

# CONSTRUCTION TRAFFIC AND PEDESTRIAN MANAGEMENT PLAN (MAIN WORKS)

**PREPARED FOR DEPARTMENT OF EDUCATION**

18 November 2019

This document has been prepared for the benefit of Department of Education. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

## QUALITY STATEMENT

### PROJECT MANAGER

Kirk Martinez

### PROJECT TECHNICAL LEAD

Kirk Martinez

### PREPARED BY

Kirk Martinez ..... 4 April 2019

### CHECKED BY

Desmond Ang ..... 4 April 2019

### REVIEWED BY

Desmond Ang ..... 4 April 2019

### APPROVED FOR ISSUE BY

Kirk Martinez ..... 4 April 2019

### SYDNEY

Level 4, 99 Walker Street, PO Box 1831, NORTH SYDNEY, NSW 2060  
 TEL +61 2 9493 9700, FAX +61 2 9493 9799

## REVISION SCHEDULE

| Rev No. | Date       | Description | Signature or Typed Name (documentation on file) |            |             |             |
|---------|------------|-------------|---|------------|-------------|-------------|
|         |            |             | Prepared by                                     | Checked by | Reviewed by | Approved by |
| 1       | 19.03.2019 | Draft v1    |   |            |             |             |
| 2       | 26.03.2019 | Draft v2    |   |            |             |             |
| 3       | 29.03.2019 | Draft v3    |   |            |             |             |
| 4       | 04.04.2019 | Final v1    | KM  | DA         | DA          | KM          |
| 5       | 27.09.2019 | Final v2    | KM  | DA         | DA          | KM          |
| 6       | 01.10.2019 | Final v3    | JN  | DA         | DA          | KM          |
| 7       | 18.11.2019 | Final v3    | JN  | DA         | DA          | KM          |

# Department of Education

## Construction Traffic and pedestrian Management Plan (MAIN WORKS)

### CONTENTS

|      |   |    |
|------|---|----|
| 1.   | Introduction .....                                      | 3  |
| 1.1  | Report Scope .....                                      | 3  |
| 2.   | Existing Transport Environment .....                    | 4  |
| 2.1  | Work Area .....   | 4  |
| 2.2  | Existing Road Environment .....                         | 4  |
| 2.3  | Operating of Existing Road Systems .....                | 5  |
| 2.4  | Existing Parking Environment .....                      | 8  |
| 2.5  | Sight Distance .....                                    | 11 |
| 2.6  | Travel Mode Survey .....                                | 11 |
| 3.   | Construction Works and Operations (Main Works) .....    | 13 |
| 3.1  | Development Proposal.....                               | 13 |
| 3.2  | Staging of Construction Works.....                      | 13 |
| 3.3  | Constructions Times .....                               | 13 |
| 3.4  | Construction Volumes .....                              | 13 |
| 3.5  | Construction Vehicles and Equipment .....               | 14 |
| 3.6  | Vehicle Movement Plan.....                              | 14 |
| 3.7  | Driver Code of Conduct .....                            | 17 |
| 3.8  | Construction Permits.....                               | 17 |
| 3.9  | Access to Adjacent Properties .....                     | 17 |
| 3.10 | Construction Environmental Management Plan (CEMP) ..... | 17 |
| 3.11 | Traffic Control Plan .....                              | 18 |
| 3.12 | Methods of Communicating Change .....                   | 18 |
| 3.13 | Site Inductions .....                                   | 18 |
| 3.14 | Key Personnel.....                                      | 18 |
| 3.15 | Car Parking During Construction Works .....             | 19 |
| 3.16 | Staff Access and Delivery vehicles.....                 | 21 |
| 3.17 | Drop Off and Pick Up.....                               | 22 |
| 3.18 | Pedestrian Safety .....                                 | 22 |
| 3.19 | Intersection Analysis.....                              | 22 |
| 4.   | Stage 4 – Removal of Classroom Demountables .....       | 25 |
| 4.1  | Construction Works .....                                | 25 |
| 4.2  | Vehicle Movement Plan.....                              | 25 |
| 4.3  | Traffic Management (Stage 4) .....                      | 26 |

|    |                           |    |
|----|---------------------------|----|
| 5. | Response to Comments..... | 27 |
| 6. | Conclusion .....          | 29 |

## LIST OF TABLES

|  |    |
|--|----|
| Table 2-1: Level of Service Criteria for Intersections .....               | 6  |
| Table 2-2: Summary of SIDRA Outputs for Wonga Road and Argyle Street ..... | 7  |
| Table 2-3: Existing Parking Restrictions and Capacity .....                | 9  |
| Table 2-4: On-site Site Distance Measurements .....                        | 11 |
| Table 2-5: Travel Mode Survey Results .....                                | 11 |
| Table 3-1: Staging of Construction Works .....                             | 13 |
| Table 3-2: Construction Truck Movements .....                              | 14 |
| Table 3-3: Location of Waste Facilities .....                              | 16 |
| Table 3-4: Contact Details .....   | 18 |
| Table 3-5: Bus Services along Argyle Street .....                          | 20 |
| Table 3-6: Wonga Road and Argyle Street SIDRA Results .....                | 24 |
| Table 5-1: Comments and Responses .....                                    | 27 |

## LIST OF FIGURES

|  |    |
|--|----|
| Figure 2-1: Construction Work Area .....   | 4  |
| Figure 2-2: Morning and Evening Peak Periods – Vehicle Turning Movements .....                           | 6  |
| Figure 2-3: Existing Intersection Layout of Argyle Street and Wonga Road .....                           | 7  |
| Figure 2-4: Parking Survey Locations on Argyle Street and Wonga Road .....                               | 8  |
| Figure 2-5: Argyle Street and Wonga Road On-Street Parking Demand.....                                   | 10 |
| Figure 3-1: Construction Vehicle Movement Plan .....   | 15 |
| Figure 3-2: Construction Movements (Overview) .....  | 16 |
| Figure 3-3: Construction Staff Parking .....   | 19 |
| Figure 3-4: Proposed Construction Staff Parking.....   | 20 |
| Figure 3-5: School Staff Parking .....   | 21 |
| Figure 3-6: Staff and Delivery Vehicle Access.....   | 22 |
| Figure 3-7: School staff and construction staff vehicle movements (Morning and Evening Peak Periods) ... | 23 |
| Figure 4-1: Construction Vehicle Movement Plan .....   | 25 |

## APPENDICES

|            |                             |
|------------|-----------------------------|
| Appendix A | Parking Survey Results      |
| Appendix B | SIDRA Results               |
| Appendix C | Vehicle Swept Path Analysis |
| Appendix D | Traffic Control Plans       |

# 1. Introduction

The Construction Traffic and Pedestrian Management Plan (CTPMP) provides a review of the traffic, parking and pedestrian implications of the traffic management measures proposed for the Main Construction Works of Picton High School.

The planned construction works will see replacement of a significant portion of the existing buildings, with any retained buildings to be re-purposed and refurbished.

The intended works to be carried out are located within the site. The construction works will involve the following:

- Main Construction Works:
  - Removal of asbestos of the existing buildings;
  - Demolition of the existing buildings; and
  - Construction and refurbishment of the new buildings.
- Removal of classroom demountables.

The proposed dates of the main construction works are estimated to be between April 2019 to August 2020. The Construction Traffic and Pedestrian Management Plan has been prepared to minimise any disruptions to the school operations.

This Construction Traffic and Pedestrian Management Plan (CTPMP) is based on the information available for the proposed construction works at the time of writing. However, it cannot be guaranteed that the specific methodology described herein is used at the time of construction. Any changes are to be incorporated into the appropriate Construction Traffic and Pedestrian Management Plans prior to the commencement of those works.

The Construction Traffic and Pedestrian Management Plan is to be submitted to the relevant authorities prior to the commencement of work.

## 1.1 Report Scope

The Construction Traffic and Pedestrian Management Plan (CTPMP) covers the traffic management concepts behind the construction of the School upgrades.

## 2. Existing Transport Environment

### 2.1 Work Area

Figure 2-1 shows the location of construction work area of Picton High School and the surrounding road network.



Figure 2-1: Construction Work Area

Picton High School is located on the eastern side of Argyle Street, approximately 100 metres north of Wonga Road. The site has an area of 5.69 hectares. Existing vehicular access to the site is provided via separate entry and exit driveways off Argyle Street, with the northern access accommodating entry movements and the southern access accommodating exit movements. The site also has frontage to Wonga Road and a partially formed paper road along the eastern site boundary.

Key features of the site and its surrounds are as follows:

- Established residential use occupies the land to the north of the site;
- Land to the west, south and east is predominantly undeveloped at present;
- Some commercial and industrial uses are located along Wonga Road, including the Picton Bus depot which is the company operating the school services; and
- A paper road extension of Wonga Road extends about half way across the rear (eastern) boundary of the site.

### 2.2 Existing Road Environment

Argyle Street is identified as a Regional Classified Road in the vicinity of the site and is managed by Wollondilly Shire Council. It runs in a north-south alignment and has a carriageway width of 13.0 metres kerb to kerb, accommodating one lane of traffic in each direction and parallel parking on both sides of the road.

Continuous double white centreline markings are established across the whole of the site frontage. In effect, these impose a no right turning restriction either to or from the driveway crossings. These current controls are somewhat impractical as established and evidence from site observations are that the control is ignored in the present environment.

A school speed zone control is imposed along Argyle Street that reduces the permissible speed limit to 40km/h between 8:00am to 9:30am and 2:30pm to 4:00pm on school days, extending from Wood Street in the north to a location about 90 metres north of Wonga Road. This covers the entire school frontage area and extends north over the marked kerbside parking environment.

The on-street parking controls on Argyle Street comprises of the following elements:

- On the western side of Argyle Street, five spaces with a P2 (2 minute) parking restriction between 8:00am to 9:30am and 2:30pm to 4:00pm;
- On the immediate school frontage, a P2 (2 minute) parking restriction drop-off zone of about 50 metres in length, catering for up to about eight vehicles at a time;
- A bus layover area is established about 20 metres north of the school's northern driveway crossing on the east side of Argyle Street. Its defined operating times are: 8:30am to 9:30am and 3:00pm to 4:00pm on school days; and
- Otherwise, generally time unrestricted parking controls are provided.

Wonga Road is a local road that runs in an east-west alignment extending from Argyle Street and runs in a north-south alignment to about the eastern boundary of the site. It has a carriageway width of 13.0 metres kerb to kerb and accommodates one lane of traffic in each direction. Unrestricted parking is provided on both sides of the road.

Stop sign in Wonga Road control its junction with Argyle Street. Argyle Street has a painted right turn bay and left turn deceleration lane which facilitate access to Wonga Road.

