



Reference: 18.300r02v02

1 May 2019

Amity College Australia Ltd
163 Kurrajong Road
PRESTONS NSW 2170

Attention: Mr Recep Aydogan, Director of Finance

**Re: 85 Byron Road & 63 Ingleburn Road, Leppington – SSD 9227
Construction Traffic Assessment**

Dear Recep,

We refer to the subject State Significant Development (SSD) application to construct a new school campus in Leppington. TRAFFIX has been commissioned to prepare this Construction Traffic Assessment to accompany the Construction Management Plan prepared by Outline Planning.

We emphasise that this report is typically completed following approval of a development application and in response to a suitable Condition of Consent. By this time, it is reasonably expected that the project can be tendered, where the appointed builder will confirm the construction methodology and number of vehicle movements.

Notwithstanding, this document has been prepared to assess the viability of the site being serviced by heavy vehicles during construction. Reference should be made to our Traffic Impact Assessment report (Reference: 18.300r01v03 dated 23 April 2019) for a description of existing and future road conditions.

Noting that the school will be constructed in stages across a 20 year period, multiple variations of the CTMP will need to be prepared in due course, in order to account for differing site conditions and completed upgrades of external roads. It is anticipated that prior to any construction stage, each revision of the CTMP report will be prepared after consultation with Council, Roads and Maritime Services and Transport for NSW.

Truck Sizes and Route

Potential routes have been investigated between the site and arterial road network at Camden Valley Way. When accounting for turning restrictions as well as intersection geometry, the following routes are proposed and are illustrated in **Figure 1**.



Routes from North (Figure 1)

▶ Routes to subject site:	<ol style="list-style-type: none">1. Turn right from Camden Valley Way into Ingleburn Road.2. Turn left into Byron Road.3. Turn right into the site.
▶ Routes from subject site:	<ol style="list-style-type: none">1. Turn left from the site into Byron Road.2. Turn right into Ingleburn Road.3. Turn left into Camden Valley Way.

Routes from South (Figure 1)

▶ Routes to subject site:	<ol style="list-style-type: none">1. Turn left from Camden Valley Way into Ingleburn Road.2. Turn left into Byron Road.3. Turn right into the site.
▶ Routes from subject site:	<ol style="list-style-type: none">1. Turn left from the site into Byron Road.2. Turn right into Ingleburn Road.3. Turn right into Camden Valley Way.

Routes from East (Figure 1)

▶ Routes to subject site:	<ol style="list-style-type: none">1. Continue straight from Denham Court Road into Ingleburn Road.2. Turn left into Byron Road.3. Turn right into the site.
▶ Routes from subject site:	<ol style="list-style-type: none">1. Turn left from the site into Byron Road.2. Turn right into Ingleburn Road.3. Continue straight on to Denham Court Road.

A swept path analysis was undertaken for the critical movements at the intersections of Camden Valley Way/Ingleburn Road/Denham Court Road and Ingleburn Road/Byron Road. The results of the analysis are presented in **Attachment 1** for a 12.5m Heavy Rigid Vehicle (HRV), which was found to be the largest design vehicle defined in AS2890.2 (2002) which can safely complete each turning movement.

The 12.5m HRV will account for all standard rigid construction vehicles, including tippers and concrete agitator trucks. Under the existing intersection configuration for Ingleburn Road/Byron Road, articulated vehicles such as truck and dog combinations will require traffic control (as they will cross the existing double centrelines when turning). However, it is expected that the signalised upgrade of this intersection will improve manoeuvrability, given the duplication of lanes (allowing straddling) and carriageway widening described in the Traffic Impact Assessment report.

Rigid vehicles will thus be able to circulate on the road network without reliance on traffic control. Articulated vehicles would not be essential to complete construction (with the benefit of reducing the

duration construction activity), and traffic control plans can be prepared accordingly should it be proposed to use these vehicles.

