Response to Submissions

Traffic and Parking

Hurlstone Agricultural High School (Hawkesbury)

Prepared for School Infrastructure NSW c/o Conrad Gargett

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161108

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Contents

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1 Introduction

During the exhibition phase of the State Significant Development Application (SSDA) for the proposed new Hurlstone Agricultural High School (ref. 17_8614), several submissions were received from various agencies. Many items related specifically to traffic conditions around the proposed development, including submissions from:

- Roads and Maritime Services;
- Transport for NSW;
- Hawkesbury City Council; and
- Department of Planning and Environment (supplementary comments)

Taylor Thomson Whitting (TTW) prepared the Transport and Accessibility Impact Assessment for the SSDA, in addition to a Preliminary Construction Traffic Management Plan (both documents were requested in the SEARs for the project). As part of a comprehensive response to the above submissions, we have prepared this report to provide information and responses relating to the site.

Preparation of this Response to Submissions (RTS) report has also included meeting with representatives from RMS and Council to discuss the proposal and their submissions. This meeting was held at RMS' offices on 20th June 2018 and was also attended by a representative from the Department of Planning & Environment. Following this meeting it was determined that an independent Road Safety Audit (RSA) be undertaken, and this RTS report includes reference to actions arising from the findings of the RSA. A draft copy of the RSA (including proposed actions) was provided to RMS and Council on 10th August 2018; we understand no response to this draft has been provided to date.

2 Road Safety Audit

Following comments received in submissions and a meeting with RMS and Council, a Road Safety Audit (RSA) was undertaken for the intersections of Londonderry Road / Vines Drive / Southee Road and Blacktown Road / Campus Drive. These two locations were highlighted by RMS and Council as areas of key safety concern.

The audit was undertaken by an independent team from TTW comprising three RMS-accredited auditors (including two Level 3 auditors). As part of the Audit commencement process, the Audit team was briefed on the project proposal and the issues highlighted in the submissions. The audit scope included both the existing site conditions and the latest design proposals. The audit of the existing site was undertaken during day and night conditions in accordance with standard practice.

Findings and proposed actions from the audit are summarised in the following sections, and we understand the Audit documentation is also to be submitted as part of the project Response to Submissions.

2.1 Londonderry Road Intersections

The following risks were identified at the intersections of Londonderry Road with Vines Drive and with Southee Road:

- Some ponding of water at Londonderry Road
- Sudden termination of footpath at Londonderry Road
- No formal pedestrian access to bus stop at Londonderry Road
- Restricted sight lines from Vines Drive around buses stopped at Londonderry Road
- Deteriorated Give Way signage at Vines Drive
- No chevron signage for T-intersection at Londonderry Road
- Speed zone change located 75 metres along Vines Drive from Londonderry Road
- Possibility for vehicles to be side by side restricting sight lines at Vines Drive
- Possibility for vehicles to cross centre-line under modified alignment of Vines Drive
- Faded line marking on Londonderry Road
- No reflectors (RRPMs) on Vines Drive
- Street signage for Vines Drive located at distance from Londonderry Road
- Raised concrete pit lid located near Londonderry Road carriageway

2.2 Blacktown Road Intersection

The following risks were identified at the intersection of Blacktown Road with Campus Drive:

- Some ponding of water at Campus Drive
- No centre line on Campus Drive
- No edge line or kerb on Campus Drive
- No Give Way line marking for Give Way sign on approach to Blacktown Road
- Street signage for Campus Drive difficult to read
- Faded line marking on Blacktown Road
- Lack of bicycle lane delineation on Blacktown Road
- Light pole not functioning at Campus Drive
- No reflectors (RRPMs) on Campus Drive

3 Roads and Maritime Services

3.1 Flood Evacuation

Matters relating to flooding of the site and a flood evacuation procedure are to be addressed by the Civil and Flooding Engineer as part of an Emergency Flood Evacuation Plan.

3.2 Londonderry Road Intersection

RMS has requested that the intersection of Londonderry Road and Vines Drive should be realigned so that it forms a cross intersection with Southee Road. Discussions with RMS indicate that insufficient information on road safety had been provided in the SSDA.

The proposed design maintains the existing road alignment but provides widened edge radii to cater for safe bus movements.

Available information from the NSW Centre for Road Safety (covering the period from 2012 to 2016) shows no recorded history of crashes at these intersections. While it is recognised that traffic volumes will be increased, there is currently no indication that a modified intersection layout is necessary to maintain safety.

The Transport and Accessibility Impact Assessment demonstrates a Level of Service 'A' at both intersections. If an intersection is performing poorly and resulting in queuing and delay, drivers may be inclined to make poor or rushed decisions. Under good traffic flow, drivers are less likely to make poor decisions and are more safely able to negotiate traffic. Poor intersection performance may indicate a need for modification however this is not the case at this site.