On-road cycling is currently allowed within the carriageway of Argyle Street, under the school speed zone-controlled environment. There are no cycle facilities provided along Wonga Road.

A continuous concrete footpath is established along Argyle Street on the school side of the road. It extends north from the southern school boundary connecting the school with the Picton town centre. No pedestrian facilities are provided along Wonga Road.

## 2.3 Operating of Existing Road Systems

### 2.3.1 Existing Traffic Movements

Turning movement surveys were commissioned on Thursday 26 July 2018, between 7:00am to 10:00am and 2:00pm to 5:30pm, at the intersection of Argyle Street and Wonga Road.

The results of the intersection traffic surveys for the morning and evening peak periods are presented in Figure 2-2.

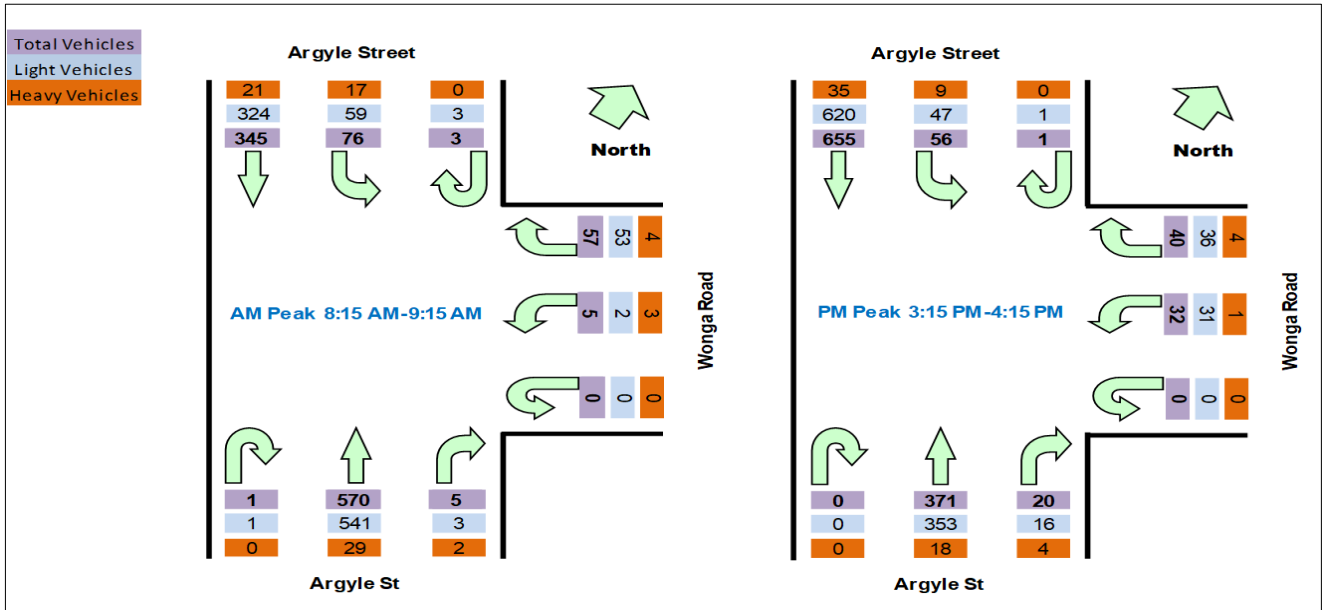


Figure 2-2: Morning and Evening Peak Periods – Vehicle Turning Movements

The survey results indicate that Wonga Road currently carries a low level of traffic, with 143 and 148 vehicle movements (inbound and outbound movements) recorded in the morning and evening peak periods, respectively.

### 2.3.2 Existing Intersection Performance

An analysis of the operation of the critical intersections within the study area was carried out using the SIDRA computer modelling program for the existing intersection traffic volumes and layouts.

Stantec has assessed the performance of the intersections using the SIDRA Intersection Analysis Software (V8). Performance criteria for intersections are based on the RTA (RMS) Guide to Traffic Generating Developments. A qualitative rating and its corresponding Level of Service (LoS) are applied to the average delay per vehicle as shown in Table 2-1.

Table 2-1: Level of Service Criteria for Intersections

| Level of Service (LoS) | Average Delay per Vehicle (seconds) | Traffic Signals, Roundabouts                                  |
|------------------------|-------------------------------------|---|
| A                      | Less than 15                        | Good operation  |
| B                      | 15 to 28                            | Good with acceptable delays and spare capacity                |
| C                      | 29 to 42                            | Satisfactory  |
| D                      | 43 to 56                            | Operating near capacity                                       |
| E                      | 57 to 70                            | At capacity; at signals incidents will cause excessive delays |

Note: For signals, average delays per vehicle are for the intersection as a whole. For Roundabouts / Give Way / Stop Signs, average delay per vehicle is for the worst movement.



The existing intersection layout of Argyle Street and Wonga Road is shown in Figure 2-3.



Figure 2-3: Existing Intersection Layout of Argyle Street and Wonga Road

Table 2-2 gives a summary of the SIDRA results for the current volumes applied to the existing intersection configuration. The SIDRA outputs are included in Appendix B.

Table 2-2: Summary of SIDRA Outputs for Wonga Road and Argyle Street

| Peak Time           | Average Delay (Secs) | Level of Service (LoS) |
|---------------------|----------------------|------------------------|
| <b>Morning Peak</b> | 14.5                 | A                      |
| <b>Evening Peak</b> | 18.4                 | B                      |

The current intersection configuration of Wonga Road and Argyle Street is operating at an excellent Level of Service (LoS) A and B for the morning and evening peak periods, respectively. The results suggest that the current intersection configuration has ample capacity to cater for the construction vehicles and construction during the construction of the Picton High School main works.

## 2.4 Existing Parking Environment

A detailed on-street parking surveys were commissioned on Thursday 26 July 2018 along Argyle Street and Wonga Road. Figure 2-4 shows the extent of the parking survey locations.



Figure 2-4: Parking Survey Locations on Argyle Street and Wonga Road

The existing parking restrictions and capacity along Argyle Street and Wonga Road is presented in Table 2-3.

Table 2-3: Existing Parking Restrictions and Capacity

| Street Name          | Parking Restrictions   | Parking Capacity |
|----------------------|--|------------------|
| Argyle Street (west) | 1P 8:30am to 6:00pm Monday to Friday<br>8:30am to 12:00pm Saturday | 21               |
|                      | Unrestricted Parking   | 36               |
|                      | P2 min 8:30am to 9:30am, 2:30pm to 4:00pm School Days              | 5                |
| Argyle Street (east) | Unrestricted Parking   | 37               |
|                      | P2 min 8:30am to 9:30am, 2:30pm to 4:00pm School Days              | 6                |
|                      | P15 min 8:30am to 9:30am, 2:30pm to 4:00pm School Days             | 6                |
|                      | Bus Zone 8:30am to 9:30am, 3:00pm to 4:00pm School Days            | 1                |
| Wonga Road (north)   | Unrestricted Parking   | 32               |
| Wonga Road (south)   | Unrestricted Parking   | 40               |

A summary of the parking survey results is shown in Figure 2-5, with key findings from the survey are summarised below:

- There is a maximum of 184 on-street parking spaces along Argyle Street and Wonga Road;
- 145 of the 184 on-street parking spaces are unrestricted parking;
- There was a maximum of 45 vehicles parked during the morning peak period between 8:00am to 9:30am;
- There was a maximum of 54 vehicles parked during the evening peak period between 2:00pm to 3:30pm; and
- The peak car parking demand occurred at 2:30pm with 54 out of 184 car parking spaces occupied, indicating a 70.7% vacancy.

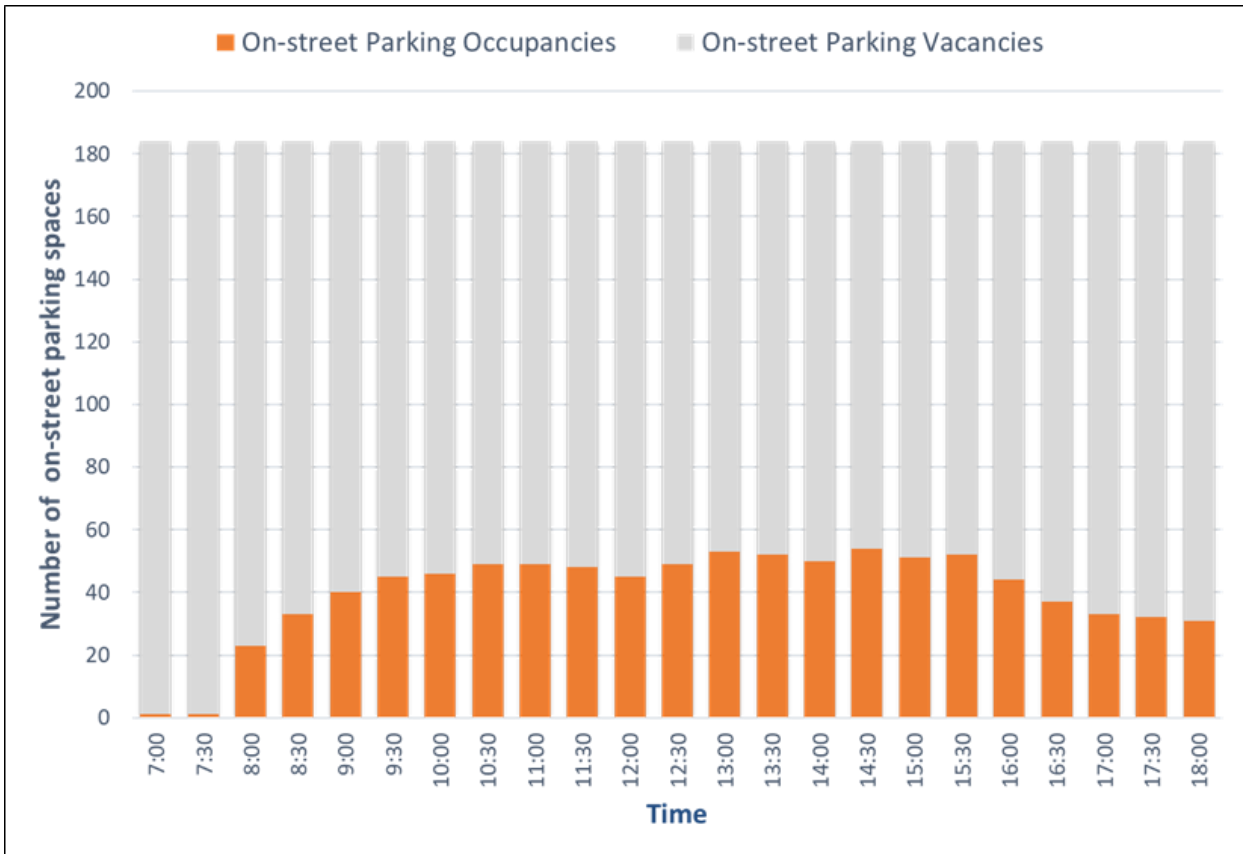


Figure 2-5: Argyle Street and Wonga Road On-Street Parking Demand

In summary, the parking survey results indicate that there is ample spare on-street parking capacity along Argyle Street and Wonga Road to accommodate for the Construction workers and School Staff during the constructions works.

