



planning consultants

17 May 2022

Our Ref: 20180C.12RP_RFI Response Letter

Jasmine Tranquille
Planning Officer
Department of Planning, Industry and Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

Dear Ms Tranquille

**RE: SSD-10291 PROPOSED SENIOR SCHOOL CAMPUS AND SPORTS CENTRE
ST LUKES GRAMMAR SCHOOL
210 HEADLAND ROAD AND 800 PITTWATER ROAD DEE WHY AND 224
HEADLAND ROAD, NORTH CURL CURL**

We refer to the letter requesting further information (RFI letter) from the Department of Planning and Environment (DPE) dated 16 November 2021 in regard to the above State Significant Development application, and the comments provided by Transport for NSW (TfNSW) that were attached to the letter. On 20 December 2021, we met with representative from DPE and TfNSW to discuss our proposed response to the RFI. On 22 December 2021, TfNSW sent through a response to the issues discussed during the meeting. This letter has been prepared in response to the issues raised in the RFI letter and at the meeting.

The following documents are attached to this letter:

- Crash Study and Review letter prepared by Transport Planning Partnership Pty Ltd dated 16 March 2022 (Attachment 1);
- Summary Crash Data and Detailed Crash Data – Pittwater Road / Warringah Road / Harbord Road intersection (TfNSW) (Attachment 2);
- Traffic & Parking Matters Response to Submissions prepared by Varga Traffic Planning Pty Ltd dated 2 May 2022 (Attachment 3);
- EIS Peer Review prepared by Bitzios Consulting dated 8 December 2021 (Attachment 4);
- Traffic Sight Line Diagrams prepared by Tonkin Zulaikha Greer Architects dated 30 November 2021 (Attachment 5); and
- Alternative Vehicle Access to 800 Pittwater Road prepared by Tonkin Zulaikha Greer Architects dated October 2019 (**Attachment 6**).

1.0 Response to TfNSW letter dated 16 November 2021

This letter provides a response to each of the matters raised by TfNSW in the Review of Updated Traffic Advice Letter (TfNSW Letter) in the **Table 1** below.

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response
<i>TfNSW prioritises road safety and efficiency on the transport network. As such, the proposed vehicular access to Harbord Road is close to a major intersection with Pittwater Road. The intersection of Pittwater Road and Harbord Road has a poor crash history where any vehicular incident could also endanger students on the footpath or parents with students using the proposed Harbord Road driveway.</i>	Transport Planning Partnership Pty Ltd (TPPP) have undertaken a review of crashes in the vicinity of the proposed access to the school site (refer Attachment 1). The crash history within the vicinity of the Pittwater Road-Warringah Road-Harbord Road intersection has been reviewed based on the information provided in the TfNSW Detail Crash Report and Summary Crash Report (Attachment 2). A total of nine crashes were recorded during the three-year period between 30 January 2017 and 7 February 2020. TPPP have provided the following key findings from the crash analysis: <i>“Key findings from the crash analysis are shown as follows:</i> <i>No fatalities were recorded during the three-year period.</i> <i>Eight crashes (89%) resulted in an injury, and two (22%) of which involved serious injury, three (33%) moderate injury and three (33%) minor/other injury.</i> <i>Three crashes (33%) occurred in the morning peak hour between 8am and 9am.</i> <i>Three crashes (33%) occurred during the school travel time but outside of a school zone.</i> <i>Four crashes (44%) involved vehicles colliding into another vehicle in front of them (RUM 30 rear end):</i> <i>Three (33%) rear end crashes occurred in the middle of the intersection, two (22%) of which involved vehicles travelling downhill on Pittwater Road southbound.</i> <i>One (11%) rear end crash occurred at the marked foot crossing on Warringah Road. This crash involved a truck travelling at excessive speed on a downhill slope towards the intersection and collided with a stationary vehicle, and subsequently resulting in a multi-vehicle crash including one other truck and two 4WD's.</i> <i>One crash (11%) involved a vehicle emerging from the Officeworks driveway (RUM 47) on to the intersection and hit a cyclist. Based on the crash location, it is believed that the motorist illegally turned right from the driveway towards the intersection and hit the cyclist travelling northbound on Harbord Road. This crash event occurred in the morning peak hour between 8am and 9am.</i> <i>One crash (11%) involved a motorist making a U-turn movement at the Officeworks driveway (RUM 40) and collided with a vehicle travelling along Harbord Road southbound.</i> <i>Two crashes (22%) involved speeding as a contributing factor. Both crashes involved rear end and occurred in a wet weather condition.</i> <i>Two crashes (22%) involved collisions with cyclists (aged 25 and 44). No school aged children were involved.</i> <i>No crashes (0%) involved collisions with pedestrians.</i> <i>In summary, the nine reported crashes predominantly involved rear end collisions (44%) with major contributing factors being speeding in a downhill slope in wet conditions in half (22%) of these rear end crash events.</i> <i>Two crashes involved motorists exhibiting likely illegal movements, involving right turn out and U-turn movements at/near the Officeworks driveway on Harbord Road.”</i> TPPP have provided the following summary and conclusion in respect to their review of the crash history in the vicinity of the proposed access to the school site: “SUMMARY & CONCLUSION <i>One crash occurred on Harbord Road where a motorist utilised the Officeworks driveway to perform a U-turn movement and collided with another vehicle travelling south on Harbord Road.</i>

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response
	2. <i>The traffic generated at the driveway by the school will be some 80% less than the traffic levels currently generated by Officeworks and the gym. Consequently the potential for conflicts will be much reduced compared to existing conditions.</i> 3. <i>Sight distances at the driveway are proposed to be improved significantly by the proposed pulled back terracing of the landscaping.</i> 4. <i>Improvements in delineation and guidance at the Officeworks driveway should be implemented to emphasise the left turn only onto Harbord Road and to reduce the possibility of U-turns occurring.</i> 5. <i>The intersection as a whole would benefit from the improvement in pavement skid resistance at the intersection."</i> Varga Traffic Planning Pty Ltd have also provided a response to the traffic and parking matters raised by TfNSW in respect to the State Significant Development application for the St Lukes Grammar School – Senior School Campus and Sports Centre at the subject site (refer Attachment 3). Varga Traffic Planning note that the site is currently occupied by Officeworks, Fitness First gym, I-MED Radiology clinic and a swim school. The existing driveway provides access to 182 parking spaces and a loading dock used by trucks up to 12.5m long HRV rigid trucks. The proposed development will involve adaptive reuse of the existing buildings for use as a Senior School campus (ie. Years 10, 11 and 12 only), for 600 senior high school students only. Varga Traffic Planning note that the Senior School generates the least amount of traffic activity compared to either the Junior School or the Middle School. Surveys conducted by Varga Traffic Planning at the existing school over a period of 5 consecutive days have revealed: • <i>"The Senior School generates very low level of traffic activity.</i> • <i>The Senior School traffic activity is more widely dispersed (typically over a period of two hours) than either the Junior School or the Middle School because the majority of senior school students attend additional classes before or after regular school hours.</i> • <i>The Senior School does not generate a distinctive "peak" period compared to either the Junior School or Middle School."</i> Traffic surveys conducted by Varga Traffic Planning at the existing access driveway off Harbord Road over a period of 5 consecutive days indicate that the existing commercial uses of the site generate an average of 3,224 vehicles per day. By comparison, the proposed Senior School Campus is expected to generate approximately 644 vehicles per day (i.e. a reduction in traffic volumes by 2,580 vehicles per day or 80%). Furthermore, traffic activity generated by the Senior School Campus will generally not coincide with road network peak periods, with minimal traffic activity during the AM network peak, and little, if any traffic during the PM network peak. Varga Traffic Planning state: <i>"That reduction in daily traffic activity means that the exposure or likelihood of crashes occurring at this location will also be reduced."</i> Varga Traffic Planning also note that a separate EIS Peer Review undertaken by Bitzios Consulting dated 8 December 2021 commissioned by the DPE (refer Attachment 3) found that: <i>"...the reduction in day traffic volumes means that the exposure or likelihood of crashes occurring at this location will also be reduced."</i> Further, pursuant to the discussions with TfNSW Land Use Planners on 23 June 2021, it was agreed that a pedestrian fence would be provided to the footpath to ensure there was no 'spill-out' of pedestrians from the site and if there were, it would not result in a road safety issue.

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response
	It is noted that no significant change is proposed to the location or dimensions of the existing vehicle access to Harbord Road and therefore there will be no reduction in the manoeuvrability of vehicles into and out of the site. It is therefore considered that the proposed redevelopment and use of the site as an educational establishment for senior school students (Years 10 – 12) will not have an adverse impact on the safety of pedestrians or motorists.
<i>In accordance with AGRD Part 4A. Sight distances at accesses should comply with the sight distance requirements for intersections, i.e. that approach sight distance (ASD), safe intersection sight distance (SISD), and minimum gap sight distance (MGSD) are to be achieved. Therefore, the current driveway location and alignment does not meet relevant Austroads and Australian Standards and is unsuitable as an access/egress point.</i>	Sight distances have not previously been raised by TfNSW or Council however an additional plan was provided as part of the RTS package (Plan Rev RTS-013) which provided sight lines for traffic and pedestrians, having regard to the proposed pedestrian fence (Attachment 4). The plan indicates that there will be little to no impediment to the lines of sight for drivers (Figure 1). At Stage 1 the landscaping in this area of the site will be significantly reduced. At Stage 2 and Stage 3 the new entry stairs and landscaping will maintain the pulled-back terracing of the landscaping and will not introduce new shrubs into this part of the site (as detailed in the Architectural Plans). Amendments have been made to the front landscaping walls to minimise visual obstructions. To assist in the further assessment of this matter, TZG Architects has prepared six (6) driveway line of sight view plans which show the differences in the lines of sight achieved between the original SSDA proposal and the amended landscaping walls at the front entry of the site (refer Attachment 4). The sight distances at the site access are considered generous and in excess of the requirements of the relevant Austroads and Australian Standards, and will provide a safe and unimpeded view line of vehicles entering Harbord Road from Warringah Road (from west to south) and from Pittwater Road (from north to south via the turning lane). Varga Traffic Planning has provided a response to the TfNSW issue of sight distances at the site access (refer Attachment 2) commenting as follows: <i>“The layout of the existing vehicular access driveway off Harbord Road and 16m width (ie. two entry lanes and one exit lane) is proposed to be retained and changed.</i> <i>However, the existing landscaping and embankments located to the north of the driveway are proposed to be cut back. This will provide an improved line of site between a vehicle exiting the site and a southbound vehicle turning left from Pittwater Road into Harbord Road, as indicated on the diagram below.”</i> (refer Figure 1 and Attachment 4)

Table 1: Responses to TfNSW Letter dated 16 November 2021

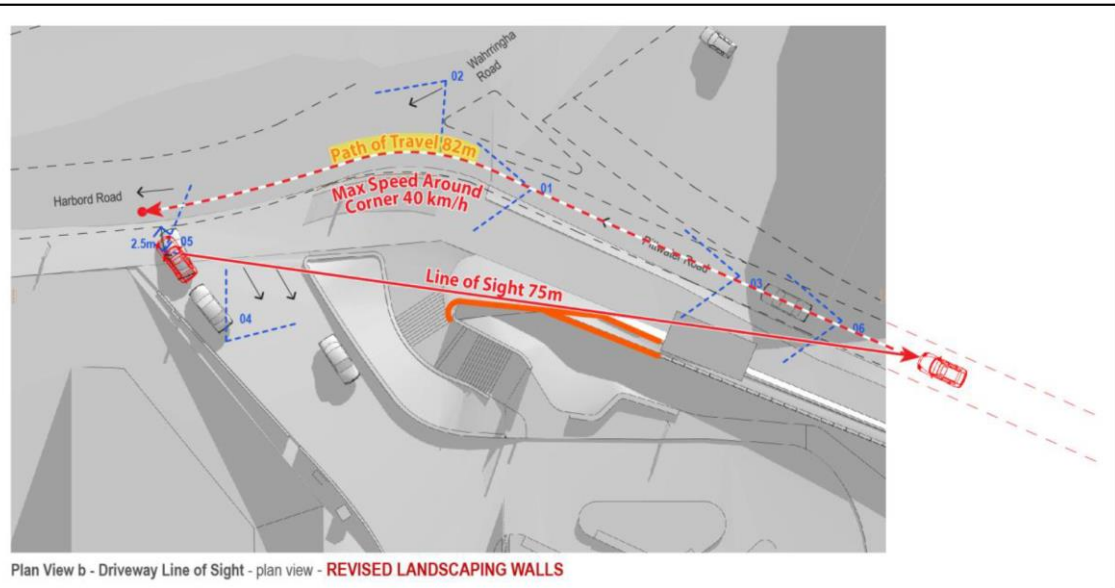
Matter Raised by TfNSW	Response
	 Figure 1 Proposed driveway lines of sight Under the Austroads publication Guide to Road Design Part 4a (2021), there are three (3) types of sight distances as follows: • Approach sight distance (ASD) is the sight distance which must be available on the minor road approaches (in this instance, the exit driveway) to all intersections to ensure that drivers are aware of the presence of an intersection. • Safe Intersection Sight Distance (SISD) is the minimum sight distance which should be provided on the major road at any intersection, and is measured along the road carriageway path of travel. • Minimum Gap Sight Distance (MGSD) is the minimum sight distance required at property entrances and is also measured along the path of travel of the approaching vehicle. The following table extracted from the Varga Traffic Planning report provides a comparison between the minimum sight distance requirements and the proposed sight distances (Figure 2). It is noted that the maximum speed of left-turn movements from Pittwater Road into Harbord Road is constrained by the existing road geometry to less than 40km/h; a 40km/hour School zone Speed Limit is anticipated in the vicinity of the driveway during school zone times which is when the majority of traffic generation is anticipated to occur; and peak hour speeds through the intersection are generally less than 40km/hour.

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response																				
	<table><tr><th colspan="4">COMPARISON OF SIGHT DISTANCE REQUIREMENTS</th></tr><tr><th></th><th>Required</th><th>Proposed</th><th></th></tr><tr><td>Approach Sight Distance (ASD)</td><td>Less than 40m</td><td>50m</td><td>Complies</td></tr><tr><td>Safe Intersection Sight Distance (SISD)</td><td>73m</td><td>82m</td><td>Complies</td></tr><tr><td>Minimum Gap Sight Distance (MGSD)</td><td>55m</td><td>82m</td><td>Complies</td></tr></table> Figure 2 Comparison of sight distance requirements (Varga Traffic Planning) Varga Traffic Planning has made the following comment on sight distances at the site access: <i>"In summary, all of the sight distance criteria nominated by Austroads will be satisfied by the proposed development. It is noted also in this regard that the TTPP report found that:</i> <i>"The sight distances at the site access driveway are considered generous and in excess of the requirements of the relevant Austroads and Australian Standards, and will provide a safe and unimpeded view line of vehicles entering Harbord Road from Warringah Road and from Pittwater Road."</i> Therefore, the proposed driveway complies with the sight distance requirements at intersections including the approach sight distance (ASD), safe intersection sight distance (SISD) and minimum gap sight distance (MGSD).	COMPARISON OF SIGHT DISTANCE REQUIREMENTS					Required	Proposed		Approach Sight Distance (ASD)	Less than 40m	50m	Complies	Safe Intersection Sight Distance (SISD)	73m	82m	Complies	Minimum Gap Sight Distance (MGSD)	55m	82m	Complies
COMPARISON OF SIGHT DISTANCE REQUIREMENTS																					
	Required	Proposed																			
Approach Sight Distance (ASD)	Less than 40m	50m	Complies																		
Safe Intersection Sight Distance (SISD)	73m	82m	Complies																		
Minimum Gap Sight Distance (MGSD)	55m	82m	Complies																		
Furthermore, a review of the arrival and service rates for pick-up and drop-off supplied by the applicant indicates that there will be a small percentage of queuing back on to Harbord Road. This is undesirable where the driveway is near an intersection that operates with multiple phasing (Double Diamond). The exit is also hazardous as the road user also needs to turn out with limited sight distance to other road user using the nearby exclusive left turn from Pittwater Road and poor road alignment between Warringah Road and Harbord Road.	Pursuant to the discussions with TfNSW Land Use Planners on 23 June 2021, it was understood that, as a result of pickup and drop-off operations within the site including the operation of two (2) queuing areas managed by staff, it was agreed that there was no risk of queuing back on to Harbord Road. Further this was supported by the outcomes in TfNSW's email dated 23 June 2021 confirming that: • NO STOPPING signs should be installed for the overflow parking spaces; • The applicant may be conditioned that a review of the pickup and drop-off operation be undertaken after 6 months trial of Stage 2 operations, as well as for the period of 6 months after the commencement of Stage 3 operation; • Raw survey data for parking duration survey for pickup and drop-off is to be provided to TfNSW for review and reference; • The Traffic Management Plan is to be updated allowing early arriving vehicles to park in the basement car park. No vehicle waiting is allowed at the pickup and drop-off area. If additional parking is required for the waiting parents for school pickup and drop-off activities, the applicant needs to convert student parking in the basement for parents to park and wait until students arrive; • The applicant is to submit the updated concept and Traffic Management Plan to DPIE for referral to TfNSW for review. The above measures proposed by TfNSW will ensure that the on-site management of vehicles is reported back to TfNSW with data and management strategies. In terms of capacity, the project is predicated on all projected and spare capacity cars being accommodated, together with further "overflow" capacity before a vehicle is held up on the road. Management measures (to be documented prior to the issue of an Occupation Certificate) will be provided to ensure all traffic flows are managed adequately and there is no risk of queuing back onto Harbord Road. These measures are capable of being included in the terms of the consent for the project.																				

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response
	Varga Traffic Planning have provided a response in respect to the drop-off and pick-up arrangements for the proposed Senior School campus (refer Attachment 3) and comment as follows: <i>“Under the Traffic Management Plan which forms part of the Development Consent for the existing school, the school is required to provide up to 12 staff to supervise the drop-off and pick-off arrangements.</i> <i>A similar Traffic Management Plan is proposed for the Senior School which will require up to 4 staff to supervise drop-offs and pick-ups at the new Senior School campus as illustrated on the figure below (Figure 3).</i> <i>In particular, one of those staff will be located at the top of the main entry driveway near space 12, who will direct traffic into the basement car parking area in the unlikely event that the first 12 spaces in the external are full. Two other staff will supervise drop-offs and pick-ups whilst the fourth staff member will supervise students at the bottom of the stairs near the signalised pedestrian crossing (where a pedestrian safety fence is proposed).</i> <i>In addition, it is noted that the 12 drop-off / pick-up spaces proposed within the basement car parking area will be located approximately 170m from the site entry off Harbord Road.</i> <i>Thus, there is no foreseeable possibility that a “small percentage” of cars could queue back onto Harbord Road.”</i> The proposed pick-up and drop-off arrangement will have a capacity of 24 vehicles (12 vehicles within the forecourt and a further 12 spaces within the basement carpark). The 12 pick-up and drop-off spaces located within the basement are located approximately 170m from the vehicle entry on Harbord Road. The 170m length of the driveway from the vehicle entry on Harbord Road will conservatively enable a queuing area for at least 20 vehicles.

