egress: ▪ Boarding House: LG northern external double door. ▪ Northern Library horizontal doors on Level 2.	Plans to be updated to correct exit door swing. The northern horizontal Library doors on Level 2 require further egress review in relation to area served, number of occupants and direction of door swing, at the DD stage.	D2.20	DP2
9.	School Complex – Tiered Seating - Although the plans are yet to detail handrails, it is likely that the pending design will not comply in this area. A common issue is that they usually do not extend the full distance of both sides of the stairway, rather stop and allow for access at the two landing levels. Or only contain a single handrail to the wall side.	Access Consultant to comment on the feasibility of a Performance Solution, once the design has progressed with handrails illustrated.	D3.3 inter alia AS 1428.-2009 Clause 11.2	DP2
10.	Boarding House - The central fire stair exit (fire engineered not to be fire isolated) will not have a fire hydrant not located within it.	The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible.	E1.3	EP1.3
11.	School Complex – Its understood that the requirement for smoke exhaust throughout the building will be considered for rationalisation by the Fire Safety Engineer, with the main trade off being a compliant sprinkler system.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution is feasible. It will be permitted omit smoke exhaust from the school, however it is required to the Basement Carpark and Gurdwara.	E2.2	EP2.2
12.	School Complex – A small number of non-compliance that can be readily rectified have been identified in relation to certain	Design changes required to illustrate compliance.	Part F2	F2.1

	sanitary facility layouts, refer Part F2 below			

Note:
Items 2-10 & 12 include DTS non-compliant items requiring further consideration at the Detailed Design Development Stage. Items 1 & 11 include DTS non-compliant items that have been resolved in principal; however, require final close out at a later stage, following the completion of the Fire Engineering Report, prior to the issue of a Construction Certificate.

It is important to note, that Group DLA suggest, that these items identified above have no bearing on planning matters, and as such should not hinder the SSD Application any further.

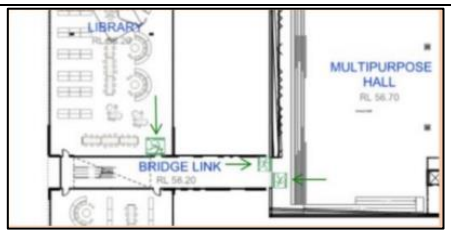
7.17.2 Fire Engineering

In the letter titled *SSDA Statement for Fire Engineering – Sikh Grammar School* prepared by Umow Lai (2019), review of the Architectural Plans prepared by PMDL and the BCA Report were utilised to inform the proposed fire engineered performance solutions for the Proposed Development, which aims to address any non-compliances articulated within the BCA Report. The Fire Engineering letter of support is located within **Appendix 30** of this EIS.

Table 79 below outlines the non-compliance for the Proposed Development requiring indicative Performance Solutions prior to the issue of a Construction Certificate.

Table 79: Non-compliances with DTS Provisions Requiring Performance Solutions			
No.	**Clause**	**Potential Performance Solution (From BCA Report)**	**Comments**
Student Accommodation			
1.	C1.1, C3.11	Ground Floor: Omission of bounding construction fire separation between the common areas, i.e. open lounge, kitchen, games room etc.	Recommended that this is addressed by design change to ensure BCA DTS compliance is achieved. We understand this has been addressed.
2.	C2.14	The common corridor is more than 40 m in length without smoke proof wall / door intervals. This is due to the common corridor area throughout the building being connected by the central open stair and communal area on Ground Level.	Feasible to be addressed by Fire Engineering. The central stair lobby is to be fire separated from the rest of the building. The lift being located within the stair lobby shall be addressed as part of the Performance Solution. Where the common corridor is more than 40 m in length, smoke doors on held-open devices are recommended to be installed.
3.	D1.3, D1.7	The central exit stair contains the following non-compliances: a. Connects more than 3 storeys (actual: 5 Storeys) and is not fire isolated from the remainder of the building. b. Discharges internally to the building rather than direct to open space.	Feasible to be addressed by Fire Engineering on the basis that the central stairs are fire separated from the rest of the building.
4.	D1.3	The eastern exit stair contains the following non-compliances: a. Connects more than 3 storeys (actual: 4 Storeys) and is not fire	Recommended that the stairs are fire separated from the rest of the building.

		isolated from the remainder of the building.	
5.	E1.3	The central fire stair exit (fire engineered not to be fire isolated) will not have a fire hydrant not located within it.	As the central Fire stairs are to be fire isolated from the remainder of the building, fire hydrants are to be provided at each Level within 4m of the stairs.
6.	G3.2, G3.3, G3.4, G3.6, G3.8	Boarding House - Omission of a number of the atrium provisions such as smoke exhaust, undersized atrium wells, bounding walls set back more than 3.5m, omission of roof protection and possibly other BCA Specification G3.8 short falls. Mechanical and Fire Services Engineer to advise.	It is assumed that the fire separation of the fire stairs would not trigger the requirements of the G3 atrium provisions. If it does, it is still considered feasible to be addressed by Fire Engineering.
School Complex			
7.	C3.3, C3.4	Basement Carpark - The opening to the pedestrian ramp area servicing the Basement Carpark is positioned within 6 m of the Primary School complex which is a separate fire compartment. The openings to the carpark may be difficult/impossible to treat. The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible. Fire separation to the adjacent wall of the Primary School building may or may not need to be fire rated as part of this review.	Feasible to be addressed by Fire Engineering. Detailed assessment of the openings will be required during the detail design stage.
8.	D1.9	Level 3 exit stairs – Contain the following non-compliances: a. Discharge at level 2, rather than ground level. b. Cause a travel distance more than 80 m to the ground floor external exits (open space).	Supportable by Fire Engineering on the basis that additional exits are provided including horizontal exits to neighbouring buildings.
9.	D2.20, D1.11	Level 2 & 3 - Horizontal exit doors – The following considerations have been noted: a. The southern door from the library to the bridge does not swing in the direction of egress, for secondary school evacuating occupants. b. Horizontal exit doors are required to be illustrated at the Multipurpose Hall compartment line to bridge junction.	a. Given that the Library may accommodate a large number of occupants, it is recommended that additional doors are provided to swing in the direction of egress. b. Design change required as indicated in the BCA report. c. The non-compliance associated with horizontal exits is feasible to be addressed by a Fire Engineering solution. d. TBC by Group DLA as per comments in the BCA report.

		 c. That the BCA deemed-to-satisfy provisions do not permit horizontal exits in a secondary or primary school building. d. The space on the opposite side of the door may contain shortfalls in terms of the number of permitted occupants – TBC by GDLA.	
10.		It's understood that the requirement for smoke exhaust throughout the building will be considered for rationalisation by the Fire Safety Engineer, with the main trade off being a compliant sprinkler system.	It is recommended that the fire compartment sizes are limited to less than 2,000 m^2 in area to avoid the requirement for smoke exhaust. There is limited basis to Fire Engineer out the requirements for smoke exhaust systems.
General Site Wide			
11.	D1.4, D1,5, D1.6	Multiple travel distance non-compliances as indicated within Table 5 of the BCA report.	A number of travel distance non-compliances are identified within the BCA report but are subject to change based on the revised architectural layouts. It is recommended that the travel distances are reassessed by the BCA consultant. Fire Engineering solutions are possible to address 50% increase in travel distances on the basis of additional fire safety measures provided to offset the extended travel distances.