## 2.5 Sight Distance

The existing sight distances have been measured on-site. These measurements are summarised in **Table 2-4**.

Table 2-4: On-site Site Distance Measurements

| Intersection                        | Sight Distance             | Photos   | Austrroads Approach Sight Distance (ASD)                         | Comment   |
|-------------------------------------|----------------------------|--|--|---|
| <b>Wonga Road and Argyle Street</b> | To the South<br>267 metres |   | Design speed of 70km/h =<br>Approach Sight Distance of 92 metres | The approach sight distances comply with the Austrroads guide to Road Design Part 4A – Unsignalized and Signalised intersection |
|                                     | To the North<br>220 metres |  | Design speed of 40km/h =<br>Approach Sight Distance of 40 metres |   |

Based on the Austrroads Guidelines and the measurements taken on-site, there is acceptable sight distances at the intersection of Wonga Road and Argyle Street.

## 2.6 Travel Mode Survey

A travel mode surveys have been undertaken for number of students and staff at the School. The surveys involved a sample of the school population. These were undertaken on 30<sup>th</sup> June 2017.

The travel mode survey results identified the following travel mode distributions in Table 2-5.

Table 2-5: Travel Mode Survey Results

| Mode of Travel                      | Student Totals | Student Mode Split (%) | Teachers Totals | Teacher Mode Split (%) |
|-------------------------------------|----------------|------------------------|-----------------|------------------------|
| Walk                                | 13             | 6.2%                   | 1               | 1.6%                   |
| Bus                                 | 140            | 66.7%                  | 0               | 0.0%                   |
| Train                               | 1              | 0.5%                   | 0               | 0.0%                   |
| Bicycle                             | 1              | 0.5%                   | 0               | 0.0%                   |
| By car - dropped off in the morning | 46             | 21.9%                  | 0               | 0.0%                   |
| Passengers in another student's car | 2              | 1.0%                   | 0               | 0.0%                   |

| Mode of Travel                                  | Student Totals | Student Mode Split (%) | Teachers Totals | Teacher Mode Split (%) |
|---|----------------|------------------------|-----------------|------------------------|
| Passengers in a car driven by a member of staff | 2              | 1.0%                   | 2               | 3.2%                   |
| Car as a driver                                 | 5*             | 2.4%                   | 59              | 95.2%                  |
| Other   | 0              | 0.0%                   | 0               | 0.0%                   |
| <b>Total respondents (sample size)</b>          | <b>210</b>     | <b>100.0%</b>          | <b>62</b>       | <b>100.0%</b>          |

Note: \*The number of students driving has been estimated based on the student parking demand due to Year 12 students not being surveyed on the survey date.

The following characteristics from the Travel Mode Survey are noted below:

- About 67% of all student used buses;
- Student drop-off by car accounted for 22% of arrivals;
- Accessible (walking/cycling) modes accounted for 6.2% of student arrivals, noting that cycling represents a very low (0.5%) utilisation. This is perhaps a function of the wide and rural nature of the area serviced; and
- By contrast, 98.4% of the staff arrived by car, either as the driver or passenger.

## 3. Construction Works and Operations (Main Works)

### 3.1 Development Proposal

The proposed construction works will see replacement of a significant portion of the existing building stock, with any retained buildings to be re-purposed and refurbishment. It is to include the following

- Removal of asbestos of the classrooms;
- Demolition of the existing classrooms; and
- Construction of the new classrooms etc.

### 3.2 Staging of Construction Works

The required construction works is separated into three stages. A breakdown of the construction works, and duration is provided Table 3-1.

Table 3-1: Staging of Construction Works

| Construction Stages                    | Construction Works   | Duration                 |
|--|--|--------------------------|
| <b>Stage 1<br/>Removal of asbestos</b> | Removal of asbestos from existing buildings  | April 2019 to May 2019   |
| <b>Stage 2<br/>Demolition</b>          | Consists of demolition of some of the existing single storey buildings, civil works and earthworks levelling to accommodate prefabricated buildings and associated services, and the delivery of classroom demountables; | May 2019 to June 2019    |
| <b>Stage 3<br/>Construction</b>        | Construction of new buildings including services and the construction of the surrounding soft and hard landscaping works   | July 2019 to August 2020 |

The main construction works is estimated to commence in April 2019, with completion of the overall construction work programme forecast for August 2021.

### 3.3 Constructions Times

The construction works (including excavation, demolition, construction and deliveries of materials and equipment etc) will be carried at the following times:

- Monday to Friday 7:00am to 5:00pm; and
- Saturday from 8:00am to 1:00pm.

Picton High School will remain in operation throughout the construction works.

### 3.4 Construction Volumes

#### 3.4.1 Truck movements

The maximum sized design vehicle for the project is a truck and dog / semi-trailer with 40ft trailer, although various types of trucks will visit the site.

The main construction works are to generate daily volumes of heavy vehicle movements from April 2019 to August 2020. All loading is proposed to occur within the site.

Table 3-2 identifies the relevant stages of construction and the estimated maximum number of truck movements per day.

Table 3-2: Construction Truck Movements

| Construction Stage            | Estimated Maximum Number of Trucks Per Day |
|-------------------------------|--|
| Stage 1 – Removal of Asbestos | To be confirmed                            |
| Stage 2 – Demolition          | Up to 40 trucks per day                    |
| Stage 3 - Construction        | Up to 5 trucks per day                     |

The number of construction vehicles to service the site is up to 40 trucks per day throughout Stages 1 and 2, for a duration for 3 months as detailed in Table 3-1. This is equivalent to four to five heavy vehicle movement every hour. This is not forecast to occur for extended periods

It is expected that there will be a reduction in construction trucks during 'Stage 3 – Construction' of up to 5 trucks per day.

The proposed turning area is provided on-site and will be used by construction trucks to U-turn and head back to Argyle Street in a forward direction, as shown in Appendix C.

### 3.4.2 Construction Worker Vehicle Movements

It is estimated that up to 120 contractors are to be on-site at any one time.

The movements generated by construction workers are expected to be primarily accessing the work area in the morning and departing the site in the evening. It has been assumed that the site will generate up to 120 vehicle movements in the morning and evening periods, with a one-person vehicle occupancy.

It should be noted contractors start working at 7:00am and finish at 5:00pm, and may start / finish different times of the day, depending on the construction works that is involved at the time. The construction works is also proposed to operate on Saturdays from 8:00am to 1:00pm.

Based on the above, the traffic generated by construction workers will occur outside of the morning and evening peak period of the School. Given the road classifications and associated traffic volumes of the nearby roads and intersections, it is considered that the road network is able to readily accommodate the expected traffic volumes generated by the construction workers, further traffic impact assessment is provided in Section 0.

## 3.5 Construction Vehicles and Equipment

The maximum sized design vehicle for the project is a truck and dog, although various types of trucks will visit the site. At most, typical construction activities are expected to generate up to 5 trucks per day for the duration of the construction period (14 months). This is equivalent to one truck movement every 2 hours.

Furthermore, the types of vehicles used on the project may include, but not be limited to:

- Excavator;
- Bobcats;
- Crane;
- Roller; and
- Watercarts;

## 3.6 Vehicle Movement Plan

It is proposed that construction vehicles will generally:

- Arrive at the site travelling from Argyle Street;
- Enter the site via the northern access.
- Unload and load materials / equipment's within the site; and



- Depart the site through the northern access into the bus area and exiting via the Southern Access to Argyle Street.

The proposed construction vehicle movement plan accessing and leaving the site is shown in Figure 3-1



Figure 3-1: Construction Vehicle Movement Plan <sup>1</sup>

It should be noted truck movements will be restricted to not travel through the bus area during the morning and afternoon school peak periods to reduce the traffic conflict between buses and construction vehicles. It is noted that subcontractors and supplier vehicle movements will be limited during peak times as per the contract agreement.

Construction trucks heading to the waste facilities will also head north or south along Argyle Street. The location of the waste facilities are as follows, with details provided in Table 3-3:

- SUEZ Spring Farm Resource Recovery Park; and
- Bargo Waste Management Facility.

An overview of the construction truck routes connecting the State roads and the waste facility locations is shown in Figure 3-2.

<sup>1</sup> Source: <https://maps.spookfish.com>



Figure 3-2: Construction Movements (Overview)<sup>2</sup>

The details of the waste facilities are provided in Table 3-3.

Table 3-3: Location of Waste Facilities

| Local Government Area (LGA) | Facility Name                   | Waste Type  | Contact Details   |
|-----------------------------|---------------------------------|---|---|
| Camden Council              | Camden Council SUEZ Spring Farm | <ul style="list-style-type: none"> <li>• Building materials</li> <li>• Batteries (only vehicles batteries – lead acid batteries)</li> <li>• Paint/oil (waste motor oil up to 20L per customer)</li> <li>• Cardboard</li> <li>• e-waste</li> <li>• glass</li> <li>• garden waste</li> <li>• mattresses</li> <li>• metal</li> <li>• food waste</li> <li>• paper</li> <li>• plastic</li> <li>• white goods</li> <li>• wood</li> <li>• tyres</li> <li>• rubber</li> </ul> | 275 Richardson Road,<br>Spring Farm NSW<br>2570<br>Ph. 1300 651 116 |
| Wollondilly Shire Council   | Bargo Waste Management Facility | <ul style="list-style-type: none"> <li>• Commercial</li> <li>• Garden Organics</li> <li>• Bricks</li> <li>• Ceramics</li> <li>• Concrete</li> <li>• Soil/clay</li> <li>• Timber – Untreated</li> </ul>  | Anthony Road, Bargo<br>NSW 2574<br>Ph. 0419 490 599                 |

Note: Details provided from the Waste Management Plan prepared by SMEC

<sup>2</sup> Source: Google maps (<https://www.google.com/maps>)

## 3.7 Driver Code of Conduct

Management of vehicular access to and from the site is essential in order to maintain the safety of the general public as well as the labour force. The following code is to be implemented as a measure to maintain safety within the site:

- Utilisation of only the designated transport routes;
- Drivers to operate during the specified working hours;
- Drivers to maintain a sufficient distance from any temporary barriers that may be implemented around trees that form part of the endangered plant community; and
- Construction vehicle movements are to abide by finalised schedules as agreed by the relevant authorities.

