

THE NORTHERN BEACHES HOSPITAL (STAGE 2)

SUBMISSIONS / PREFERRED INFRASTRUCTURE REPORT

PROJECT REFERENCE: SSI 6792

9 April 2015



Prepared by LFA (Pacific) Pty Ltd for:

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**LFA (PACIFIC) PTY LIMITED**

MASTERPLANNING
URBAN DESIGN
ARCHITECTURE
LANDSCAPE ARCHITECTURE
INTERIORS

SUITE 4, EDGECLIFF COURT, 2 NEW McLEAN ST, EDGECLIFF NSW 2027
M PO BOX 259, EDGECLIFF NSW 2027 **T** 02 9327 6822 **F** 02 9327 5554
E lfa@lfa.com.au **W** www.lfa.com.au **ABN** 92 830 134 905 **QIM** ISO 9001 #100903

NOMINATED ARCHITECTS ALF LESTER NO.2128 STEPHEN ANDERS NO.5764

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1 INTRODUCTION

This Submissions / Preferred Infrastructure Report (PIR) has been prepared by LFA (Pacific) Pty Ltd on behalf of Healthscope and Health Infrastructure (HI). It provides a response to comments and issues raised in relation to the public exhibition of the environmental impact statement (EIS) for Stage 2 for the Northern Beaches Hospital development.

The EIS was placed on public exhibition from 20 November 2014 to 19 December 2014 inclusive. Public exhibition of the EIS was managed by the Department of Planning and Environment (DP&E).

The Submissions / PIR supports a State Significant Infrastructure (SSI) application (SSI_6792) for planning approval under Part 5.1 of the *Environmental Planning and Assessment Act* (EP&A Act). -- Planning approval is being sought in respect of the:

- Bulk excavation works;
- Construction of a nine storey Hospital building (approximately 69,800sqm)
- Staff, patient and visitor car parking, including construction of an eight storey multi-deck Car Park (approximately 38,250sqm);
- Site works including internal roads, pathways and landscaping; and
- Utility amplification works

Stage 1 of the NBH project comprising the Concept Proposal and site clearance and preparatory works was the subject of an earlier SSI application and subsequent approval. A Stage 1 Modification Application for preparatory site works was approved by DP&E under delegation of the Minister for Planning on 27 February 2015.

This Stage 2 Submissions and Preferred Infrastructure Report is structured as follows:

- Section 1: Introduction and purpose of the Submissions and PIR;
- Section 2: Response to key issues raised by the Department of Planning & Environment
- Section 3: Response to issues raised in submissions from government agencies;
- Section 4: Response to issues raised in submissions by the public
- Section 5: Concluding statement with respect to the planning approval application for the Stage 2 works.

2 RESPONSE TO KEY ISSUES RAISED BY DP&E

Following the exhibition of the NBH Stage 2 Infrastructure Application and EIS, the DP&E indicated via a letter dated 20 January 2015 the need for the Proponent to respond to the received submissions. It was indicated that particular consideration should be given to issues raised by Warringah Council (WC), Transport for NSW (TfNSW), NSW Rural Fire Services (RFS) and the NSW Environmental Planning Authority (EPA) (refer Section 3).

It was also indicated that the Department had undertaken a preliminary assessment of the EIS letter and identified a number of key issues that needed to be addressed, including car parking and traffic impacts, proposed number of roads and treatment spaces, site levels, bushfire protection measures, environmental amenity and contamination assessment.

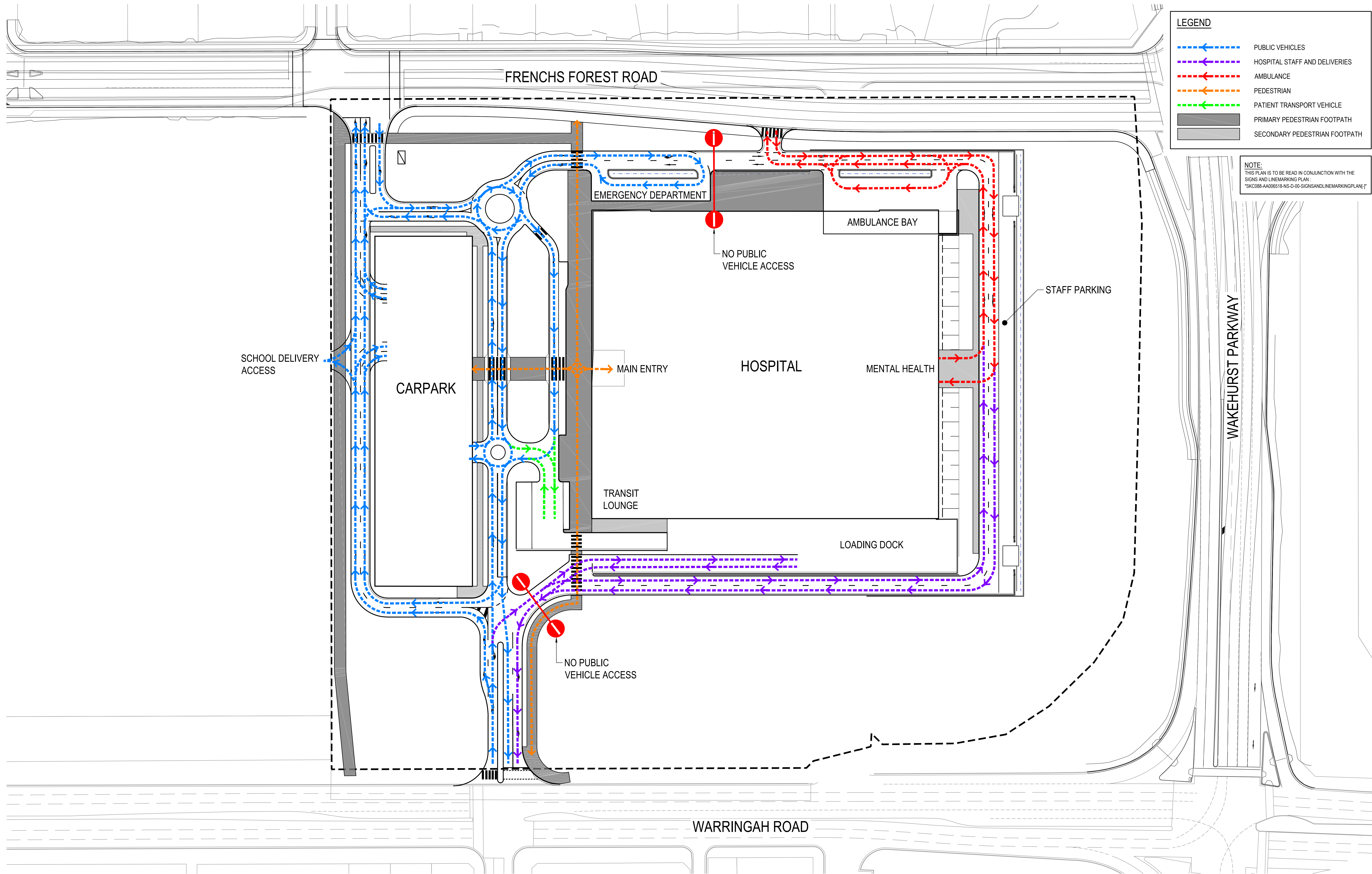
Comment	Response
1. Car Parking and Traffic The Department has identified that there are inconsistencies between the Transport Accessibility Study and the Traffic and Transport Assessment for the Northern Beaches Connectivity and Network Enhancements in regard to the operation of the key intersections in the 2012 base scenario and traffic volumes along Frenchs Forest Road West. Please provide a revised Transport Accessibility Study that addresses the inconsistencies and any subsequent variations to the findings regarding impacts on the performance of the key intersections. The assessment of the key intersections should include the Warringah Road / Allambie Road intersection.	The conclusions drawn in the Revised Transport Accessibility Study (TAS) (refer Appendix 1) have been reviewed against the Connectivity and Network Enhancements (CaNE) data and a revised TAS prepared with particular attention directed toward NBH Trip Generation and the performance of key intersections. ▪ Trip Generation There is a slight variation of less than 5% in the peak hour trip generation rates identified in the revised TAS (843 trips) compared with the 887 trips (rounded to 900 in the modelling) identified in the (CaNE) EIS. The NBH EIS data was based on the RMS guide to traffic generating developments while the CaNE EIS adopted traffic generation potential based on a similar hospital. It is noted that the traffic network modelling carried out by RMS incorporated the higher trip generation figures.