It is noted, that as part of the detailed design stage, the non-compliance will be formally addressed by way of Fire Engineering Performance Solutions prior to the issue of a Construction Certificate. The formal FEBQ and FER will be prepared and undertaken during this part of the process.

7.17.3 Structural Support

In the letter titled, *Sikh Grammar School – Structural Letter in Support of SSDA* prepared by Northrop (2019), they consider the relevant structural support systems required for the Proposed Development, based on the overall proposed Masterplan (refer to **Appendix 32**).

7.18 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The *Ecologically Sustainable Development Report* (Umow Lai, 2019), considers Ecologically Sustainable Development (ESD) opportunities and initiatives, with regard to the Proposed Development (refer to **Appendix 29**). The Proposed Development would incorporate into its design and operation, a number of ecologically sustainable initiatives, to achieve a high level of environmental sustainability.

It is noted, that the Proposal seeks to achieve a minimum NABERS Green Star rating of 4-Star-Green-Star, which is considered a 'Best Practice' outcome.

To inform the overall ESD opportunities on the Subject Site, the following documentation was reviewed, including:

- Principles of ESD – Schedule 2, Clause 7(4) of the EP&A Regulation;
- Green Building Council of Australia, Green Star Design & As-Built v1.2 Rating Tool;
- SSD 9472 – SEARs; and
- CSIRO projected impacts of climate change.

7.18.1 Ecologically Sustainable Development Principles

The ensuing sections of this EIS outlines the Proposed Development's consistency with the principles of ESD in accordance with the EP&A Regulation.

The Precautionary Principle

The built-form of the Proposed Development embraces sustainable design principles via maximising the potential passive (i.e. energy free) performance of the relevant building components. It is noted, that school buildings are generally constructed around a relatively shallow plan to allow daylight to penetrate available spaces. Whereas, buildings designed around a deep plan, increasing the ceiling heights, improves overall daylight availability and air movement encountered. Further, incorporating natural ventilation across the Site will assist minimizing energy consumption from mechanical plant on-site, whilst external shading will reduce the potential for solar gain during the indicative summer months, in turn reducing cooling loads and the overall risk of overheating.

The stormwater design for the Proposed Development will ensure, that the post-development peak event discharge rates do not exceed pre-development rates and the overall design development will explore the feasibility for all rainwater from new roofs to be captured and reused on-site for irrigation and building services.

It is noted, that roof materials and colour selections have been strategically chosen, in order to contribute to a cooler microclimate and mitigate any potential for the 'Heat Island Effect' from occurring. Furthermore, building services, lighting and equipment will be specified to be highly energy efficient using current best practice approaches and products.

With regard to climate-drive risks, the highest risk identified include an increase in maximum temperatures and the length and frequency of heat events. The proposed design for the Subject Site addresses the potential for high external heat loads by proposing measured glass to façade ratios and other passive measures to support energy efficient mechanical solutions. Further solutions include increased insulation; high-performance glazing; detailing of the building fabric to minimise unwanted infiltration; and consideration of thermal mass.

Inter-Generational Equity

The proposed Masterplan includes provisions with regard to embracing indoor environmental quality as a fundamental requirement by focusing on delivering fresh air; quality acoustics; and low toxicity materials and finishes.

The proposed Masterplan design places significant emphasis on improving solar access across the Site, that will result in the Proposed Development actively engaging the end user with their surroundings, once fully operational, ultimately improving the overall wellbeing experienced across the Subject Site. The ESD Report notes, that this is commonly referred to as the 'biophilic response'.

The proposed school buildings target high levels of energy efficiency and low operational energy consumption. As mentioned above, the Proposed Development envisages to attain a 4-Star-Green-Star NABERS rating.

Conservation of Biological Diversity and Ecological Integrity

It is noted, that the Proposed Development works would have a minimal impact on existing vegetation and biological communities on the Subject Site, which has been further reinforced by the Ecological Report prepared by NGH Environmental (refer to **Appendix 23**). The proposed landscape design has considered a range of initiatives to enhance the biodiversity of the Subject Site through a carefully chosen dichotomous selection of endemic trees and shrubs dispersed across the Site.

Improved Valuation, Pricing and Incentive Mechanisms

The environmental targets anticipated for the Proposed Development have largely been embedded in the nature of the Proposed Development, rather than as additional 'add-on' items. For example, identified areas across the Site will experience a relatively high degree of thermal efficiency through the effective distribution of daylight and optimization of mechanical ventilation systems throughout the indicative learning areas; thereby, reducing ongoing operational costs for the School.

A utility monitoring strategy is also proposed for the on-going management of energy and water consumption across the Site. The Waste Management Plan will further assist in reducing costs as well as incorporating potable water reuse and recycle applications across the Subject Site.

7.18.2 CSIRO Projected Impacts of Climate Change

It is noted, that high performance building envelopes help to mitigate any anticipated climatic heat effects from occurring, by shielding the environment from extreme weather. Measures to achieve this include:

- Attention to solar gain through the integration of shading devices and high-performance windows;
- Airtight construction and controlled ventilation, with a responsive cooling system providing year-round thermal comfort; and
- High levels of insulation minimises any potential heat gains through the building fabric.

Stormwater detention rates will be sized accordingly to account for any increases in prolonged rainfall events. Additionally, strengthening the frame and foundation design will satisfactorily accommodate any additional loading anticipated from increased wind patterns.

Furthermore, the proposed landscape design will maximise permeable surfaces to slow the runoff of rainfall from the Subject Site and green spaces identified in the surrounding area (along with green roofs), will incorporate shading and rain refuge to cover occupants and visitors during climatic events.