## 3.8 Construction Permits

### 3.8.1 Works Zone

An application for a works zone will be submitted to Council for approval, if required.

This would be a separate application to the Construction Traffic Management Plan.

### 3.8.2 Road Occupancy License

A Road Occupancy Licence 'ROL' will be submitted to the relevant authorities when works are within the road carriageway. A ROL is required for any activity likely to impact on traffic flow, even if that activity takes place off-road. Council are the assessing authority depending on the responsibility.

### 3.8.3 Other Permits

Any other relevant permits will be applied to Council prior to the Construction works. This may include the following:

- Public Space – Permits the occupation of the footpath area only
- Stand Plant – Permits the occupation of traffic lane/parking lane/footpath area on a day to day basis, does not permit the closure of a road.
- Hoarding – Where Class A (i.e. site fencing) or B (i.e. overhead footpath protection) hoarding is to be located on public property.

## 3.9 Access to Adjacent Properties

The existing driveways located on Argyle Street and Wonga Road will not be impacted by the construction activities. It is advised the developments on surrounding the site will be contacted by the contractors to ensure access to the site will remain open or provided with an alternative access.

## 3.10 Construction Environmental Management Plan (CEMP)

### 3.10.1 Project Environmental Duties

All construction staff working on the Picton High School Construction Works will have the following environmental obligations:

- Minimise pollution of land, air and water;
- Use pollution control equipment and keep it in proper working order;
- Preserve the natural and cultural heritage environment;
- Minimise the occurrence of offensive noise;
- Be a good neighbour to surrounding land users;

- Keep the community informed of Project milestones, upcoming activities and duration of relevant aspects of the works;
- Use equipment with noise control features where available and ensure that it is properly maintained; and
- Take all feasible and reasonable steps to ensure compliance with the requirements of this plan.

### 3.10.2 Environmental Management Plan

As a minimum, it is proposed to install or impose the following operational environmental measures as part of the proposed traffic operations:

- Pedestrian fencing is to be installed around the site to prevent inadvertent / unauthorised pedestrian access;
- A wheel-wash is to be installed at the site egress points for truck cleaning prior to departure when there is exposed ground on the site; and
- All excavated material is to be covered prior to leaving the site to prevent aerial dispersal onto the road network.

### 3.11 Traffic Control Plan

A Traffic Control Plan (TCP) has been developed for the major construction works, as shown in Appendix D. This will be used as required during the construction phases, if required.

The Traffic Control Plans has been designed in accordance with the Australian Standards and the Roads and Maritime Services (RMS) Traffic Control at Work Sites Manual and prepared by an RMS Accredited Traffic Control Plan Developer.

### 3.12 Methods of Communicating Change

School Infrastructure NSW has a Community Liaison Officer specifically in charged with this responsibility. The communication will be in accordance with the Community Communication Strategy submitted to the Secretary Planning in accordance with SSD 8640 Consent Condition B10.

### 3.13 Site Inductions

The requirements of this Construction Traffic and Pedestrian Management Plan must be followed. The site manager will ensure that site inductions occur on a regular basis or as deemed necessary.

### 3.14 Key Personnel

The key Construction Traffic and Pedestrian Management Plan personnel with contacts details are provided in Table 3-4

Table 3-4: Contact Details

| Contact Name          | Contact Number | Email  | Company |
|-----------------------|----------------|--|---------|
| <b>Bradley Warren</b> | 0435 080 348   | <a href="mailto:bradleyw@taylorau.com.au">bradleyw@taylorau.com.au</a>   | Taylor  |
| <b>Hazem Gergis</b>   | 0435 009 588   | <a href="mailto:hazemg@taylorau.com.au">hazemg@taylorau.com.au</a>       | Taylor  |
| <b>Kirk Martinez</b>  | 0414 059 849   | <a href="mailto:Kirk.martinez@stantec.com">Kirk.martinez@stantec.com</a> | Stantec |
| <b>Desmond Ang</b>    | -              | <a href="mailto:Desmond.ang@stantec.com">Desmond.ang@stantec.com</a>     | Stantec |

## 3.15 Car Parking During Construction Works

### 3.15.1 Construction Workers Parking

It is estimated that up to 120 contractors will be on-site. Construction workers will have access to the northern school car park throughout the duration of the Construction Works, as shown in Figure 3-3.



Figure 3-3: Construction Staff Parking

In addition, there has been a temporary car park implemented to provide parking for up to 150 vehicles. Access to the proposed carpark will be via Argyle Street and is a short walking distance from the site.



Figure 3-4: Proposed Construction Staff Parking

The proposed 150 car parking spaces provided in the adjacent property will accommodate for the 120 construction staff.

Workers and sub-contractors will also be encouraged to use public transport to travel to and from the work site where possible. The site has access to public transport services, fronting the Picton High School along Argyle Street. The bus routes are shown in Table 3-5.

Table 3-5: Bus Services along Argyle Street

| Bus Route | Bus Services                                |
|-----------|---|
| 911       | Bargo to Picton                             |
| 912       | Yanderra to Picton via Buxton and Thirlmere |
| 913       | Buxton to Picton via Tahmoor                |
| 914       | Buxton to Picton via Estonian Village       |

It should be taken in consideration, that the parking demand can be reduced by the following:

- Construction workers will arrive and finish throughout different times of the day;
- Car parking spaces is provided on-site;
- Public transport will be used to get to / from the site; and
- Construction workers will also car share.

### 3.15.2 School Staff Parking

School staff will have access to the southern car park throughout the duration of the construction works, as shown in Figure 3-5.



Figure 3-5: School Staff Parking

In addition, additional on-street parking is also available along Wonga Road and Argyle Street. There is a maximum of 184 on-street parking spaces along Argyle Street and Wonga Road, further details of available parking spaces is provided in Section 2.4.

### 3.16 School Staff Access and Delivery vehicles

School staff will have access to the southern car park via Argyle Street and Wonga Road. A new entry and exit access will run along the southern boundary of the site connecting Wonga Road to the southern carpark. A new (entry only) access will be located on Argyle Street, as shown in Figure 3-6.

Deliveries to the site will be very low and infrequent. Delivery vehicles will enter and exit the site via the new driveway access on Wonga Road.



Figure 3-6: Staff and Delivery Vehicle Access

### 3.17 Drop Off and Pick Up

The parents drop off and pick up area will continue to occur along Argyle Street, as per the current arrangements. There will be a new School access fronting the parents drop off and pick up area. The new School Access on Argyle Street and a footpath connection via the northern side of the Hall Building will be provided for access to the School grounds. This will be the main drop off and pick up point

Parents will continually be advised by the Schools newsletter of the designated pick up and drop off areas along Argyle Street.

### 3.18 Pedestrian Safety

During the construction activities, a traffic controller / Taylor staff will assist in the safety of pedestrian movements at the Argyle Street main construction site access to avoid conflicts with bus and vehicle movements.

### 3.19 Intersection Analysis

An analysis of the operation of the existing intersection of Argyle Street and Wonga Road was carried out using the SIDRA computer modelling program.

The two traffic modelling scenarios for the road network are modelled for the morning and evening School peak periods:

- **Scenario 1: Existing Traffic (Base Case)** - This scenario includes the 2018 traffic survey volumes (includes the current school operations) modelled over the existing intersection configuration of Wonga Road and Argyle Street. This analysis has been performed for the morning and evening peak periods;
- **Scenario 2: Construction Traffic Volumes** - This analysis incorporates the main construction works of Picton High School. For this assessment school staff and construction staff will enter the Site via Argyle Street, and leave via Wonga Road, all bus services will operate via the existing bus arrangement on



Argyle Street. The layout of the existing intersection configuration of Wonga Road and Argyle Street is used for the assessment.

### 3.19.1 Traffic Distribution

The traffic distribution of the various users associated with the school are described below and in Figure 3-7:

- It has been assumed that 100% of school staff (current staff number is 83) will utilise the new driveway access via Argyle Street to access the site, and all staff will exit the site via Wonga Road in the afternoon;
- Staff vehicle distributions have been based on a 50 / 50 split coming from the northbound and southbound direction;
- The bus movements have been based on the existing traffic surveys for the morning and afternoon peak periods. For this assessment bus services will continue to operate along Argyle Street as per the current operations;
- Construction staff vehicle distributions have been based on a 50 / 50 split coming from the northbound and southbound direction;
- Construction staff and school staff will both arrive at the school during the morning peak periods;
- Construction staff and school staff will exit at different afternoon times of the day. School Staff generally leave the site from 3:30pm to 4:40pm, and the construction hours are until 5:00pm. Therefore, construction staff will leave after 5:00pm onwards;
- The parents drop-off and pick-up movements will continue to occur along Argyle Street as per the current arrangement; and
- Deliveries to the school will be very low and infrequent. Deliveries will enter and exit the site via the new driveway access on Wonga Road.

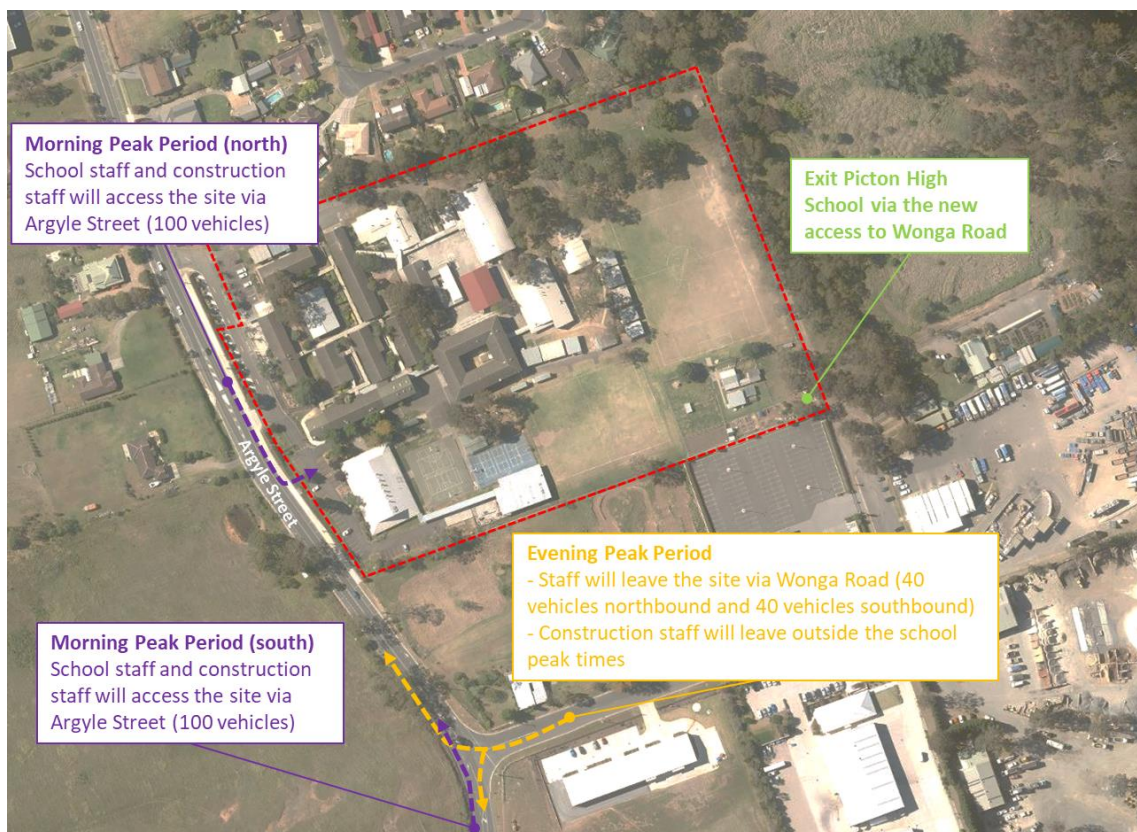


Figure 3-7: School staff and construction staff vehicle movements (Morning and Evening Peak Periods)

A summary of the SIDRA results is presented in Table 3-6 for the Argyle Street and Wonga Road intersection, with the detailed outputs provided in Appendix B.