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW

Response

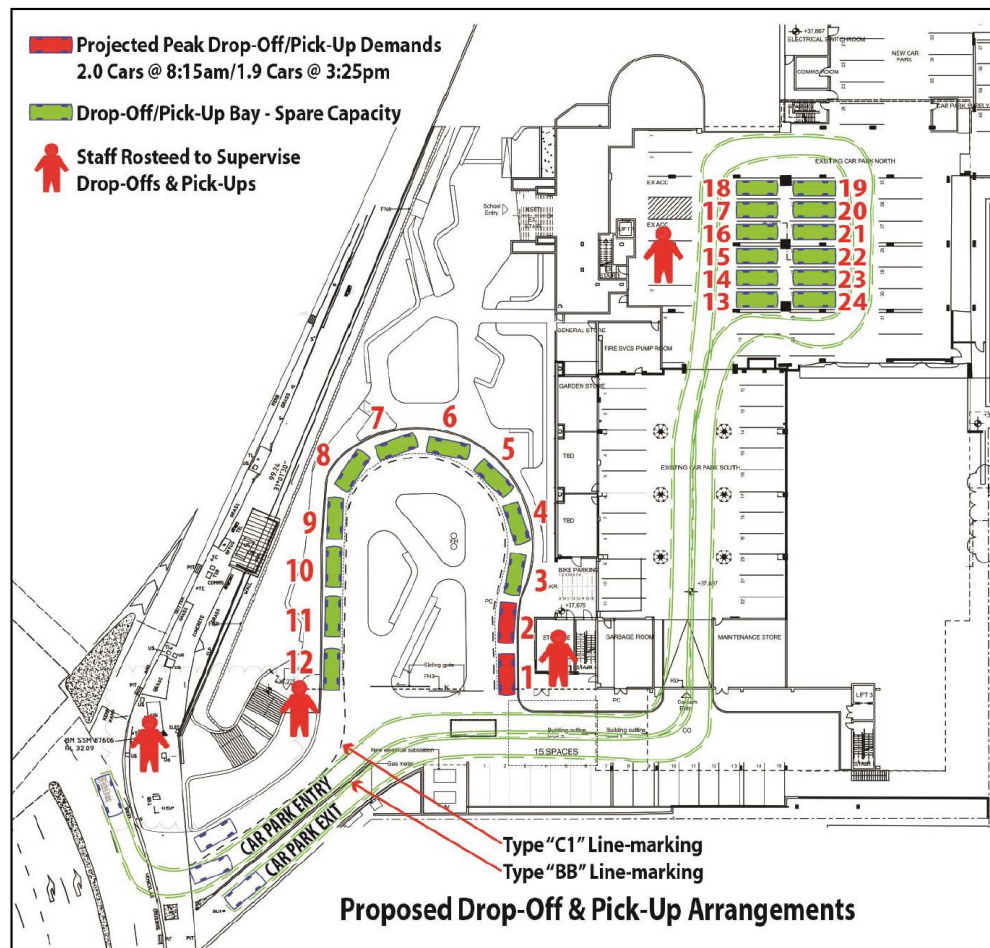


Figure 3 Proposed pick up and drop-off arrangements (Stage 3) (Varga Traffic Planning)

Table 1: Responses to TfNSW Letter dated 16 November 2021

Matter Raised by TfNSW	Response
<i>Harbord Road is a major road corridor linking Dee Why to Curl Curl and North Manly. Current practice is to limit the number of vehicular conflict points along busy roads where an alternative access via Headland Road would be more appropriate to maintain network road safety and network efficiency. This current practice is reflected in Section 6.2.1 of TfNSW current publication of the Guide to Traffic Generating Developments, which states 'access across the boundary with a major road is to be avoided wherever possible'.</i>	A comprehensive review of alternative access options was provided by TZG Architects within the Architectural Design Report that accompanied the RTS Response Submission. An extract of the relevant material is attached for reference (Attachment 6). We note that the reference under Option 1 for the potential for traffic to queue (AM peak) into the intersection has been resolved in consultation with TfNSW as per the discussion above. Further, Varga Traffic Planning (refer Attachment 3) have provided an assessment of the seven (7) options for access arrangements to the Senior School site which concludes that the current proposal (Option 1) of using the existing driveway for the Senior School Campus proposal is the only feasible and preferred option to access the site. The review identifies opportunities for access having regard to the availability of adjoining properties, land ownership, topography, land use zoning and other factors. There is no readily feasible option that would enable an alternative point of access to the site to be achieved (refer to discussions in Table 2). It is unreasonable for the site to not be able allowed to use its current driveway for access to the proposed Senior School Campus where the traffic flows will be significantly reduced from the existing traffic conditions of the commercial land uses of the site and given that the only road frontage of the site as a registered Torrens Title lot is to Harbord Road. Pursuant to Section 6.2.1 of the TfNSW publication <i>Guide to Traffic Generating Developments</i>, and on the basis of the information provided to DPE and TfNSW, it is concluded that the retention of the existing vehicle crossover, reduction in the traffic generated by the proposed development and the introduction of safety measures and traffic management mean that safety for students, staff, pedestrians and all road users is improved and the potential conflicts are reduced. Varga Traffic Planning have provided the following conclusion (refer Attachment 3) to demonstrate that the current proposal is the preferred option for vehicular site access as follows: <i>"In summary, the current proposal is the preferred option for vehicular site access because:</i> <i>• the existing driveway off Harbord Road is substantial, some 16m in width with 2 entry lanes and 1 exit lane, and can comfortably accommodate all vehicle sizes up to and including 12.5m long HRV rigid trucks</i> <i>• daily traffic volumes using the driveway will be reduced by 80% from 3224 vpd to 644 vpd as a consequence of the development proposal</i> <i>• the driveway will be used by the Senior School only (ie. Years 10 and 11 only)</i> <i>• the Senior School generates substantially less traffic activity than either the Junior School or the Middle School</i> <i>• the Senior School traffic activity will be minimal during the AM and PM road network peak periods, and there is unlikely to be any traffic activity during the daytime between 9.30am-2.30pm</i> <i>• the substantial reduction in the traffic generation potential of the site (and therefore the adjacent Pittwater Road/Harbord Road intersection) means that the exposure of likely crashes occurring at this location will also be reduced</i> <i>• all of the sight distance criteria nominated by Austroads will be satisfied by the driveway off Harbord Road</i> <i>• queuing analysis based on the 5-day surveys indicate that the peak drop-off and pick-up demands for the Senior School will be 2 cars at 8.15am and 1.9 cars at 3.25pm</i> <i>• the proposed external drop-off/pick-up arrangements comprise 12 spaces located well within the site and will be supervised by staff as part of the TMP, including a staff member who will direct traffic into the basement carpark in the unlikely event that all 12 spaces are ever occupied</i> <i>• a further 12 drop-off/pick-up spaces can be provided within the basement car parking area, some 170m from the site entry of Harbord Road</i> <i>• thus there is no foreseeable possibility that cars could ever queue back onto Harbord Road."</i>

We understand from the RFI letter that DPE cannot progress with the assessment unless the application demonstrates that the existing approved driveway to the existing commercial land uses at the site can safely operate for the proposed Senior School Campus (even with the significantly lower traffic volumes) without compromising the safety of the users and the surrounding road network.

The above responses indicate that all matters raised by TfNSW have either previously been resolved, and/or are capable of being resolved through the implementation of conditions already discussed between TfNSW and the School. Accordingly, it is proposed that DPE can progress with the assessment given that it has been demonstrated that the driveway can safely operate without compromising the safety of the users and the surrounding road network.

2.0 Alternative Options

At the meeting with DPE and TfNSW on 20 December 2021, TfNSW requested that further consideration of alternative vehicular access options was undertaken, in particular:

- Option 3: Vehicle Entry via 224 Headland Road;
- Option 5: Vehicle Entry via 226/228 Headland Road; and
- Option 7: Vehicular Access via 210 Headland Road (Tango Avenue).

Table 2 provides a further assessment against Options 3, 5 and 7.

Table 2 Review of alternative vehicle entry options

Option	Assessment
Option 3: Vehicle entry via 224 Headland Road	<u>Description</u>: Construction of a new driveway and/tunnel from Headland Road through 224 Headland Road to 800 Pittwater Road. This option would require partial demolition of the existing structures on 224 Headland Road, removal of existing trees along Headland Road and considerable excavation into existing rock to provide a link into the existing basement carpark at 800 Pittwater Road.  <i>Figure 4 Option 3 (Existing street frontage to 224 Headland Road)</i> <u>Comment</u> This option is considered to be unsuitable for the following reasons: • Location of the new driveway does not meet any of the AustRoad sight distance requirements, • Steep gradient of this section of Headland Road could not safely accommodate the projected 644 vehicles using the new vehicle crossover;

Table 2 Review of alternative vehicle entry options

Option	Assessment
	• Estimated traffic volumes generated by the Senior School would have an adverse impact on Headland Road and the surrounding road network and likely require the signalisation of the Harbord Road / Headland Road intersection; • 20m level difference between 224 Headland Road and 800 Pittwater Road; and • Potential impacts on the structural adequacy of the existing buildings at 224 Headland Road and 800 Pittwater Road.
Option 5: Vehicle entry via 226/228 Headland Road	<u>Description:</u> Construction of a new driveway from Headland Road through 226/228 Headland Road to 800 Pittwater Road. This option would require the School acquiring 226/228 Headland Road which are two (2) strata-titled lots and demolishing the existing industrial buildings to provide an alternative vehicle entry to 800 Pittwater Road.  <i>Figure 5 Option 5 (Existing driveway access to 226/228 Headland Road).</i> <u>Comment</u> This option is considered to be unsuitable for the following reasons: • The School does not own these sites. If these strata lots cannot be acquired, this option cannot be achieved; • Removal of existing industrial units to provide vehicle access to an educational establishment is inconsistent with the current IN1 General Industrial zone. Educational Establishments are not permissible in the IN1 zone under the <i>Warringah Local Environmental Plan 2011</i>. • Location of the new driveway does not meet any of the AustRoad sight distance requirements, • The steep gradient of this section of Headland Road could not safely accommodate the projected 644 vehicles using the new vehicle crossover; and • Estimated traffic volumes generated by the Senior School would have an adverse impact on Headland Road and the surrounding road network and likely require the signalisation of the Harbord Road / Headland Road intersection.
Option 6: Vehicle entry via 210 Headland Road (entry from Tango Avenue)	<u>Description:</u> Use of the existing driveway serving the existing staff car park at 210 Headland Road (access from Tango Avenue). This option would require a new connection (vehicle and/or pedestrian) to be constructed across either Stony Range Regional Botanic Garden or 222 Headland Road.

Table 2 Review of alternative vehicle entry options

Option	Assessment
	 <i>Figure 6 Option 7 (Existing vehicle entry into 210 Headland Road into Tango Avenue)</i> <u>Comment</u> This option is considered to be unsuitable for the following reasons: • Stony Range Regional Botanic Garden is Crown land dedicated for recreation under the <i>Crown Land Management Act 2016</i> and <i>Local Government Act 1993</i>. Use of the site to provide vehicle / pedestrian connection for an educational establishment is inconsistent with the Stony Range Regional Botanic Garden Plan of Management; • 222 Headland Road is a strata-titled lot and is not in School ownership; • Estimated traffic volumes generated by the Senior School would have an adverse impact on Headland Road, Tango Avenue and the surrounding road network and likely require the signalisation of the Harbord Road / Headland Road intersection.

Therefore, it is considered that Options 3, 5 and 7 are unsuitable as alternative options to provide vehicle access to 800 Pittwater Road. The current proposal (Option 1) of using the existing driveway for the Senior School campus proposal is the only feasible and preferred option to access the site and will not have an adverse impact on the safety of pedestrians or motorists.

3.0 Issues raised in TfNSW correspondence dated 22 December 2021

On 22 December 2021, following the meeting between DPE, TfNSW and the proponent, TfNSW provided the following correspondence:

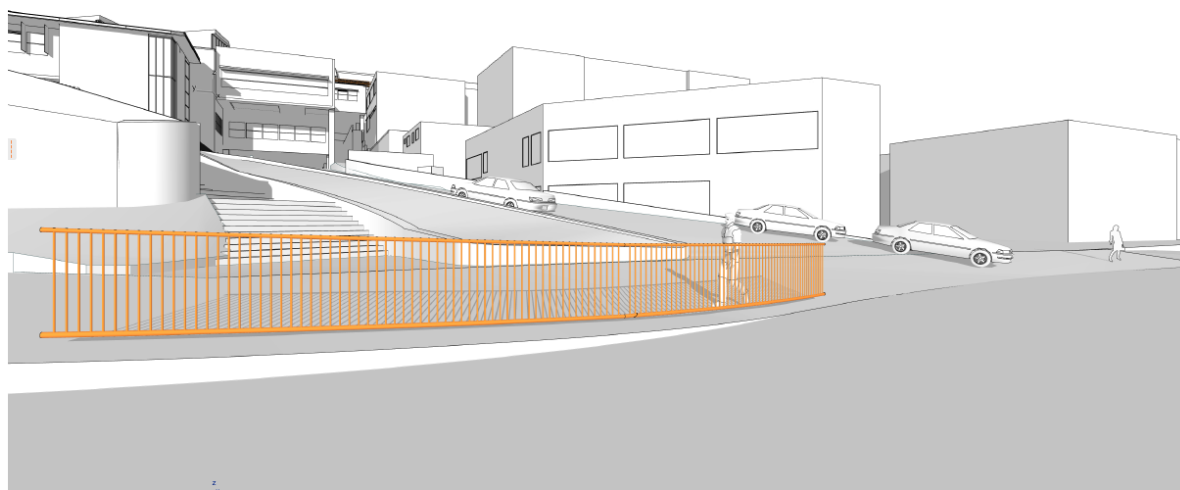
This correspondence is further to our meeting on 20 December 2021 with representatives from St. Luke's Grammar School and DPIE, we have provided the requested accident history for the intersection of Pittwater Road and Harbord Road, Dee Why and our previous letter. We should highlight that the damage sustained to the signposting at the driveway indicates that it is at a location where drivers are experiencing difficulty managing the access.

TfNSW has recently reviewed the amended Driver Sight Distance Diagram provided by the applicant. The layout fails to demonstrate compliance with Austroads Minimum Gap Sight Distance.

As per our past correspondence attached, the existing driveway is contrary to Austroads Design guidelines as the location is in close proximity to a major intersection where parents need to give-way to pedestrians/cyclists along a footway in Harbord Road. This is therefore contrary to the principles required for safe roads as outlined in the NSW Road Safety Plan 2021 for a trauma -free transport network and a 'Towards Zero' vision for NSW. The principle of a Safe Road is to provide an environment that does not place demands upon the driver, or other road users; it should have no surprises. Young pedestrians are also a vulnerable road user group and pedestrian conflicts at the driveway must be avoided.

As part of this correspondence, TfNSW provided copies of the detailed crash data (DCR) and summary crash data (SCD) in the vicinity of the intersection of Pittwater Road / Warringah Road / Harbord Road (**Attachment 2**) A review of the detailed crash data and summary crash data provided by TfNSW was undertaken by Ken Hollyoak, Director, TTPA who is an accredited Road Safety Auditor (**Attachment 1**). This review was undertaken to verify if the crash history at the intersection illustrated any pattern that would likely create a safety issue for students or motorists using the existing driveway at 800 Pittwater Road.

As discussed in **Table 1**, the crash study and review concluded that two (2) of the motor vehicle crashes involved motorists making illegal movements in the vicinity of the existing driveway. However, the crash study and review report recommended that improvements in delineation and guidance in the existing driveway should be implemented to emphasise left turn only out of the driveway onto Harbord Road. The proposed development includes upgrades to the existing driveway including new line-marking. In addition, new pedestrian fencing and a large waiting area is provided in the vicinity of the pedestrian crossings (**Figure 7**). In accordance with the proposed Senior School Traffic Management Plan, this location will be supervised during peak Senior School pick-up and drop-off periods to ensure that students cross the road safely.



View 02b - Pedestrian Fence Line of Sight - approaching from West (from Warringah Road) - **REVISED LANDSCAPING WALLS**

Figure 7 Pedestrian fencing at the intersection of Pittwater Road and Warringah Road (TZG Architects)

Varga Traffic Planning has demonstrated that the driver sight distance diagram complies with the Austroads minimum gap sight distance (MGSD) requirement of 55metres, by having a MGSD of 82 metres (**Figure 1**).



It is therefore considered that the proposed development is consistent with the *NSW Road Safety Plan 2021* including Priority Area “Liveable and safe urban communities”. This is achieved by:

- Reduction in the traffic generated by the site;
- Compliance with the Austroads design guidelines for driver sight distances at intersections;
- Upgrades to existing driveway to improve delineation and guidance; and
- Introduction of pedestrian safety fencing adjacent to pedestrian crossings, as well as supervision during peak school pick-up and drop-off times.

Please do not hesitate to contact the undersigned if you have any queries or require further information.

Yours faithfully

DFP PLANNING PTY LTD

A handwritten signature in black ink, appearing to be 'Amy Cropley', written over a horizontal line.

AMY CROPLEY
URBAN DESIGNER / PRINCIPAL PLANNER

acropley@dfppanning.com.au

A handwritten signature in black ink, appearing to be 'R. Hayer', written over a horizontal line.

Reviewed: _____

Attachments:

- | | |
|---------------------|---|
| Attachment 1 | Crash Study and Review by TTPP |
| Attachment 2 | Detailed Crash Data and Summary Crash Data (TfNSW) |
| Attachment 3 | Traffic and Parking Matters – Response to Submissions by Varga Traffic Planning Pty Ltd |
| Attachment 4 | EIS Peer Review by Bitzios Consulting (for the DPIE) |
| Attachment 5 | Sight Lines Plans |
| Attachment 6 | Extract of Architectural Design Report – Alternative Vehicle Access to 800 Pittwater Road |



planning consultants

ATTACHMENT I

Our Ref: 22032

16 March 2022

Midson
Suite 7, 33 Alexandra Street,
Hunters Hill NSW 2110

Attention: Toby James

Dear Toby

**RE: ST LUKE'S GRAMMAR SSDA
CRASH STUDY & REVIEW**

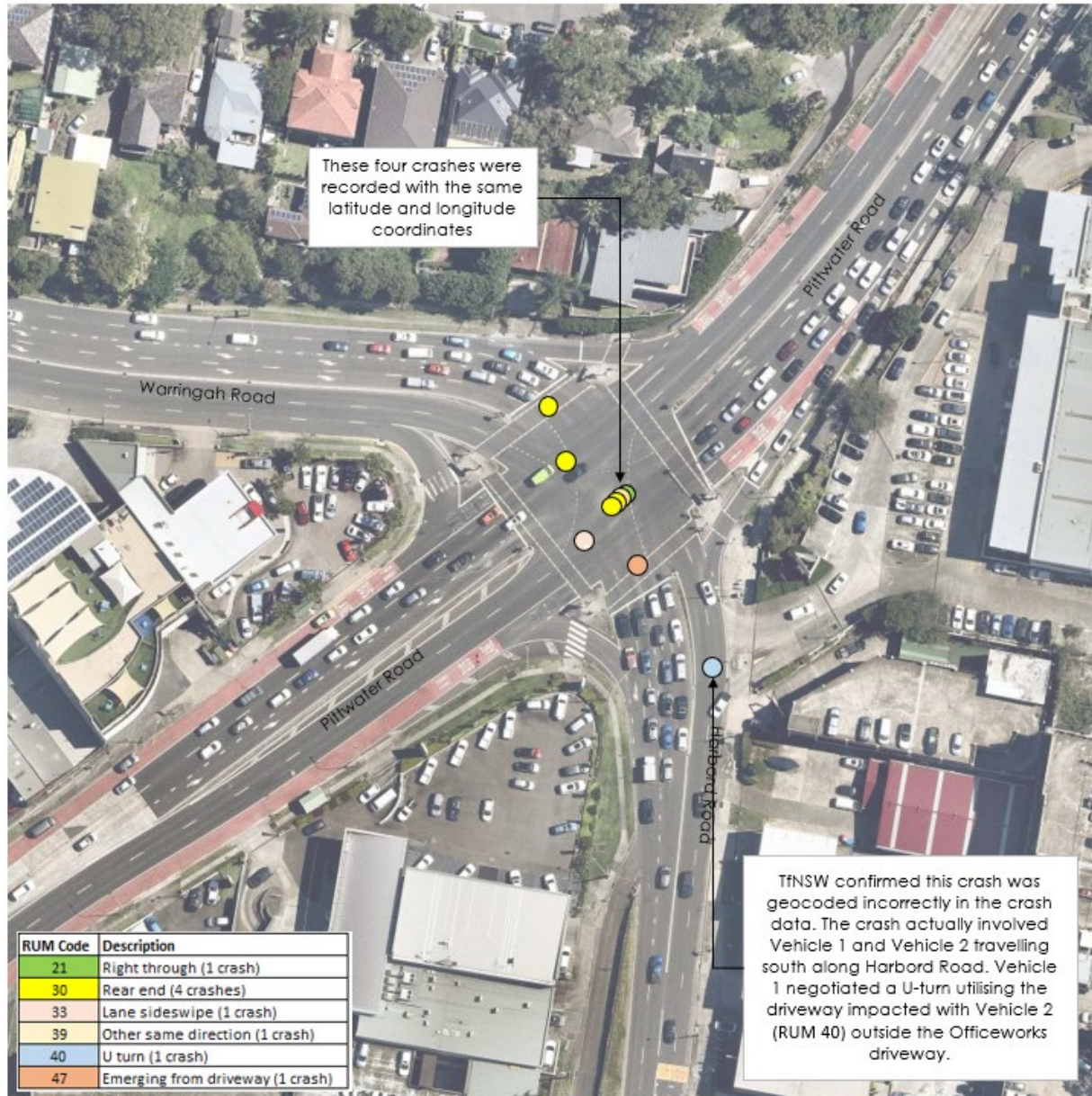
My name is Kenneth Hollyoak and I am a Director of The Transport Planning Partnership Pty Ltd of Suite 402, 22 Atchison Street, St Leonards NSW 2065. My CV is contained at **Annexure A** of this report which contains a resume of my education and experience which is the basis upon which I give my opinion in this report.

As requested, I have undertaken a review of the crashes in the vicinity of the proposed access to the school site – that is the former Officeworks driveway.