Comment	Response
	The detailed traffic network modelling that has been carried out by RMS has been reviewed and has been identified as the most relevant and appropriate information available. Accordingly, the RMS modelling of the impact of trip generation volumes on the network and intersections has been adopted as part of the Revised Transport Accessibility Study. ▪ Intersection Performance Given the comprehensive and substantive nature of the RMS traffic modelling, the levels of intersection performance have been carefully reviewed and aligned with the CaNE data in the Revised Transport Accessibility Study.

Comment	Response
2. Service Vehicles Provide further details regarding transport routes for service vehicles, in particular arrangements for west travelling service vehicles given the weight restrictions on the surrounding local roads, including Frenchs Forest Road West .	Service vehicles will enter and leave the site via the Warringah Road site access. It is noted that the CaNE EIS for Stage 1 works assumed the Warringah Road hospital access as a left in left out. Traffic movements from this intersection are left in; left out; right out and right in only for emergency vehicles. All deliveries will be managed through the loading dock at basement level on the southern side of the main hospital building. Vehicles which will service the hospital include:
	14 Metre Semi-Trailer Two VIE (medical gas) storages are proposed on the eastern side of the site. The maximum size of vehicle for deliveries will be a 14 metre semi-trailer tanker. Deliveries will be infrequent (once every 3 months for the main tank and once every six months for the back-up tank) and outside of peak traffic periods. Access will be via the Warringah Road entry along the southern road and eastern road. Exit from the site will be via the ambulance emergency entry to Frenchs Forest Road West (left out). Operational management controls such as driver inductions and training will be implemented to ensure vehicles use only the designated routes to and from the site.

Comment	Response
	12.5 Metre Rigid A rigid 12.5 metre truck will be the largest vehicle required for most deliveries. Anticipated frequency is in the order of 30 trips per day. Vehicles will enter and exit the site from Warringah Road. Vehicles approaching the site from the west and northwest will enter via left turn into the site and exit by the right turn proposed in the RMS Reference Design. Vehicles approaching from the east and south east will generally use Frenchs Forest Road West and Forest Way to facilitate the left turn entry from Warringah Road. Based on the assumption that 50% of vehicles approach the site from the east, 15 vehicles per day will access the site via the upgraded Frenchs Forest Road West.
3. Car Parking Provide details of the car parking reviews undertaken to determine the car parking requirements.	The detailed Car Park Plan (refer Appendix 2) provides the basis for the car park design.
4. Carpark Management Provide details of any future car parking management scheme for the on-site hospital car park and fee structure and identify how the scheme would mitigate car parking demand on local roads.	The approach to carpark management is set out in the Car Park Plan (refer Appendix 2).

Comment	Response
5. Vehicle Circulation Patterns Provide further details of vehicle circulation patterns and any measure to control movements, including any boom gates and signage details, to demonstrate safe and clear movement patterns within the site.	The Primary Traffic Flow Diagram (refer Figure 1) shows the pattern of vehicular movement within the hospital site. Essentially all public vehicular access is restricted to the western sector, which is linked to the site access points on Warringah Road and Frenchs Forest Road West. The 'public' road network provides access to:- ▪ The emergency department in the north ▪ Hospital drop-off / pick-up to the west of the hospital complex and various access and egress options for the carpark structure. The drawing also indicates the restrictions on public vehicle access to the eastern and southern sectors of the hospital which are restricted to ambulance access to the emergency department, as well as mental health, hospital staff access to at-grade car parking in the eastern sector, together with service deliveries to the basement loading dock. The drawing highlights a further restriction on public vehicle access to the patient pick-up and transfer area located immediately to the south-west of the hospital building. The drawing also identifies the primary pedestrian path systems that will provide linkages from both Frenchs Forest Road West and Warringah Road, as well as from the main carpark, to the hospital entrance.



Comment	Response
	The supporting signage and line-marking plan (Figure 2) identifies the indicative location of signage throughout the NBH site, including stop signs, pedestrian crossing signs, round-about signs as well as no-stopping signs. The only provision for boom gates will be within the main carpark structure to control access and egress.

6. Service Entry to School

Provide further details regarding the purpose of the service vehicle entry from the adjoining school site and details regarding management of access (including safety of users of the public pathway along the western boundary of the hospital site.)

The provision of a dedicated entry to the school for delivery and service vehicles reflects detailed consultation between Health Infrastructure and Forest High School. The objective is to reduce pedestrian / vehicular conflicts on Frenchs Forest Road West at the school's existing student drop-off area.

The school will manage the controlled access electronically. The new dedicated service / delivery entry point will result in a safer access to the school for students and staff from Frenchs Forest Road West.

It is anticipated that the internal road kerb line will be maintained with a rollover kerb installed adjacent to the entry. This detail will provide the right of passage to pedestrians or cyclists.

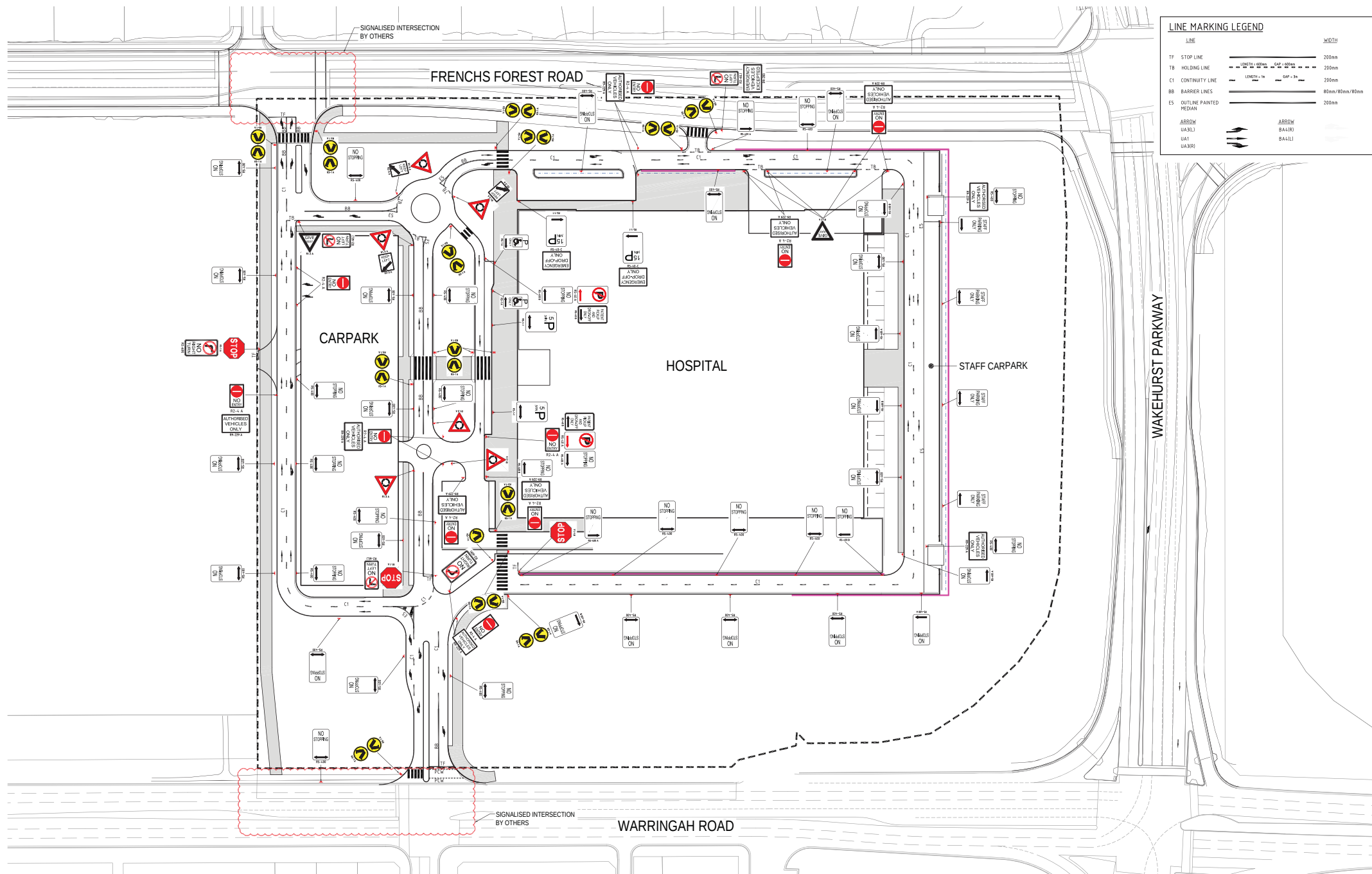
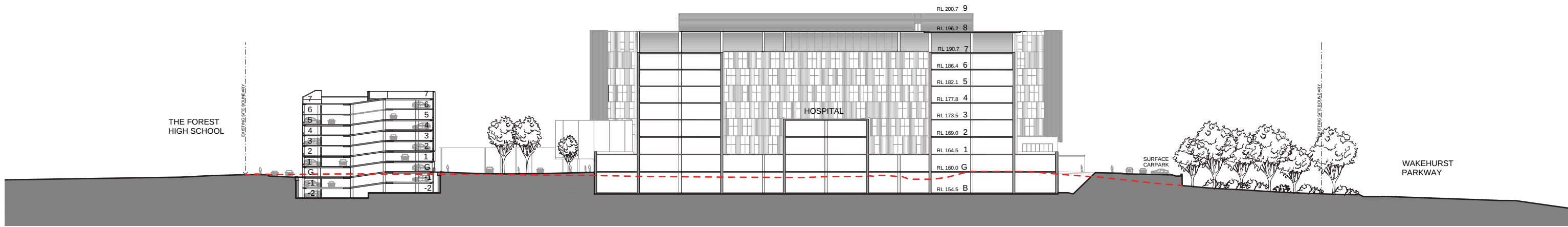