Table 3-6: Wonga Road and Argyle Street SIDRA Results

| Scenario              | Morning Peak         |                        | Evening Peak         |                        |
|-----------------------|----------------------|------------------------|----------------------|------------------------|
|                       | Average Delay (secs) | Level of Service (LoS) | Average Delay (secs) | Level of Service (LoS) |
| Scenario 1 (Existing) | 14.5                 | A                      | 18.4                 | B                      |
| Scenario 2            | 15.0                 | B                      | 18.7                 | B                      |

Note: For the SIDRA assessment, the gap acceptance values for right turning vehicles from Wonga Road have been reduced to 5.0 seconds and 3.0 seconds for the critical gap and follow-up headway. The reductions are based on on-site observations and traffic surveys.

The intersection analysis results show that the intersection of Wonga Road and Argyle Street is currently (Scenario 1) operating at a Level of Service A and B for both the morning and evening peak periods.

Based on the Scenario 2 assessment, the intersection of Wonga Road and Argyle Street is operating at a Level of Service B for the morning and evening peak periods and can accommodate for the traffic leaving via Wonga Road due to the main construction works of Picton High School. The results produced are acceptable, given that there should not be any construction vehicles leaving the site during the afternoon peak.

## 4. Stage 4 – Removal of Classroom Demountables

### 4.1 Construction Works

After completion of the main construction works of the School. The temporary classroom demountables will be removed from the site. This will take a duration of 5 months between January 2021 to May 2021.

### 4.2 Vehicle Movement Plan

For Stage 4 (removal of temporary classroom demountables), it is proposed that construction vehicles will generally:

- Arrive at the site travelling from Argyle Street;
- Enter the site via the new access off Wonga Road.
- Unloading and loading will occur within the site; and
- Depart the site via Wonga Road to Argyle Street.

The proposed construction vehicle during the 'Stage 4 – Removal of temporary classroom demountables' movement plan accessing and leaving the site is shown in Figure 3-1



Figure 4-1: Construction Vehicle Movement Plan <sup>3</sup>

Truck movements will be restricted to travel during the morning and afternoon school peak periods to reduce the traffic conflict between buses and construction vehicles.

These works are expected to generate up to 10 trucks daily volumes of heavy vehicle movements from January 2021 to May 2021.

<sup>3</sup> Source: <https://maps.spookfish.com>

### 4.3 Traffic Management (Stage 4)

As detailed in Section 3, the following traffic, parking and access management will remain the same during these works (removal of the temporary classroom demountables):

- Construction Staff Parking will be provided in the northern car park. There is ongoing negotiations for the overflow car park at the neighbouring properties, providing up to 150 car parking spaces. This will be provided in the adjacent property to the south of Picton High School
- Parent drop-off and pick up will continue to operate along Argyle Street;
- Bus services will continue to operate using the designated bus area along Argyle Street;
- School staff will have access to the southern car park throughout the duration of the construction works. Additional on-street parking is also available along Wonga Road and Argyle Street.
- The main student access is via Argyle Street.
- A traffic controller / staff will assist in the safety of pedestrian and traffic movements to avoid conflicts with any vehicle and pedestrian conflict when construction activities are in operation.

## 5. Response to Comments

The following comments and responses are provided in Table 5-1.

Table 5-1: Comments and Responses

| Comments   | Response  |
|--|---|
| <p><b>B15</b> Prior to commencement of construction, the Applicant must prepare a Construction Environmental Management Plan (CEMP);</p> <ul style="list-style-type: none"> <li>a. be prepared by a suitably qualified and experienced person(s);</li> <li>b. be prepared in consultation with Council and RMS;</li> <li>c. detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;</li> <li>d. detail heavy vehicle routes, access and parking arrangements</li> <li>e. include a Driver Code of Conduct to               <ul style="list-style-type: none"> <li>I. minimise the impacts of earthworks and construction on the local and regional road network;</li> <li>II. minimise conflicts with other road users;</li> <li>III. minimise road traffic noise; and</li> <li>IV. ensure truck drivers use specified routes.</li> </ul> </li> </ul> | <p>Refer to Section 3.10 regarding Construction Environment Management</p> <ul style="list-style-type: none"> <li>a. The Construction Traffic and Pedestrian Management Plan and Traffic Control Plan has been prepared by an RMS Accredited Traffic Control Plan Developer;</li> <li>b. RMS and Council have been contacted in preparation of the Construction Traffic and Pedestrian Management Plan</li> <li>c. It should be noted contractors start working at 7:00am and finish at 5:00pm, and may start / finish different times of the day, depending on the construction works that is involved at the time. The construction works is also proposed to operate on Saturdays from 8:00am to 1:00pm.</li> </ul> <p>Truck movements will be restricted to travel through the bus area during the morning and afternoon school peak periods to minimise the conflict between buses, construction vehicles and pedestrians.</p> <p>A Traffic Control Plan (TCP) has been developed for the major construction works, details provided Section 3.11.</p> <p>The Traffic Control Plans has been designed in accordance with the Australian Standards and the Roads and Maritime Services (RMS) Traffic Control at Work Sites Manual and prepared by an RMS Accredited Traffic Control Plan Developer</p> <p>Refer to Section 3.17 and 3.18 for pedestrian safety and existing parent drop off and pick up.</p> <ul style="list-style-type: none"> <li>d. Refer to Section 3.7 for Driver Code of Conduct</li> </ul> |
| <p><b>B17</b> The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP)</p>   | <p>Documented throughout the Construction Traffic and Pedestrian Management Plan</p>  |

| Comments  | Response  |
|---|---|
| <p><b>B22</b> Prior to the commencement of construction, the Applicant must provide sufficient parking facilities for heavy vehicles on-site (unless alternative parking is agreed to in writing from the relevant road authority), and ensure that construction traffic associated with the development minimises on-street parking or the use of public parking facilities.</p> | <p>Refer to the following Section:<br/>           Sections 3.10 – Existing Parking Environment<br/>           Section 3.15.1 – Construction Staff Parking<br/>           Section 3.15.2 – School Staff Park</p> <p>It is proposed that all loading will occur within the site</p> |
| <p><b>B27</b> The Applicant must notify the RMS Traffic Management Centre of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site.</p>   | <p>RMS have been contacted and will require the final Construction Traffic and Pedestrian Management for review.</p>  |
| <p><b>C9</b> All construction vehicles (excluding worker vehicles) are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site before stopping.</p>  | <p>Refer to the Vehicle Movement Plan in Section 3.6</p>  |
| <p><b>C10</b> A Road Occupancy License must be obtained from the relevant road authority for any works that impact on traffic flows during construction activities.</p>   | <p>The Road Occupancy License will be applied to Council prior to Construction works of Picton High School</p>  |

## 6. Conclusion

Stantec has prepared this Construction Traffic and Pedestrian Management Plan (CTPMP) to discuss the proposed temporary traffic and pedestrian management measures to be employed during the Main Construction Works of Picton High School.

The construction works will consist of the following:

- Removal of asbestos of the existing buildings;
- Demolition of the existing buildings;
- Construction and refurbishment of the new buildings; and
- Removal of temporary classroom demountables.

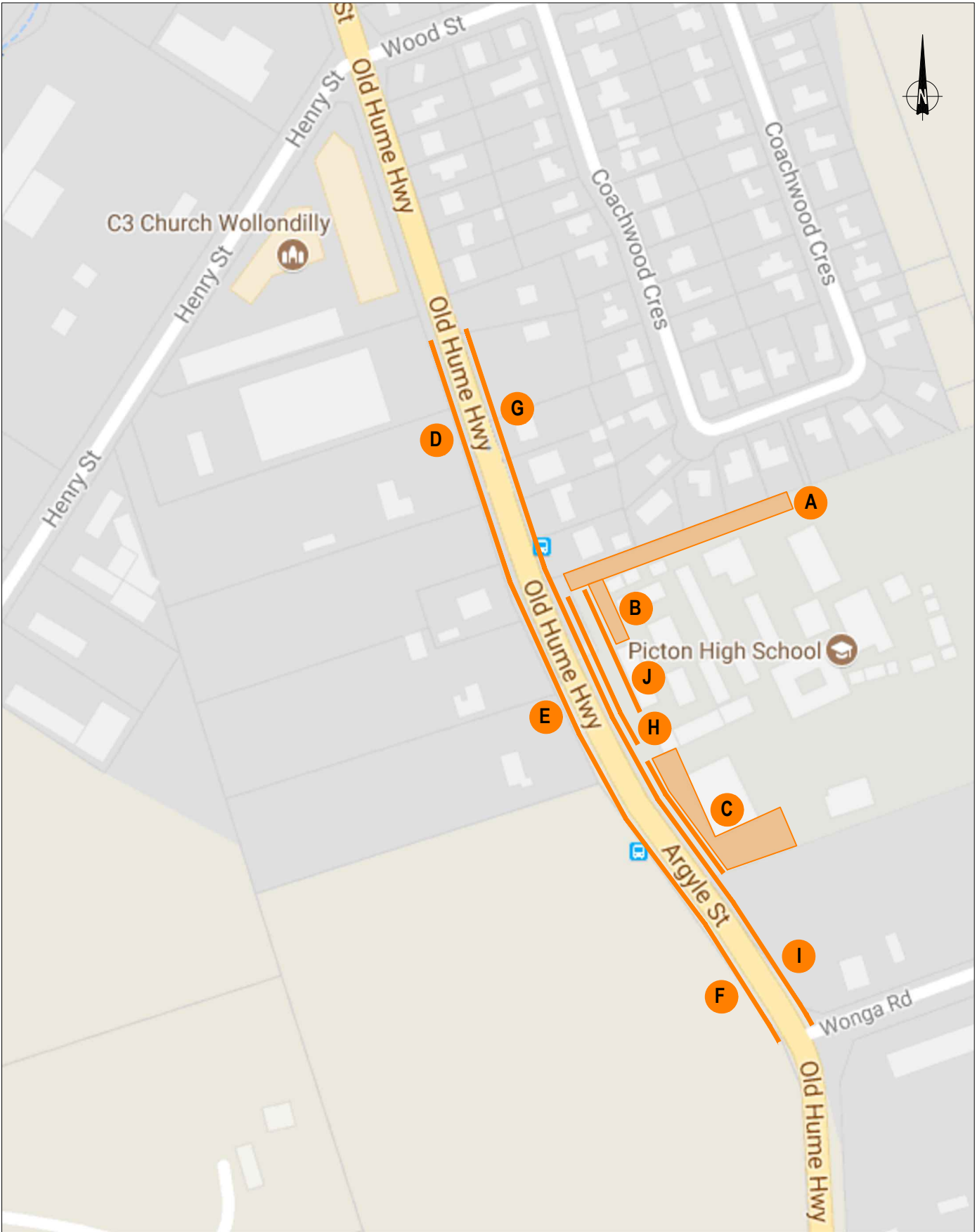
The main construction works will occur on-site. By way of a summary, it is concluded that these effects can be managed within acceptable bounds to minimise disruption expected to vehicular traffic, pedestrians and construction vehicles.