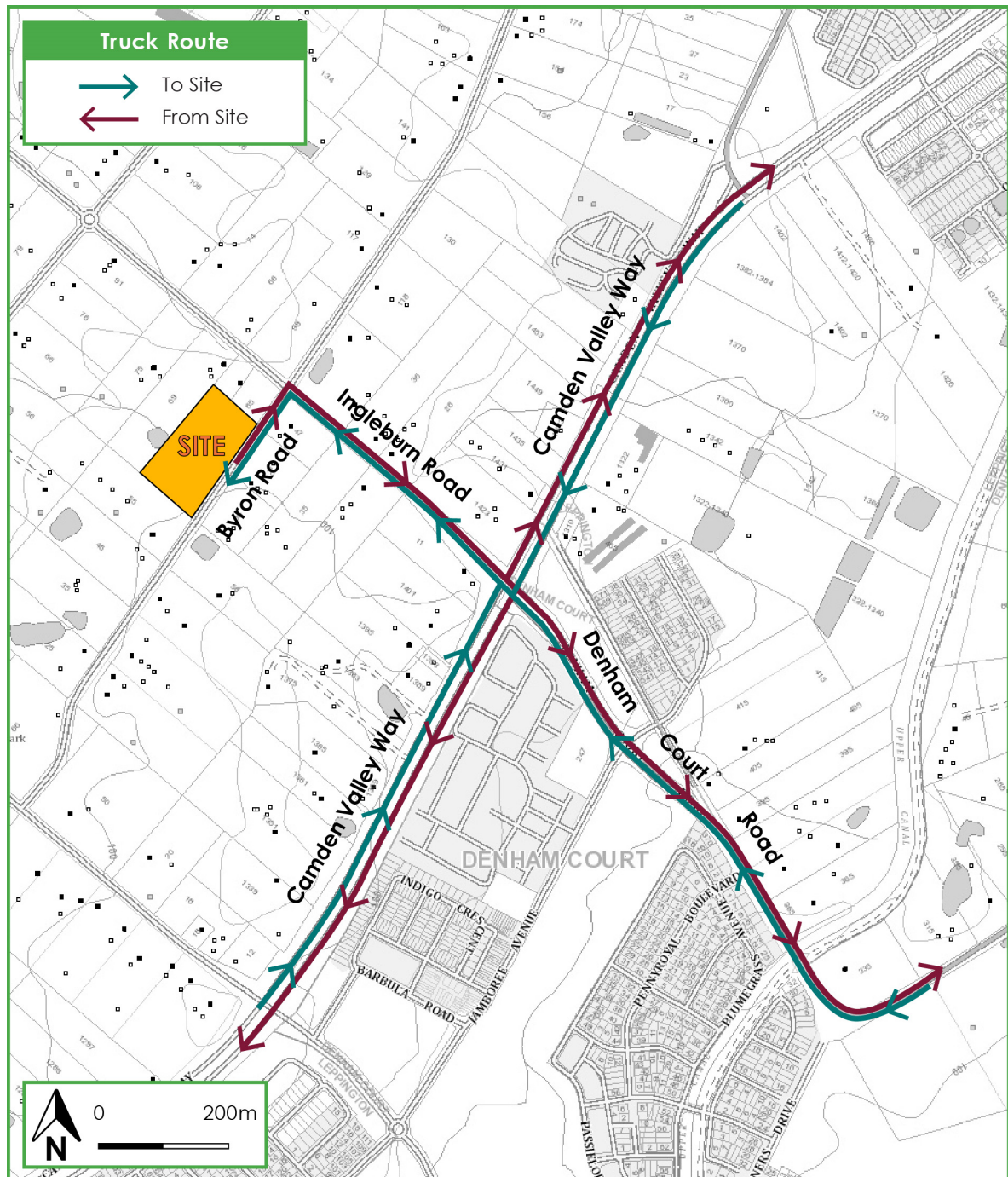


Figure 1: Truck Routes



Site Access

For the following reasons, it is anticipated that site access for trucks will be feasible for the majority of duration (if not all) of construction activity:

- ▶ The site area is approximately 2.23 hectares, with a 180 metre frontage to Byron Road. This will allow flexibility for trucks to enter the site where appropriate during initial stages, with ample turning area to enable forward entry and exit site access movements.
- ▶ The construction of at-grade pick-up and drop-off areas on the eastern and western side roads can act as hardstand areas for trucks. These car parks have a 'porte cochere' layout, thus enabling forward entry and exit site access movements.
- ▶ The proposed school will include two hardstand loading areas at the eastern and western side roads. This would require a reverse entry movement and will be supervised with traffic control.

It is therefore unlikely that the site will rely on a Works Zone for any extended period of time. This will ensure that the handling of materials can safely be done within the confines of the site, as well as maximising availability of on-street parking.

A swept path analysis has been undertaken for an indicative site access movement from Byron Road. This location adopts the existing access for the site and is appropriate for Stage 1 construction activity. The results are presented in **Attachment 1** for a 12.5m HRV and demonstrate the existing carriageway of Byron Road will be sufficiently large enough to facilitate site access movements for this design vehicle. Once detailed information is provided from a builder, swept paths for all confirmed access movements for each relevant stage will be undertaken prior to each CTMP submission.

Overview of Phases

Preliminary information regarding the general phases of construction activity is summarised below. This is provided without the benefit of a builder and all relevant details will be confirmed prior to lodgement of any CTMP accompanying each stage of construction for the school.

Demolition

Demolition activity will comprise of the demolition of buildings as well as clearing existing trees on-site. Based on previous experience, it is estimated that this can involve between 5-10 truck arrivals per day, with minimal activity during peak periods. The majority of activity would be expected to take place before the opening of the school, including the demolition of existing dwelling houses, although the temporary buildings for earlier stages will also need to be removed prior to construction of the permanent development.