The crash history within the vicinity of the Pittwater Road- Warringah Road- Harbord Road intersection has been reviewed based on the information provided in the TfNSW Detailed Crash Report and Summary Crash Report. A total of nine crashes were recorded during the three-year period between 30 January 2017 and 7 February 2020.

The location and Road User Movement (RUM) type of the crashes are shown in Figure 1. Crash locations are based on the latitude and longitude coordinates provided in the TfNSW Interactive Crash Statistics, referencing to the Crash ID recorded in the TfNSW Detailed Crash Report and Summary Crash Report. The only exception is the crash (ID 1164104) that occurred on Harbord Road as the description in the Detailed Crash Report and the latitude and longitude coordinates did not match. Consultation with TfNSW's crash data team has confirmed that the latitude and longitude coordinates are incorrect and the crash actually occurred on Harbord Road southbound outside the Officeworks driveway.

Figure 1: Crash Location Map (30 January 2017 and 7 February 2020)



Key findings from the crash analysis are shown as follows:

- No fatalities were recorded during the three-year period.
- Eight crashes (89%) resulted in an injury, and two (22%) of which involved serious injury, three (33%) moderate injury and three (33%) minor/other injury.
- Three crashes (33%) occurred in the morning peak hour between 8am and 9am.
- Three crashes (33%) occurred during the school travel time but outside of a school zone.
- Four crashes (44%) involved vehicles colliding into another vehicle in front of them (RUM 30 rear end):

- Three (33%) rear end crashes occurred in the middle of the intersection, two (22%) of which involved vehicles travelling downhill on Pittwater Road southbound.
- One (11%) rear end crash occurred at the marked foot crossing on Warringah Road. This crash involved a truck travelling at excessive speed on a downhill slope towards the intersection and collided with a stationary vehicle, and subsequently resulting in a multi-vehicle crash including one other truck and two 4WD's.
- One crash (11%) involved a vehicle emerging from the Officeworks driveway (RUM 47) onto the intersection and hit a cyclist. Based on the crash location, it is believed that the motorist illegally turned right from the driveway towards the intersection and hit the cyclist travelling northbound on Harbord Road. This crash event occurred in the morning peak hour between 8am and 9am.
- One crash (11%) involved a motorist making a U-turn movement at the Officeworks driveway (RUM 40) and collided with a vehicle travelling along Harbord Road southbound.
- Two crashes (22%) involved speeding as a contributing factor. Both crashes involved rear end and occurred in a wet weather condition.
- Two crashes (22%) involved collisions with cyclists (aged 25 and 44). No school aged children were involved.
- No crashes (0%) involved collisions with pedestrians.

In summary, the nine reported crashes predominantly involved rear end collisions (44%) with major contributing factors being speeding in a downhill slope in wet conditions in half (22%) of these rear end crash events.

Two crashes involved motorists exhibiting likely illegal movements, involving right turn out and U-turn movements at/near the Officeworks driveway on Harbord Road.

REVIEW OF ADDITIONAL DOCUMENTS

I note that Bitzios Consulting (Bitzios) was engaged by the Department of Planning, Industry and Environment to review the traffic assessments. It is of note that they said the following in their report dated 08/12/2021

- *We have analysed five-year crash data that occurred at and in the vicinity of the Pittwater Road / Harbour Road intersection. In the five-year period ending December 2018 a total of 16 crash reported at this location. A detailed analysis shows that none of these crashes occurred at the driveway or because of traffic movements at the driveway as shown in the following figure.*
- *Moreover, the proponent analysis shows that the daily traffic volumes entering and exiting the driveway are projected to reduce substantially as a result of the land use change. It is estimated that the daily traffic volumes will reduce from 3,224 veh/day to 644 veh/day; a reduction of 2,580 veh/day or 80%. Generally, the reduction in daily traffic volume means the exposure or likelihood of crash occurring at this location will also reduce.*
- *Pedestrian access points are shown in the following figure. Students arriving on foot from the north on Pittwater Road would use access point A, which is well north of the intersection. A separate pedestrian access point is proposed north of the Harbord Road driveway (point B), thus minimising conflicts at the driveway itself. The only concerning vehicular/pedestrian conflict area (point C) is the crossing the access road (which is a currently a shared path) at 800 Pittwater Road. However, surrounding land uses suggests that this area will be infrequently used by the pedestrians.*



- Given the substantial reduction in daily traffic flows entering and exiting the driveway and majority students on foot using the access point A, the crash potential at this location is expected not to increase with the development.
- In response to TfNSW comments, the proponent amended the landscaping and subsequently prepared sight distance diagrams detailing the intervisibility between pedestrian and motorists. Sight distance diagrams have been prepared at four locations along Pittwater Road and at low locations on the driveway (Location B in Figure 3). While these diagrams provide three dimensional illustrations of the issue, no analysis were offered whether the sight distances satisfy the safe requirements as per AGRD part 4A for ASD, SISD and MGSD.
- We suggest that the resulting sight distances are presented in a tabulated format that shows whether the requirements are satisfied. Since it is proposed to introduce school zone near the vicinity of the school, we suggest that the sight distance requirements should be checked for 40km/h speed limit in addition to the existing speed limit at this location.

Bitzios concluded that

- The Northern Beaches Council do not have any concern
- TfNSW is against the proposal on the ground of safety issue regarding the access point at 800 Pittwater Road
- Bitizios Consulting review concludes that further analysis of sight distance is required to adequately address the relevant TfNSW review item

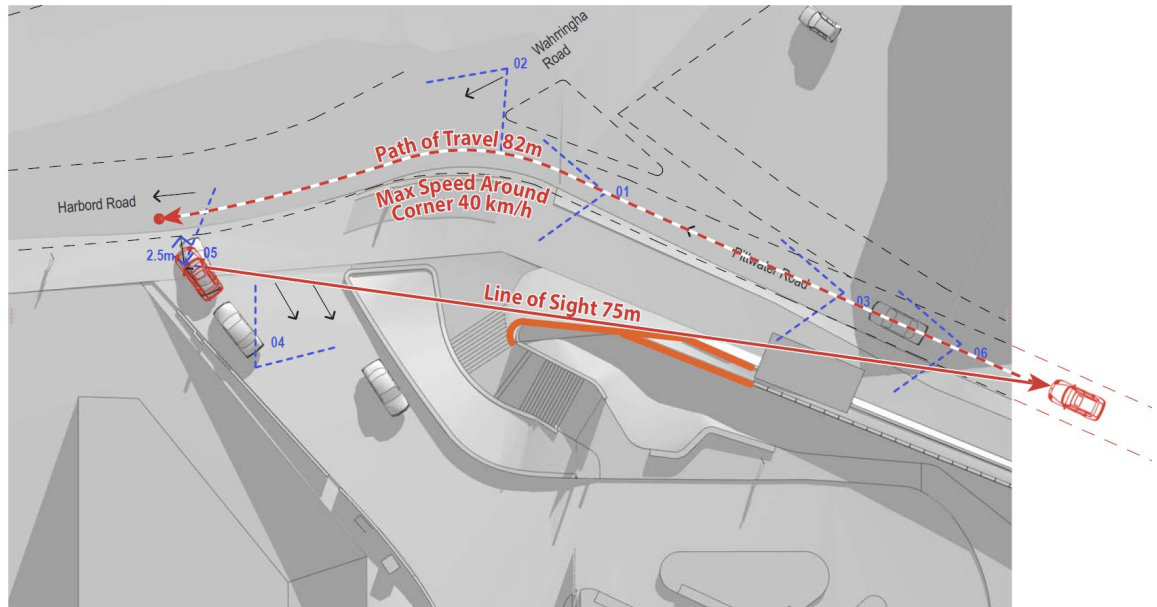
I am also aware of a letter from DFP dated 2nd June 2021. This says :-

Sight distances have not previously been raised by TfNSW or Council however an additional plan was provided as part of the RTS package (Plan Rev RTS-013) which provided sight lines for traffic and pedestrians, having regard to the proposed pedestrian fence. The plan indicates that there will be little to no impediment to the lines of sight for drivers.

At Stage 1 the landscaping in this area of the site will be significantly reduced. At Stage 2 and Stage 3 the new entry stairs and landscaping will maintain the pulled back terracing of the landscaping and will not introduce new shrubs into this part of the site (as detailed in the Architectural Plans). Amendments will be made to the front landscaping walls to minimise visual obstructions.

To assist in the further assessment of this matter, TZG Architects has prepared driveway line of sight view plans which show the differences in the lines of sight achieved between the original SSDA proposal and the amended landscaping walls at the front entry of the site (refer Attachment 1).

Therefore, the sight distances at the site access are considered generous and in excess of the requirements of the relevant Austroads and Australian Standards and will provide a safe and unimpeded view line of vehicles entering Harbord Road from Warringah Road (from west to south) and from Pittwater Road (from north to south via the turning lane).



Plan View b - Driveway Line of Sight - plan view - REVISED LANDSCAPING WALLS

Approach Sight Distance (ASD)	- less than 40m
Safe Intersection Sight Distance (SISD)	- 73m
Minimum Gap Sight Distance (MGSD)	- 55m

SUMMARY & CONCLUSION

1. One crash occurred on Harbord Road where a motorist utilised the Officeworks driveway to perform a U-turn movement and collided with another vehicle travelling south on Harbord Road.
2. The traffic generated at the driveway by the school will be some 80% less than the traffic levels currently generated by Officeworks and the gym. Consequently the potential for conflicts will be much reduced compared to existing conditions.
3. Sight distances at the driveway are proposed to be improved significantly by the proposed pulled back terracing of the landscaping.
4. Improvements in delineation and guidance at the Officeworks driveway should be implemented to emphasise the left turn only onto Harbord Road and to reduce the possibility of U-turns occurring.
5. The intersection as a whole would benefit from the Improvement in pavement skid resistance at the intersection

I trust that this is clear but should you have any further queries regarding the above or require further information, please do not hesitate to contact the undersigned on 0422 005405.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Ken Hollyoak', is positioned above the printed name.

Ken Hollyoak
Director

Annexure A – CV



Industry Experience

39 years

Qualifications & Memberships

- BSc (Hons) Civil Engineering: Trent University, UK
- MSc (Dist): Transport Planning Oxford Brookes University, UK
- Fellow of Engineers Australia, Chartered Professional Engineer
- Fellow of the Australian Institute of Traffic Management & Planning
- Registered Professional Engineer of Queensland RPEQ
- Institution of Civil Engineers (UK), Chartered Engineer
- Member of European Engineering Institution (FEANI)
- Fellow of the Chartered Institution of Highways & Transportation (UK)
- Level 3 Road Safety Audit Team Leader
- Holder of TfNSW Prepare a Works Zone Traffic Management Plan
- Member of TfNSW working party for updating their Traffic Generation Guidelines

Professional Background

2016 – Present TTPP
2012 – 2016 GTA Consultants
2009 – 2012 Halcrow MWT
2006 – 2009 Hyder Consulting
2002 – 2006 TPA Consultants
1989 – 2001 Parkman
1982 – 1989 Gloucester Council
1980 – 1981 Gleeson Contractors

Professional Overview

Ken is a chartered professional engineer and has nearly 40 years of experience in the road design/transportation & traffic planning field. He primarily works as traffic advisor preparing transport impact assessments for development applications / planning proposals as part of multi-disciplinary development teams. He has been involved in some of the largest projects in Sydney including Royal North Shore Hospital, UTS Broadway Building, Harold Park, Castle Towers shopping Centre, Warringah Mall, Barangaroo, Rouse Hill Town Centre etc. As part of this work, Ken assists in the design of roads, car parks, ramps and accesses & often certifies their compliance with AS2890.

Ken has worked as Expert Witness in above 100 cases ranging from Development Proposals in Land & Environment Court to Road Safety/Traffic Management cases in the Supreme & Coroners Court.

Ken is an accredited Road Safety Auditor and was expert witness for the Coroner in his investigation into fatalities on the Princes Highway in 2008. He was also the RMS external road safety advisor on the assessment/removal of Speed Cameras across New South Wales in 2011. He also undertook a large driver behavioural study into the effects of audiotactile line marking on the Newell Highway near Parkes in 2011. Ken was also the Alliance Traffic Manager during the design phase of the Inner West Busway in 2007-2009. Ken was also engaged by Westconnex & Northern Beaches Hospital to undertake all of the road safety audits for the traffic management works at the schemes between 2016 and 2020.

Industry Experience

Traffic, Transport, Parking Impact Assessments

Castle Towers Shopping Centre
Warringah Mall Shopping Centre
Costco Stores, Casula & Marsden Park
Casuarina Shopping Centre
Royal North Shore Hospital
71 Macquarie Street, Circular Quay
Baiada Farm, Manilla
Gateway Shopping Centre

Road Safety Audits

Sydney CBD Light Rail
Newcastle Light Rail
Kiama Off Ramps from Princes Highway
Bus Corridor Road Safety Audits
Railway Station Car Park Upgrades
Ballina Bypass
Albury Bypass Pre-Opening
Tugun Bypass Pre Opening
Sydney City Centre Bus Interchange Precincts

Road Safety Studies

Newell Highway Audiotactile Road Markings
RMS Speed Camera Review 2010, 2011 & 2012
RMS Scramble Crossing Review
Expert Witness – Walgett Crash Investigation
Expert Witness – Princes Highway Fatalities
Expert Witness – Launceston Fatal Crash

Transport Management & Accessibility Plans

Parramatta North Urban Transformation Scheme
Inner West Busway - Drummoyne & Rozelle

Transport Planning

Tuggerah Town Centre
Cessnock Centre Master planning
Forster / Tuncurry Town Centre

S94 Studies

Expert Witness – Lismore S94 Plan
Expert Witness – Cessnock Bellbird S94 Plan

Car Park Review / Design

Royal North Shore Hospital Car Park
Ashfield Mall Car Park
Crossroads Shopping Centre
Australian Technology Park
St Leonards Square

Traffic Management

Trinity Grammar School
Manly Vale Public School
Queenwood School for Girls
Teralba Quarry Traffic Management Plan
Chatswood Chase Loading Dock Plan
Casuarina Square Loading Dock Plan

Construction Traffic Management

Barangaroo Road Authority Advisor
Taronga Zoo Projects
UTS Broadway Building
Harold Park Development

Active Travel

Harold Park Green Travel Plan
Australian Catholic University Green Travel Plan
Macquarie University Campus Green Travel Plan
Bay Run Cycleway Planning Drummoyne
RMS Cycle Licensing Review

Research

RMS Traffic / Parking Generation Studies for Shopping Centres, Schools, Bulky Goods Stores, Medium Density Housing, Over 55s Housing, Hardware Stores



planning consultants

ATTACHMENT 2

Year	# Crashes	# Casualties
2017	4	6
2018	2	1
2019	2	2
2020	1	1

Degree of crash - detailed	# Crashes	% of Total
Serious Injury	2	22.2%
Moderate Injury	3	33.3%
Minor/Other Injury	3	33.3%
Non-casualty (towaway)	1	11.1%

Degree of casualty - detailed	# Casualties	% of Total
Seriously Injured	2	20.0%
Moderately Injured	3	30.0%
Minor/Other Injured	5	50.0%

Road user class	# Casualties	# Casualties without safety device	% Casualties by class without safety device
Motor vehicle driver	4		
Motorcycle rider	2		
P/C rider	2		
Motor vehicle passenger	2		
Total	10		

Crashes with speeding involved	
2	22.2%

Crashes with fatigue involved	
0	0.0%

Without safety device includes: Belt fitted but not worn, No restraint fitted to position OR No helmet worn

<

One-hour intervals	# Crashes	% of Total
02:00 - 02:59	1	11.1%
07:00 - 07:59	1	11.1%
08:00 - 08:59	3	33.3%
12:00 - 12:59	1	11.1%
14:00 - 14:59	1	11.1%
15:00 - 15:59	1	11.1%
18:00 - 18:59	1	11.1%

Day of week	# Crashes	% of Total
Sunday	1	11.1%
Monday	3	33.3%
Tuesday	1	11.1%
Wednesday	2	22.2%
Friday	2	22.2%

Weekend crashes	Weekday crashes
111.1%	88.9%

School travel time	# Crashes	% of Total
Yes	3	33.3%
No	6	66.7%

School zone active	# Crashes	% of Total
Not a school zone	9	100.0%

Public holiday period	# Crashes	% of Total
End term 2	1	11.1%

School holiday period	# Crashes	% of Total
End term 2	1	11.1%

Weather	# Crashes	% of Total
Fine	6	66.7%
Raining	2	22.2%
Overcast	1	11.1%

Natural lighting	# Crashes	% of Total
Daylight	7	77.8%
Darkness	2	22.2%

Street lighting	# Crashes	% of Total
On	3	33.3%
Off	3	33.3%
Unknown / not stated	3	33.3%



Dataset filters: Reporting year in 2020,2019,2018,2017,2016 and Town in DEE WHY

Note: Crash self reporting, including self reported injuries began in Oct 2014. Trends from 2014 are expected to vary from previous years. More unknowns are expected in self reported data.

Generated: 15/11/2021 14:25

Detailed Crash Report

TNSW Region / LGA / Town / Street	Crash ID	Data Source	Date of crash	Day of Week	Time	Distance	Direction	ID Feature	Location type	Alignment	Weather	Surface condition	Speed limit	TU Type	TU Direction	TU Manoeuvre	Age / Gender	Road User Class	Degree of casualty	Degree of crash	Killed	Serious Injury	Moderate Injury	Minor Other Injury	Uncategorised Injury	Crash Factor
Greater Sydney Northern Beaches DEE WHY HARBORD RD	1164104	E69664381						RUM: 40 U turn						No. of TUS involved: 2												
	P	19/02/18	Mon	1515	0 m	at	OFFICEWORK SENT	2-way	Str	Fine	Dry	60	CAR	S in HARBORD RD	Perform U-turn	28 M	MV driv.	N	MC	0	0	1	0	0		
													CAR	S in HARBORD RD	Proceeding in lane	34 M	MV driv.	M								
	1143644	E65515643						RUM: 47 Emerging from drive						No. of TUS involved: 2												
Greater Sydney Northern Beaches DEE WHY PITTWATER RD	S	05/07/17	Wed	0815	10 m	S	PITTWATER RD	X-int	Cur	Fine	Dry	60	4WD	E in HARBORD RD	Forward from drive	45 M	MV driv.	N	MC	0	0	1	0	0		
													P/C		Proceeding in lane	25 M	P/C rider	M								
	1143958	E66119484						RUM: 33 Lane sideswipe						No. of TUS involved: 2												
	P	28/02/17	Tue	0705	10 m	S	HARBORD RD	X-int	Str	Ovcst	Wet	60	TRK	S in PITTWATER RD	Proceeding in lane	45 M	MV driv.	N	SC	0	1	0	0	0		
Greater Sydney Northern Beaches DEE WHY PITTWATER RD													P/C	S in PITTWATER RD	Proceeding in lane	44 M	P/C rider	S								
	1154211	E66116769						RUM: 30 Rear end						No. of TUS involved: 2												
	P	14/08/17	Mon	1230	0 m	at	HARBORD RD	X-int	Cur	Fine	Dry	60	CAR	S in PITTWATER RD	Proceeding in lane	54 F	MV driv.	N	OC	0	0	0	3	0		
													4WD	S in PITTWATER RD	Stationary	2 F	MV pass.	O								
Greater Sydney Northern Beaches DEE WHY PITTWATER RD																	34 F	MV driv.	O							
	1221562	E140259101						RUM: 21 Right through						No. of TUS involved: 2												
Greater Sydney Northern Beaches DEE WHY PITTWATER RD	P	25/09/19	Wed	1820	0 m	at	HARBORD RD	X-int	Str	Fine	Dry	60	WAG	E in PITTWATER RD	Turning right	48 F	MV driv.	N	MC	0	0	1	0	0		
													M/C	W in PITTWATER RD	Proceeding in lane	53 F	MC rider	M								

Detailed Crash Report

TNSW Region / LGA / Town / Street	Crash ID	Data Source	Date of crash	Day of Week	Time	Distance	Direction	ID Feature	Location type	Alignment	Weather	Surface condition	Speed limit	TU Type	TU Direction	TU Manoeuvre	Age / Gender	Road User Class	Degree of casualty	Degree of crash	Killed	Serious Injury	Moderate Injury	Minor Other Injury	Uncategorised Injury	Crash Factor
Greater Sydney Northern Beaches DEE WHY PITTWATER RD	1224962	E73528903						RUM: 30 Rear end								No. of TUs involved: 2										
	P	07/02/20	Fri	0845	0 m	at	WARRINGAH RD	X-int	Cur	Rain	Wet	60	M/C	S in PITTWATER RD	Proceeding in lane	30 F	MC rider	O	OC	0	0	0	1	0	S	
													CAR	S in PITTWATER RD	Stationary	56 F	MV driv.	N								
	1143971	E67168751						RUM: 39 Other same direction								No. of TUs involved: 2										
	S	30/01/17	Mon	1400	0 m	at	WARRINGAH RD	X-int	Str	Fine	Dry	60	CAR	S in PITTWATER RD	Proceeding in lane	29 M	MV driv.	O	OC	0	0	0	1	0		
														CAR	S in PITTWATER RD	Other forward	53 M	MV driv.	N							
Greater Sydney Northern Beaches DEE WHY WARRINGAH RD	1215597	E71865835						RUM: 30 Rear end								No. of TUs involved: 4										
														LOR	E in WARRINGAH RD	Proceeding in lane	54 M	MV driv.	N							
	P	30/08/19	Fri	0824	10 m	W	PITTWATER RD	X-int	Cur	Rain	Wet	60	4WD	E in WARRINGAH RD	Stationary	35 F	MV driv.	S	SC	0	1	0	0	0	S	
													TRK	E in WARRINGAH RD	Stationary	35 M	MV driv.	N								
													4WD	E in WARRINGAH RD	Stationary	48 F	MV driv.	N								
	1184213	E68874211						RUM: 30 Rear end								No. of TUs involved: 2										
	S	21/10/18	Sun	0245	0 m	at	PITTWATER RD	X-int	Str	Fine	Dry	60	CAR	N in WARRINGAH RD	Proceeding in lane	33 M	MV driv.	N	NC	0	0	0	0	0		
													4WD	N in WARRINGAH RD	Stationary	53 M	MV driv.	N								
Report Totals	Crashes: 9	Fatal Crashes (FC): 0	Serious Injury Crashes (SC): 2		Moderate Injury Crashes (MC): 3		Minor/Other Injury Crashes (OC): 3		Uncategorised Injury Crashes																	
		Killed (K): 0	Seriously Injured (S): 2		Moderately Injured (M): 3		Minor/Other Injured (O): 5		Uncategorised Injured (U): 0		Not Injured (N): 12															

Detailed Crash Report

Report Filters

Dataset Filters

Reporting year in 2020,2019,2018,2017,2016 and Town in DEE WHY

Crash self reporting, including self reported injuries began in Oct 2014. Trends from 2014 are expected to vary from previous years. More unknowns are expected in self reported data.



planning consultants

ATTACHMENT 3



2 May 2022
Ref 19090

Transport for NSW
31 Argyle Street
PARRAMATTA NSW 2150

Attn: Mr Brendan Pegg

Dear Brendan,

**ST LUKE'S GRAMMAR SCHOOL
PROPOSED SENIOR SCHOOL CAMPUS (SSD-10291)
TRAFFIC & PARKING MATTERS
RESPONSE TO SUBMISSIONS**

I refer to your letter dated 15 November 2021 regarding the proposed expansion of St Luke's Grammar School at Dee Why.