# Appendices





# Appendix A Parking Survey Results





# Appendix B SIDRA Results

# MOVEMENT SUMMARY

 **Site: 3 [AM 2018 - Existing - Argyle/Wonga]**

AM 2018 - Existing - Argyle/Wonga

Site Category: (None)

Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|-----------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Vehicles<br>veh | Queue Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Argyle Street            |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 2                               | T1   | 600                   | 5.1           | 0.318            | 0.0                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9                  |
| 3                               | R2   | 5                     | 40.0          | 0.008            | 9.1                  | LOS A            | 0.0                         | 0.3                 | 0.50         | 0.63                | 0.50             | 49.5                  |
| Approach                        |      | 605                   | 5.4           | 0.318            | 0.1                  | NA               | 0.0                         | 0.3                 | 0.00         | 0.01                | 0.00             | 59.8                  |
| East: Wonga Road                |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 4                               | L2   | 5                     | 60.0          | 0.010            | 12.4                 | LOS A            | 0.0                         | 0.4                 | 0.48         | 0.92                | 0.48             | 36.2                  |
| 6                               | R2   | 60                    | 7.0           | 0.148            | 14.5                 | LOS A            | 0.5                         | 3.6                 | 0.73         | 1.00                | 0.73             | 35.0                  |
| Approach                        |      | 65                    | 11.3          | 0.148            | 14.3                 | LOS A            | 0.5                         | 3.6                 | 0.71         | 1.00                | 0.71             | 35.1                  |
| North: Argyle Street            |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 7                               | L2   | 80                    | 22.4          | 0.050            | 3.5                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.45                | 0.00             | 38.6                  |
| 8                               | T1   | 363                   | 6.1           | 0.194            | 0.0                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.00                | 0.00             | 40.0                  |
| Approach                        |      | 443                   | 9.0           | 0.194            | 0.7                  | NA               | 0.0                         | 0.0                 | 0.00         | 0.08                | 0.00             | 39.7                  |
| All Vehicles                    |      | 1114                  | 7.2           | 0.318            | 1.2                  | NA               | 0.5                         | 3.6                 | 0.04         | 0.09                | 0.04             | 48.1                  |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: STANTEC NEW ZEALAND | Processed: Tuesday, March 19, 2019 2:50:57 PM

Project: \\ausyd1s01\TDG\brSYD\Oracle Onwards\Taylor Construction\300303009 - PHS - CTMP (Main Works)\6.0 Project Deliverables\6.4

Models & Calculations\Picton HS - Construction.sjp8

# MOVEMENT SUMMARY

 Site: 3 [PM 2018 - Existing - Argyle/Wonga]

PM 2018 Existing - Argyle/Wonga  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Argyle Street            |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 2                               | T1   | 391                   | 4.9           | 0.208            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.00                | 0.00             | 60.0                  |
| 3                               | R2   | 21                    | 20.0          | 0.046            | 12.1                 | LOS A            | 0.2                                  | 1.3           | 0.66         | 0.83                | 0.66             | 48.2                  |
| Approach                        |      | 412                   | 5.6           | 0.208            | 0.6                  | NA               | 0.2                                  | 1.3           | 0.03         | 0.04                | 0.03             | 59.2                  |
| East: Wonga Road                |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 4                               | L2   | 34                    | 3.1           | 0.076            | 14.4                 | LOS A            | 0.2                                  | 1.8           | 0.65         | 1.00                | 0.65             | 48.2                  |
| 6                               | R2   | 42                    | 10.0          | 0.132            | 18.4                 | LOS B            | 0.4                                  | 3.2           | 0.78         | 1.00                | 0.78             | 45.7                  |
| Approach                        |      | 76                    | 6.9           | 0.132            | 16.7                 | LOS B            | 0.4                                  | 3.2           | 0.72         | 1.00                | 0.72             | 46.8                  |
| North: Argyle Street            |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 59                    | 16.1          | 0.035            | 5.7                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.57                | 0.00             | 52.9                  |
| 8                               | T1   | 689                   | 5.3           | 0.366            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.00                | 0.00             | 59.9                  |
| Approach                        |      | 748                   | 6.2           | 0.366            | 0.5                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.05                | 0.00             | 59.3                  |
| All Vehicles                    |      | 1236                  | 6.0           | 0.366            | 1.5                  | NA               | 0.4                                  | 3.2           | 0.06         | 0.10                | 0.06             | 58.3                  |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: STANTEC NEW ZEALAND | Processed: Tuesday, March 19, 2019 2:50:58 PM

Project: \\ausyd1s01\TDG\brSYD\Oracle Onwards\Taylor Construction\300303009 - PHS - CTMP (Main Works)\6.0 Project Deliverables\6.4 Models & Calculations\Picton HS - Construction.sjp8

# MOVEMENT SUMMARY

## Site: 3 [AM Existing + Construction - Argyle/Wonga]

AM Existing + Construction - Argyle/Wonga  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|-----------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Vehicles<br>veh | Queue Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Argyle Street            |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 2                               | T1   | 663                   | 4.6           | 0.350            | 0.0                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9                  |
| 3                               | R2   | 5                     | 40.0          | 0.007            | 8.7                  | LOS A            | 0.0                         | 0.3                 | 0.48         | 0.62                | 0.48             | 49.8                  |
| Approach                        |      | 668                   | 4.9           | 0.350            | 0.1                  | NA               | 0.0                         | 0.3                 | 0.00         | 0.00                | 0.00             | 59.8                  |
| East: Wonga Road                |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 4                               | L2   | 5                     | 60.0          | 0.009            | 11.8                 | LOS A            | 0.0                         | 0.3                 | 0.45         | 0.91                | 0.45             | 36.4                  |
| 6                               | R2   | 60                    | 7.0           | 0.155            | 15.0                 | LOS B            | 0.5                         | 3.8                 | 0.74         | 1.00                | 0.74             | 34.9                  |
| Approach                        |      | 65                    | 11.3          | 0.155            | 14.7                 | LOS B            | 0.5                         | 3.8                 | 0.72         | 1.00                | 0.72             | 35.0                  |
| North: Argyle Street            |      |                       |               |                  |                      |                  |                             |                     |              |                     |                  |                       |
| 7                               | L2   | 80                    | 22.4          | 0.050            | 3.5                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.45                | 0.00             | 38.6                  |
| 8                               | T1   | 321                   | 6.9           | 0.172            | 0.0                  | LOS A            | 0.0                         | 0.0                 | 0.00         | 0.00                | 0.00             | 40.0                  |
| Approach                        |      | 401                   | 10.0          | 0.172            | 0.7                  | NA               | 0.0                         | 0.0                 | 0.00         | 0.09                | 0.00             | 39.7                  |
| All Vehicles                    |      | 1135                  | 7.1           | 0.350            | 1.2                  | NA               | 0.5                         | 3.8                 | 0.04         | 0.09                | 0.04             | 49.0                  |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: STANTEC NEW ZEALAND | Processed: Tuesday, March 19, 2019 2:50:58 PM

Project: \\ausyd1s01\TDG\brSYD\Oracle Onwards\Taylor Construction\300303009 - PHS - CTMP (Main Works)\6.0 Project Deliverables\6.4 Models & Calculations\Picton HS - Construction.sjp8

# MOVEMENT SUMMARY

## Site: 3 [PM Existing + Construction - Argyle/Wonga]

PM Existing + Construction - Argyle/Wonga  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Argyle Street            |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 2                               | T1   | 391                   | 4.9           | 0.208            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.00                | 0.00             | 60.0                  |
| 3                               | R2   | 21                    | 20.0          | 0.046            | 12.1                 | LOS A            | 0.2                                  | 1.3           | 0.66         | 0.83                | 0.66             | 48.2                  |
| Approach                        |      | 412                   | 5.6           | 0.208            | 0.6                  | NA               | 0.2                                  | 1.3           | 0.03         | 0.04                | 0.03             | 59.2                  |
| East: Wonga Road                |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 4                               | L2   | 76                    | 1.4           | 0.169            | 14.6                 | LOS B            | 0.6                                  | 4.0           | 0.67         | 1.00                | 0.67             | 48.2                  |
| 6                               | R2   | 84                    | 5.0           | 0.248            | 18.7                 | LOS B            | 0.9                                  | 6.3           | 0.80         | 1.03                | 0.89             | 45.6                  |
| Approach                        |      | 160                   | 3.3           | 0.248            | 16.8                 | LOS B            | 0.9                                  | 6.3           | 0.74         | 1.01                | 0.78             | 46.8                  |
| North: Argyle Street            |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 59                    | 16.1          | 0.035            | 5.7                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.57                | 0.00             | 52.9                  |
| 8                               | T1   | 689                   | 5.3           | 0.366            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.00                | 0.00             | 59.9                  |
| Approach                        |      | 748                   | 6.2           | 0.366            | 0.5                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.05                | 0.00             | 59.3                  |
| All Vehicles                    |      | 1320                  | 5.7           | 0.366            | 2.5                  | NA               | 0.9                                  | 6.3           | 0.10         | 0.16                | 0.11             | 57.4                  |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com**