7.18.3 Green Star Performance Rating

The Proposed Development aims to create and build a new Educational Establishment with an architectural and landscape treatment, that achieves a high-quality integrated design and an attractive appearance, in a style that is representative of best-practice measures, as well as achieving the principles of ESD, as outlined above and within the EP&A Regulation.

The Proposed Development would showcase the next-generation in school design envisaged for the education sector, targeting a State-of-the-Art, 4-Star-Green-Star rated Educational Establishment, designed to achieve satisfactory standards in relation to sustainability, social amenity and building quality. To achieve a desired 4-Star-Green-Star rating, the Proposed Development will adhere to the following nine (9) environmental categories, as well as any indicative corresponding initiatives, as outlined in **Table 80** below:

1. Management;
2. Indoor Environmental Quality;
3. Energy;
4. Transport;
5. Water;
6. Materials;
7. Land Use and Ecology;
8. Emissions; and
9. Innovation.

Table 80: Adherence to Environmental Categories

Category	Initiative
Management	1. The Project team will establish ongoing environmental performance targets relating to its consumption of energy and water, production and recycling of waste, and to the ongoing maintenance and improvement of good indoor environmental quality. Furthermore, the school will monitor and report on nominated targets to ensure consequential outcomes. 2. During design and documentation, the Project team will review the design for its ease of maintenance for all building services and building fabric. 3. Comprehensive pre-commissioning and commissioning activities will be performed for all nominated building systems. 4. Post completion the project will undergo a 12-month period of building tuning, with minimum quarterly meetings, to optimise the buildings systems. 5. Building user guides will be produced by the Contractor to help users interact effectively with the buildings, optimising building performance and user comfort. The Guides will include guidance on all sustainability attributes of the site, and information on maintenance requirements. 6. Building services will include metering on all major energy and water-consuming equipment, providing the facility manager with information on system performance and allowing them to closely manage efficient use of resources on site. 7. A systematic and methodical Environmental Management plan will be formalised for implementation during the construction phase by the Contractor such as ISO 14001. 8. The design will include infrastructure for operational waste management and the separation of waste streams.
Indoor Environmental Quality	1. In-takes and exhausts will follow best practice guidelines to avoid unwanted recirculation. 2. Exhausting pollutants from print/photocopy equipment, cooking equipment, and carpark vehicle exhaust through dedicated exhaust systems to avoid lowering IAQ of adjacent spaces.

	3. The project will address noise in enclosed spaces by reducing noise levels to no more than 5 dB(A) above the satisfactory levels provided in Table 1 AS/NZS 2107:2000 and mitigation reverberation. Noise transmission and reverberation times will be through detailed acoustic separation and acoustic attenuators. 4. Light fittings shall be selected, where possible, such that glare is controlled or reduced and where required glare from sunlight will be reduced through a combination of blinds, screen, fixed devices, or other means. Occupants will also can control lighting in the spaces through manual lighting controls. 5. All habitable areas will be extensively daylit, delivered by a façade providing high levels of daylight and views for occupants. 6. All paints, sealants, adhesives, floor coverings and composite timbers used internally will meet low VOC (Volatile Organic Compound) emissions limits in accordance with Green Star Design and As-Built v1.2 VOC Emissions limits tables. 7. Any engineered wood products will meet stipulated formaldehyde limits as per Green Star Design and As-Built v1.2 Table 13.2: Formaldehyde Emissions Limit Values for Engineering Wood Products.
Energy	1. Energy modelling demonstrating a reduction in energy consumption and GHG emissions of the proposed building as compared to a reference building; for 7 points as per Credit 15 of the Green Star pathway. 2. Good passive design features will be incorporated into the proposal to achieve measurable impacts on both building services strategies and the thermal comfort of occupants. 3. LED lighting, which offers life cycle cost advantages and reduced annual energy consumption, shall be utilised wherever possible A high percentage of lighting will be controlled either through occupant detection, daylight controls or time clock controlled to meet BCA Section J6 requirements. 4. Ensuring thermal comfort on site takes a three stages approach. (i) Stage 1 utilises natural ventilation via openable facades and ceiling fans for air movement. (ii) Stage 2 provides thermal comfort via "air tempering". Air tempering is the delivering of air at a higher temperature than full AC, allowing for reduced loads on cooling coils to save energy. (iii) Stage 3 is full AC. This is expected to be used only during peak summer conditions. Reed switches on the windows / louvre arrangement shall be proposed so full AC mode can only be achieved when the façade is closed. 5. The domestic hot water system (DHW) will be low–emission, utilising one or any combination of the following technologies (to be selected during detailed design): (i) Natural gas with solar pre-heat (ii) Natural gas with high-efficiency condensing boilers (iii) Heat-pump technology. Heat-pumps utilising refrigerants with a lower global warming potential (GWP) (e.g. CO2) will be preferred over those using conventional refrigerants. 6. The project will make provisions for the inclusion of solar photovoltaic (PV) arrays to supplement energy consumption and reduce ongoing operating costs. It is proposed the available roof space is reviewed and a suitable PV system be assessed for feasibility in detailed design stage.

Transport	1. Infrastructure allowances will be made for low emission vehicles. 2. Active transport facilities such as bicycle parking, showers and lockers will be available on site for occupants and visitors.
Water	1. The proposal includes rainwater harvest and re-use. 2. All bathroom fixtures (toilet pans, urinals, hand basin taps and showers) will meet minimum WELS ratings in accordance with the applicable Green Star Guidelines: a. Basin taps and urinals to be equal to or more than 5 Star WELS b. Showers to be equal to or more than 3 Star WELS c. Toilets to be equal to or more than 4 Star WELS 3. Landscape areas will be irrigated using sub-soil drip irrigation with wherever practical automated control to limit unnecessary irrigation.
Materials	1. A minimum 90% of all construction waste generated will be diverted from landfill by either re-use or recycling. In addition, the following options are being explored and may also be incorporated: 2. A high percentage of PVC products used in the project including those in all formwork, pipes, flooring, blinds and cables shall meet the Best Practice Guidelines for PVC in the Built Environment, published by the Green Building Council of Australia. 3. A high percentage of timber used in building and construction will be from a reused source or certified by a forest certification scheme.
Land Use and Ecology	1. The total proposed works are contained within the existing site and the site's current ecological value will be improved through well-considered landscape design. 2. Rooftops that will contribute to a cooler microclimate using light coloured roof materials to reduce the 'Heat Island Effect'.
Emissions	1. The lighting design shall be compliant with AS1158: Lighting for Roads and Public Spaces and AS4282: Control of the Obtrusive Effects of Outdoor Lighting. This would be achieved through control of upward light output ration (LOR) or control of direct illuminance. 2. Stormwater design will ensure post-development peak event discharge rates do not exceed pre-development rates and that pollution reduction targets will be met. 3. Landscape solutions will be applied to achieve a high level of stormwater performance across the site, improving water quality prior to discharge from the site. 4. Water based heat rejection has been avoided to avert any potential impacts associated with harmful microbes in building cooling systems.
Innovation	The Innovation category is a way of encouraging, recognising, and rewarding the spread of innovative practices, processes and strategies that promote sustainable communities and cities.