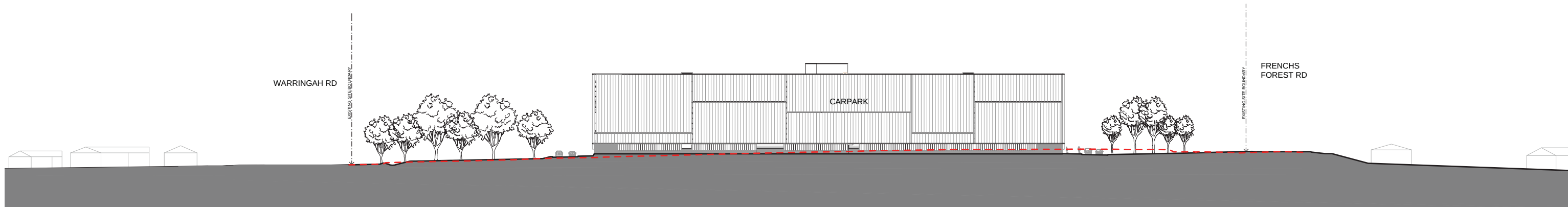
Figure 2

Comment	Response						
7. Motor Cycle Parking Consider providing motorcycle parking areas.	The need to provide motor cycle parking areas is referenced in the Car Park Plan (refer Appendix 2).						
8. Number of Beds and Treatment Spaces Provide clarification regarding the total number of beds and treatment spaces.	<table><tr><td>Total beds</td><td>488</td><td>*</td></tr><tr><td>Treatment areas</td><td>50</td><td></td></tr></table>	Total beds	488	*	Treatment areas	50	
Total beds	488	*					
Treatment areas	50						
9. Built Form and Urban Design Provide revised architectural and landscape plans that clearly illustrate the existing and proposed site levels for the entire site.	The Precinct Site Sections drawing (Figure 3) indicates the extent to which the proposed hospital responds to the existing land form and also highlights the proposed landscape treatment. The Precinct Plan (Figure 4) shows the location of the four sections that have been prepared. Section 1 is an east-west section that identifies The Forest High School site boundary, the carpark structure, the hospital, together with the proposed surface carpark and retaining wall structure immediately east of the hospital with the retained vegetation in the former Blinking Light Reserve extending to the Wakehurst Parkway. Three cross-sections AA, BB and CC are cut through the site from Warringah Road to Frenchs Forest Road West. Section AA is through the proposed carpark and identifies the extent of excavation required for the two basement parking levels.						

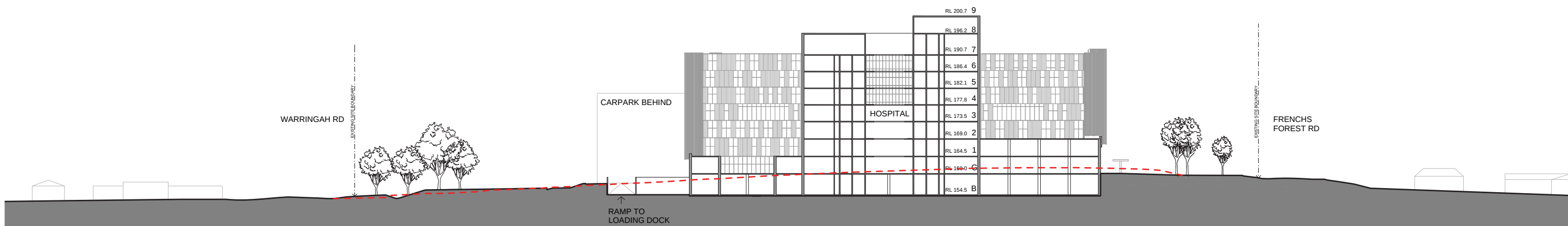
* New South Wales Health Procedures Policy – Bed Numbers Data Collection
(Document No: PD2012_054 – September 2012)