The existing layout provides a clear priority for the majority traffic movement. At the Vines Drive intersection, through traffic along Londonderry Road currently represents approximately 73% and 81% of all intersection movements in the morning and afternoon peak hours respectively. The current design proposal maintains this clear priority along Londonderry Road. Following opening of the School, the through movement shall remain the majority movement at approximately 60% and 67% for the morning and afternoon peaks.

Vines Drive and Southee Road are currently separated by approximately 40 metres (centre to centre). Conflict points for turning vehicles are separated, and vehicles can fully enter traffic streams and complete a manoeuvre before another manoeuvre (by that vehicle or another vehicle) takes place. Additionally, there is full sight distance between the two approaches to Londonderry Road, such that all oncoming vehicles and potential conflict points can be clearly and safely identified by drivers.

Introduction of a cross intersection would condense these separated movements and bring turning conflict points closer together. A direct connection between Vines Drive and Southee Road may introduce confusion of priority (requiring additional signage and line marking), while the current separated arrangement intuitively provides clear definition of Londonderry Road as the priority movement. Allowance for a through movement between Vines Drive and Southee Road would also provide minimal benefit for users, with an estimated 5% of users approaching and departing along Southee Road.

In responding to the findings of the Road Safety Audit, it is proposed that improvements be made to signage, line marking, and safety devices (such as RRPMs) to improve driver awareness and safety. These changes will be coordinated with RMS during the detailed design stage as this will involve minor maintenance works on Londonderry Road.

Overall it is considered that there is not a need to modify the intersection layout (beyond widening to cater for the design vehicle), and a cross intersection may increase vehicle conflict and introduce additional traffic hazards by condensing vehicle movements. The current proposal, including additional changes to improve road safety, is deemed adequate for the desired purpose.

3.3 Safety Issues

3.3.1 Campus Routes

RMS has expressed concern regarding motorists "rat running" through campus roadways when accessing the site from College Drive or Campus Drive.

There are not considered to be any possible routes through the campus where motorists could "rat run" and create safety or operational issues. All routes between the School and various public roadways are via the only possible access route.

All internal roadways are currently marked as 40 km/hr areas. Introduction of 40 km/hr School Zones on any internal roadways would not change vehicle speeds and therefore there would be no incentive for drivers to use alternative routes if available.

3.3.2 Pedestrian and Cyclist Safety

RMS has noted that pedestrian and cyclist safety are to be considered in the vicinity of the site. The proposed development includes new pedestrian footpaths connecting to the existing pedestrian network, utilising existing (improved) pedestrian crossings plus new pedestrian crossings in the car park area. Cyclists will be able to utilise existing shared paths and the widened roadway along Vines Drive will improve vehicle-cyclist separation and safety.

3.3.3 School Zones

It is anticipated that School Zones will be installed along Vines Drive and Maintenance Lane, as the only two roads with direct access points to the school. The school is considered to be the leased parcel of land within the larger university site.

No School Zones are expected to be provided on external public roads including Londonderry Road and Blacktown Road (which are frontages to the broader WSU parcel of land).

All development and installation of School Zone signage will be in accordance with RMS requirements as detailed in the RMS submission.

3.4 Traffic Impact Assessment

3.4.1 Southee Road

RMS has stated that traffic impacts at the intersection of Londonderry Road and Southee Road have not been modelled, as requested in the SEARs. This statement is incorrect.

Modelling for this intersection was undertaken and discussed in the Transport and Accessibility Impact Assessment (see page 28), demonstrating a Level of Service 'A' maintained at this intersection.

3.4.2 Blacktown Road

RMS has noted the deterioration of the intersection of Blacktown Road and Campus Drive from Level of Service 'C' to 'F' and does not consider this to be satisfactory.

In addition to consideration of all queuing being within the public site:

- The painted median island and centre-of-road space provides for safer vehicle movements and storage space relative to other intersections along Blacktown Road (such as The Driftway or Bennett Road).
- Modelling has allocated 5% of total traffic generation to a right turn from Campus Drive to Blacktown Road. Given the delays even under the existing scenario, demand for this movement may be lower than even the 5% estimate. It is

recommended that discussions take place between the University and the Department of Education to implement improvements to wayfinding and highlight the improved site egress via College Drive to Bourke Street.

- The vehicle allocation of 5% is a total of only 13 vehicles during the PM peak, relative to current demand of 44 vehicles (growing to 49 vehicles by 2027). With such low demand for this movement (particularly in relation to the more than 1,000 vehicles per hour travelling along the major road), the delay experienced by drivers is considered to be acceptable.
- The 95th percentile queue length is only 4 vehicles which is considered to be a short queue in which drivers can clearly see the front of queue and the source of any delays.