Background

The subject site is located at 800 Pittwater Road, with vehicular access provided via a 16m wide driveway located on the southern boundary of the site, off Harbord Road.

The site is currently occupied by *Officeworks*, a *Fitness First* gym, an *I-MED Radiology* clinic and a swim school. The existing driveway provides access to 182 parking spaces and a loading dock used by trucks up to 12.5m long HRV rigid trucks.

The proposed development will involve *adaptive reuse* of the existing buildings for use as a *Senior School* campus (*i.e. Years 10, 11 and 12 only*), for 600 *senior high school students only*.

It is important to note that the *Senior School* generates the least amount of traffic activity compared to either the *Junior School* or the *Middle School*, as indicated by the graphs shown on Figures 4, 5 and 6 below. These graphs summarise the results of surveys conducted at the existing school over a period of 5 consecutive days and reveal that:

- the *Senior School* generates very low levels of traffic activity
- the *Senior School* traffic activity is more widely dispersed (typically over a period of 2 hours) than either the *Junior School* or the *Middle School* because the majority of *senior school* students attend additional classes *before* or *after* regular school hours
- the *Senior School* does not generate a distinctive “peak” period compared to either the *Junior School* or the *Middle School*.

Figure 4: Results of Drop-off & Pick-up Surveys - **Junior School**
(Number of Cars per 5 Minutes)

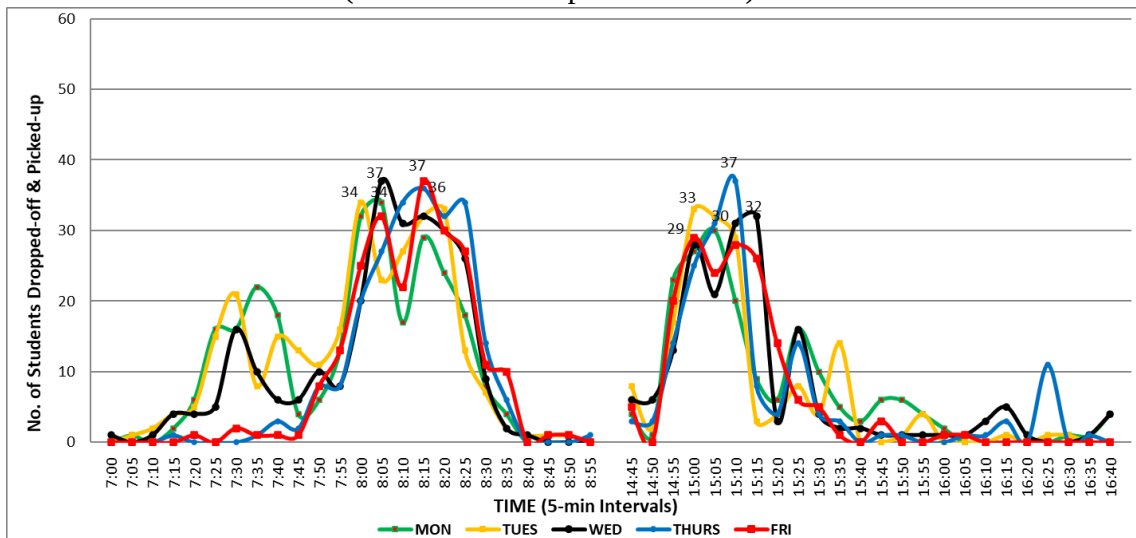


Figure 5: Results of Drop-off & Pick-up Surveys - **Middle School**
(Number of Cars per 5 Minutes)

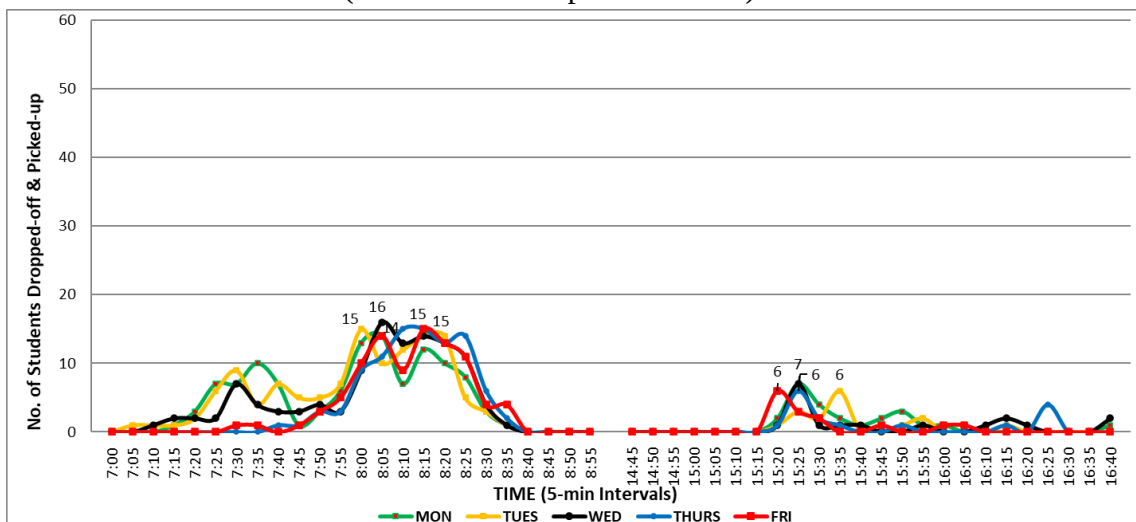
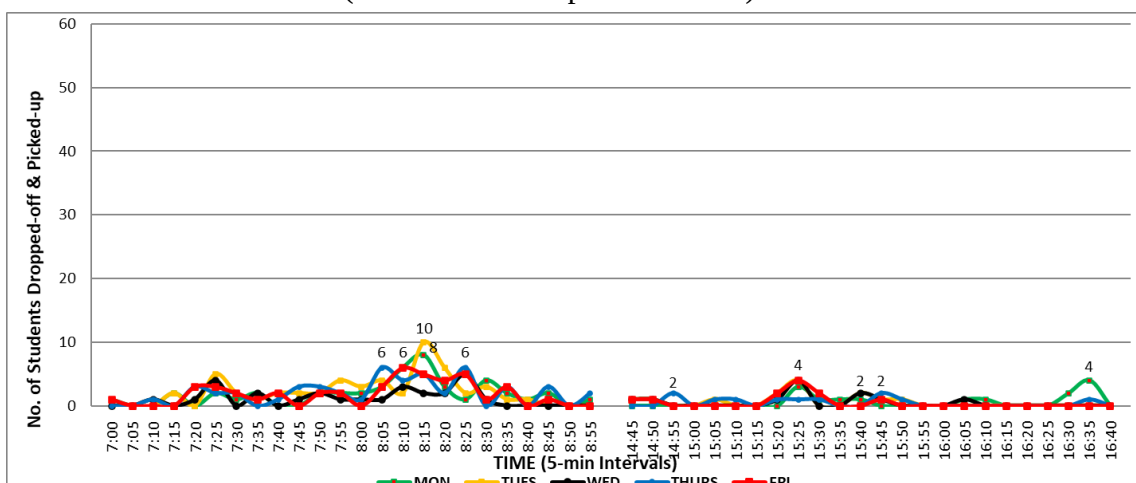


Figure 6: Results of Drop-off & Pick-up Surveys - **Senior School**
(Number of Cars per 5 Minutes)



Traffic surveys conducted at the existing site access driveway off Harbord Road over a period of 5 consecutive days indicate that the existing commercial uses of the site generate an average of 3224 vehicles per day.

By comparison, the proposed *Senior School* campus is expected to generate approximately 644 vehicles per day.

Thus, the proposed *Senior School* campus will reduce the traffic volumes generated by the site by 2580 vehicles per day or 80% as indicated on Table 4 below.

Table 4 - Nett Reduction in Traffic Flows As a Consequence of the Proposed Senior School at 800 Pittwater Road Vehicles Per Day (vpd)			
	In	Out	Total
Existing Commercial Uses	1,603 vpd	1,621 vpd	3,224 vpd
Proposed Senior School Campus	322 vpd	322 vpd	644 vpd*
Nett Reduction in traffic	-1,281 vpd	-1,299 vpd	-2,580 vpd

* Includes after-hours community uses of the pool

Furthermore, traffic activity generated by the *Senior School* campus will generally not coincide with road *network peak* periods, with minimal traffic activity during the AM *network peak*, and little, if any traffic activity during the PM *network peak*.

That reduction in daily traffic activity means that the exposure or likelihood of crashes occurring at this location will also be reduced.

Response to Submissions

The following advice is provided in response to submissions from TfNSW.

Crash Records

TfNSW Comment

TfNSW prioritises road safety and efficiency on the transport network. As such, the proposed vehicular access to Harbord Road is close to a major intersection with Pittwater Road. The intersection of Pittwater Road and Harbord Road has a poor crash history where any vehicular incident could also endanger students on the footpath or parents with students using the proposed Harbord Road driveway.

TfNSW crash records for the most recent four years on record have recorded nine in total with 89% involving injuries 22% involved serious injury. 44% of these occurred immediately before school opening and after finishing times.

I note that the crash history in the vicinity of the Pittwater Road/Warringah Road/Harbord Road intersection provided by TfNSW has been reviewed in a separate study undertaken by *The Transport Planning Partnership (16 March 2022)*. The *TTPP* assessment found that:

- a total of 9 crashes were recorded during the 3 year period between 30 January 2017 and 7 February 2020

- the 9 reported crashes predominantly involved rear-end collisions (44%) with major contributing factors being speeding in a downhill slope in wet conditions in half (22%) of those rear-end crash events
- traffic activity generated by the Senior School at the driveway will be some 80% less than the traffic levels currently generated by Officeworks/Fitness First/I-MED radiology and pool. Consequently, the potential for conflicts will be much reduced compared to the existing conditions
- the intersection as a whole would benefit from the improvement in skid resistant pavement at the intersection.

A separate EIS Peer Review undertaken by Bitzios Consulting (8 December 2021) which also found that:

...the reduction in day traffic volumes means that the exposure or likelihood of crashes occurring at this location will also be reduced.

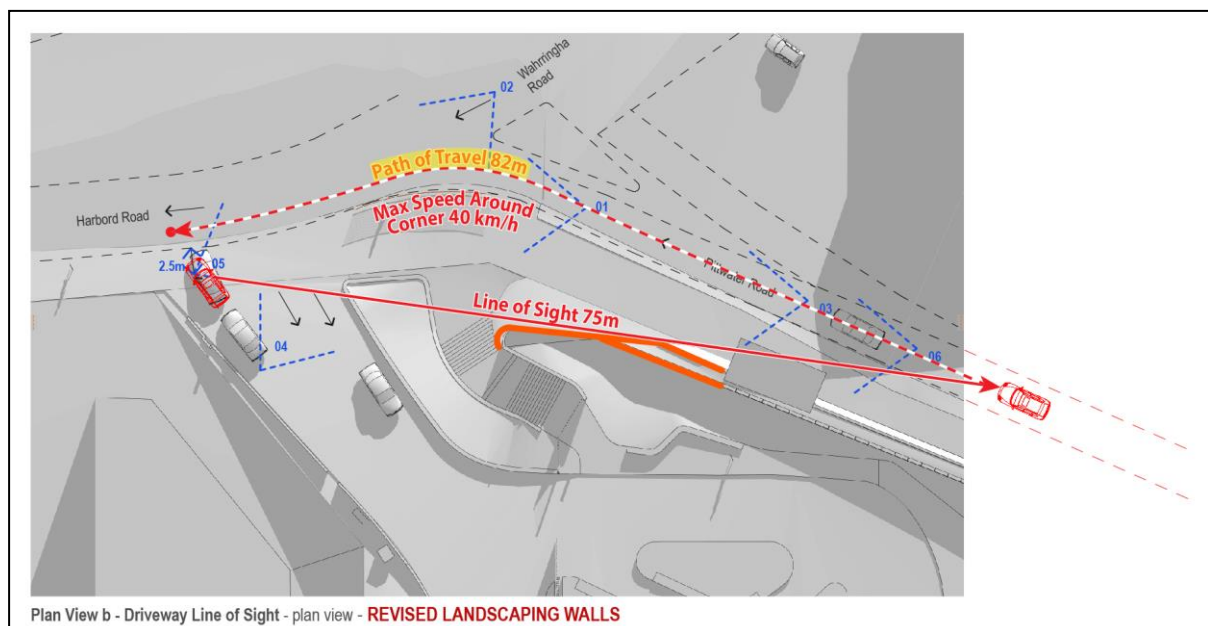
Sight Distances

TfNSW Comment

In accordance with AGRD Part 4A. Sight distances at accessed should comply with the sight distance requirements for intersections, i.e. that approach sight distance (ASD), safe intersection sight distance (SISD), and minimum gap sight distance (MGSD) are to be achieved. Therefore, the current driveway location and alignment does not meet relevant Austroads and Australian Standards and is unsuitable as an access/egress point.

The layout of the existing vehicular access driveway off Harbord Road and 16m width (i.e. 2 entry lanes and 1 exit lane) is proposed to be retained unchanged.

However, the existing landscaping and embankments located to the north of the driveway are proposed to be cut back. This will provide an improved line of sight between a vehicle exiting the site and a southbound vehicle turning left from Pittwater Road into Harbord Road, as indicated on the diagram below.



There are 3 types of sight distance specified in the Austroads publication *Guide to Road Design Part 4a (2021)* as follows:

- **Approach Sight Distances (ASD)** is the sight distance which must be available on the minor road approaches (in this instance, the exit driveway) to all intersections to ensure that drivers are aware of the presence of an intersection
- **Safe Intersection Sight Distance (SISD)** is the minimum sight distance which should be provided on the major road at any intersection, and is measured along the road carriageway path of travel
- **Minimum Gap Sight Distance (MGSD)** is the minimum sight distance required at property entrances and is also measured along the path of travel of the approaching vehicle.

Most relevant to the subject site is **Minimum Gap Sight Distance (MGSD)**, as referenced in *Part 3.4 – Sight Distance at Property Entrances* of *AGRDP4a*. However a comparison of all 3 sight distance requirements with the proposed sight distances that will be available are summarised in the table below, noting that:

- the maximum speed of the left-turn movement from Pittwater Road into Harbord Road is constrained by the road geometry to less than 40 km/h
- a 40 km/h *School Zone Speed Limit* is anticipated in the vicinity of the driveway
- peak hour speeds through the intersection are typically less than 40 km/h, and
- the *Senior School* will generate little, if any traffic activity outside school zone times in any event.

COMPARISON OF SIGHT DISTANCE REQUIREMENTS			
	Required	Proposed	
Approach Sight Distance (ASD)	Less than 40m	50m	Complies
Safe Intersection Sight Distance (SISD)	73m	82m	Complies
Minimum Gap Sight Distance (MGSD)	55m	82m	Complies

In summary, all of the *sight distance* criteria nominated by Austroads will be satisfied by the proposed development. It is noted also in this regard that the *TTPP* report found that:

The sight distances at the site access driveway are considered generous and in excess of the requirements of the relevant Austroads and Australian Standards, and will provide a safe and unimpeded view line of vehicles entering Harbord Road from Warringah Road and from Pittwater Road.

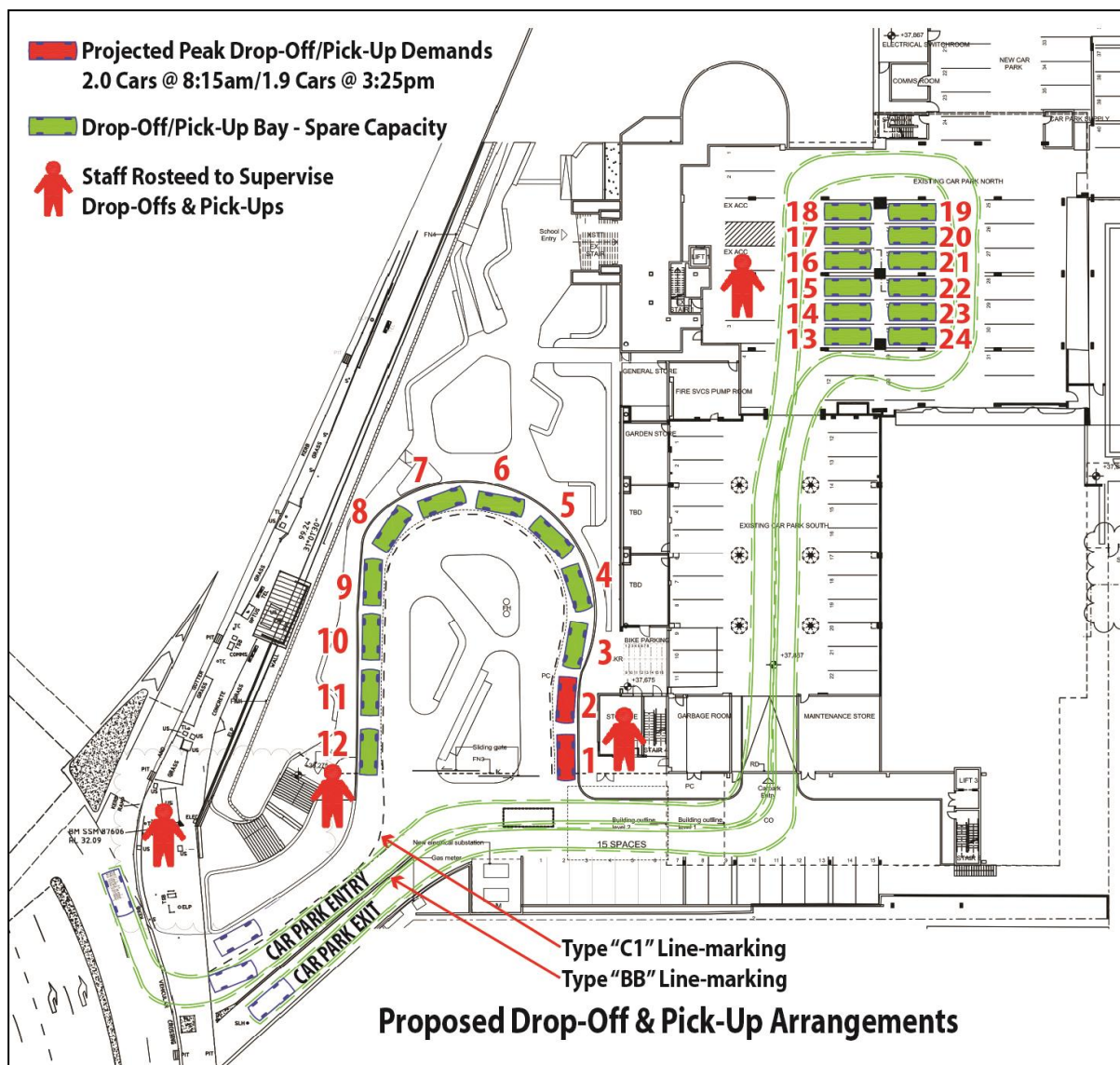
Drop-Off & Pick-Up Arrangements

TfNSW Comment

Furthermore, a review of the arrival and service rates for pick-up and drop-off supplied by the applicant indicates that there will be a small percentage of queuing back on to Harbord Road. This is undesirable where the driveway is near an intersection that operates with multiple phasing (Double Diamond). The exit is also hazardous as the road user also needs to turn out with limited sight distance to other road user using the nearby exclusive left turn from Pittwater Road and poor road alignment between Warringah Road and Harbord Road.