SECTION 1-1



SECTION A-A



SECTION B-B



SECTION C-C

--- EXISTING SITE LEVELS

NOTE: INDICATIVE SUBJECT TO CHANGE, FOR INFORMATION ONLY

Figure 3

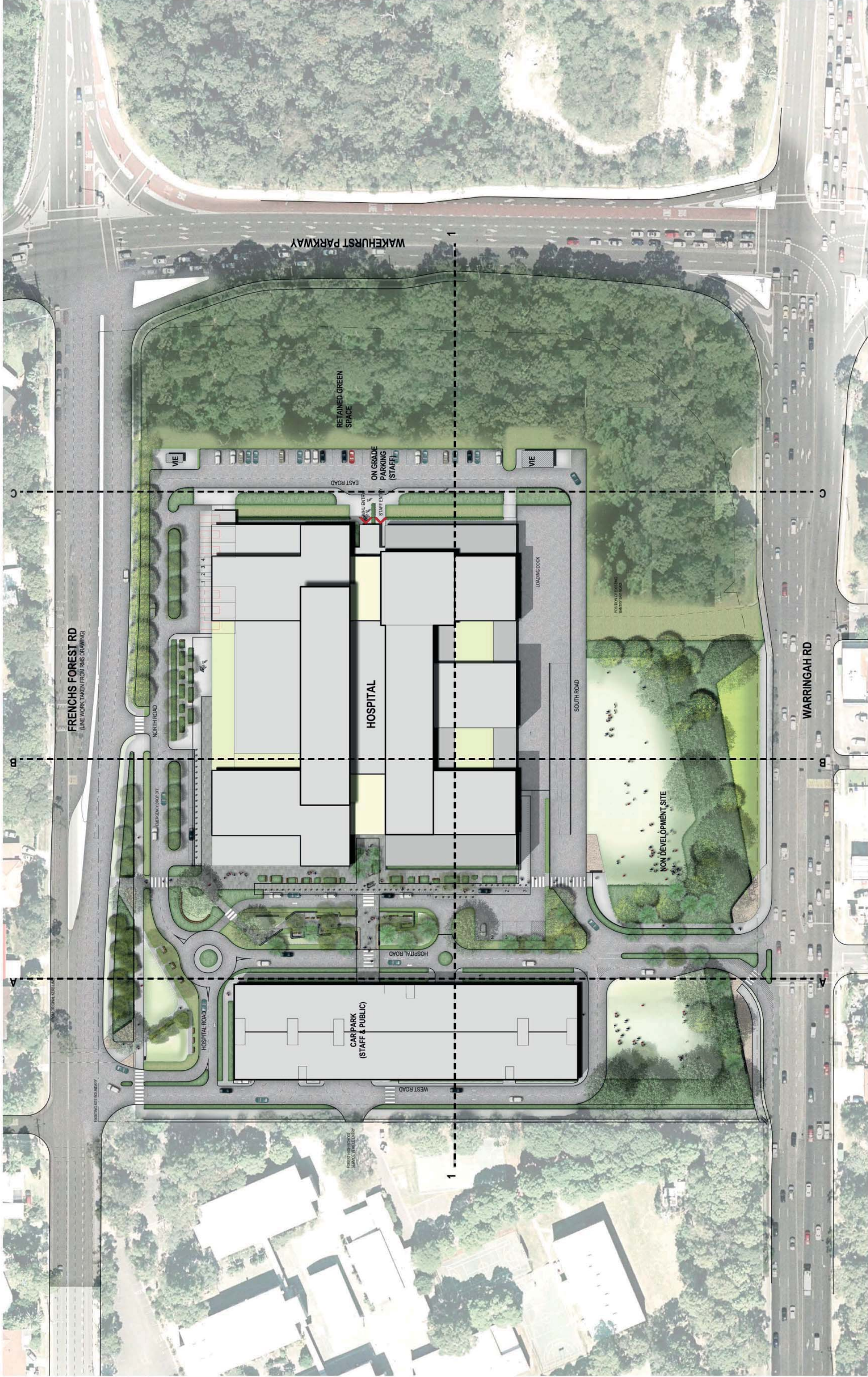


Figure 4

Comment	Response
Provide additional images and a northern elevation landscape plan to illustrate the treatment along the northern boundary of the site.	Section BB is through the hospital and highlights the extent of basement excavation and the ramp to the loading dock at the basement level. Section CC is immediately east of the hospital and shows the retaining wall structure to the Frenchs Forest Road West frontage identified in the Stage 1 Modification Application. The sectional drawings indicate that, with the exception of the retaining wall structures to the north-east quadrant of the building complex and the excavation associated with the hospital basement and the carpark structure, the finished ground levels are broadly consistent with the existing site levels. Figure 5 – Landscape Sections & Figure 6 – Landscape Plan (North-East Quadrant) provide updated information relating to the on-grade staff parking, proposed landscape treatment and the retaining wall structure immediately east of the hospital. Landscape Section 5 now correctly shows the relative levels of the staff carpark, the hospital basement and the existing ground levels in the former Blinking Light Reserve. Figure 7 is a detailed drawing illustrating the northern elevational landscape treatment to Frenchs Forest Road West. The drawing is based on the Stage 2 landscape plans and the submitted planting schedules.