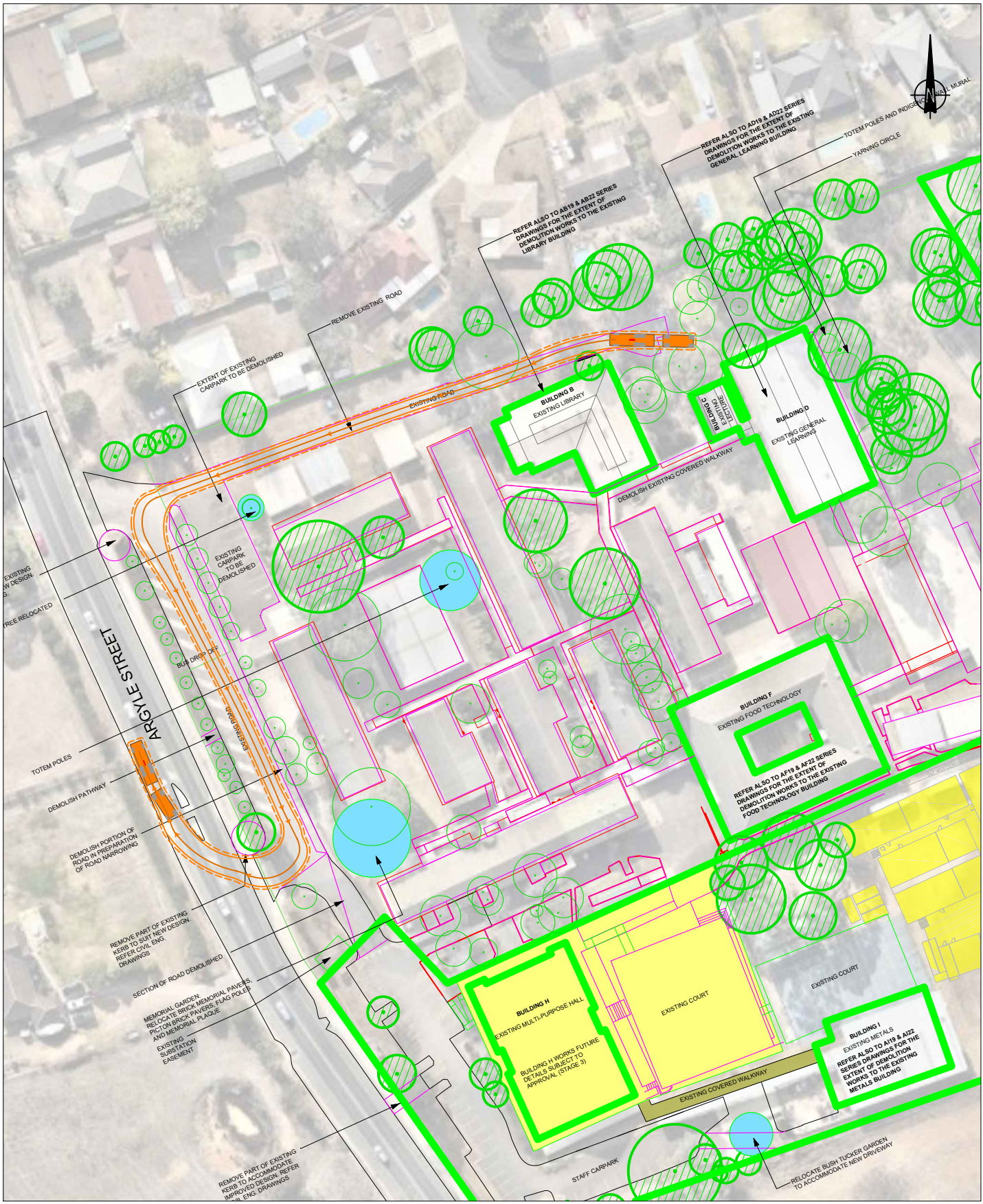
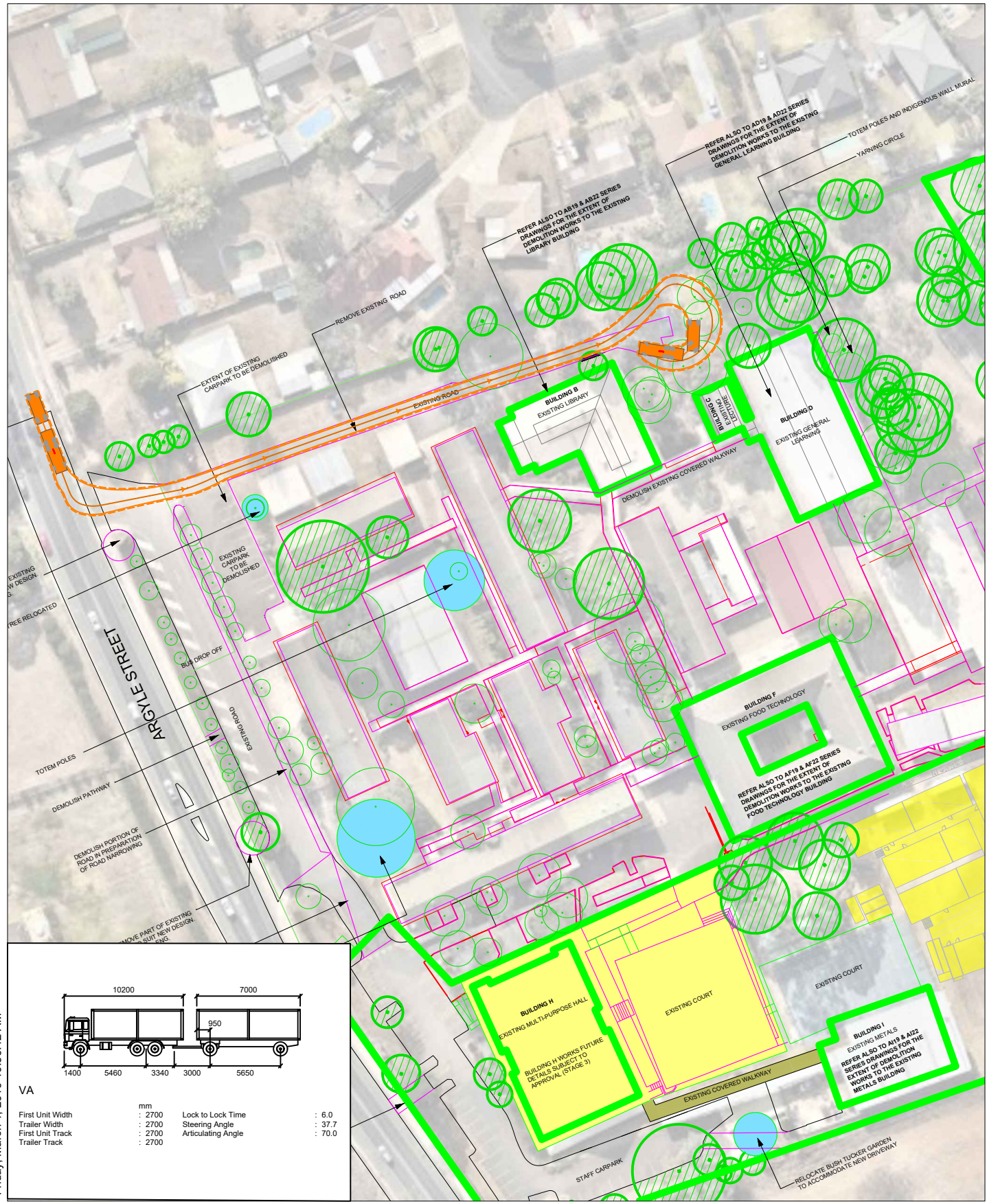
Organisation: STANTEC NEW ZEALAND | Processed: Tuesday, March 19, 2019 2:50:59 PM

Project: \\ausyd1s01\TDG\brSYD\Oracle Onwards\Taylor Construction\300303009 - PHS - CTMP (Main Works)\6.0 Project Deliverables\6.4