PART H MANAGEMENT AND MITIGATION MEASURES

By:	The Sikh Grammar School Australia
In relation to:	Proposed State Significant Development Application (Proposed Sikh Grammar School)
Site:	151-161 Tallawong Road, Rouse Hill (Lots 42 & 43 DP 30186)

The Sikh Grammar School Australia would undertake the facilitated construction and operation of the proposed Sikh Grammar School in accordance with the following:

Below prescribes some of the terms and abbreviations used in this Statement, including:

Approval	The Minister's approval of the Proposed Development
BCA	Buidling Code of Australia
Council	Blacktown City Council
Department	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act, 1979*
Project	The Proposed Development as described in this EIS
Proponent	The Sikh Grammar School Australia
Secretary General	Secretary General of the Department (or delegate)
Site / Subject Site	Land to which the project application applies
WorkCover	NSW WorkCover

ADMINISTRATIVE COMMITMENTS

Commitment to Minimise Harm to the Environment

1. The Sikh Grammar School Australia would implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the project.

Occupation Certificate and Registration as a School

2. The Sikh Grammar School Australia would ensure a staged Interim and Final Occupation Certificate is obtained prior to the occupation of the School.
3. The Sikh Grammar School Australia would ensure the registration of the School

Terms of Approval

4. The Sikh Grammar School Australia would carry out the project generally in accordance with the:

    a) Environmental Impact Statement;
    b) Drawings prepared by PMDL Architects;
    c) Management and Mitigation Measures;
    d) Any Conditions of Approval.

5. If there is any inconsistency between the above, the Conditions of Approval shall prevail to the extent of the inconsistency.

6. The Sikh Grammar School Australia would ensure compliance with any reasonable requirement/s of the Secretary-General of the Department of Planning and Environment arising from the Department's assessment of:

a) Any reports, plans, programs, strategies or correspondence that are submitted in accordance with this Approval; and
b) The implementation of any recommended actions or measures contained in reports, plans, programs, strategies or correspondence submitted by the Project Team as part of the application for Approval.

Structural Adequacy

7. The Sikh Grammar School Australia would ensure that all new buildings and structures on the Site are constructed in accordance with the relevant requirements of the BCA.

Access

8. The Sikh Grammar School Australia would ensure at the Construction Certificate Stage compliance with Part D3 BCA and the following:
   a. Provide door schedule which shows compliance with AS1428.1 with respect to clear openings, circulation space and luminance contrast on doorways, door force is 20N where a door closer is fitted.
   b. Provide slip resistance certification for ramps, to show testing under wet surface conditions in accordance with AS4586 – 2013.
   c. Detail all 1:14 gradients ramps to comply with AS1428.1 with regards to handrails on both sides with extensions and tactile ground surface indicators.
   d. All public stairs to comply with AS1428.1 Cl 11 Stairs.
   e. Tactile indicators to be installed on top and bottom of non-fire isolated stairs and ramps to comply with AS1428.4.1.

Operation of Plant and Equipment

9. The Sikh Grammar School Australia would ensure that all plant and equipment used on site is maintained and operated in proper and efficient manner, and in accordance with relevant Australian Standards.

SPECIFIC ENVIRONMENTAL COMMITMENTS

Noise

11. Construction on the Subject Site would only be undertaken between 7am and 6pm Monday to Friday, and 8am and 1pm on Saturdays. No construction would be allowed on Subject Site on Sundays or public holidays. The following specific measures are proposed throughout the construction and operational phases of development:

    a) Prompt response to any community issues of concern;
    b) Noise monitoring on-site and within the community;
    c) Refinement of on-site noise mitigation measures and plant operating procedures where practical;
    d) Preparation of a formal noise management plan including noise monitoring program;
    e) For equipment with enclosures (i.e. compressor rooms) ensure door and seals are well maintained and kept closed when not in use;
    f) Keep plant and equipment well maintained, regular inspection and maintenance of equipment to ensure it is good working order;
    g) Equipment not to be operated until it is maintained or repaired;
    h) Regularly train workers (i.e. toolbox talks) to use equipment in ways to minimise noise;
    i) Operate mobile plant in a quiet, efficient manner;
    j) Switching off vehicles and plant when not in use; and,
    k) Incorporate clear signage at the site including relevant contact numbers for community enquiries.

Air Construction Traffic

12. During construction:

    a) all trucks entering or leaving the site with loads have their loads covered;
    b) trucks associated with the project do not track dirt onto the public road network; and,
    c) the public roads used by these trucks are kept clean.

Dust Management

13. During the construction phase of the project, all reasonable and feasible measures to minimise the dust generated by the project. These include:

Source	Control Measures
General	
Visual Inspection	Carry out visual inspections of the Subject Site during site preparatory / construction activities and employ measures where necessary to minimise any visible air pollution generated by the Project.
Regular Maintenance	Regularly inspect and perform maintenance on dust control technologies (i.e. water sprays nozzles) and measures to ensure the effectiveness of these controls.
Erosion Control Structures	Silt and other material removed frequently from around erosion control structures to ensure deposits do not become a dust source.
Vegetated Buffers	Retain existing vegetation where appropriate and implement additional vegetated buffers around the boundary of the site to provide act as a physical barrier to the transport of pollutants in the direction of sensitive receptors.
Waste Materials	Cleared vegetation, demolition materials and other combustible waste material should not be burnt on-site. All waste materials be appropriately contained (in skips, bins) and covered during adverse weather conditions and handled in accordance with the Subject Site's Waste Management Plan.
Wind Blown Dust Sources	
Disturbed Areas	– Disturb only the minimum area necessary. – Stabilise all disturbed areas as soon as practicable to prevent or minimise windblown dust. – Rehabilitate disturbed areas as soon as practicable with a layer of inert material and vegetation (generally a minimum of 500mm). – Regularly assess weather conditions to identify adverse weather conditions1 that are unfavourable in terms of dust levels at receptor locations surrounding the site (i.e. on dry days, during strong winds, and particularly north easterly winds blowing in direction of the school).
Stockpile/s	– Water sprays and/or covers would be employed for material stockpiles, particularly during adverse weather conditions, to minimise dust generation. – Stockpiles would be covered overnight. – Use of chemical dust suppressants would also be used where necessary. – Fencing, bunding or shelterbelts used to reduce ambient wind speeds (in some areas).
Transportation (Trucks)	– Truck loads covered with tarpaulin or lid prior to transport of dusty materials by road.