5 Section 5 (Refer to Figure 6 for Section Reference)
1:50

Figure 5

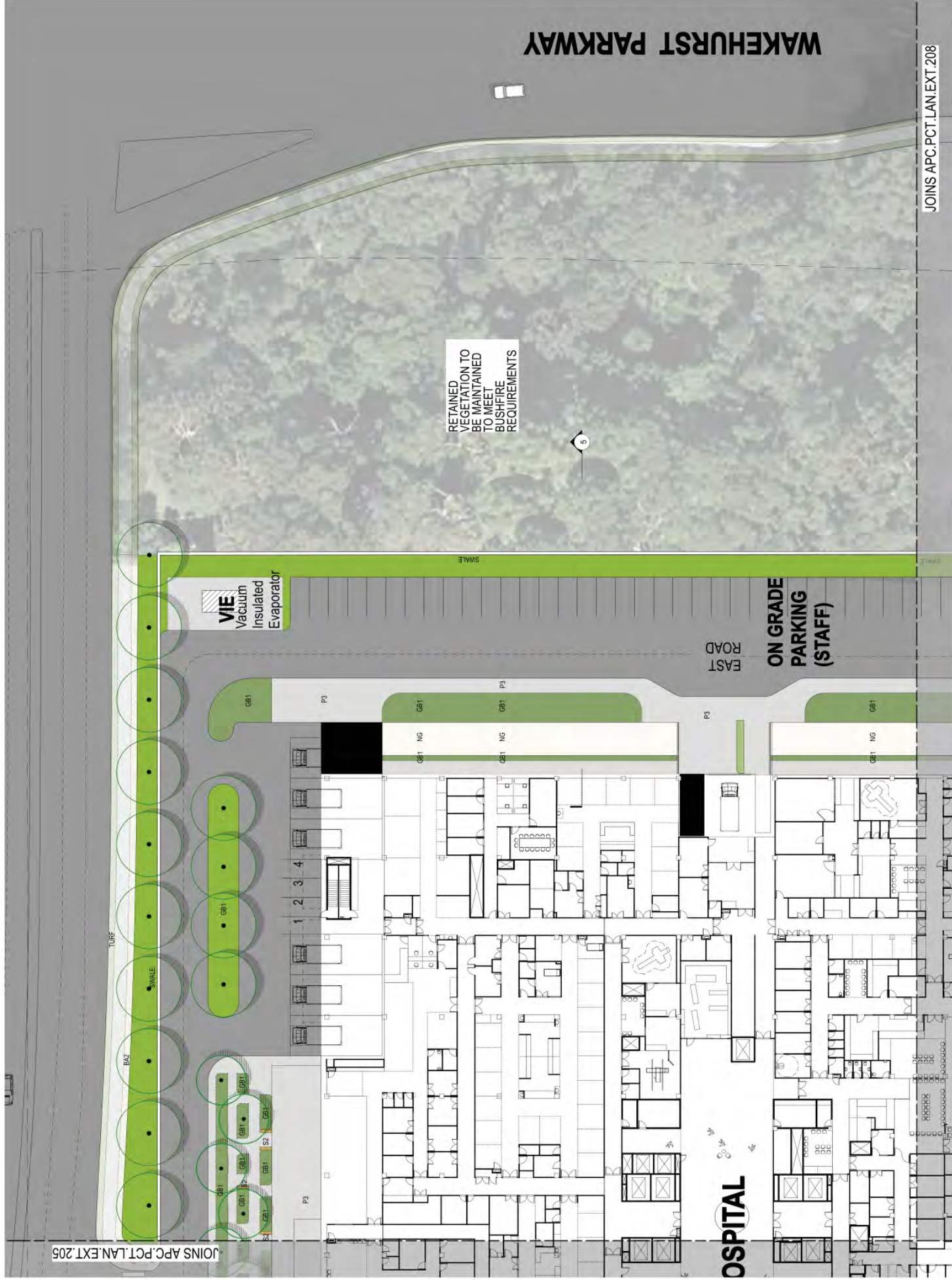


Figure 6

MASONRY WALL IN ELEVATION

GROUND SURFACE IN ELEVATION

GROUND IN SECTION



SITE REFERENCE PLAN



LANDSCAPE - CONTEXT NORTH STREETSCAPE - FRENCH'S FOREST ROAD
Scale 1:600 @ A3

Figure 7

Comment	Response
10. APZ Provide certification from a bushfire consultant that the entire site can be managed as an Asset Protection Zone (APZ) and certify that the vegetation buffer will be maintained in accordance with the standards of an APZ.	Advice has been received from the Bushfire consultant, Eco Logical, that the entire site can be managed to comply with an APZ including the eastern vegetation buffer. The letters of advice are provided at Appendix 3.
11. Acoustic Assessment Provide a revised acoustic assessment that establishes project specific noise operational noise criteria in accordance with the Industrial Noise Policy and addresses concerns raised by the Environment Protection Authority in relation to background noise monitoring.	The Stage 2 Noise and Vibration Report has been revised and is included as Appendix 7 of this Preferred Infrastructure Report. The report includes the results of recent long-term noise monitoring and establishes revised Project Specific Noise goals in accordance with the Industrial Noise Policy.
12. Traffic Noise Impacts Review the assessment of traffic noise impacts and any measures required to mitigate the noise impacts associated with the traffic generated by the operation of the hospital. In particular, the traffic noise generated during the PM peak hour along Frenchs Forest Road West east of the hospital entrance, which appears to exceed the noise criteria in NSW Road Noise Policy.	Section 7 of the Revised Stage 2 Noise and Vibration Assessment Report identifies traffic noise generated by the development in accordance with the NSW Road Noise Policy (RNP). The assessment confirms compliance with the RNP. It is noted that the RNP criteria is based upon the average traffic generated over the 15 hour daytime period (7am to 10pm) and 9 hour night time period (10pm to 7am) and not on a peak hour basis. It is also noted that the increased traffic generated by the NBH was already considered in the RMS assessment of the Frenchs Forest Road West development (Connectivity and Network Enhancements EIS).

Comment	Response
13. Helipad Provide details of the approach and departure surfaces for the helipad and demonstrate that the design of the building and location of the helipad ensures that approach and departure surfaces are orientated to minimise acoustic impacts on adjoining sensitive receivers.	Section 6 of the Revised Stage 2 Noise and Vibration Report provides assessment and discussion regarding the siting and design of the Helipad. As acknowledged by the EPA in their responses, “the helipad is to be located towards the south eastern corner of the roof of the hospital building with a view to minimising noise impacts on surrounding residents”. The preferred flight arrival and departure path is detailed as east-west direction at 7.5 degrees. It is noted that the approved Concept Plan provided for a helipad located some 100m south of residences in Frenchs Forest Road West and approximately 95m east of the Forest High School boundary. The proposed Stage 2 helipad is further removed from sensitive receivers being located approximately 130m south of the Frenchs Forest Road West residences and 190m east of the school boundary. Figure 8 identifies the proposed location of the Stage 2 helipad as well as the earlier Stage 1 Concept Plan location. The Stage 2 design provides for plant and lift elements north of the helipad as well as the carpark structure to the west. These elements, together with the substantial increase in separation, will help ameliorate acoustic impacts.

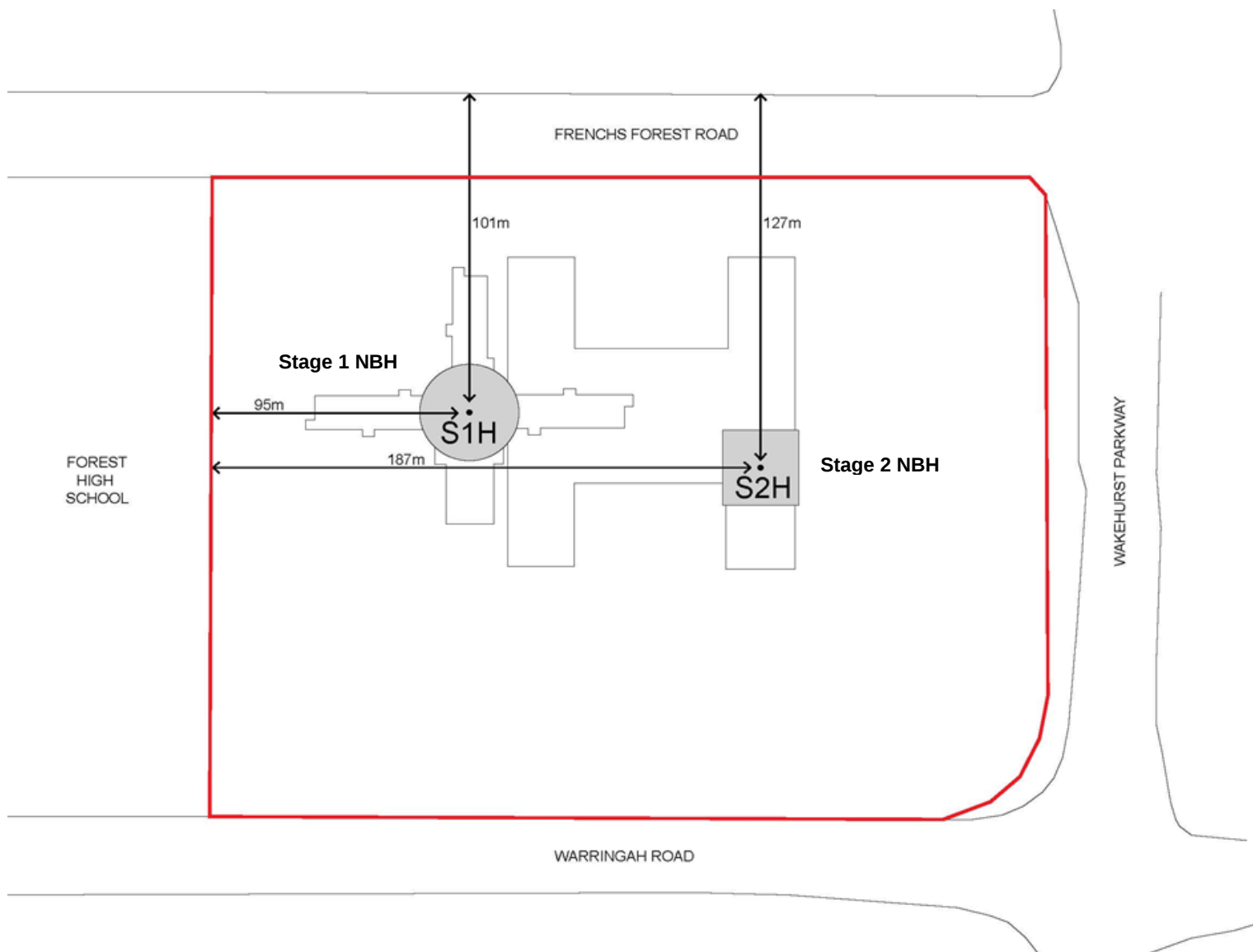


FIGURE 8: HELIPAD LOCATION
(4.02.15)

Comment	Response
14. Contamination Provide a Phase 2 contamination assessment.	A Phase 2 Environmental Site Assessment was completed in November 2014 by SMEC and provided to DP&E on 22 January 2015. A copy of the Phase 2 Environmental Assessment is provided at Appendix 4.

3 RESPONSE TO SUBMISSIONS BY GOVERNMENT AGENCIES

Submissions were received in relation to the Northern Beaches Hospital Stage 2 SSI Application from Government agencies. Agency submissions included:

- Warringah Council
- Sydney Water
- NSA Office of Environment & Heritage (OEH)
- NSW Rural Fire Services (RFS)
- NSW Roads & Maritime Services (RMS)
- NSW Environmental Planning Authority (EPA)
- Transport for NSW (TfNSW)

This section provides responses to the issues raised in submissions.