The drop-off and pick-up arrangements proposed at the *Senior School* campus are illustrated on the diagram below, and comprise 12 spaces in the external drop-off/pick-up area, plus a potential further 12 spaces in the existing basement car parking area.

The two existing entry lanes off Harbord Road are proposed to be retained, with separate entry lanes providing access to the external drop-off area and to the basement car park.



Queuing analysis based on the 5-day surveys indicates that the peak drop-off and pick-up demands for the *Senior School* will be **2 cars** at 8:15am and 1.9 cars at 3:25pm as indicated by the “**red cars**” as shown on the diagram below.

Under the *Traffic Management Plan* which forms part of the development consent for the existing school, the school is required to provide up to 12 staff to supervise the drop-off and pick-up arrangements.

A similar *Traffic Management Plan* is proposed for the *Senior School* which will require up to 4 staff to supervise drop-offs and pick-ups at the new *Senior School* campus as illustrated on the figure below.

In particular, one of those staff will be located at the top of the main entry driveway, near space 12, **who will direct traffic into the basement car parking area** in the unlikely event that the first 12 spaces in the external area are full. Two other staff will supervise drop-offs and pick-ups whilst the fourth staff member will supervise students at the bottom of the stairs near the signalised pedestrian crossing (where a pedestrian safety fence is proposed).

In addition, it is noted that the 12 drop-off/pick-up spaces proposed within the basement car parking area will be located approximately **170m** from the site entry off Harbord Road.

Thus, there is no foreseeable possibility that a “small percentage” of cars could queue back onto Harbord Road.

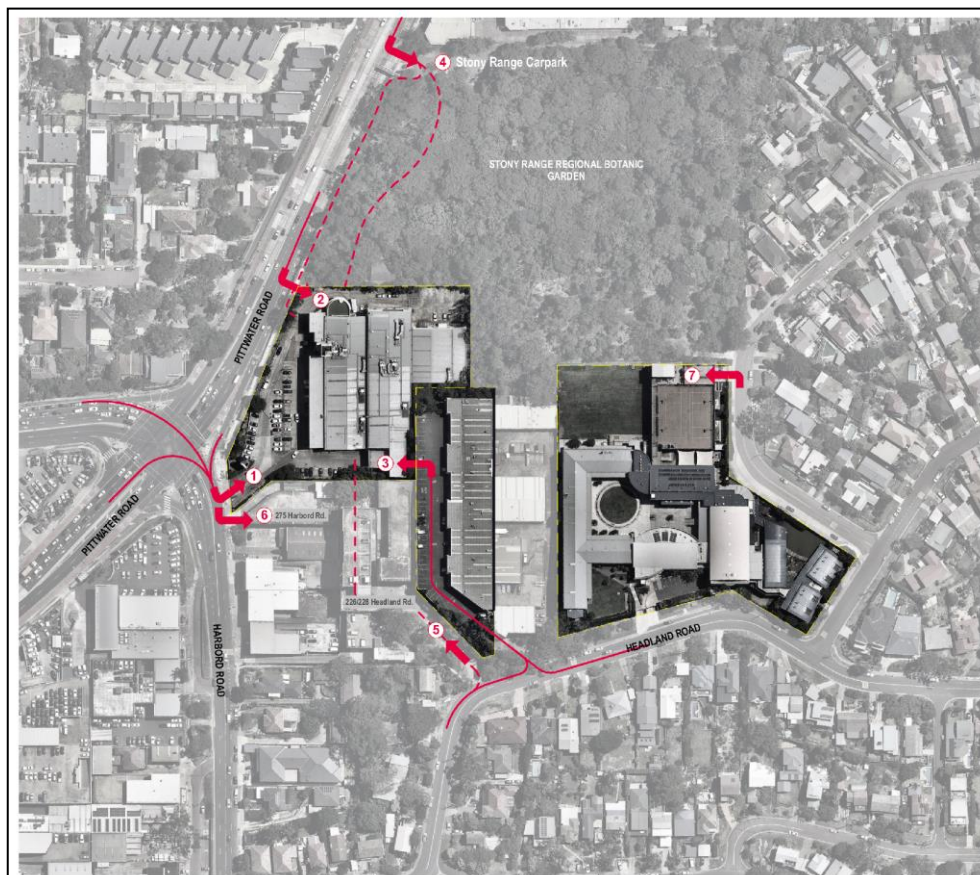
Alternative Access Arrangements

TfNSW Comment

Harbord Road is a major road corridor linking Dee Why to Curl Curl and North Manly. Current practice is to limit the number of vehicular conflict points along busy roads where an alternative access via Headland Road would be more appropriate to maintain network road safety and network efficiency. This current practice is reflected in Section 6.2.1 of TfNSW current publication of the Guide to Traffic Generating Developments, which states ‘*access across the boundary with a major road is to be avoided wherever possible*’.

TfNSW recommends that the subject development’s access provisions are reconsidered, with the removal of the vehicular crossover at Harbord Road for the abovementioned reasons. TfNSW would welcome the opportunity to discuss the agency’s road safety concerns with the Department, Council, and the Applicant, if required.

A number of alternative access arrangements were investigated as illustrated on the diagram below.



Option 1 is the current proposal.

Option 2 was a new access suggested by Council, directly from Pittwater Road into the basement car parking area, however this was rejected by TfNSW.

Option 3 involved the partial demolition of the existing structures on 224 Headland Road to provide a ramp between 224 Headland Road and 800 Pittwater Road (noting that there is a 20m difference in RLs). A new access driveway would be required on Headland Road as the existing driveway which is shared with the adjacent industrial premises would require owners consent which is unlikely to be forthcoming. In any event, this option was rejected because:

- the driveway does not meet any of the Austroads sight distance requirements, and
- the steep gradient of this section of Headland Road could not safely accommodate the projected 644 vehicles per day traversing the steeply sloping footpath.

Option 4 involved use of the Stony Range Car Park however this was found to be inadequate and impractical, noting also that this car park is owned by others.

Option 5 involved provision of a new vehicular access driveway through 226 Headland Road to access 800 Pittwater Road, noting that the school does not own this property. This option was rejected because:

- the driveway does not meet any of the Austroads sight distance requirements, and
- the steep gradient of this section of Headland Road could not safely accommodate the projected 644 vehicles per day traversing the steeply sloping footpath.

Option 6 involved the use of the driveway on the adjacent site to the south at 275 Harbord Road, noting that the school does not own this property. The driveway serving this property is located immediately to the south of the current proposal (Option 1).

Option 7 considered the use of the existing driveway serving the existing car parking area of Tango Avenue, however there was no potential to provide a link to the 800 Pittwater Road site across either Stony Range or the adjacent industrial property at 220 Headland Road which the school does not own.

In addition, it is noted that Options 3, 5 and 7 would increase traffic volumes on Headland Road beyond its *environmental capacity*, and would likely require the signalisation of the Harbord Road/Headland Road intersection.

Conclusion

In summary, the current proposal is the preferred option for vehicular site access because:

- the existing driveway off Harbord Road is substantial, some 16m in width with 2 entry lanes and 1 exit lane, and can comfortably accommodate all vehicle sizes up to and including 12.5m long HRV rigid trucks
- daily traffic volumes using the driveway will be reduced by 80%, from 3224 vpd to 644 vpd as a consequence of the development proposal
- the driveway will be used by the *Senior School* only (i.e. Years 10 and 11 only)
- the *Senior School* generates substantially less traffic activity than either the *Junior School* or the *Middle School*
- the *Senior School* traffic activity will be minimal during the AM and PM road *network peak* periods, and there is unlikely to be *any* traffic activity during the daytime between 9:30am-2:30pm
- the substantial reduction in the traffic generation potential of the site (and therefore the adjacent Pittwater Road/Harbord Road intersection) means that the exposure of likely crashes occurring at this location will also be reduced
- all of the *sight distance* criteria nominated by Austroads will be satisfied by the driveway off Harbord Road
- queuing analysis based on the 5-day surveys indicate that the peak drop-off and pick-up demands for the *Senior School* will be 2 cars at 8:15am and 1.9 cars at 3:25pm
- the proposed external drop-off/pick-up arrangements comprise 12 spaces located well within the site and will be supervised by staff as part of the *TMP*, including a staff member who will direct traffic into the basement car park in the unlikely event that all 12 spaces are ever occupied
- a further 12 drop-off/pick-up spaces can be provided within the basement car parking area, some **170m** from the site entry of Harbord Road
- thus there is no foreseeable possibility that cars could ever queue back onto Harbord Road.

Please do not hesitate to contact me on telephone 9904 3224 should you have any enquiries.

Yours sincerely



Robert Varga
Director
Varga Traffic Planning Pty Ltd



planning consultants

ATTACHMENT 4

File Name	Prepared	Reviewed	Issued by	Date	Issued to
P5484.001T St Luke's Grammar School EIS Peer Review	M. Hassan	A. Ahmed	M. Hassan	08/12/2021	Aditi.Coomar@planning.nsw.gov.au

St Luke's Grammar School, Northern Beaches

EIS Peer Review

1. Introduction

1.1 Background

A State Significant Development application (SSD-10291) for the expansion of St Luke's Grammar School in Northern Beaches is currently being assessed by the Department of Planning, Industry and Environment (the Department). The SSD application seeks approval for:

- Alterations to and adaptive reuse of the existing industrial building at 800 Pittwater Road for the purpose of a new senior school campus with 600 students (Years 10 – 12), including:
 - Demolition, internal alterations and part two four-storey additions
 - Provision of general learning areas, administration, café and speciality learning areas
 - An indoor swimming pool and outdoor sports courts, performing arts / assembly theatres
 - Reconfiguration of the basement and at-grade carparking area to provide for drop-off / pick-up zones and car spaces, associated bus turning and driveway areas
 - Circulation areas, landscaping, new substation, signage and an acoustic wall.
- Alterations to and adaptive reuse of an existing industrial building at 224 Headland Road for the purpose of a new sports centre for the school comprising:
 - Internal alterations and additions to construct two multi-purpose courts and new lifts
 - Landscaping works, car parking and signage
- A vertical connection linking the two sites.
- Construction works across the two sites in three stages.

The location of the proposed development is shown in **Figure 1**.



Figure 1: Site Location

Review Scope

Bitzios Consulting (Bitzios) was engaged by the Department to undertake an independent peer review of the following documents and background information:

- The Applicant's EIS and TIA reports.
- Review submissions by Council and Transport for NSW (TfNSW).
- Review Applicant's Response to Submissions (RtS).

Provide advice relating to the following:

- Whether the EIS and RtS adequately assessed the traffic impacts on the locality due to the existing school and proposed development.
- Whether the proposal in its current form should be recommended for approval with conditions, or refused
- Provision of draft conditions of approval to avoid, minimise, mitigate, and/ or manage residual impacts (should approval be recommended) or reasons for refusal.

2. Review

2.1 EIS (Appendix 24)

Source Document: St Luke's Grammar School, Dee Why Proposed Senior School Campus & Sports Centre: Traffic and Parking Assessment Report

Item	Section/Page	Bitzios Comments	Bitzios Priority
1	General	There are some deficiencies in this report which were explained in the responses to different submissions. Therefore, those issues are not mentioned or discussed here. Those will be discussed in the responses to submissions. However, there are few comments regarding the EIS report are mentioned as follows, which were not raised in the responses.	Note
2	Sidra Modelling - Signal Data	Following traffic signal data/information for Pittwater Road / Harbord Road intersection should be provided. i) Source/date of the signal data ii) Cycle time iii) Phase times.	Note
3	Sidra Modelling - Validation	Sidra model validation is missing.	Note

2.2 Response to Submission

Source Document: 7 Traffic Response 1 (Dated: 11 February 2021)

Item	Section/Page	Bitzios Comments	Bitzios Priority
4	Annexure 1 – Page 1	<u>Issue: Access via Pittwater Road</u> The response of the proponent was adequate.	Note
5	Annexure 1 – Page 1	<u>Issue: Traffic volumes and RMS input</u> The response of the proponent was adequate.	Note
6	Annexure 1 – Page 2	<u>Issue: Further information</u> The response of the proponent was adequate.	Note
7	Annexure 2 – Page 1	<u>Issue: Vehicle Access to 800 Pittwater Road</u> The response of the proponent was adequate.	Note
8	Annexure 2 – Page 2	<u>Issue: Traffic Impact (queueing)</u> The response of the proponent was adequate. The proponent also provides additional drop off / pick up bays inside the basement car parking which we believe resolve the queueing issue (in Traffic Response 2, dated: 26 May 2021).	Note
9	Annexure 2 – Page 5	<u>Issue: The traffic report did not include the assessment of existing and future travel demands</u> The response of the proponent was adequate.	Note

St Luke's Grammar School, Northern Beaches

EIS Peer Review

Project: P5484 Version: 001

Item	Section/Page	Bitzios Comments	Bitzios Priority
10	Annexure 2 – Page 7	<u>Issue: Swept path of HRVs</u> The response of the proponent was adequate.	Note
11	Annexure 2 – Page 9	<u>Issue: Parking Demand and Supply</u> The response of the proponent was adequate.	Note
12	Annexure 2 – Page 9	<u>Issue: Traffic Modelling</u> The response of the proponent was adequate.	Note
13	Annexure 2 – Page 10	<u>Issue: Traffic Modelling using peak hour factors</u> The response of the proponent was adequate.	Note
14	Annexure 2 – Page 10	<u>Issue: Traffic generation for stages</u> The response of the proponent was adequate.	Note
15	Annexure 2 – Page 11	<u>Issue: Traffic generation for additional uses</u> The response of the proponent was adequate.	Note
16	Annexure 2 – Page 12	<u>Issue: Car Parking</u> The response of the proponent was adequate.	Note
17	Annexure 2 – Page 13	<u>Issue: Construction Pedestrian and Traffic Management</u> The response of the proponent was adequate.	Note
18	Annexure 2 – Page 14	<u>Issue: Green Travel Plan</u> The response of the proponent was adequate.	Note
19	Annexure 2 – Page 15	<u>Issue: Access to School Bus Services</u> The response of the proponent was adequate.	Note
20	Annexure 2 – Page 15	<u>Issue: School Operational Management Plan</u> The response of the proponent was adequate.	Note
21	Annexure 3 – Page 1	<u>Issue: Feasibility of an alternative access point and demonstrate that the existing driveway can operate safely</u> The response of the proponent was adequate.	Note
22	Annexure 3 – Page 2	<u>Issue: Queuing of vehicles utilising the proposed pick-up and drop-off areas</u> The response of the proponent was adequate.	Note
23	Annexure 3 – Page 6	<u>Issue: Impacts on the local traffic network</u> The response of the proponent was adequate.	Note
24	Annexure 3 – Page 6	<u>Issue: Updated traffic modelling</u> The response of the proponent was adequate.	Note

Item	Section/Page	Bitzios Comments	Bitzios Priority
25	Annexure 3 – Page 6	<u>Issue: Impacts of cumulative parking demands</u> The response of the proponent was adequate.	Note
26	Annexure 3 – Page 7	<u>Issue: Trip generation of each development stage and assessment of the proposed traffic impact on the existing junior campus</u> The response of the proponent was adequate.	Note
27	Annexure 3 – Page 8	<u>Issue: Workplace Travel Plan</u> The response of the proponent was adequate.	Note
28	Annexure 3 – Page 8	<u>Issue: School Traffic Management Plan</u> The response of the proponent was adequate.	Note
29	Annexure 3 – Page 8	<u>Issue: Further transport pattern survey</u> The response of the proponent was adequate.	Note
30	Annexure 3 – Page 9	<u>Issue: Heavy rigid vehicle</u> The response of the proponent was adequate.	Note
31	Annexure 3 – Page 10	<u>Issue: Parking spaces for Y-12 students</u> The response of the proponent was adequate.	Note

Source Document: 10 Traffic Response 2 (Dated: 26 May 2021)

Item	Section/Page	Bitzios Comments	Bitzios Priority
32	Page 1	<u>Issue: Queuing analysis has not included the vehicles queuing to access the off-street car park</u> The response of the proponent was adequate.	Note
33	Page 3	<u>Issue: Queuing analysis (dwelling time)</u> The response of the proponent was adequate.	Note
34	Page 4	<u>Issue: Parents would arrive to the site and queue at the school gate well before the school opens</u> The response of the proponent was adequate.	Note
35	Page 4	<u>Issue: Increase pedestrian / vehicle conflicts</u> The response of the proponent was adequate.	Moderate
36	Page 5	<u>Issue: Student pick up and drop off and student parking facilities are not to be provided on the Senior Campus</u> The response of the proponent was adequate. The proponent also provides additional drop off / pick up bays inside the basement car parking which we believe resolve the queuing issue.	Note

Item	Section/Page	Bitzios Comments	Bitzios Priority
37	Page 7	<u>Issue: Details of bus movements generated</u> The response of the proponent was adequate.	Note
38	Page 8	<u>Issue: Estimating trip generation of each development stage</u> The response of the proponent was adequate.	Note
39	Page 12	<u>Issue: Traffic modelling result for the scenario of 10 years after completion of Stage 3</u> The response of the proponent was adequate.	Note
40	Page 13-14	<u>Issue: point 8-13</u> The response of the proponent was adequate.	Note

Source Document: 12 Traffic Response 3 (Dated: 6 September 2021)

Item	Section/Page	Bitzios Comments	Bitzios Priority
41	Page 1	<u>Issue: No Stopping sign should be installed for the overflow parking spaces</u> The response of the proponent was adequate.	Note
42	Page 1	<u>Issue: The applicant may be conditioned that a review of the pickup and drop-off operation to be undertaken after 6 months of trial of Stage 2 operation, as well as for the period of 6 months after the commencement of Stage 3 operation</u> The response of the proponent was adequate.	Note
43	Page 1	<u>Issue: Raw survey data for parking duration survey for pickup and drop-off to be provided to TfNSW for review and reference</u> The response of the proponent was adequate.	Note
44	Page 2	<u>Issue: Point 4 and 5</u> The response of the proponent was adequate.	Note

2.3 Final Comments from Northern Beaches Council

Source Document: Director Response - St Lukes - State Significant Development - DPIE (Dated: 16 November 2021)

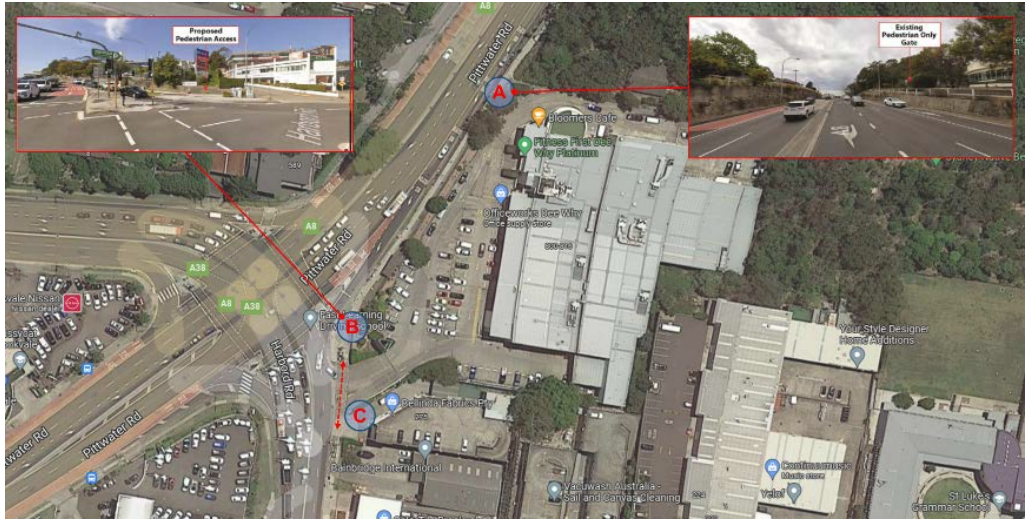
No objection was raised from the Council.