Tipper trucks would be the most appropriate design vehicle for demolition activity, which will not exceed the size of a 12.5m HRV for rigid types. Trucks will enter and exit the site directly from Byron Road, with forward movements permissible at all times. Whilst the traffic volumes on Byron Road are presently low, the need for traffic controllers will be assessed in a later revision of the CTMP, to account for any changed conditions. They will be necessary in the instance where larger truck and dog vehicles are sought.



As the majority of demolition activity will take place prior to the opening of the school, no special pedestrian measures are warranted, other than standard considerations (e.g. hoarding).

Excavation

Excavation activity will comprise of removing earth to construct two (2) basements, as well as general cut and filling. Given the basements will only be single level, and occupy a limited footprint, it is not expected that these works will be substantial. In this regard, approximately 10-15 trucks per day are estimated during peak activity.

Tipper trucks would be the most appropriate design vehicle for demolition activity, which will not exceed the size of a 12.5m HRV for rigid types. Trucks will enter and exit the site directly from Byron Road, with forward movements permissible at all times. Whilst traffic volumes on Byron Road are presently low, the need for traffic controllers will be assessed in a later revision of the CTMP, to account for any changed conditions. They will be necessary in the instance where larger truck and dog vehicles are sought.

Construction

The construction of the school buildings will be staged over the next 20 years. The level of activity, and site conditions will vary substantially and thus traffic volumes cannot reasonably be estimated at this point in time. Whilst the majority of this will occur as the school is operational, there is opportunity to schedule peak activity outside peak pick-up and drop-off periods, while more intense work, such as concrete pours, could be undertaken during school holiday periods.

Different trucks will be used during these phases, although it is expected that most trucks can be rigid types for the delivery of construction material (e.g. concrete agitator trucks). Special traffic control measures would be prepared in the instance where oversize materials would be transported to the site.

The site access points would also change during the various stages, shifting from access to Byron Road to the side roads, which will minimise impacts as network traffic volumes increase. Trucks could initially use the pick-up and drop-off areas to park on-site and in later stages can rely on the permanent hardstand loading areas at all times.

It will be likely that traffic controllers will be needed to facilitate site access movements when the school is operational to ensure pedestrian safety. This would be formalised with the preparation of Traffic Control Plans in future CTMPs reports.

Traffic Management

The development is located on a large site with sufficient area to accommodate all construction activities on site. In addition, the area is currently underdeveloped the impact of construction works at this stage will be minimal. As such, traffic management strategies are to be determined at a later stage. The Traffic Control plans will be designed in accordance with the requirements of the RMS Traffic Control at Work Sites Technical Manual and AS 1742.



Summary

In summary, this Preliminary Construction Traffic Management Plan demonstrates that the site can safely and reliably be accessed by rigid vehicles. Future revisions of this report will be prepared prior to any stage of work commencing, which will take into consideration the site and external conditions. This will involve the input of the appointed builder and follow the recommendations arising from consultation with relevant authorities.

We trust the above is of assistance and please don't hesitate to contact the undersigned should you have any queries.