Warringah Council

Comment	Response
1. Biodiversity Section 4.7 – Flora and Fauna within the EIS (Stage 2) states that: <i>“A flora and fauna report has been prepared and is provided in Appendix H. The report provides a review of biodiversity matters identified in Stage 1 site clearance and preparatory works and provides comment on the consequences of the Stage 1 works on the development of Stage 2 NBH.”</i> Several biodiversity related mitigation measures (additional to offset measures) are associated with the development consent for Stage 1 and 2 (see Infrastructure Approval – conditions B6, B4, B5, B11(i), C6, C7 and C8). The report by KMA (Appendix H of the EIS, dated 7 October 2014) makes no reference to the status and compliance of these conditions and those mitigation measures specifically identified in specialist reporting.	An independent biobanking assessment was undertaken for the proposed NBH development as part of the Stage 1 application. The biodiversity offset strategy provided for the clearing of the total hospital site (refer Biobanking Agreements, ID 55 and ID 38). The biodiversity offset strategy has been resolved with OEH and the required number of credits will be retired by the agreed completion date in June 2015.

Comment	Response
It is recommended that a more detailed review of biodiversity matters is provided including compliance and reporting associated with all mitigation measures. The report by KMA (2014) only refers to offsets associated with the 10 hectare site at Belrose. It is understood that this is only part of the offset requirements and that resolution of offsets and biobanking credits associated with Health Infrastructure land on Aquatic Drive, remains unresolved. It is recommended that clarification is provided on the status of the remaining offsetting arrangements for the Hospital (if any), including specific reference to the land on Aquatic Drive. Reference to the approved clearing associated with the Stage 1 Infrastructure approval (see figure 1, Northern Beaches Hospital Services Diversion Works and Revised Biodiversity Offset Strategy) appears to be inconsistent with recent aerial imagery for the site (refer to Nearmap) illustrating the current extent of clearing for the services diversions located closest to the intersection of Wakehurst Parkway. It is unclear if further clearing in this area would be undertaken as part of Stage 2 and if the clearing is inconsistent with offsetting requirements.	OEH has acknowledged (19 December 2014) that the Stage 1 approval 'allows for the entire clearing' of the site (Appendix 5).
2. Stormwater Quality Council supports the integrated approach to WSUD measures and the proposed use of alternative sources water for non-potable purposes. However the stormwater quality targets do not recognise the nutrient reduction targets contained in the Northern Beaches Management Plan (1999).	
	The approved Concept and Stage 1 Stormwater Management Strategy & Plan (SMS & P, Arup) states that nutrients are not considered relevant due to low generation rates and hence targets were not included. Appendix A – Site Survey, of the Concept and Stage 1 SMS and P states that this issue was discussed and agreed with Council.

Comment	Response
Stormwater quality targets including nutrient reductions must be demonstrated through the preparation of a MUSIC Model prepared in accordance with the draft 'NSW Water Sensitive Urban Design Guidelines', unless alternative modelling parameters are justified on the basis of local studies.	Stage 2 SMS & P (Hyder) proposes a WSUD strategy and measures to remove a significant proportion of any nutrients generated by the development. The report (Section 2.4.2) states that stormwater quality targets adopted for Stage 2 are derived from the Northern Beaches Stormwater Management Plan.
Details of the modelling of those elements, parameters and assumptions used, including all data files, must be provided to Council.	Details of the water quality modelling (utilising MUSIC software) of the WSUD elements and assumptions will be provided prior to connection to the external stormwater system.

3. Stormwater Quantity

The report does not provide an adequate level of detail in respect to post development flows and Council's onsite stormwater detention requirements to enable assessment. Updated information must be submitted to Council for review as this information has implications for the Stage 1 Road Upgrades stormwater assessments.

Specific consideration is required for the occurrence and assessment of the Coastal Upland Swamp EEC. The RMS Stage 1 Road Upgrades Biodiversity Assessment Report (Vol. 2, Table 13, pg.118) indicates that this EEC does not occur within a 10km radius of the site, however Figure 4 (pg.23) and Figure 6 (pg. 48) within the same report and Figures 9-3 of Environment Impact Statement (Vol. 1, pg. 204) contradicts this which shows the occurrence of vegetation attributed to the Coastal Upland Swamp EEC outside of the study area adjacent to the Wakehurst Parkway in the north.

Stage 2 SMS & P (Hyder) (Section 5.2) proposes a strategy to maintain predevelopment catchment areas to key discharge points and on site detention to restrict post development peak flows for the 5,20 and 100 year ARI events.

Details of the site drainage system modelling (utilising DRAINS software) will be provided prior to connection to the external stormwater system.

Comment	Response
According to the Table E1 of the Surface Water Management Strategy (Vol. 3, App. M, pg. E2) hydrological changes are anticipated due to redirection of flows to the western side of the Wakehurst Parkway that may impact the swamp downstream from F25 (refer Appendix A below). A reduction in flows particularly the 2 year ARI from 1.4 to 0.22 however of more concern is the potential reduction in more frequent flows (i.e. < 2 year ARI) which may be supporting the swamp. This is further supported by the Biodiversity Assessment report (pg. 69, 70) which states: <i>“changes in hard surface area and potential change to groundwater recharge resulting from the Concept Proposal will indirectly impact soak and aquatic habitats for frogs and other groundwater dependant species outside or within the study area.”</i> The EIS for RMS Stage 1 Road Upgrades assumes there will be no additional / reduced flows from the Hospital site, post development. If this conclusion changes, the assessment will need to be updated to reflect any change in hydrology and the associated impacts on downstream environments, including the identified swamp.	
4. First Flush Devices To avoid concentrated pollutants entering the stormwater system, first flush devices for the rainwater tanks must drain to a landscaped area and not directly to the stormwater system.	A first flush device for the rain water tanks is included in the Roof Water Drainage design including discharge to a landscape area.

Comment	Response
5 Soil and Water Management Plan The Soils and Water Management Plan (SWMP) for Stage 2 provides inadequate levels of detail. Prior to commencement of works, a SWMP must be prepared in accordance with the “Blue Book” (Managing Urban Stormwater – Soils and Construction, 4th Edition by Landcom 2004). The plan, including drawings, should provide specific details outlining: • The staging of works particularly the rehabilitation and revegetation of areas, • Locations and types of erosion and sediment controls, • Refuelling areas, spill control measures and response, • Stockpile locations and controls, • Flow paths management, • Dust suppression measures, • Maintenance and inspection checklists • Entry/exit controls	A detailed SWMP will be developed as part of the overall Stage 2 CEMP. The SWMP will be in accordance with the “Blue Book” and will address the identified specific details listed.
6. Stormwater Management Strategy NEU Development Engineering have reviewed the Stormwater Management Strategy and Plan prepared by Hyder Consulting and acknowledge the plan addresses Councils On Site Stormwater Detention (OSD) technical specification and Auspec One Design specification, as far as Stormwater quantity control and drainage preliminary design is concerned. Additionally detailed design plans, hydraulic calculations and an a DRAINS OSD hydraulic model need to be provided to verify that there will be no increase in predevelopment stormwater flows and the pre-existing discharge drainage points from the site are maintained.	A consolidated stormwater management report and associated models will be prepared and issued prior to connecting to the external stormwater system. Refer to response 3. Stormwater Quality on page 15.

Comment	Response
7. Transport Accessibility The Northern Beaches Hospital (Stage 2) SSI 6792 – Appendix F Transport Accessibility Study (Sec 1-7) has been reviewed and the following comments are provided. Nexus The Transport Accessibility Study does not create the nexus between the hospital and the proposed RMS improvements and Council's comments on Stage 1 EIS for Connectivity and Enhancement Works.	The Revised Transport Accessibility Study (refer Appendix 1) highlights the nexus and interrelationships between the proposed connectivity and network enhancement works identified in the CaNE EIS and the new Northern Beaches Hospital. Pedestrian & Cycle Connectivity The NBH study also considered proposals for pedestrian and cycle connectivity in the external network identified in the Concept Design for the CaNE. Appropriate pedestrian and cycle linkages have been provided in the Stage 2 NBH design
8. Pedestrian Access Page 35, paragraph 3, mentions access for pedestrians to bus stops. Figure -18 shows pedestrian access through the site, but fails to mention pedestrian thoroughfare along the western boundary. These routes should be well lit to ensure safety of pedestrians.	Noted. This path has been constructed, lit and is already in use.