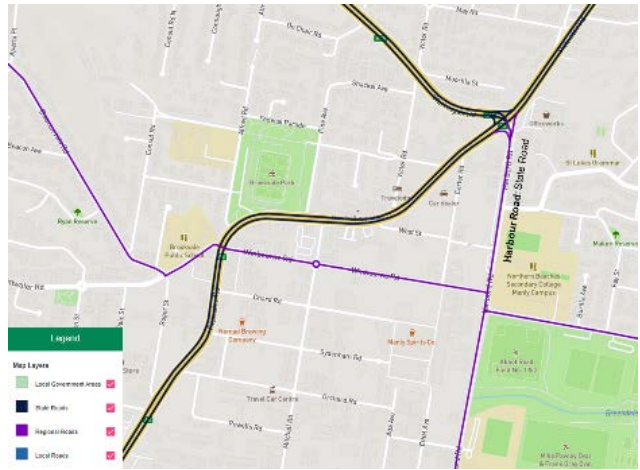
2.4 Final Comments from TfNSW

Source Document: TfNSW Response Letter SSD-10291_ (Dated: 15 November 2021)

TfNSW does not support the application in its current form. TfNSW recommends that the subject development's access provisions are reconsidered, with the removal of the vehicular crossover at Harbord Road. The reasons behind this decision and comments of Bitzios is provided as follows.

Item	Section/Page	TfNSW Reasons for refusal	Bitzios Comments
45	Page 1	TfNSW prioritises road safety and efficiency on the transport network. As such, the proposed vehicular access to Harbord Road is close to a major intersection with Pittwater Road. The intersection of Pittwater Road and Harbord Road has a poor crash history where any vehicular incident could also endanger students on the footpath or parents with students using the proposed Harbord Road driveway. TfNSW crash records for the most recent four years on record have recorded nine in total with 89 % involving injuries 22% involved serious injury. 44% of these occurred immediately before school opening and after finishing times.	The crash history at the nearby intersection is recognised and acknowledged. We have analysed five-year crash data that occurred at and in the vicinity of the Pittwater Road / Harbour Road intersection. In the five-year period ending December 2018 a total of 16 crash reported at this location. A detailed analysis shows that none of these crashes occurred at the driveway or because of traffic movements at the driveway as shown in the following figure.  Figure 2: Crash Locations (2014 -2018) Moreover, the proponent analysis shows that the daily traffic volumes entering and exiting the driveway are projected to reduce substantially as a result of the land use change. It is estimated that the daily traffic volumes will reduce from 3,224 veh/day to 644 veh/day; a reduction of 2,580 veh/day or 80%. Generally, the reduction in daily traffic volume means the exposure or likelihood of crash occurring at this location will also reduce.

Item	Section/Page	TfNSW Reasons for refusal	Bitzios Comments
			Pedestrian access points are shown in the following figure. Students arriving on foot from the north on Pittwater Road would use access point A, which is well north of the intersection. A separate pedestrian access point is proposed north of the Harbord Road driveway (point B), thus minimising conflicts at the driveway itself. The only concerning vehicular/pedestrian conflict area (point C) is the crossing the access road (which is a currently a shared path) at 800 Pittwater Road. However, surrounding land uses suggests that this area will be infrequently used by the pedestrians.  Figure 3: Pedestrian Access Locations Given the substantial reduction in daily traffic flows entering and exiting the driveway and majority students on foot using the access point A, the crash potential at this location is expected not to increase with the development.
46	Page 1	In accordance with AGRD Part 4A. Sight distances at accesses should comply with the sight distance requirements for intersections, i.e. that approach sight distance (ASD), safe intersection sight distance (SISD), and minimum gap sight distance (MGSD) are to be achieved. Therefore, the current driveway location and alignment does not meet relevant Austroads and Australian Standards and is unsuitable as an access/egress point.	In response to TfNSW comments, the proponent amended the landscaping and subsequently prepared sight distance diagrams detailing the intervisibility between pedestrian and motorists. Sight distance diagrams have been prepared at four locations along Pittwater Road and at low locations on the driveway (Location B in Figure 3). While these diagrams provide three dimensional illustrations of the issue, no analysis were offered whether the sight distances satisfy the safe requirements as per AGRD part 4A for ASD, SISD and MGSD. We suggest that the resulting sight distances are presented in a tabulated format that shows whether the requirements are satisfied. Since it is proposed to introduce a school zone near the vicinity of the school, we suggest that the sight distance requirements should be checked for 40km/h speed limit in addition to the existing speed limit at this location.

Item	Section/Page	TfNSW Reasons for refusal	Bitzios Comments
47	Page 1	Furthermore, a review of the arrival and service rates for pick-up and drop-off supplied by the applicant indicates that there will be a small percentage of queuing back on to Harbord Road. This is undesirable where the driveway is near an intersection that operates with multiple phasing (Double Diamond). The exit is also hazardous as the road user also needs to turn out with limited sight distance to other road user using the nearby exclusive left turn from Pittwater Road and poor road alignment between Warringah Road and Harbord Road.	The proponent's 'drop-off' and 'pick-up' analysis shows the supply far exceeding the demand. Moreover, 'overflow' and 'spaces' capacity will be provided along with active management by supervisors. Furthermore, in the recent communications, the proponent has agreed to prepare a management plan prior to occupancy certificate being issued. The proponent has agreed to share the data and management strategic with TfNSW. In line with TfNSW, we suggest that a review of the 'drop-off' and 'pick-up' operation 6 (six) months after the opening of Stage 2 and Stage 3 operation is conditioned. The Double Diamond phasing arrangement has very little relevance to the operation of the driveway, and the southbound left turn from Pittwater Road is fully controlled by signals. Speeds would be lower due to the proposed 40 km/h School Zone.
48	Page 1-2	Harbord Road is a major road corridor linking Dee Why to Curl Curl and North Manly. Current practice is to limit the number of vehicular conflict points along busy roads where an alternative access via Headland Road would be more appropriate to maintain network road safety and network efficiency. This current practice is reflected in Section 6.2.1 of TfNSW current publication of the Guide to Traffic Generating Developments, which states 'access across the boundary with a major road is to be avoided wherever possible'.	The proponent has investigated an alternative option to relocate the driveway away from Harbour Road to Headland Road. However, the alternative option was deemed not feasible due to reasons including land availability. The policy of limiting driveway access to major roads is acknowledged and understood. The proposed driveway access to Harbord Road is an existing arrangement. Moreover, although the AM peak traffic volumes using the driveway would increase slightly, and the daily driveway traffic volumes would decrease substantially under the proposal. We are in the opinion that effective management of the 'drop-off' and 'pick-up' facility should limit any adverse impacts on Harbour Road traffic flows. Moreover, as compared with the current driveway traffic, outside the school 'drop-off' 'pick-up' hours, the driveway traffic flows would reduce substantially.  Figure 4: Harbour Road Classification

3. **Conclusions**

This report summarises the review of the traffic and transport items for this state significant development including TIA, and the proponent's responses to the submissions from DPIE, Northern Beaches Council and Transport for New South Wales. The key outcomes of this review are as follows:

- The Northern Beaches Council do not have any concern
- TfNSW is against the proposal on the ground of safety issue regarding the access point at 800 Pittwater Road
- Bitzios Consulting review concludes that further analysis of sight distance is required to adequately address the relevant TfNSW review item

4. **Recommendations**

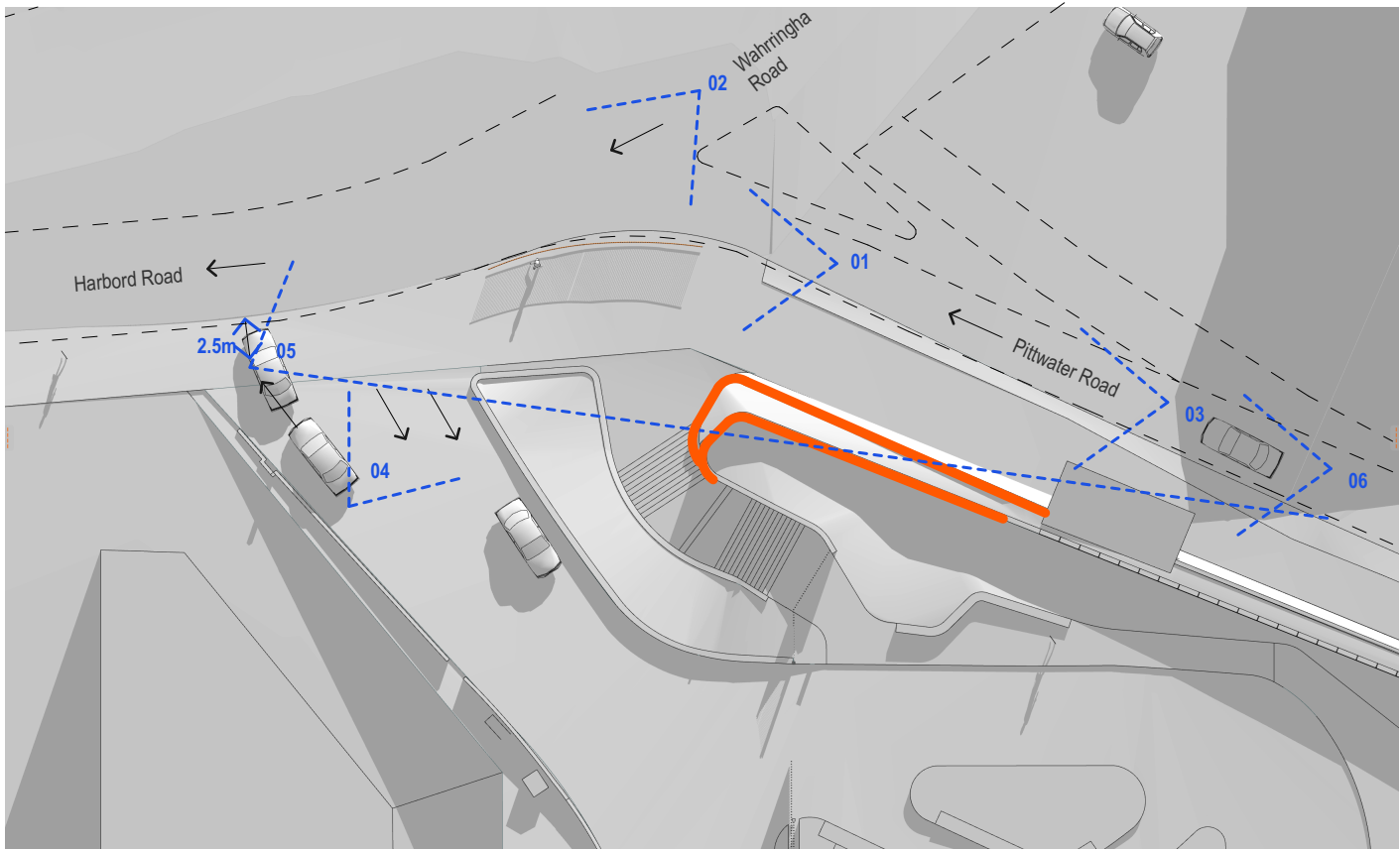
Review of Bitzios Consulting suggests that the proposal can be accepted with the following conditions:

- Assessment of approach sight distance (ASD), safe intersection sight distance (SISD), and minimum gap sight distance (MGSD) should be submitted by the proponent. If these are not satisfactory, mitigation measures should be discussed
- A review of the 'drop-off' and 'pick-up' operation 6 (six) months after the opening of Stage 2 operation is conditioned to get approval of Stage 3
- Again, a review of the 'drop-off' and 'pick-up' operation 6 (six) months after the opening of Stage 3 operation is conditioned further continue the Stage 3 operation
- Heavy vehicle access is restricted to 800 Pittwater Road during school 'drop-off' and 'pick-up' periods

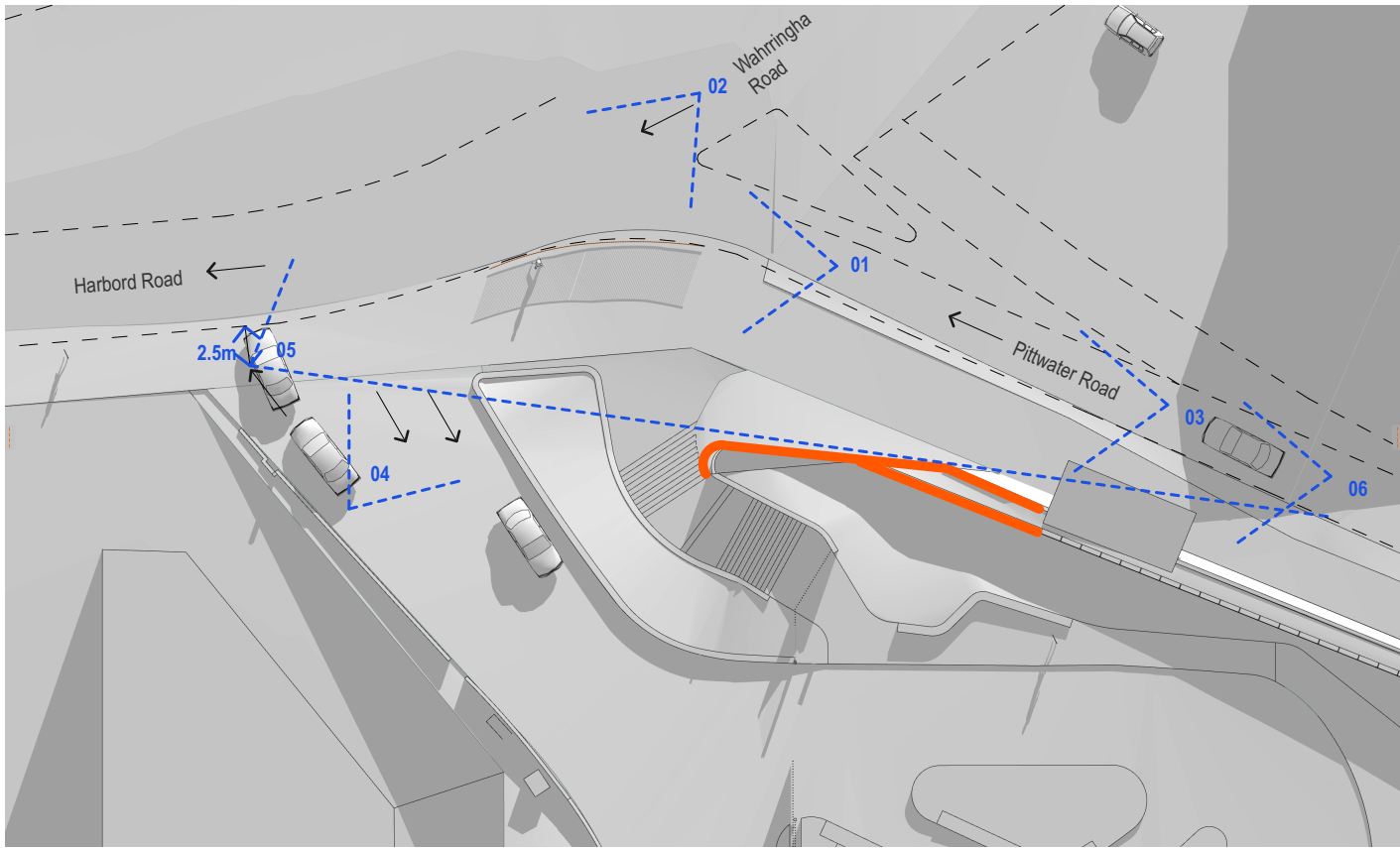


planning consultants

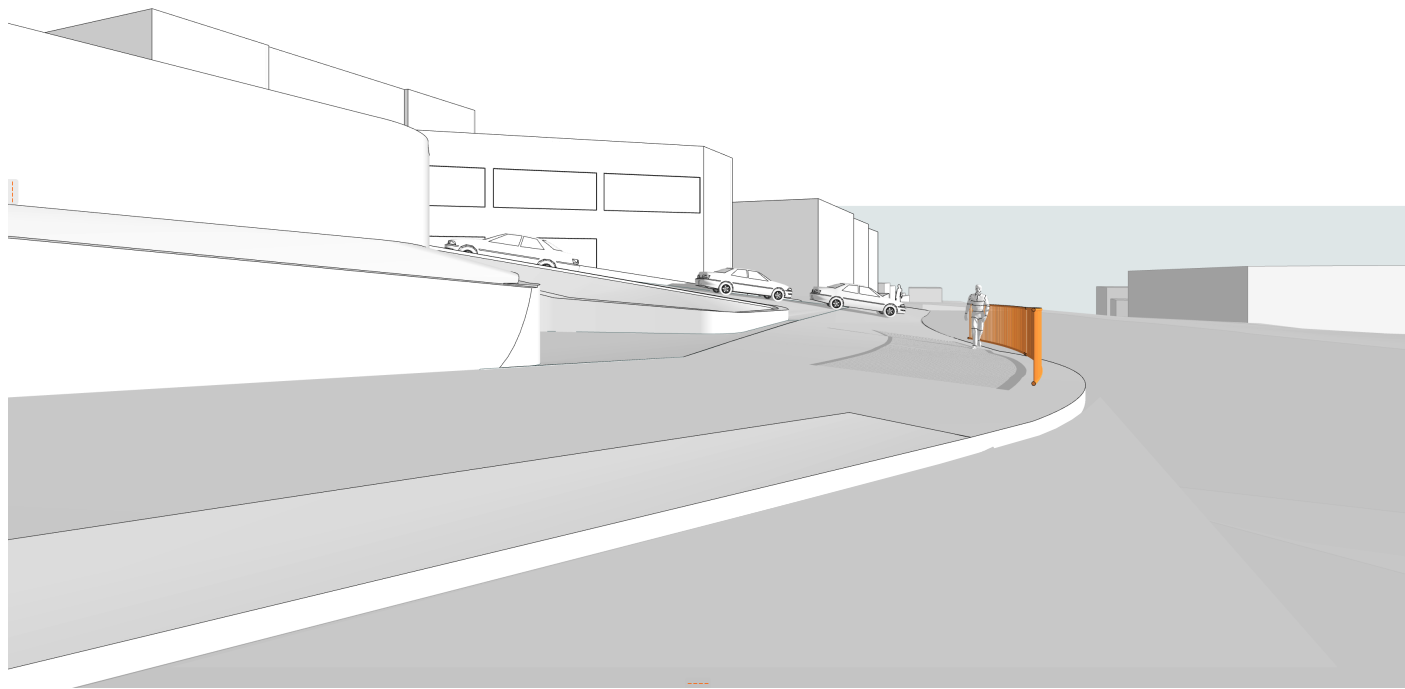
ATTACHMENT 5



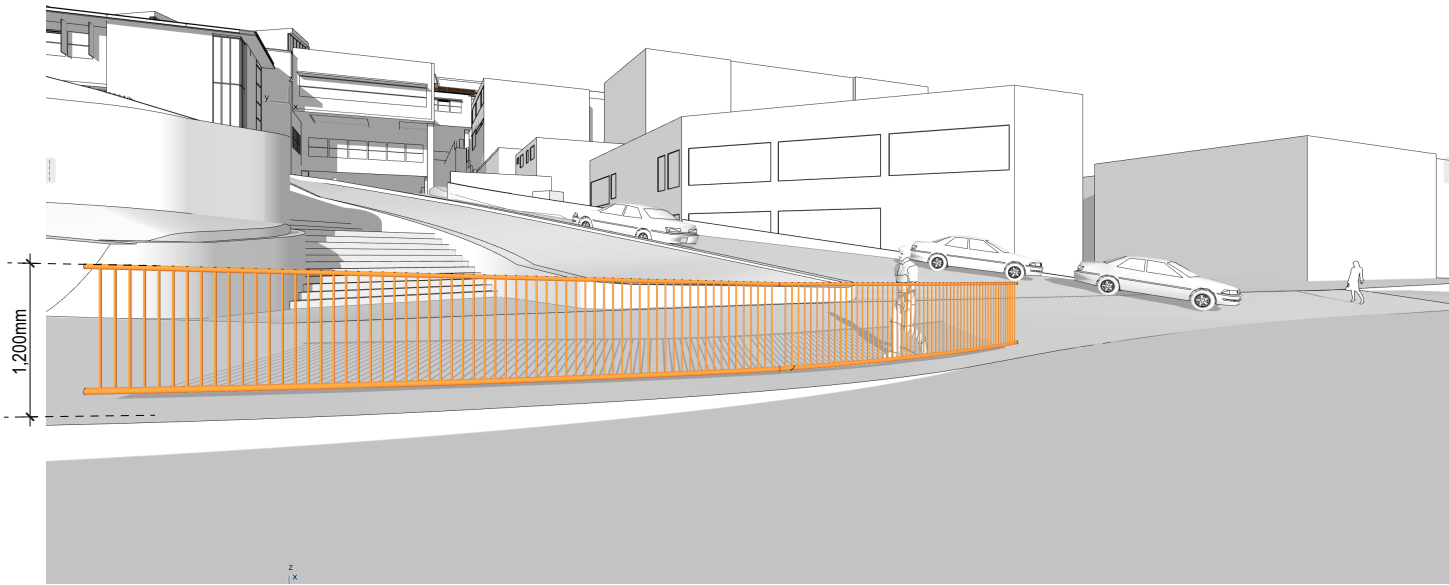
Plan View a - Driveway Line of Sight - plan view (landscaping wall configuration as per SSDA proposal)