	– Minimise truck queuing and unnecessary trips through logistical planning of materials delivery and work practices. – Reduce vehicle / truck idling times. – Maintain a following distance of trucks of 20 seconds minimum to allow for dust clouds generated by the lead truck to dissipate. – Install a truck wheel wash or shaker grid to remove any loose dirt.
Activity Generated Dust Sources	
Internal Road Dust	– Roads and trafficked areas would be watered down using a water-cart and/or sprinkler(s) to minimise the generation of dust. – Haulage vehicles would be restricted to the most direct route and minimal manoeuvring areas to prevent indiscriminate driving over non-active areas. – Haul roads and hard stand areas will have designated speed limits (i.e. generally 20 km/hour). – Enforce speed limits on all on-site vehicles to minimise wheel-generated dust. – Stabilise access roads and work areas as soon as practicable to prevent or minimise windblown dust. – Maintain roads on a regular basis to ensure roads are clearly marked, pot holes and corrugations are eliminated, and extra material build up is removed or redistributed on the road. – Chemical dust suppressants used where necessary.
External Road Dust	– Vehicles causing dirt track out onto main roads would be cleaned up on a regular basis to prevent this becoming an additional source of dust. – Material spillages would be cleaned up promptly.
Excavation	– Apply water sprays to trucks and loading points for dust suppression.
Loading and Dumping	– Dump heights would be minimised wherever possible (reduce to 5 m).
Plant and Equipment	– All plant and equipment used during activities would be maintained and operated in a proper and efficient condition. – Reduce idling times of trucks and other machinery. – Fixed plant should be located as far from local receptors as possible.
Excessive Dust Events	
Internal Roads	– Employ additional water spraying / water carts. – Further reduce speed on haul roads during high winds. – Halt traffic movements.
Stockpiles	– Cover stockpiles of material.
Project Site	– Temporarily halt activities and resume once weather conditions have improved.

Waste Management

14. The Sikh Grammar School Australia would ensure that all waste generated on site during operation is classified in accordance with the Office of Environmental and Heritage's *Waste Classification Guidelines: Part 1 Classifying Waste* and disposed of to a facility that may lawfully accept the waste.
15. Consider measures and performance-based targets for reduction, reuse and recycling options.

Protection of Vegetation

16. The Sikh Grammar School Australia would mark the clearance boundaries prior to commencement of construction to ensure that there is no unnecessary removal of vegetation.

Aboriginal Heritage

17. During works, The Sikh Grammar School Australia would notify the NSW Office of Environment and Heritage should an Aboriginal site and/or object be recorded in the Aboriginal Heritage Information Management System (AHIMS).

Ecologically Sustainable Development

18. The Sikh Grammar School Australia would investigate the following ESD measures in respect of:

a) Energy & Greenhouse Gas Emissions;
b) Potable water reduction;
c) Minimising waste to landfill;
d) The Indoor Environment;
e) Occupant amenity and comfort;
f) Land Use & Ecology;
g) Emissions; and,
h) Building Management

Bushfire Protection

19. **Asset Protection Zones** – all grounds within the Subject Site, that are not built upon, must be maintained as an APZ (inner protection area) and in accordance with Appendix 5 of PBP. Accordingly, this will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering no more than 20% of the area.
20. **Construction** – At the time of construction for the proposed Student Accommodation and Early Learning Centre, if the neighbouring property to the southwest (Lot F DP 407863) is not developed, that these buildings shall comply with Section 5 (BAL 12.5); AS3959-2009 and Section A3.7 of PBP.
21. **Landscaping** – Any new landscaping is to comply with Appendix 5 of PBP.
22. **Emergency Management** – A bushfire emergency / evacuation plan is to be prepared and be consistent with the NSW RFS Guidelines for the *Preparation of Emergency / Evacuation Plan*.

Contamination

23. Surface water of the associated dam traversing the properties should be chemically treated prior to discharge, and safe application to the land should be ensured so that no run-off would leave the Subject Site.
24. Advised that a hazardous materials survey may be conducted on the existing residential dwelling prior to demolition to account for the management of any potential risks, namely, asbestos and polychlorinated bi-phenyls (PCBs).
25. A contaminated land professional should be consulted with should any unexpected finds concerning stained or odorous material be uncovered during the demolition and construction phases of development.

Geotechnical

26. **Footings and Foundations:** Shallow footings, such as pad and strip footings, or slab-on-ground may be adopted founding on residual soil or underlying rock, depending on foundation level. Individual pad footings and all footings within

building footprints should not span the interface between different foundation materials. Alternatively, inclusion of movement joints may mitigate impacts of differential movements. Shallow footings may be designed adopting allowable end bearing capacities of 100 kPa for stiff to very stiff residual soil or "engineered fill' (refer earthworks below), 250 kPa for hard residual soil and 350 kPa for very low to low strength shale.

Deepened footings such as piles founding in rock may be considered to accommodate higher end bearing pressures. Estimates of safe end bearing pressure and shaft friction for piles founding in very low to low strength rock are 700 kPa and 60 kPa, and for medium strength rock are 1500 kPa and 250 kPa, respectively. For uplift resistance, we recommend reducing allowable shaft friction by 50% and checking against 'piston' and 'cone' pull-out mechanisms in accordance with AS2159 (2009).

Provided bearing capacities assume an embedment of at least 0.3 m into the design unit. Bearing capacity values should be confirmed by a geotechnical engineer on site during construction. It is noted, that further testing is required for higher bearing pressures.

27. **Earthworks:** All earthworks, including filling of dam, should be carried out following removal of topsoil and other unsuitable materials, such as uncontrolled fill and soft soils, in accordance with AS3798 (2007) and BCC's requirements. A qualified geotechnical engineer should inspect the condition of the exposed material to assess suitability of the prepared surface as foundation for footings or fill placement. Further geotechnical advice can be provided by MA related to earthworks requirements, including site filling, dependent on final design and proposed construction methodologies.