Comment	Response
9. Landscape The following development assessment related comments are provided for consideration: (Frenchs Forest Road West) The depth of landscaping within the front setback to Frenchs Forest Road West needs to be confirmed as adequate (in terms of the height of native trees at maturity) for a nine storey building fronting a secondary road, which is otherwise characterised as a bushland lined streetscape. Additional depth and density of landscaping is considered necessary.	
	A layered landscaping approach has been adopted for Frenchs Forest Road West. The design, which takes into account the general bushland setting of the surrounds, provides for native landscape planting along the northern ground plane, supplemented by ground cover planting to the Frenchs Forest Road West frontage. A layer of landscape at the hospital 'ground' level supported by the retaining walls provides additional tree grove shielding which is further extended in the planting associated with the landscape spine and the extension of the landscape spine at the western end of the Frenchs Forest Road West frontage. Although the approved concept plan requires that the building be set back a minimum of 6m from the Frenchs Forest Road West boundary, the Stage 2 proposal provides for a setback of 23m from the expanded (31m) Frenchs Forest Road West to ensure that a layered landscape approach can be achieved.

Comment	Response
(Western Side Boundary with School) The depth of landscaping within the western side boundary setback to the car park is inadequate. The side setback area to the car parking building should accommodate at least a 3 metre of landscape strip, rather than relying upon the landscape buffer on the adjoining school site.	The existing landscape along the western boundary is significant, consisting of mature specimens with heights reaching 20m. The landscape design incorporates an additional layer of planting (1.5m within the swale) along the eastern edge of the pedestrian / cycle pathway that complements the existing flora and enhances the pedestrian level amenity. The coupling of the existing and proposed landscape will provide a landscape buffer and screen to the adjoining school site. The need to maintain the APZ required by RFS across the NBH site limits tree planting options on the western boundary. The landscape design has also considered Crime Prevention Through Environmental Design (CPTED) principles. Pedestrian routes that are not aligned with the main public domain have clear sight lines along paths and routes with the supporting landscape designed to minimise possible hiding locations or blind spots behind walls, vegetation or structures.

Comment	Response
10. Car Park Facades The facades of the car park building are proposed to be quite planar and continuous cladded on perforated mesh. Some concerns are raised as to the extent of use of fine grained mesh over such a large area, particularly when viewed from Warringah Road and Frenchs Forest Road West. The final selection of material (colour/texture/relief) must demonstrate an adequate level of articulation and visual interest, whilst being complementary to the surrounding bushland setting.	The car park will be clad on three sides with folding, perforated metallic panels, captured top and bottom in a concrete frame, providing articulation and depth to the car park facades. The northern façade faces the main vehicular entrance from Frenchs Forest Road West and incorporates two clear elements – one forming a bold and graphic main entrance sign for the hospital, the other designed to accommodate a large artwork. Similarly the façade to Warringah Road is broken down into two framed elements of folded perforated metallic panels. The overall depth of the folded panels to the eastern and southern facades is between 600 – 900mm which creates an undulating layer to the face of the building. As illustrated on the material finishes board for the car park, the perforated panels to the north, south and eastern facades are not a fine mesh but are an aluminium perforated cladding. The final selection, the specified colour and size of perforations, together with the folded design, will provide a level of articulation and visual interest.
11. Illumination from Hospital Building Facades The illumination from windows of a 9 storey building in close vicinity to nearby residential properties have the potential to cause nuisance. Therefore, the level of lighting from the façade windows needs to be minimised to avoid such impacts. External illumination of building facades should also be minimised.	Noted.

Comment	Response
12. Rooftop Lighting The rooftop level car park has the opportunity to impact on the nearby residential properties through excessive illumination. In this regard, the design and intensity of illumination should be kept to a minimum and compliant with the AS 4282-1997 – Obtrusive Effects of Outdoor Lighting.	Lighting design to the car park roof top level will be compliant with AS 4283-1997. Within Green Star initiatives Health scope's lighting design is targeting EMI – 7 Light Pollution and no light beam, generated from within or outside of the building boundary, is directed at any point in the sky hemisphere without falling directly onto a non-transparent surface.
13. Front Setback Illumination/headlight glare/signage The ground floor level and proposed activities within the front setback to Frenchs Forest Road West (including the ambulance parking areas) have the potential to negatively impact on the night time amenity of residential properties on the northern side of the street. Therefore, further measures should be incorporated into the landscape design to minimise these effects and any future signage is to be located and designed to minimise the impacts on amenity (including compliance with SEPP 64 – Advertising and Signage).	The 23m setback of the hospital building from the northern boundary, the elevated ground plane in the eastern sector, the solid balustrade above the retaining wall, together with the layered landscape approach including the screening of the ambulance areas, will minimise the impact on residential properties on the northern side of Frenchs Forest Road West (refer Figure 9 – NBH Setback from Frenchs Forest Road West and Figure 10 - Section through Northern Sector of NBH). Any signage will be in accordance with SEPP 64.
14. Waste Removal Hours The hours for waste removal should be confined to 7.00am to 7.00pm to minimise noise impact on nearby residential properties in Frenchs Forest Road West. Delivery Hours Similarly, deliveries by suppliers and stockists should be confined to 7.00am to 7.00pm to minimise the noise impact on nearby residential properties in Frenchs Forest Road West.	The hospital, including Emergency facilities will operate 24 hours/day and deliveries may be required at any time of day. Both delivery and waste access to the hospital is via the left in, left out access from Warringah Road to the basement delivery/loading docks. Accordingly, there will be no impact on adjacent residences in Frenchs Forest Road West.