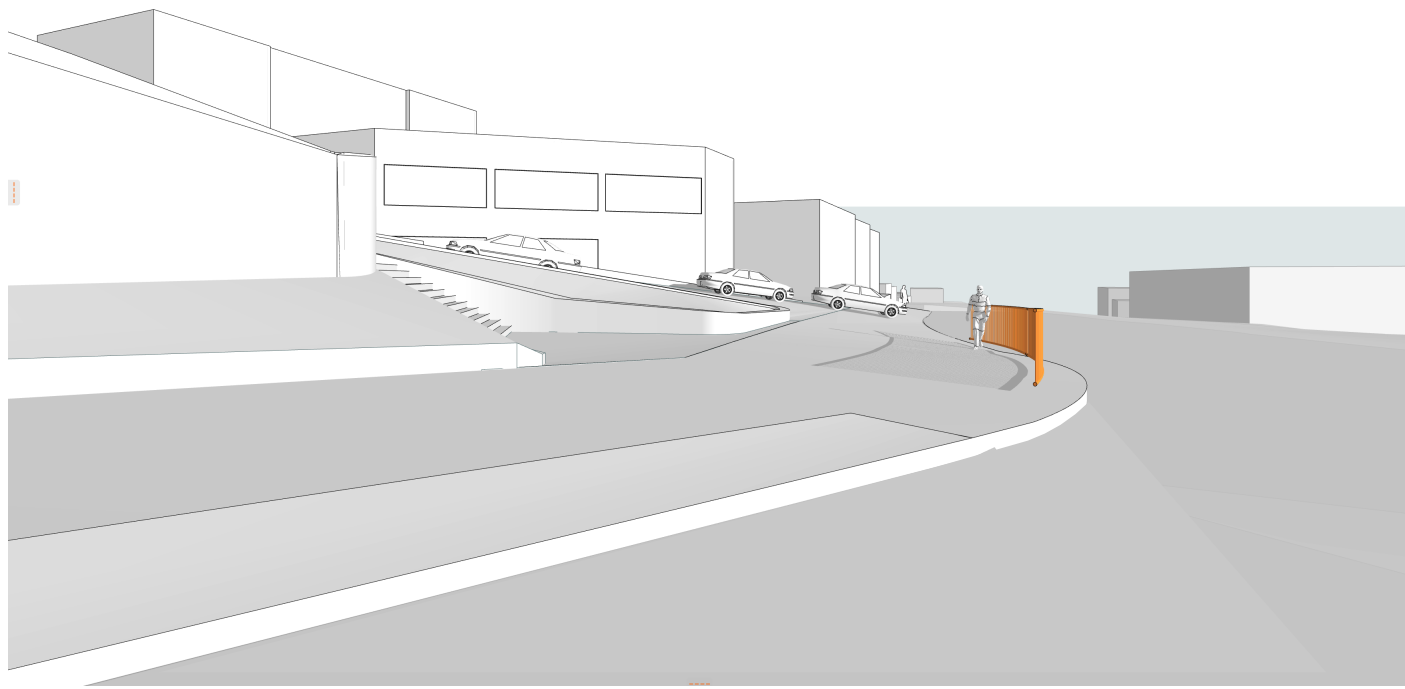
Plan View b - Driveway Line of Sight - plan view - **REVISED LANDSCAPING WALLS**



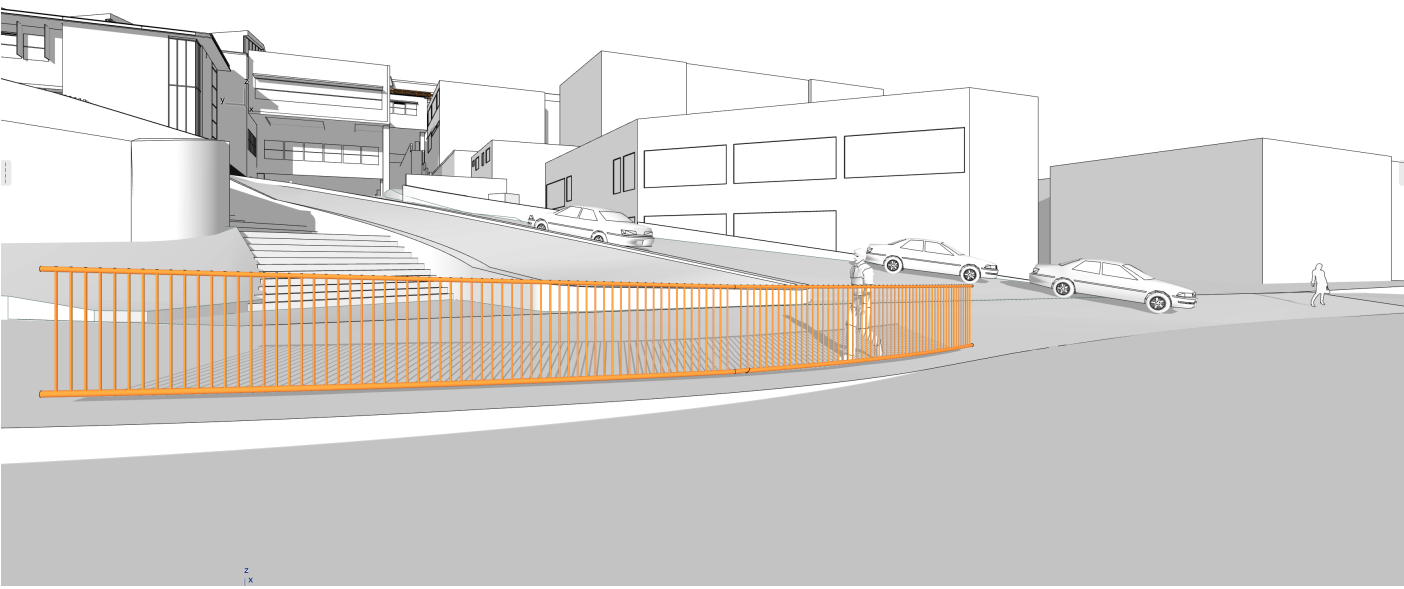
View 01a - Driveway Line of Sight - approaching from North (from Pittwater Road)



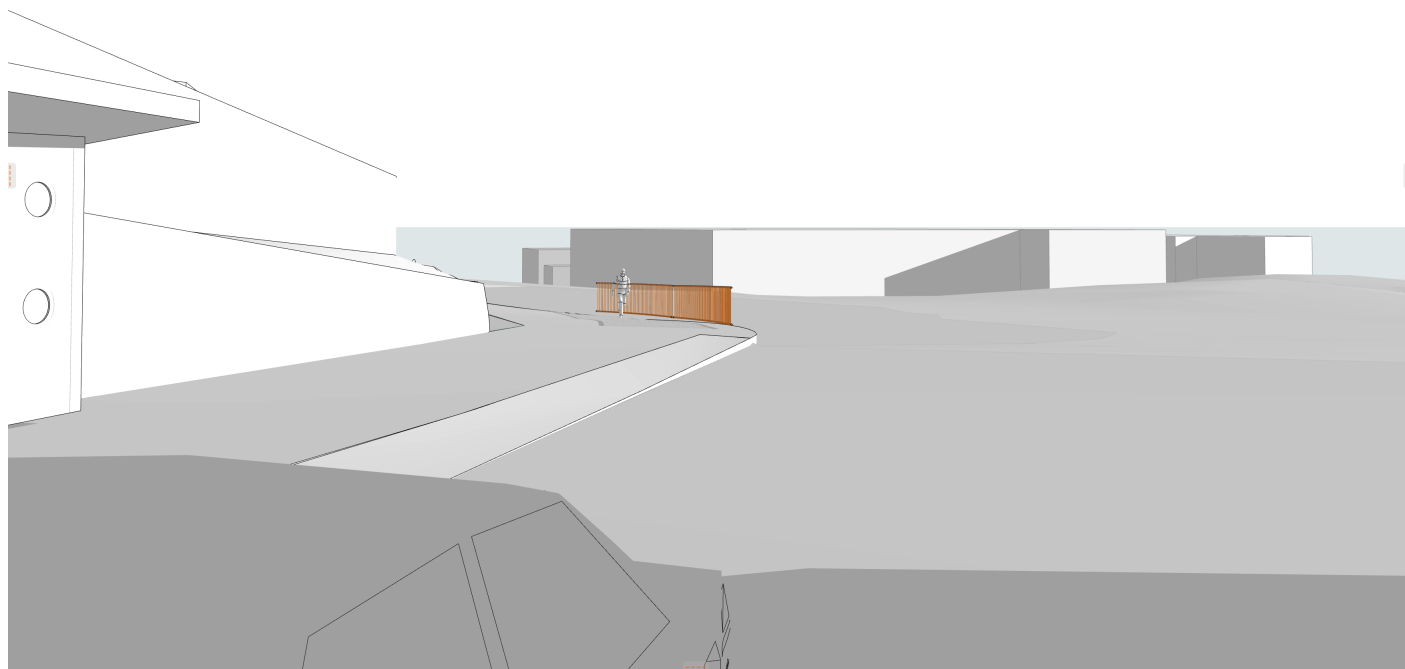
View 02a - Pedestrian Fence Line of Sight - approaching from West (from Warringah Road)



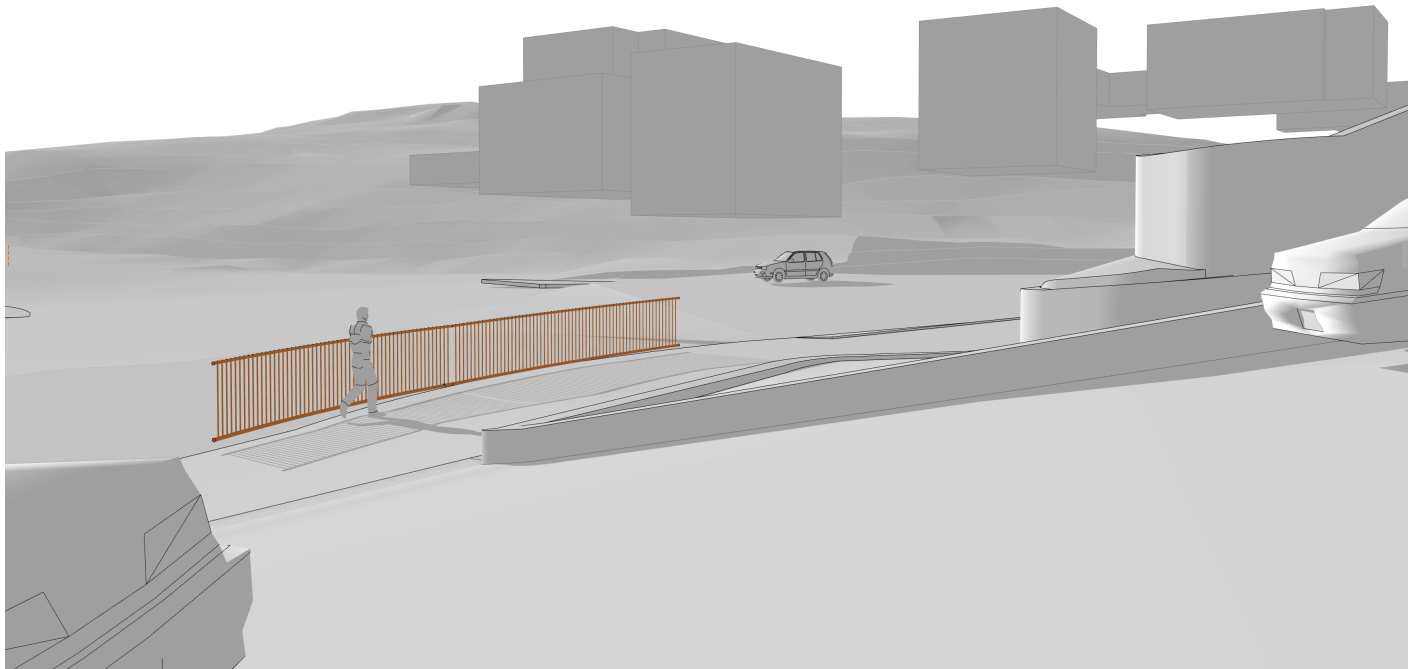
View 01b - Driveway Fence Line of Sight - approaching from North (from Pittwater Road) - **REVISED LANDSCAPING WALLS**



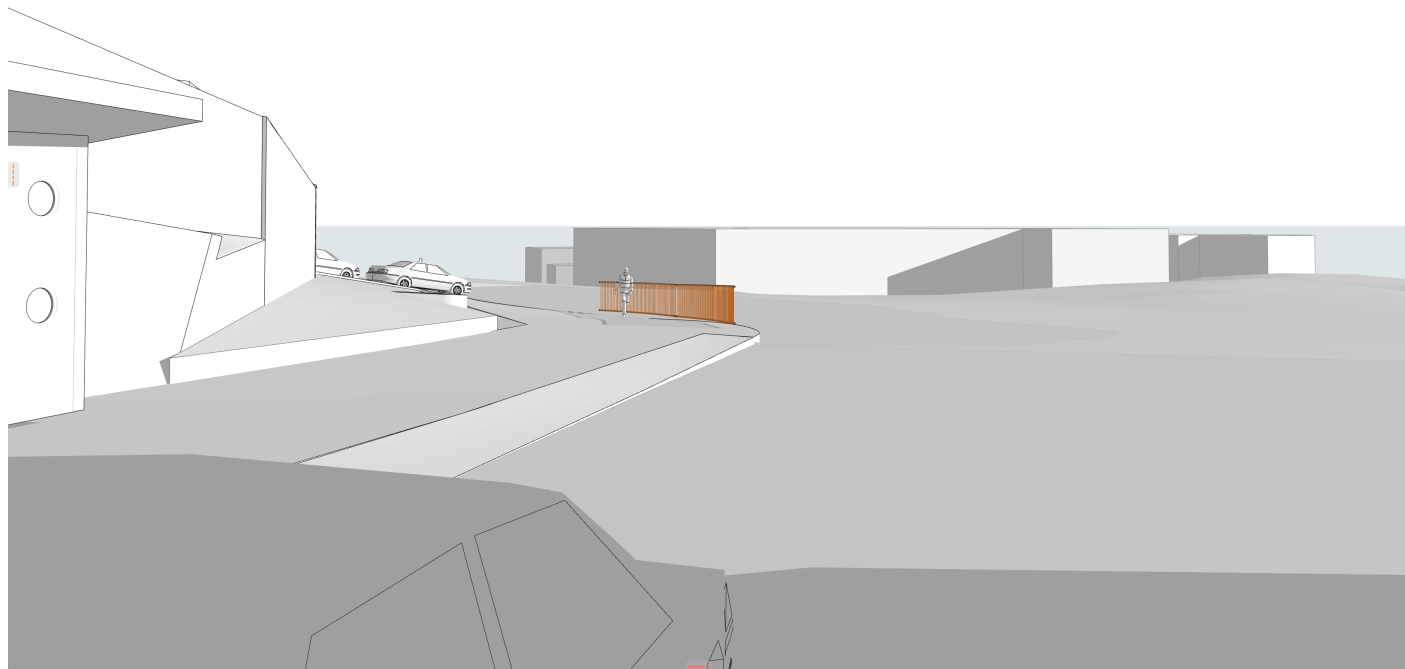
View 02b - Pedestrian Fence Line of Sight - approaching from West (from Warringah Road) - **REVISED LANDSCAPING WALLS**



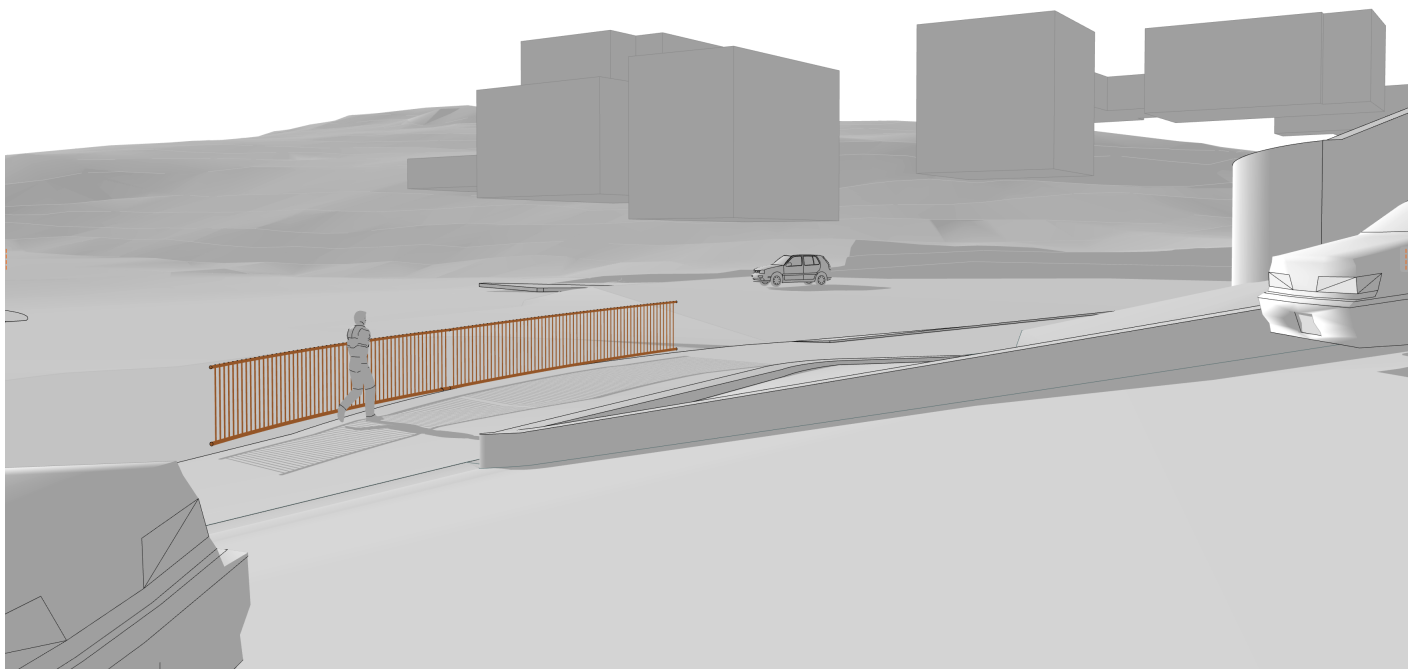
View 03a - Driveway Line of Sight - approaching from North (from Pittwater Road)



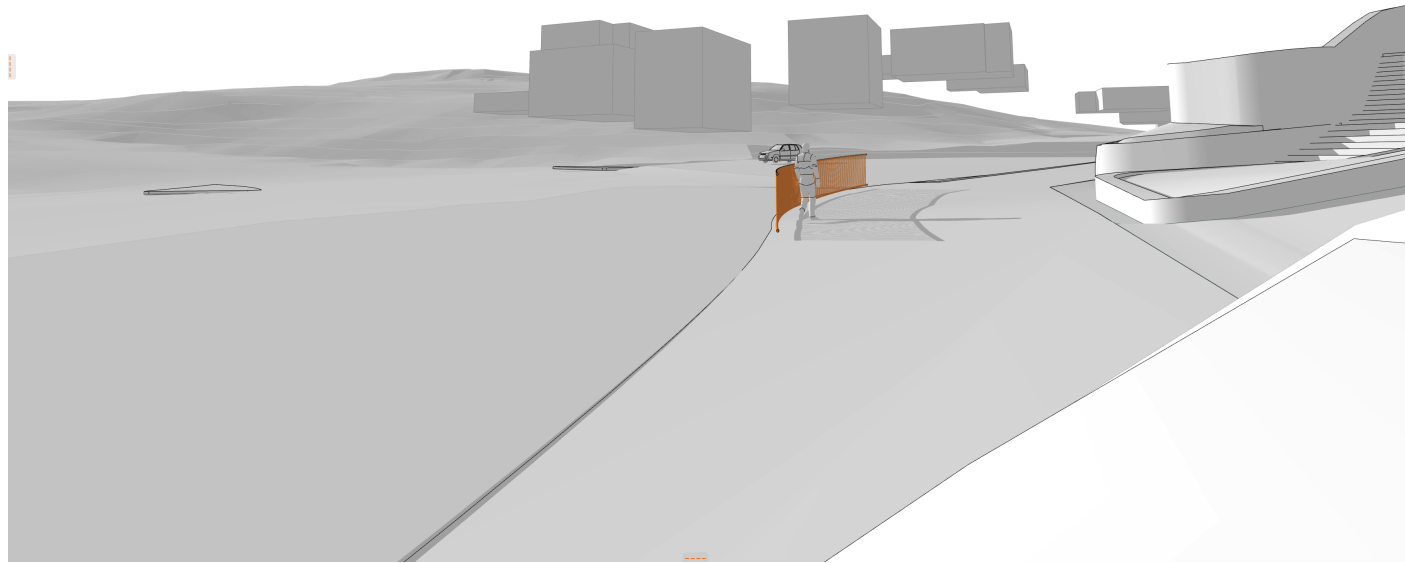
View 04a - Driveway Line of Sight - exiting the site