28. **Drainage Requirements:** Appropriate surface drainage measures should be provided to divert overland flows away from structures and discharge into council approved discharge points.

29. **Site Classification:** A preliminary site classification of 'H1' should be adopted for design of lightly loaded shallow footings, in accordance with AS 2870 (2011), subject to the recommendations presented in this report and CSIRO guidelines (CSIRO BTF 18, 2003). A preliminary site classification of 'P' should be adopted, where footings are likely to be impacted by the presence of uncontrolled fill or soft foundation material, by cutting and filling of > 0.4 m thickness or by environments that could lead to exceptional moisture condition variations within foundation material, such as areas impacted by dam and drainage depression.

30. **Trafficability and Construction Access:** Trafficability across exposed soil/subgrade materials is expected to be adequate in dry weather for most construction plant such as conventional rubber tyre plant, four-wheel drive plant and track mounted plant.

    During wet weather, trafficability of all heavy machinery on exposed soil/sub-grade materials, particularly residual clay / silty clay, may be reduced. Provision for site grading, temporary open drains or toe/crest drains is suggested to collect any overland flow, prevent water ponding and hence minimise potential for any further soil/sub-grade softening or erosion, and to help improve trafficability. The use of granular fill or aggregate for temporary construction roads may be necessary to allow works during and immediately following wet weather.

Flooding

31. The drainage system on the low point along Tallawong Road, adjacent to the northern site boundary is to be upgraded with five (5) 900 x 900 mm V-grate pits and 1.5 m diameter pipes to completely capture 1% AEP flows.
32. 1% AEP flood waters collected from Tallawong Road are to be conveyed by a 2 m wide and 1.8 m deep box culvert under the proposed basement car parking area, along the north eastern corner of the Site and discharged into the 1.5 m diameter trunk drainage pipe under the northern boundary road, which would be constructed as parts of the subdivision works, currently being assessed by Blacktown City Council.
33. An emergency overland flow path is provided through the proposed carpark to direct PMF flows towards the northern boundary road.
34. The Site is generally flood free for all events up to and including the PMF event from Stages 1-9 for the Proposed Development, with the specified mitigation measures and design measures implemented.

Ecologically Sustainable Development

35. The Proposed Development will achieve equivalent to a 4-Star-Green-Star NABERS rating, considered in line with industry 'Best Practice' measures, as defined by the Green Building Council of Australia.
36. The Proposed Development will comply with Section J of the BCA.

Traffic and Access

37. The Proposed Development provides adequate parking provisions for compliance with the DCP for all components of the Proposed Development.
38. The restriction concerning the operation of the Gurdwara and Langar during school hours ensures adequate parking provision for the Place of Public Worship during the later evening periods when peak operation would occur.
39. The Proposal facilitates good access for buses, whether this is for the specific school route, or local and / or regional bus services through the provision of a three (3) bus indented bay along Tallawong Road.
40. The proposed parking provision for the Early Learning Centre exceeds the minimum requirements of the DCP and is considered satisfactory.
41. The design of the car parking areas and access arrangements complies with AS2890.1 and is considered satisfactory.
42. Traffic control should be implemented by school staff to manage the proposed kiss and drop facilities within the basement car parking area and ELC car parking area.

Aboriginal Cultural Heritage

43. The Proposed Development does not require further investigation and the proposed construction works can proceed with caution, subject to approval.
44. As an SSD Application, an AHIP permit would not be required if works were to uncover Aboriginal material. However, in the unlikely event, that previously undiscovered Aboriginal finds are identified during construction, works in the vicinity of the find should cease and a qualified archaeologist / heritage consultant called in to inspect the find and provide recommendation on proceeding.
45. In the unlikely event, that human remains are discovered during the construction, all work must cease. The NSW OEH, the local police and Deerubbin LALC should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
46. Further archaeological assessment would be required if the proposed development extends beyond the area currently investigated. This would include consultation

with the RAPs for the project and may include further field survey and / or test excavation.

47. Continued consultation with the RAPs for the proposed development should be undertaken if there are any major changes in project design or scope, further investigation or finds.

Biodiversity

48. Mitigation measures to be implemented with regard to terrestrial safeguards throughout the Proposed Development's construction and operational phases of development should be in accordance (where practicable) with those outlined in **Table 81** below.

Table 81: Terrestrial Safeguards – Construction and Operation	
Impact	**Safeguards and Mitigation Measures**
Removal of native vegetation	▪ Native vegetation removal to be minimised through detailed design; and ▪ Arboricultural assessment of canopy trees prior to removal to determine if trees can be retained.
Removal of threatened species habitat	▪ Habitat removal will be minimised through detailed design; and ▪ Replace or re-install any habitat features removed in nearby bushland.
Injury and mortality of fauna	▪ Habitat tree clearing to be supervised by ecologist; and ▪ If unexpected threatened fauna or flora species are discovered, stop works immediately and consult project ecologist.
Invasion and spread of weeds/edge effects	▪ Exclusion zones to be set up at clearing limits to prevent spread of weeds into adjacent native vegetation; and ▪ Hygiene protocols preventing spread of weed seed and propagules to be detailed in CEMP and followed during construction.
Invasion and spread of pathogens and disease	▪ Hygiene protocols managing introduction and spread of soil borne pathogens, such as *Phytophthora cinnamomi* to be detailed in CEMP and followed during construction.
Noise, light and vibration	▪ Temporary impacts as a result of construction works to be managed as per CEMP requirements.

49. Mitigation measures to be implemented with regard to aquatic safeguards throughout the Proposed Development's construction phase of development should be in accordance (where practicable) with those outlined in **Table 82** below.