Yours faithfully,

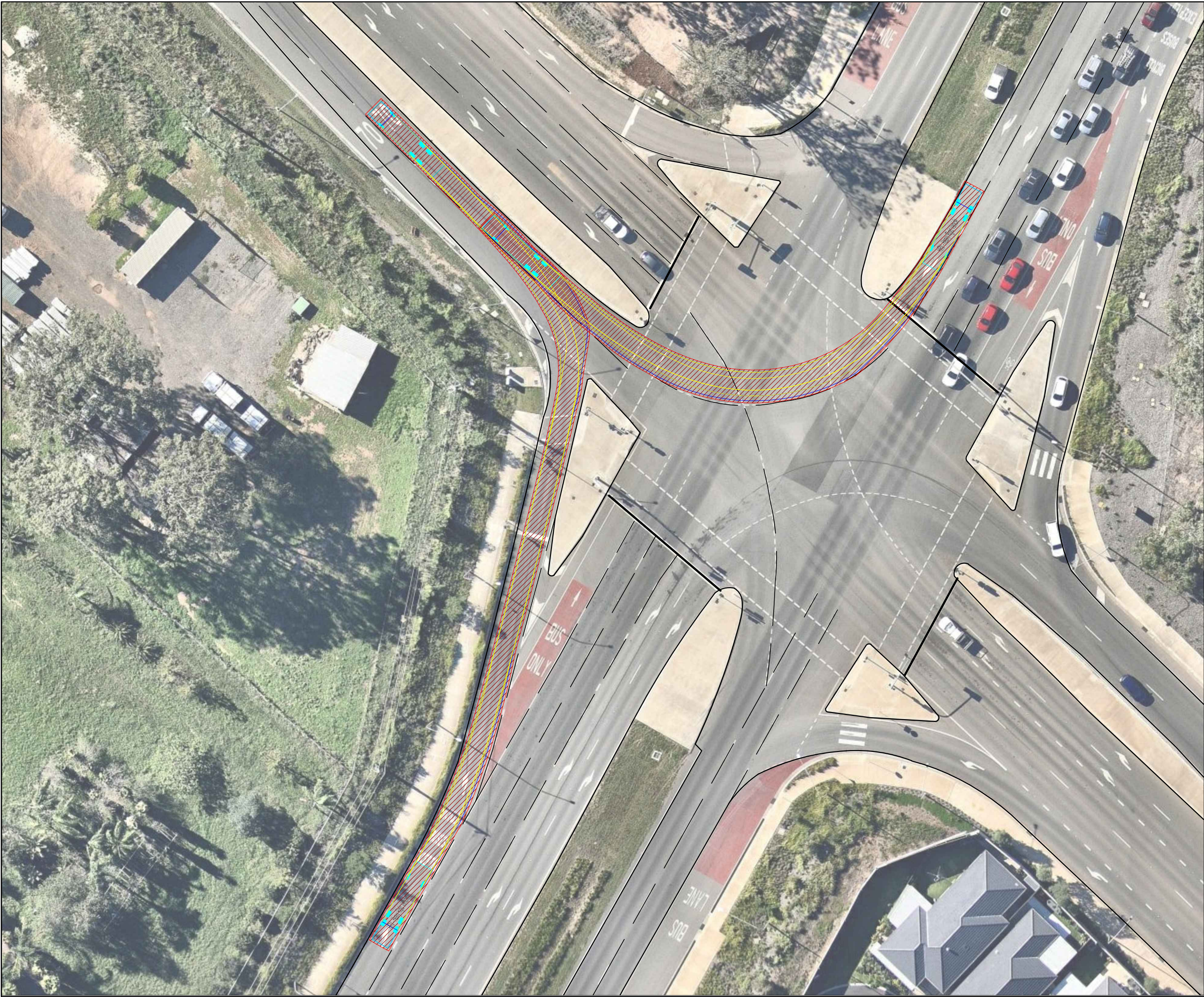
Traffix

Kedar Ballurkar
Senior Engineer

Attachments: 1) Swept Path Analysis

ATTACHMENT 1

Swept Path Analysis



Notes

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (AS/NZS 2890.1-2004 *Parking facilities - Off-street car parking*, and/or AS 2890.2-2002 *Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

no. revision note

A Swept Path Analysis

by. date

HD 24-04-2019

Swept Path Legend:

Wheel Path

Vehicle Body Envelope

Clearance Envelope (300mm)

architect

Gran Associates

client

Amity College Australia Ltd
163 Kurralong Road
Prestons NSW 2170

scale

1:400 @ A3

0m

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12

16

project

Amity College Leppington
63 Ingleburn Road and 85 Byron Road
Leppington NSW 2179

drawing prepared by

TRAFFIX

traffic and transport planners

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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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e: info@traffix.com.au

drawing title

Camden Valley Way and Ingleburn Road
Entering Ingleburn Rd from Camden Valley Way
12.5m long Heavy Rigid Vehicles (HRV)

drawn: HD

checked: KB

date: 26-04-2019

18.300307v01 TRAFFIX [xx.xx.xx Plans] Truck Routes Swept Paths.dwg

18.300

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project no.

drawing phase.

drawing no.

rev



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drawing title

Camden Valley Way and Ingleburn Road
Entering Ingleburn Rd from Camden Valley Way
12.5m long Heavy Rigid Vehicles (HRV)

drawn: HD

checked: KB

date: 26-04-2019

18.300d07v01 TRAFFIX [xx xx xx Plans] Truck Routes Swept Paths.dwg

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drawing title

Byron Road and Ingleburn Road
Left turn into Byron Road from Ingleburn Road
12.5m long Heavy Rigid Vehicles (HRV)

drawn: HD

checked: KB

date: 26-04-2019

18.300407v01 TRAFFIX [px xx xx Plans] Truck Routes Swept Paths.dwg

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Byron Road and Ingleburn Road
Right turn into Ingleburn Road from Byron Road
12.5m long Heavy Rigid Vehicles (HRV)

drawn: HD

checked: KB

date: 26-04-2019

18.300407v01 TRAFFIX [px xx xx Plans] Truck Routes Swept Paths.dwg

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drawing title

Byron Road and Site Access
Above: Entry into Site Left: Exit into Byron Road
12.5m long Heavy Rigid Vehicles (HRV)

drawn: HD

checked: KB

date: 26-04-2019

18.300307v01 TRAFFIX [xx.xx.xx Plans] Truck Routes Swept Paths.dwg

18.300

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project no.

drawing phase.

drawing no.

rev