In responding to the findings of the Road Safety Audit, it is proposed that improvements be made to signage, line marking, and safety devices (such as RRPMs) to improve driver awareness and safety. These changes will be coordinated with RMS during the detailed design stage as this will involve minor maintenance works on Blacktown Road.

3.5 On-Site Car Parking

RMS has requested that “No Stopping” signage be installed along both sides of Vines Drive to ensure a clear carriageway for vehicles including buses. This is considered acceptable and consistent with the design intent, and will be implemented in detailed design plans. Given that Vines Drive currently operates sufficiently without “No Stopping” signage in place, an appropriate spacing and location of signs will be determined for the site.

RMS has stated that the application for car park modifications be undertaken in conjunction with the proposed school application to ensure the area is functional prior to the school opening. This is consistent with the intent of the application pathways, and we have been advised that the car park will be included in and sought under the SSDA.

RMS has noted that the shared bus / car usage in the car park concept design is not ideal and requires physical separations. The detailed design has since been modified and provides a fully separated bus drop-off area including kerb separation, pedestrian fencing, pedestrian crossings, and modified access for improved safety.

The capacity of the car park is based on school and university demand as detailed in the Transport and Accessibility Impact Assessment. Other schools in the nearby area will not be able to provide relevant transport data due to the unique nature of the proposed site and catchment, and therefore information from the existing Glenfield site and university parking surveys are considered the most relevant data.

3.6 Other

All car parking and vehicle areas are designed in accordance with the relevant Australian Standards and Austroads guidelines. Certification will be required and provided by the Civil engineer and architect prior to provision of the relevant Construction Certificate.

A Construction Traffic Management Plan will be prepared by the appointed builder prior to provision of the relevant Construction Certificate.

4 Transport for NSW

4.1 Bicycle Parking

TfNSW has noted that bicycle parking should be included on architectural drawings. The revised architectural set demonstrates a proposed bicycle storage shelter beside Building 4 (Hall), with capacity for 60 bicycles. End of trip facilities will be provided in the Hall.

4.2 Future Bus Services

TfNSW has requested additional data (prior to operation) of school catchment and transport demand. Further information is not available at this time and will not be available until school operation due to the unique arrangements of the school (with no formal catchment area). TfNSW should liaise directly with the school during operation to determine any information required for future service planning.

4.3 WSU Car Park Modifications

TfNSW has noted that the car park concept design does not meet the drop-off / pick-up and bus capacities discussed in the Transport Assessment. The detailed design has since been modified to meet these capacities, with 5 bus bays and approximately 12 drop-off and pick-up spaces (73 metres) for cars. The design provides a fully separated bus drop-off area including kerb separation, pedestrian fencing, pedestrian crossings, and modified access for improved safety.

4.4 Green Travel Plan

TfNSW has recommended that the development be conditioned to provide and implement a comprehensive Green Travel Plan as part of ongoing operation. It is noted that a Green Travel Plan was not requested in the SEARs for the development, while these have been requested on some other state-significant school projects. For this reason, a Green Travel Plan has not currently been developed.

A condition on the development is not considered necessary for this approval, however would be consistent with the intended operation of the School and acceptable to the applicant. Any condition must be detailed such that flexibility is provided to the School for future operation (i.e. suitable actions will change over time and the actions listed may not always be relevant).

4.5 Traffic and Parking Management Plan

TfNSW has recommended that the development be conditioned to prepare a Traffic and Parking Management Plan. As above, a condition would be acceptable if requested by the DPE, but must ensure flexibility for future school operation and modifications.

4.6 Road Safety Evaluation

TfNSW has recommended that a Road Safety Evaluation (RSE) be conducted on relevant sections of road used for drop-off and pick-up. No objection is raised to this requirement, noting that the site's major access points have recently been assessed as part of a Road Safety Audit undertaken at Londonderry Road and Blacktown Road.

While the applicant shall respond to any deficiencies raised within the RSE, it is noted that it may not be feasible or practical to implement design changes in response to all items. Design changes will take place So Far As Is Reasonably Practical (SFAIRP), giving consideration to level of improvement, risk management, other design changes, and cost and timeline. This is typical of Road Safety practice across all types of developments.

5 Hawkesbury City Council

5.1 Londonderry Road Intersection

Council has requested that consideration be given to redirecting Vines Drive to line up with Southee Road and form a crossroad, and including an intersection treatment such as a roundabout.

As discussed in Section 3.2, the current design proposal is to be maintained as there is considered insufficient need for a cross intersection layout. Council's submission specifically notes a roundabout as a possible intersection treatment. Some of the conflict issues as discussed in Section 3.2 could be improved by provision of a control method rather than an uncontrolled cross intersection. However, the need for such a modification remains insufficient, and the existing arrangement is considered suitable.