Models & Calculations\Picton HS - Construction.sjp8



# Appendix C Vehicle Swept Path Analysis



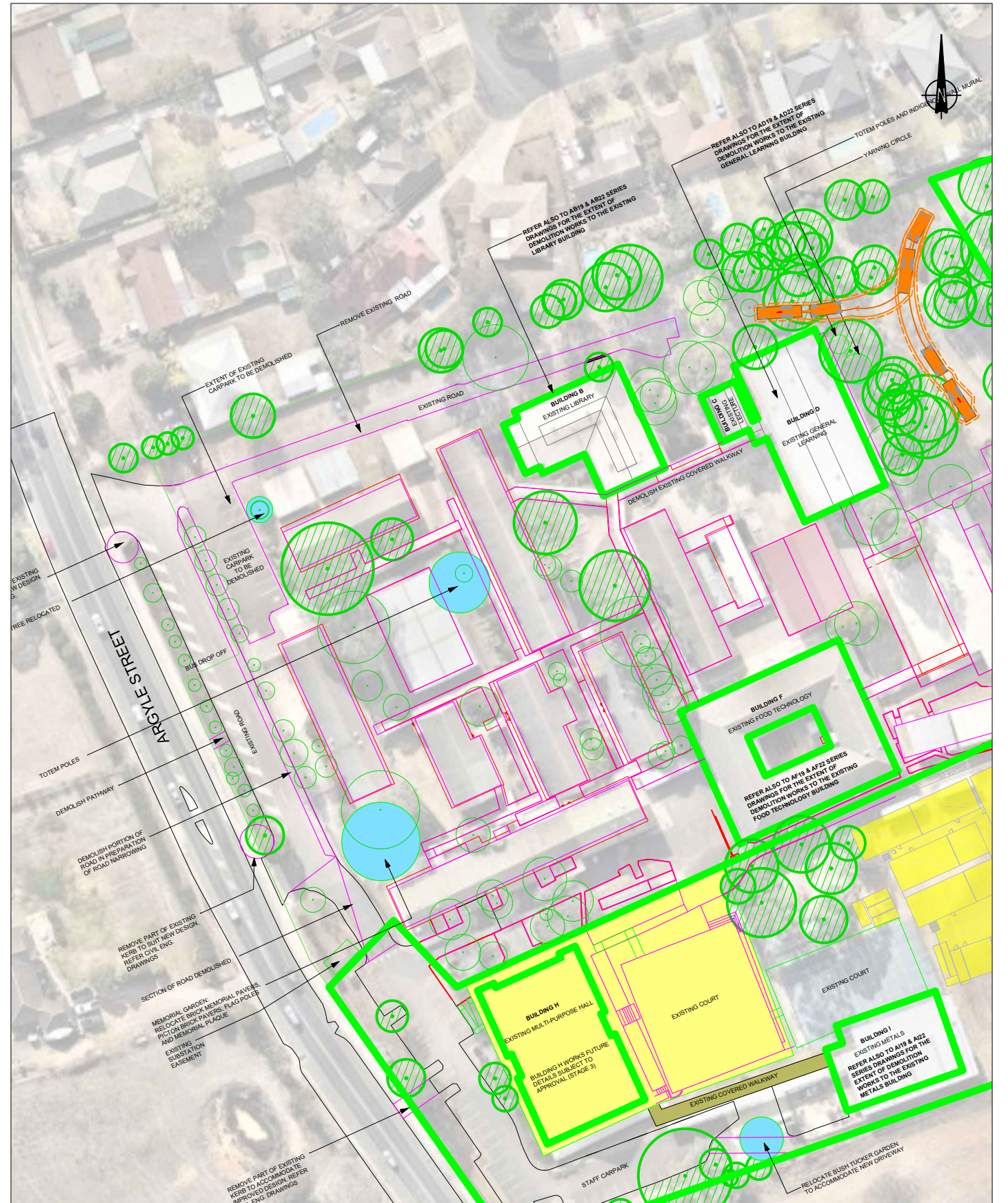
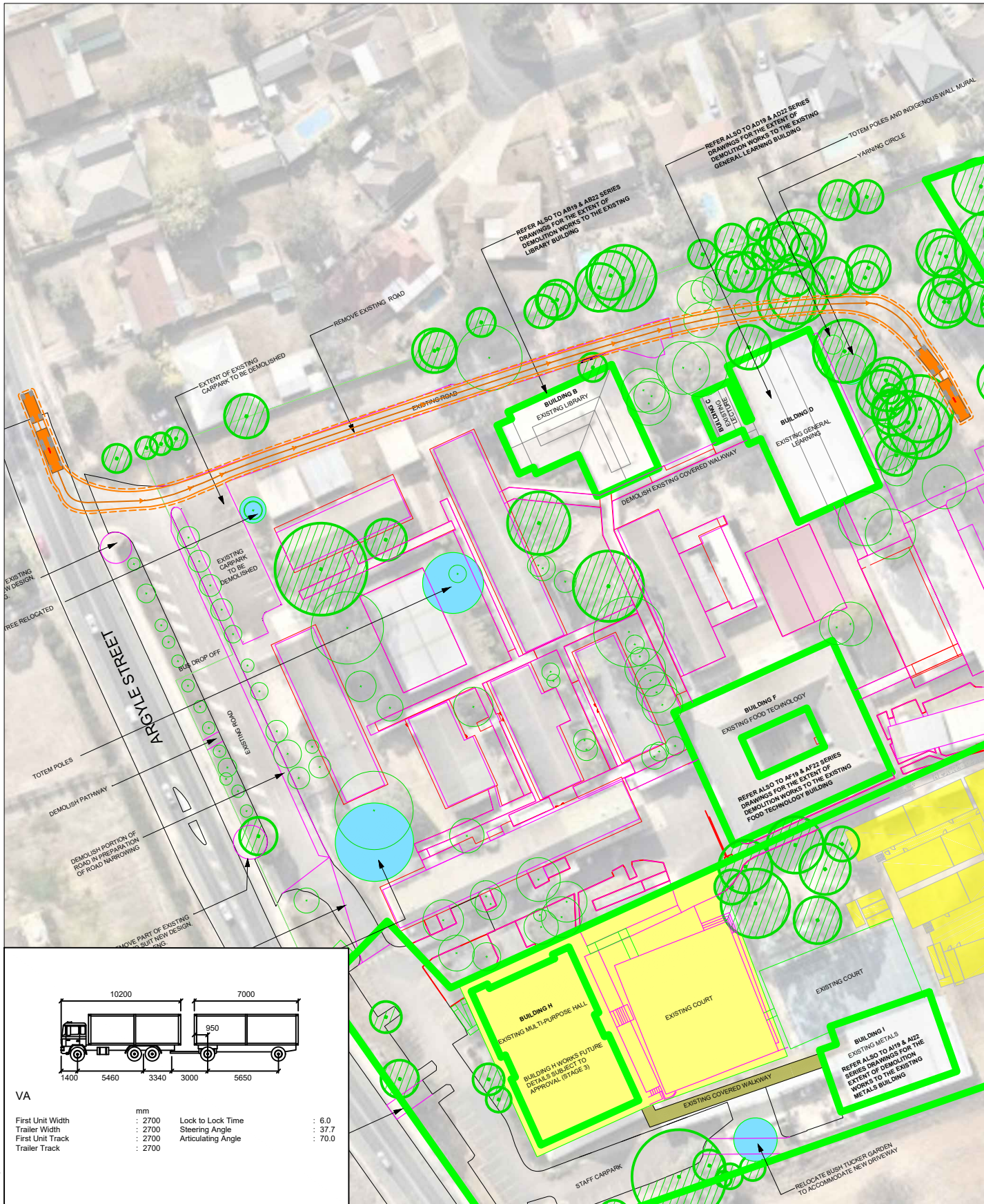
| REV | DATE     | DRN | CHK | DESCRIPTION |
|-----|----------|-----|-----|-------------|
| 00  | 01/03/19 | DA  |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |

**Picton High School Redevelopment**  
 Swept Path Assessment  
 19.0 metre Truck and Dog

DRAWN: DA  
 DATE: 01-03-19 STATUS: ---  
 SCALE: 1:1200 @ A3  
 DWG NO:300303009-01SA

**Stantec** **1**

Friday, March 1, 2019 10:56:12 AM



| REV | DATE     | DRN | CHK | DESCRIPTION |
|-----|----------|-----|-----|-------------|
| 00  | 01/03/19 | DA  |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |

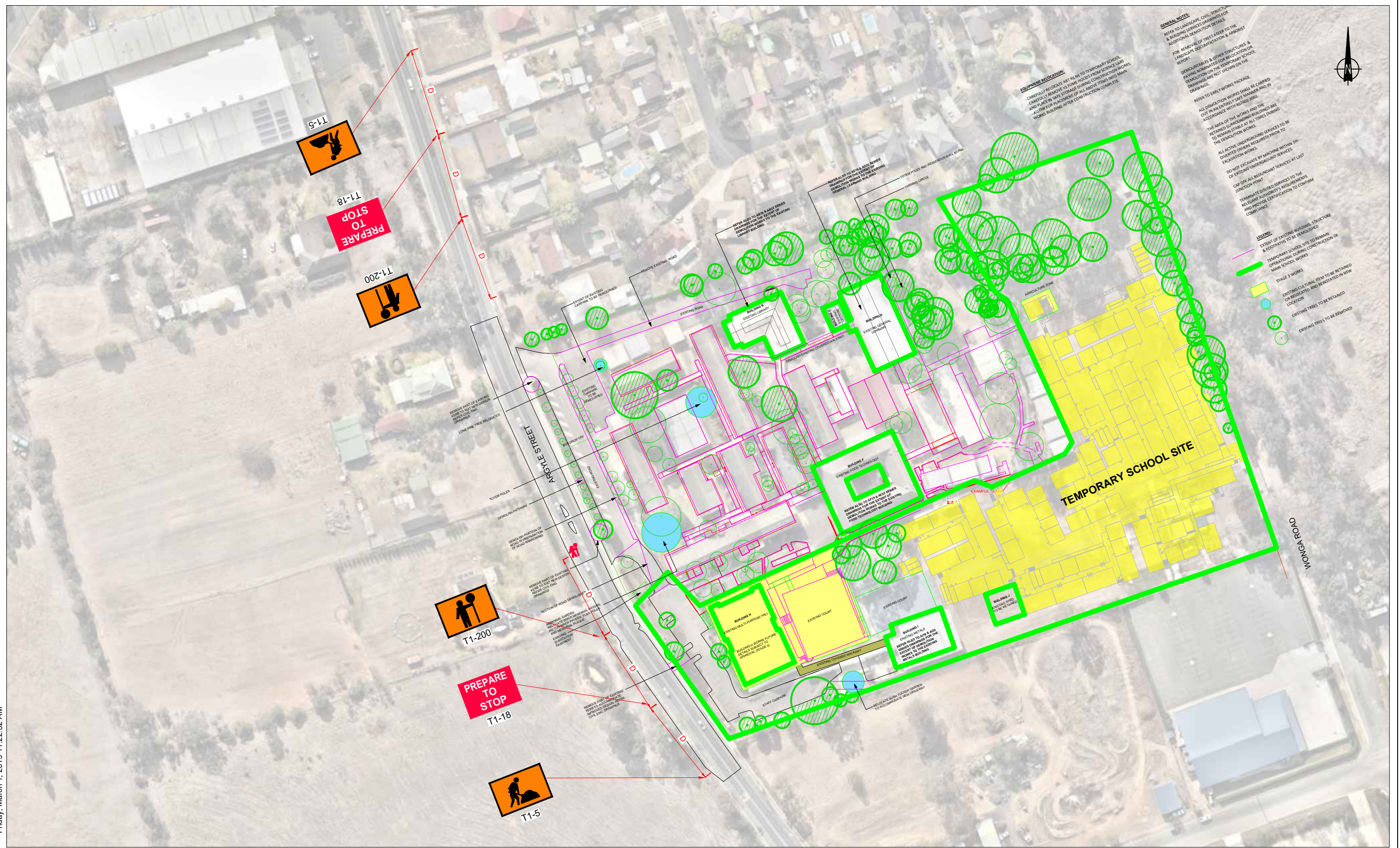
**Picton High School Redevelopment**  
 Swept Path Assessment  
 19.0 metre Truck and Dog

DRAWN: DA  
 DATE: 01-03-19  
 SCALE: 1:1200 @ A3  
 DWG NO: 300303009-01SA

Stantec **2**

# Appendix D Traffic Control Plans

Friday, March 1, 2019 11:22:32 AM



| REV | DATE     | DRN | CHK | DESCRIPTION |
|-----|----------|-----|-----|-------------|
| 00  | 21/03/19 | DA  |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |
|     |          |     |     |             |

**Picton High School Redevelopment**  
Traffic Control Plan

DRAWN: DA --- ---  
 DATE: 01-03-19 STATUS: ---  
 SCALE: 1:1649.5007 @ A3  
 DWG NO:300303009-01SA



**Sydney**

Level 4, 99 Walker Street, PO Box 1831  
NORTH SYDNEY, NSW 2060  
Tel +61 2 9493 9700  
Fax +61 2 9493 9799

Please visit [www.stantec.com](http://www.stantec.com) to learn more about how  
Stantec design with community in mind.