Table 82: Aquatic Safeguards – Construction	
Impact	**Safeguards and Mitigation Measures**
Flooding	▪ As part of the construction environmental management plan (CEMP), a procedure will be prepared to identify potential flood threats and an evacuation procedure for dispersible materials, hazardous materials and equipment containing such materials. The procedure will include:

	○ Regular consultation of the Bureau of Meteorology website for weather forecasts and flood warnings; ○ Where possible, schedule activities on land subject to flooding to avoid high flow periods; and ○ A process for removing equipment and materials off site and out of flood risk areas quickly. ▪ Storing and use of fuels, chemicals and extracted materials away from the water's edge, in bunded areas.
Water contamination	▪ Protection (e.g. sedimentation fencing) shall be provided for the works to minimise runoff from the construction site into waterways and waterbodies.
Soil management, erosion and sediment control	▪ An Erosion and Sediment Control Plan (ESCP) is to be prepared. The plan will be site-specific, taking into account the specific nature of the works and surrounding environment at each alignment section. The plan will be prepared in accordance with the Blue Book (Landcom, 2004). ▪ Sediment and erosion controls will be maintained during the construction works and adapted if required to ensure the objectives of the Blue Book (Landcom, 2004) are met. ▪ Construction works should not be carried out in periods of forecast heavy rains or strong/gale wind warnings. ▪ Where possible, topsoils and subsoils will be removed and stockpiled without mixing the two, in a location or manner that will facilitate the return of soils to a location as close as possible to their original sources. Disturbed areas will be dressed with top soil to assist rapid revegetation of the disturbed surfaces. ▪ Stockpiles will be covered within 10 days in accordance with the Blue Book (Landcom, 2004). ▪ Vehicle and machinery movements will be restricted to access tracks as far as possible. ▪ Vehicles and machinery must not be parked on native vegetated areas. Staff shall park at designated parking areas , existing cleared areas or exotic vegetated areas.

50. Mitigation measures to be implemented with regard to aquatic safeguards throughout the Proposed Development's operational phase of development should be in accordance (where practicable) with those outlined in **Table 83** below.

Table 83: Aquatic Safeguards – Operation	
Impact	**Safeguards and Mitigation Measures**
Flooding	▪ Stormwater retention and management devices will be installed to reduce the 1% AEP peak flow to pre-development flows.
Stormwater management and contamination	▪ Stormwater systems will be designed and managed in accordance with the control measures

	and guidelines specified in section 2.3.1 of the NWGCDCP. ▪ Stormwater systems will be fitted with grating and oil-water separators to capture contaminants. ▪ All filtration systems fitted to stormwater will be maintained in accordance with design guidelines to ensure their effectiveness is maintained.
Water use	▪ Landscaped areas will be designed and managed in accordance with section 4.2.6 of the NWGCDCP, which includes measures to reduce water use, water runoff and maintenance requirements, including fertiliser and herbicide application rates

ENVIRONMENTAL RISK ASSESSMENT

51. An Environmental Risk Assessment has been prepared by Willowtree Planning, which identifies the potential environmental impacts associated with the construction of the Proposed Development (refer to **Appendix 4**). The impacts and mitigation measures of the risk assessment undertaken have been satisfactorily incorporated in the abovementioned mitigation measures.

PART H PROPOSED DEVELOPMENT JUSTIFICATION

The Proposed Development is justified on environmental, social and economic grounds and is compatible with the locality in which it is proposed. Refer to **Part G** of this EIS, that provides detail regarding the justification of the environmental, social and economic impacts anticipated as a result of the Proposed Development.

This SSD Application is considered supportable on this basis for the following reasons:

1. Supports State, Regional and Local Planning Objectives

The Proposed Development is consistent with the objectives, provisions and strategies outlined within the following State, Regional and Local Plans and Policies:

- *NSW State Priorities;*
- *A Plan for Growing Sydney;*
- *Directions for a Greater Sydney;*
- *A Metropolis of Three Cities;*
- *Central City District Plan;*
- *NSW Future Transport Strategy 2056;*
- *State Infrastructure Strategy 2018-2038;*
- *Sydney's Cycling Future 2013;*
- *Sydney's Walking Future 2013;*
- *Sydney's Bus Future 2013;*
- *North West Priority Growth Area Land Use and Infrastructure Implementation Plan 2018;*
- *Crime Prevention Through Environmental Design (CPTED) Principles;*
- *Healthy Urban Development Checklist, NSW Health;*
- *Better Placed – an integrated design policy for the built environment of NSW;*
- *State Environmental Planning Policy (Sydney Region Growth Centres) 2006;* and
- *Blacktown City Council Growth Centre Precincts Development Control Plan 2018.*

The Proposed Development demonstrates an ability to provide a large scale infrastructure development, for which there is significant demand in the relevant policies and local and regional planning strategies, which the Site is located within an area earmarked for such development.

2. Appropriate Use of an Approved Site

The Proposed Development would retain and contribute to the provision and facilitated growth of a State-of-the-Art Educational Establishment, for the immediate locale as-well-as the wider region. The strengthening of the education sector is an important strategy for the economic welfare of Western Sydney as a region as-well-as the wider NSW Government Region. The Proposed Development complements significant government investment in infrastructure and strategic planning vision as enunciated throughout State & Regional Strategies alike. The Proposed Development would be a direct response to the strategic vision (goals / objectives) for the site as set out in *Greater Sydney Region Plan – A Metropolis of Three Cities;* the *Central City District Plan*; and the *North West Priority Growth Area Land Use and Infrastructure Implementation Plan 2018*.

3. Minimises Environmental Impacts

Specialist consultants have assessed the risks and determined that the Proposed Development can be undertaken with minimal environmental impacts. No significant risk to the locality would result from the Proposed Development. Where impacts have been identified, these would be appropriately managed and mitigated through the compilation of mitigation measures.

Additionally, considerable ecological and environmental improvements are included in the project. The measures for implementation are described within **Part G** of this EIS.

4. Creates Compatibility with Surrounding Development

The proposed use is considered compatible with existing and future uses on the Subject Site and adjoining land, as well as land portions within close proximity to the Site. The investigations undertaken as part of this Application conclude that no significant cumulative impact would occur from the proposed use for the purpose of an Educational Establishment.

5. Delivers Ecologically Sustainable Development

The principles of Ecologically Sustainable Development as outlined in Clause 7(4) of the EP&A Regulation have been carefully considered in the formulation of this Proposal and are addressed as follows:

Precautionary Principle
The Proposed Development presents no threat of serious or irreversible environmental damage. The project will deliver ecological restoration and habitat creation to improve the Site, implement climate change adaptation principles, and apply industry best practice ESD initiatives.

Inter-generational Equity
The Project Team and Consultants have examined the overall effects of the Proposed Development on the Natural Environment and the existing Built Environment at and around the Subject Site. The Project Team has examined Biodiversity; Bushfire; Traffic; Aboriginal Cultural Heritage; Flooding; Water Quality and Quantity; Acosutics; Vibration; Geotechnical Conditions; Social Impacts; and Waste Management. This detailed assessment has concluded, that no unreasonable use of resources, affectation of environmental processes or prevention of the use of the land for future generations would occur from the Proposed Development.