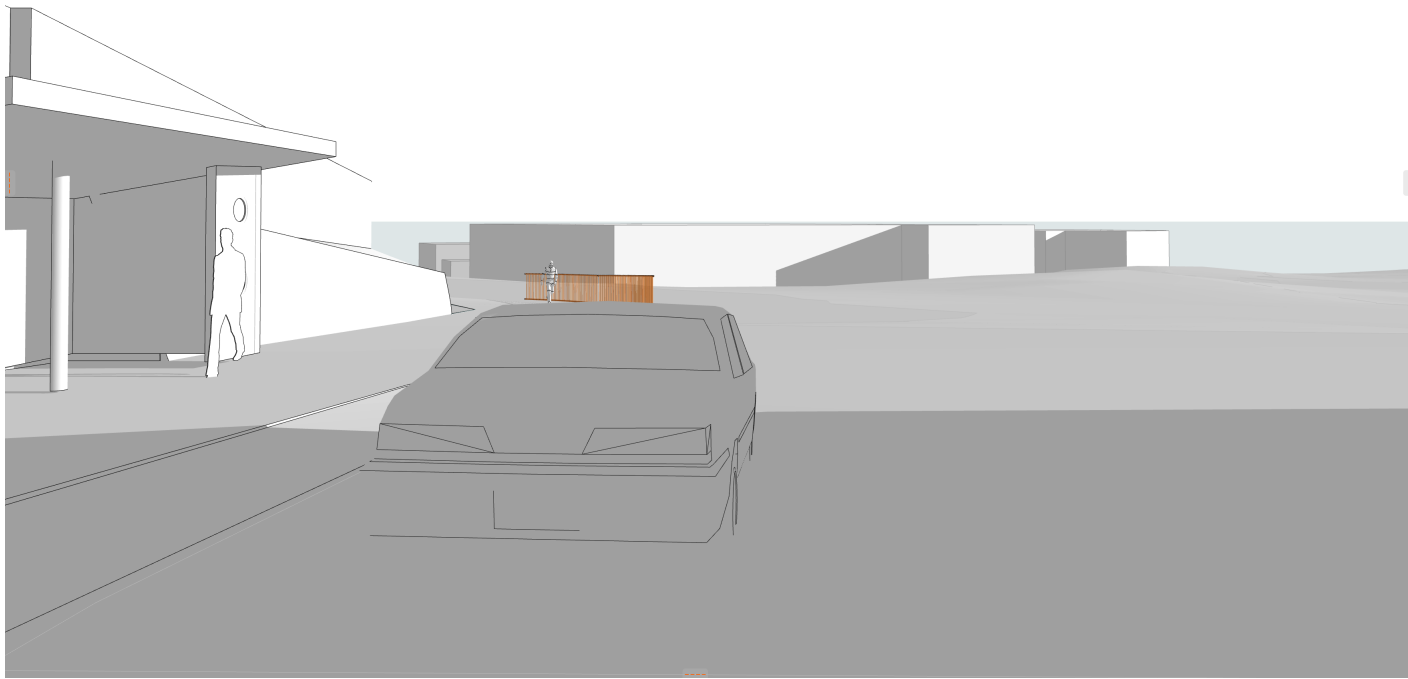
View 03b - Driveway Line of Sight - approaching from North (from Pittwater Road) - **REVISED LANDSCAPING WALLS**



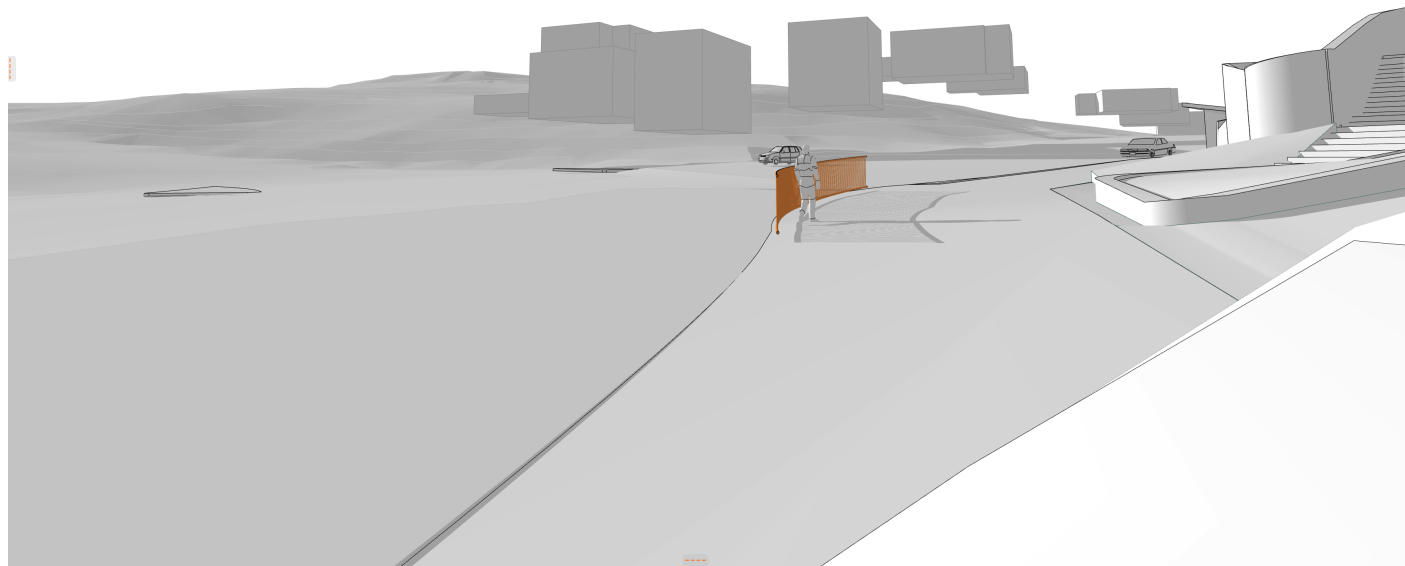
View 04b - Driveway Line of Sight - exiting the site - **REVISED LANDSCAPING WALLS**



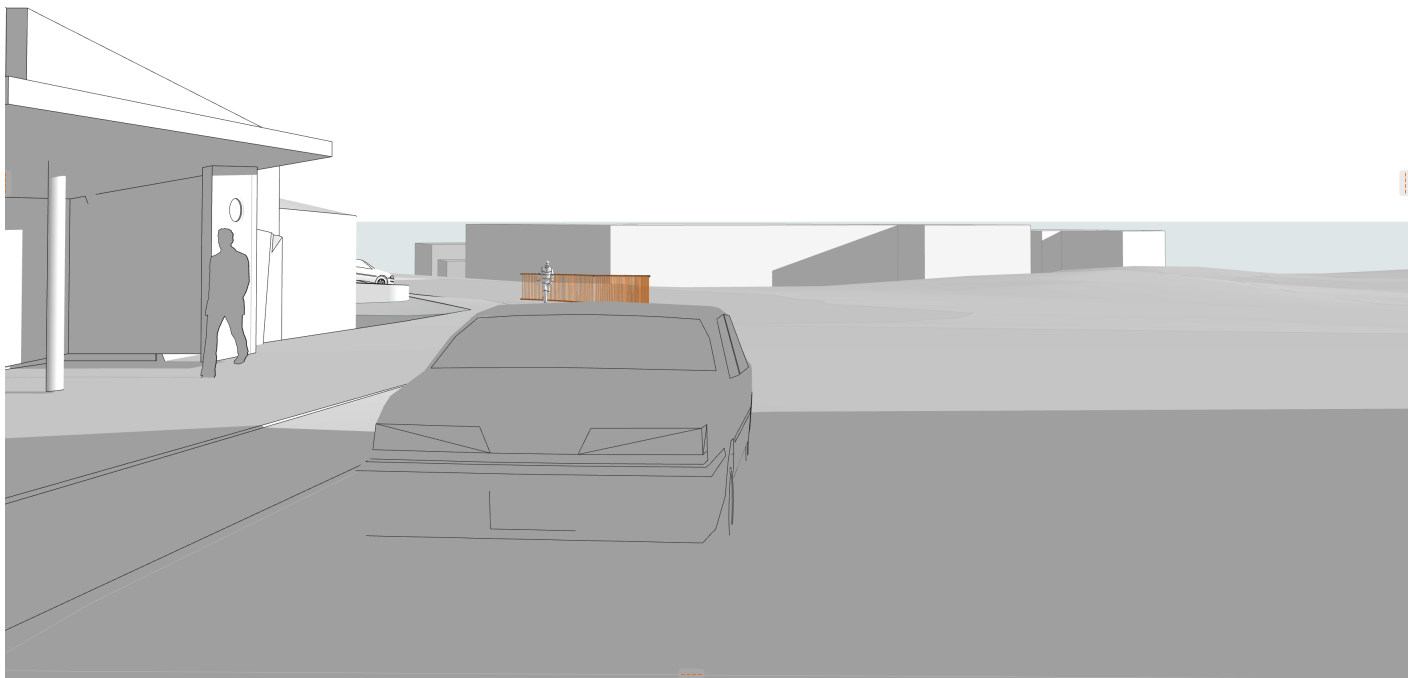
View 05a - Driveway Line of Sight - 2.5m Setback from Kerb



View 06a - Driveway Line of Sight - from Bus Stop



View 05b - Driveway Line of Sight - 2.5m Setback from Kerb - **REVISED LANDSCAPING WALLS**



View 06b - Driveway Line of Sight - from Bus Stop - **REVISED LANDSCAPING WALLS**



planning consultants

ATTACHMENT 6

3.1 Alternative Vehicle Access to 800 Pittwater Road

Northern Beaches Council - Transport Comments

(Access via Pittwater Road)

The preference of Council is that the access be provided on Pittwater to avoid the potential of rear end collisions when turning from Pittwater Road onto Harbord Road, being that the access point is close to the intersection.

An access directly off Pittwater Road would provide better accessibility and improve safety. Further, the reconfiguration would support the possibility for additional parking capacity.

Transport for NSW Comments

(Vehicle Access to 800 Pittwater Road)

The proposed development is likely to increase student movements along Harbord Street at a location where some of the right turning vehicles from Pittwater Road need to enter and exit the driveway located in close proximity to the Pittwater Road/Warringah Road/ Harbord Road intersection. The following comments are made in relation to the proposed access arrangement to the school:

- The proposed activities associated with the development would likely to increase pedestrian / vehicle conflicts and cause pedestrian related incidents at the entrance to the school with the increase in pedestrian movements. and
- The proposed school arrangement would have potential impact on the safety and operation efficiency of the Pittwater Road / Warringah Road signalised intersection as the proposed school activities such as off-street parking and pick up and drop off activities on site would likely to cause queuing onto Harbord Road, which results in immediate obstruction to the operation of the signalised intersection. As such, Transport for NSW does not support the vehicle access driveway from Harbord Road to the proposed development.

(Recommendation)

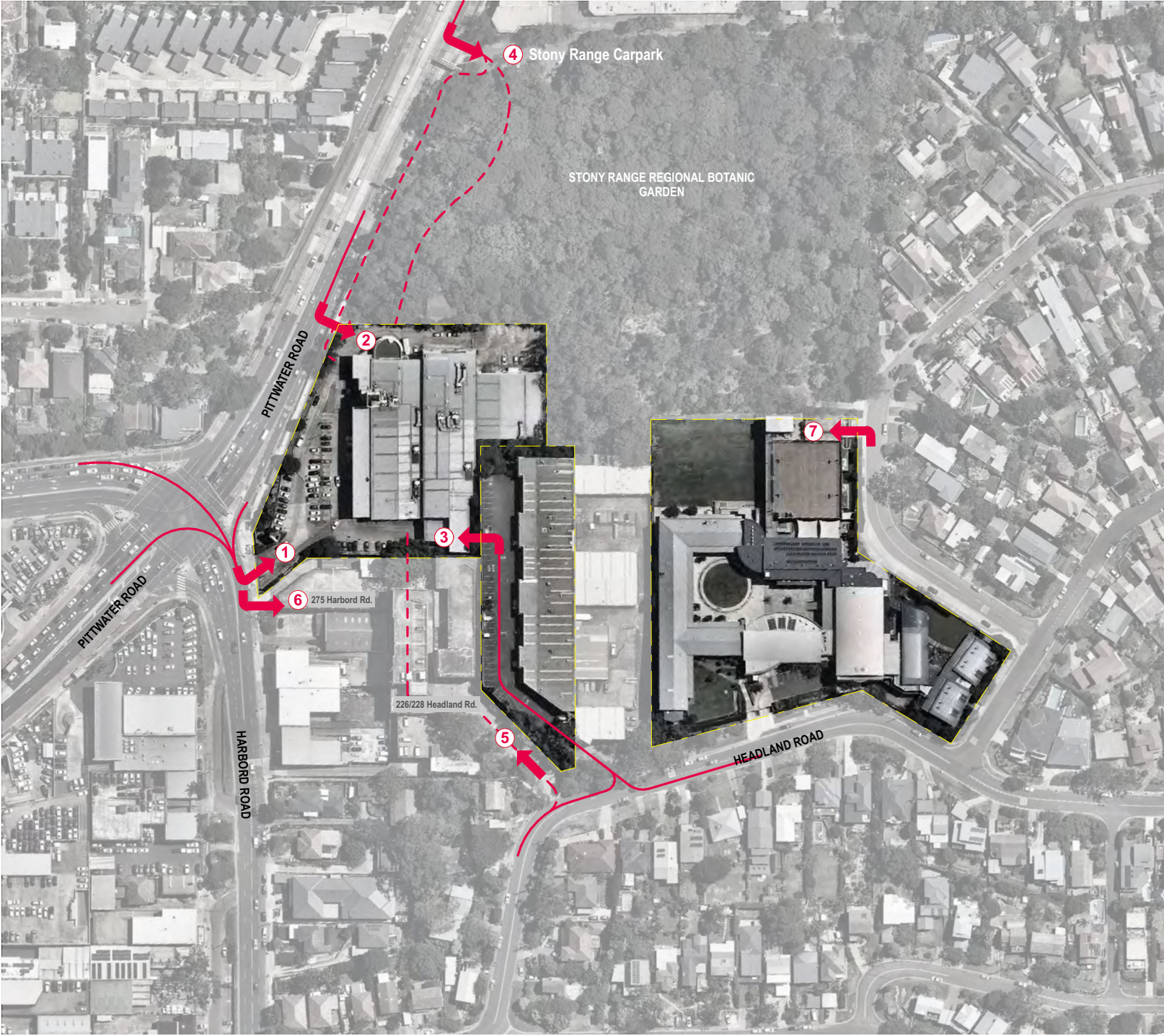
It is requested that the Proponent:

- Investigates an alternate access to Harbord Road driveway with the closure of this access in consultation with TfNSW during the preparation of the applicant's response to submission.

DPIE Comments

The Department notes that Transport for NSW (TfNSW) have raised concerns regarding the increase in pedestrian / vehicle conflicts associated with the Harbord Road driveway providing access to the senior school campus at 800 Pittwater Road. The Department agrees with the above concern. Noting the proposed change of use of the premises, the Department requires you to:

- investigate the feasibility of an alternative access point to the site, including the closure of the Harbour Road driveway. Or
- demonstrate that the existing driveway can operate safely in the future ameliorating the identified risks.





Site Access Option 1: Existing entry from Harbord Road



Site Access Option 2: New entry from Pittwater Road



Site Access Option 1: Existing entry from Harbord Road



Site Access Option 2: New entry from Pittwater Road



Site Access Option 3: Vehicle entry via 224 Headland Road



Site Access Option 4: Carpark of Stony Range Regional Botanic Gardens



Site Access Option 3: Vehicle entry via 224 Headland Road



Site Access Option 4: Carpark of Stony Range Regional Botanic Gardens



Site Access Option 5: Vehicle entry via 226/228 Headland Road



Site Access Option 6: Vehicle entry via 275 Harbord Road



Site Access Option 5: Vehicle entry via 226/228 Headland Road



Site Access Option 6: Vehicle entry via 275 Harbord Road



Site Access Option 7: Vehicle entry via 210 Headland Road (Tango Avenue)



ite Access Option 7: Vehicle entry via 210 Headland Road (Tango Avenue)

SITE ACCESS OPTIONS	ADVANTAGES	DISADVANTAGES
Option 1 - Existing entry from Harbord Road	- Existing entry into 800 Pittwater Road (long established); - Moderate level change between road level and site (existing driveway has suitable gradients for vehicles); - Site in school ownership; - Potential impacts to signalised intersection can be appropriately mitigated	- Proximity to Pittwater Road/Warringah Road/Harbord Road signalised intersection; - Potential for traffic to queue (AM peak) into intersection; - Space in school forecourt used for vehicle access and at-grade parking;
Option 2: New entry from Pittwater Road	- Approximately 90m north of signalised intersection; - Separates pedestrian and vehicle traffic; - At-grade parking in forecourt could be replaced with additional play area / outdoor space for school; - Site in school ownership	- Require extensive excavation to provide new driveway and link into existing basement carpark; - New vehicular access point to site from classified road; - Potential impacts on heritage values of site (excavation beneath clock tower and former curved canteen); - Potential impacts to structural adequacy of existing building (excavation beneath existing building); - Impacts on existing bus lane along Pittwater Road
Option 3: Vehicle entry via 224 Headland Road	- Removes any vehicular access to site from classified road; - At-grade parking in forecourt could be replaced with additional play area/ outdoor space for school - Site in school ownership	- Increased traffic to local roads (Headland Road); - Level difference of 20m between 224 Headland Road and 800 Pittwater Road; - Impacts on shared driveway with 222 Headland Road; - New vehicle link + associated infrastructure between 224 Headland and 800 Pittwater Road result in visual (bulk / scale) and heritage impacts
Option 4: Carpark of Stony Range Regional Botanic Gardens	- Existing carpark to be used for drop-off/pick-up – potential reduce traffic generation during AM / PM school peak periods; - Approximately 220m north of signalised intersection;	- Would still require vehicle access from Harbord Road for staff / student parking as well as deliveries/servicing; - Not in school ownership would require agreement / approval between school and Council (as Crown Land Manager) for use; - Site - crown land dedicated for recreation (requirements under Crown Land Management Act and Local Government Act); - Students would have to walk through Stony Range RBG or along Pittwater Road footpath to access school
Option 5: Vehicle entry via 226/228 Headland Road	- Less of a level difference between 226 / 228 Headland Road and 800 Pittwater Road - Removal of vehicular access to site from classified road - At-grade parking in forecourt could be replaced with additional play area/ outdoor space for school	- Shared driveway between 226 and 228 Headland Road; - Strata titled lots; - Not in school ownership; - Increased traffic to local roads (Headland Road); - Loss of industrial units to provide vehicle access to school (inconsistent with zoning); - usual and heritage impacts as result of new vehicle connection to 800 Pittwater Road.
Option 6: Vehicle entry via 275 Harbord Road	Potential for better separation between vehicle and pedestrian traffic	- Driveway in close proximity to signalised intersection. Would still need to include part of 800 Pittwater Road frontage to provide adequate driveway width; - Site not in school ownership; - Demolition / removal of existing industrial units; - Fill required to amended site levels.
Option 7: Vehicle entry via 210 Headland Road (Tango Avenue)	- Removal of vehicle access to the site form a classified road; - At-grade parking in forecourt could be replaced with additional play area / outdoor space for school	- Increased traffic to local roads (Headland Road and Tango Avenue); - Access via part of Stony Range Regional Botanic Garden (crown land dedicated for recreation) or Access via 222 Headland Road (not in school ownership)