Council's submission includes some additional notes not raised in the RMS submission, particularly that the intersections are located on a bend. As noted previously, there is currently full sight distance between the two approaches. In accordance with the Austroads Guide to Road Design, for sight distance to oncoming traffic the critical gap acceptance in a 60km/hr zone is 5 seconds or 83 metres. For drivers exiting Vines Drive turning left, sight distance to oncoming traffic from the right (i.e. around the road bend) is approximately 65 metres for fully unobstructed vision. When excluding the nearest minor obstruction (electrical pole), sight distance past the first major obstruction is approximately 91 metres, which is sufficient to meet Austroads guidelines.

Sight distance issues identified in the Road Safety Audit relate to operation of the bus stop which is an intermittent and infrequent occurrence.

5.2 Blacktown Road Intersection

Council has requested that consideration be given to upgrading the intersection of Campus Drive and Blacktown Road to improve level of service and safety.

As discussed in Section 3.2, the current design proposal (i.e. maintain existing) is to be maintained as there is considered insufficient need to an upgraded intersection. The current arrangement provides acceleration and deceleration lanes in all direction and is expected to be used by low volumes of traffic.

In responding to the findings of the Road Safety Audit, it is proposed that improvements be made to signage, line marking, and safety devices (such as RRPMs) to improve driver awareness and safety. These changes will be coordinated with RMS during the detailed design stage as this will involve minor maintenance works on Blacktown Road.

5.3 Public Road Upgrades

Council notes that no discussion has been provided regarding upgrades of public roads and intersections. Given that all roads and intersections are shown to operate at acceptable levels of service (excepting Campus Drive as previously discussed), no further upgrades are considered necessary. Roads in the vicinity of the site are state roads with significant capacity and good driver amenity.

5.4 School Zones

No School Zones are expected to be provided on external public roads including Londonderry Road and Blacktown Road (which are frontages to the broader WSU parcel of land). It is anticipated that School Zones will be installed along Vines Drive and Maintenance Lane, as the only two roads with direct access points to the school. The school is considered to be the leased parcel of land within the larger university site.

6 Department of Planning and Environment

The Department of Planning and Environment (DPE) has also undertaken a preliminary assessment of the application and identified key issues. All issues raised by DPE relating to traffic and access have been addressed in earlier sections of this document as follows:

- Car parking demands — Section 3.5
- Green Travel Plan — Section 4.4 (prior to operation)
- Traffic and Parking Management Plan — Section 4.5 (prior to operation)
- Bicycle parking — Section 4.1

In relation to University parking approvals, the current parking capacities and design concepts have been developed in consultation with the University and have been reviewed by the University. Development of the parking capacity also included a study of existing campus parking demand to determine the appropriate size for the car park. No further comments or objections have been raised to date regarding parking capacities.

7 Public Submissions

No submissions were received from members of the public.

All standard procedures will be followed regarding future consultation and notification for residents and members of the public, including during the construction phase of the works.

8 Conclusion

This document has provided a response to each of the submissions received by various agencies during the exhibition process. No public submissions were received during this period.

In responding to comments from RMS and Council, a meeting was held with representatives from both agencies to discuss the proposal and their submissions. Following this meeting an independent Road Safety Audit was undertaken and a number of additions to the design have been proposed (to be finalised during detailed design) to improve road safety around the site.

In response to RMS' submission, this document has provided detail on a number of items including intersection design, delays and modelling, and on-site parking. Some requests from Council such as a modified intersection at Londonderry Road have not been pursued due to a lack of need for such modifications and the adequacy of the current intersection to serve the necessary purpose. The Department of Education will work with RMS during relevant parts of the design development (including design of interface with State roads) to ensure a smooth development process.

Transport for NSW provided a submission with comments on design details and requests for future documentation, and indicated a number of suggested conditions of consent. Future documentation may include a Green Travel Plan, Traffic and Parking Management Plan, and Road Safety Evaluation. In the interest of student safety and wellbeing, the applicant does not object to requirement for these documents if requested by the Department of Planning, however all documents would be most suited for submission prior to occupation, rather than any earlier stages of the development.

Hawkesbury City Council also provided a response addressing similar items including the Londonderry Road intersection and other intersections. Additional comments unique to Council (such as a recommended roundabout at Londonderry Road) have been addressed in this report.

Supplementary comments from the Department of Planning and Environment were similarly addressed in earlier sections of this report relating to other agency submissions.

No submissions were received from members of the public, however the future design development and construction of the school will include standard community consultation and notification procedures.

We believe this response provides sufficient detail to address the comments from interested agencies, and that the development should be recommended for approval.

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