The buildings will provide healthy internal and external environments for teaching students today and in the future. The landscaping principles of ecological restoration and habitat creation will deliver benefit to current and future generations. Further, the Proposed Development would improve the economies of the region through substantial infrastructure investment (through a new school) and provide new employment opportunities during construction and through the operational phase for the education sector; thereby, improving the inter-generational equity.

Conservation of Biological Diversity and Ecological Integrity
The Site is currently of low ecological value, for which it is located within Biodiversity Certified Land, as confirmed by NGH Environmental (2019). The landscape design, proposed by Sym Studio will significantly enhance the biological diversity and ecological integrity of the Site.

Improved Valuation, Pricing and Incentive Mechanisms
The design and operation of the School will reduce energy and water consumption and greenhouse gas emissions. Life Cycle Costing will be used throughout the design process to justify capital investment and reduce ongoing impacts.

Environmental Management
The Proposed Development implements significant and elaborate measures, that avoid, contain and address any potential noise impacts; waste and pollution; traffic impacts; and flooding impacts, through avoidance; better design; and management. This is exemplified through acoustical measures; waste management measures and control practices; and drainage systems and erosion and sediment control measures,

which will be implemented throughout both the construction and operational phases of the Proposed Development.

PART I CONCLUSION

This EIS has been prepared to consider the environmental, social and economic impacts of the Proposed Development for The Sikh Grammar School Australia. This EIS has addressed the issues outlined in the SEARs (refer to **Appendix 1** of this Submission) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant EPIs, built-form, social and environmental impacts.

The Proposed Development is considered appropriate for the location and should be supported by the Minister for the following reasons:

- It has been prepared having regard to the relevant Planning legislation and is considered permissible with development consent;
- The Proposed Development has been prepared with regard to the relevant State and Regional Planning Policies and Strategies, and demonstrates consistency and compliance with the objectives of the strategic documents;
- It has been prepared having regard to Council's Planning Policies and generally complies with the aims and objectives of the planning controls for the Site, including the Sydney Region Growth Centres SEPP and the BCC Growth Centres DCP;
- Whilst the Proposed Development results in a numeric non-compliance with the height standard of the Sydney Region Growth Centres SEPP, justification has been provided with the accompanying Clause 4.6 Variation (refer to **Appendix 2** of this Submission), which finds the standard is unnecessary and unreasonable in the circumstances of the Proposed Development;
- The proposal is suitable for the Site as evidenced by the site analysis and various site investigations;
- The proposal does not have any unacceptable off-site impacts on adjoining or surrounding properties or the public domain, in terms of traffic, social and environmental impacts;
- The proposal provides sufficient car parking on-site to meet the demand of the School's population;
- Required infrastructure will be successfully augmented to service the Subject Site;
- The Proposed Development is of a high quality in terms of built-form, bulk and architectural treatment and responds positively to the existing and desired future character of the surrounding area;
- The proposal provides high quality landscaping and open space areas with formalised landscaped learning areas, sports courts and fields, areas for free active play and significant vegetation planting;
- The proposal has addressed the concerns raised during consultation with key government agencies and stakeholders;
- The Proposed Development will result in a high standard educational environment for the School through:
    - Promoting excellence in Sikh education;
    - Building on the strengths of the past to inform the present and create new futures that will enable students to experience growth and success;
    - Achieve quality teaching and learning in all aspects of school life.
- The Proposed Development will contribute positively to energy efficiency and environmental sustainability. The Proposed Development has adopted and incorporated many ESD features to reduce energy and water consumption during the life of the Proposed Development.

Based on the findings of this EIS, it is concluded, that the Proposed Development supports continued investment and growth for the education sector, through the provision of a new school – Sikh Grammar School. The Proposal contributes to the retention and growth of infrastructure in accordance with market demand and residential growth within the North West Priority Growth Area, particularly the Riverstone East Precinct. The Proposed Development is

therefore considered suitable from both a local and regional context and is both orderly and appropriate, based on social, cultural, economic and environmental considerations. It also satisfies all requisite regulatory requirements, as stipulated within the SEARs to address, as Key Issues for the Proposal.

Given all of the abovementioned reasons and the satisfaction of the Objects of the Act and the aims of the Sydney Region Growth Centres SEPP, it is recommended that the Proposed Development, for the purposes of the proposed Sikh Grammar School, be supported by the NSW DPIE, as orderly and an economically satisfactory in accordance with the provision of infrastructure investment contributing to the continued growth and supply within the Growth Centres.

Appendix 1
Secretary's Environmental Assessment Requirements

Appendix 2
Clause 4.6 Variation Request

Appendix 3
Blacktown City Council Growth Centres Development Control Plan Compliance Table

Appendix 4
Environmental Risk Assessment

Appendix 5
CIV and Quantity Surveyors Report

Appendix 6
Survey Plan

Appendix 7
Subdivision Plan

Appendix 8
Architectural Plans

Appendix 9
Construction Staging Plans

Appendix 10
Indicative Stage 1 Construction Plans

Appendix 11
Architectural Design Report

Appendix 12
Landscape Design Report & Plans

Appendix 13
Civil Engineering Drawings

Appendix 14
Tailout Civil Engineering Drawing

Appendix 15
Concept Stormwater Management Plan and Preliminary Flood Study

Appendix 16
Geotechnical Engineering and Salinity Assessment Report

Appendix 17
Preliminary Site Investigation (Phase 1) Contamination Report (151 Tallawong Road, Rouse Hill)

Appendix 18
Preliminary Site Investigation (Phase 1) Contamination Report (161 Tallawong Road, Rouse Hill)

Appendix 19
Traffic and Parking Impact Assessment

Appendix 20
Construction Traffic Management Plan

Appendix 21
Noise and Vibration Impact Assessment

Appendix 22
Odour Advice

Appendix 23
Aquatic and Terrestrial Ecology Assessment

Appendix 24
Waste Management Plan

Appendix 25
Aboriginal Cultural Heritage Assessment Report

Appendix 26
Bushfire Assessment Report

Appendix 27
Social Impact Assessment

Appendix 28
Site Infrastructure Assessment

Appendix 29
Ecologically Sustainable Development Report

Appendix 30
Fire Engineering Report

Appendix 31
Access Report

Appendix 32
Structural Engineering Letter of Support

Appendix 33
Mechanical Strategy

Appendix 34
BCA Report

Appendix 35
BCA Capability Statement

Appendix 36
Government Architect NSW Meeting Minutes

Appendix 37
Operational Management Plan

Appendix 38
Development Contributions Plan Letter

Appendix 39
Lighting Design Statement