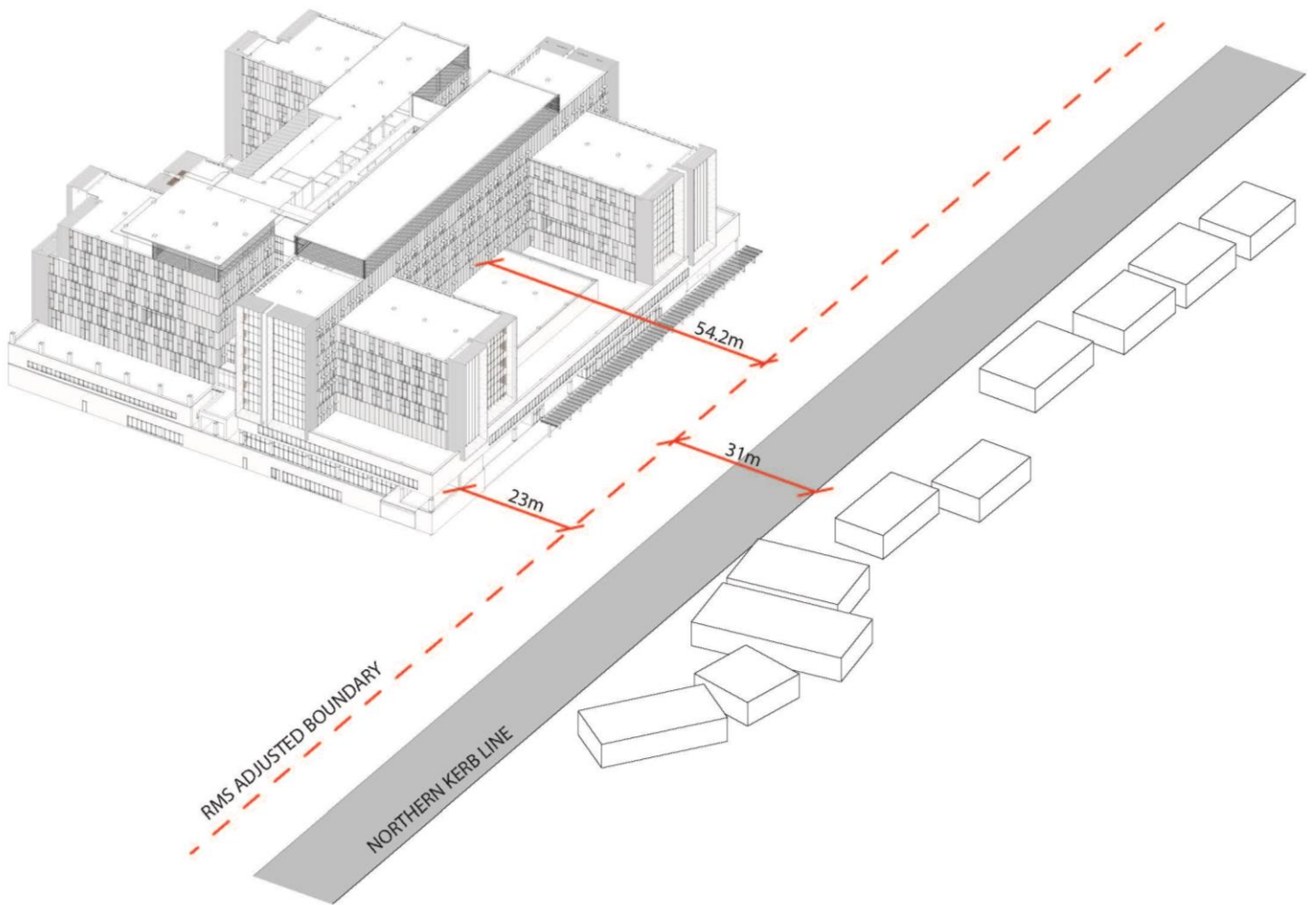
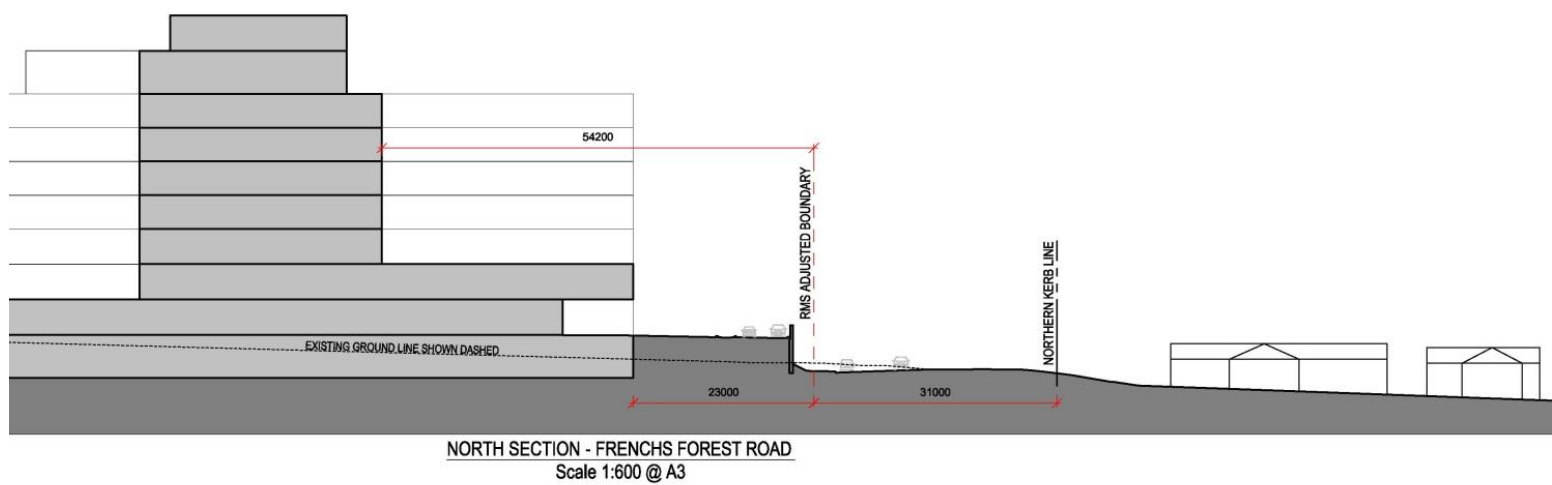


FIGURE 9: NBH SETBACK FROM FRENCHS FOREST ROAD
(4.02.15)



FOR INFORMATION ONLY

Client & Construction	Designer	Project	GRAPHIC SCALE	SCALE	DRAWINGS	PURPOSE	DATE	DRAWING NO	REVISION
		The Northern Beaches Hospital		As Indicated	Stage 2 Condition (indicative) Section	EIS	06/02/14	APB.PCT.ARC.SEC.007	EX

FIGURE 10: SECTION THROUGH NORTHERN SECTOR OF NBH
(4.02.15)

Comment	Response
15. Hours of Excavation & Construction The hours of construction should be restricted to 7am to 5pm (Mon to Fri), 8am to 1pm (Sat) and no work on Sundays and Public Holidays. Excavation should be restricted to 8am to 5pm (Mon to Fri, so no excavation on weekends).	The proposed construction hours from 7am to 6pm on Monday to Friday are in accordance with the ICNG recommended standard hours for construction work. The application seeks extended work hours on Saturday (7.00 am - 5.00 pm) from the hours nominated in the ICNG (8.00 am – 1.00 pm). While normal construction activities are proposed between 8.00 am and 1.00 pm in accordance with ICNG, works during the proposed extended hours will be limited to those having minimal impact (such as fitout) on the nearest noise sensitive residential receivers. The Proponent shall consult with The Forest High School and take reasonable steps to ensure that noise generating works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements acceptable to The Forest High School are made.
16. Staff Car Parking The proposal to charge staff to park in the onsite car park building will result in problems with staff parking in nearby residential streets. This issue needs to be addressed by the traffic consultant with a view to avoiding such a loss of amenity and kerbside parking availability for residents	The car parking provision has been designed to meet the parking demand, including staff parking requirements, identified in the Car Park Plan. Adequate staff and bike parking is provided. A copy of the Car Park Plan is attached (Appendix 2). We will continue to work with Warringah Council regarding street parking management.
17. Motorcycle Parking An adequate number of motorcycle spaces are to be included in the car park building.	Refer to Car Park Plan (Appendix 2).

Comment	Response
18. Construction Traffic Management Plan The parking of construction staff cars has the potential to significantly impact on the amenity of nearby residential properties. An adequate number of spaces are to be set aside onsite or other arrangements are to be made for staff to park and access the work site. Similarly, the parking of excavation and construction trucks is to be provided for in a manner (onsite or other arrangements) that does not unduly impact on nearby residential properties.	Car space provisions and a pooling scheme have been allowed for in the CEMP to reduce impact on the amenity of nearby residences. Ultimately the car pooling scheme can serve up to 500 people throughout the construction period. The haul road strategy stipulated in both the CEMP and Preliminary Construction Traffic Management Plan confirms the capacity of the site to manage construction traffic. Traffic controllers will direct construction traffic to their original point of departure if site conditions do not permit access or if the activity has not been booked in with the materials handling coordinator.
19. Historic Heritage Comments The Northern Beaches Hospital (Stage 2) SSI 6792 – Appendix J Historic Heritage Impact Report, has been reviewed. It is noted that a new Heritage Impact Report was not submitted for this Stage 2 application. Rather the Stage 1 Historic Heritage Impact Assessment report (dated September 2012), was submitted with a covering update letter which confirmed that the recommendations made in the 2012 Report were still valid for the Stage 2 EIS. Given that it is 2 years since this report was prepared, it contains a number of factual errors. These matters were raised in Council's previous submission on the Stage 1 EIS and it was requested that the errors be updated. This hasn't happened.	An updated report will be submitted.

Comment	Response
While the report correctly describes the historic context for the Hospital site and the surrounding area, it does not correctly identify the one listed heritage item in the vicinity, being the remnant fruit trees from Holland's Orchard, adjacent to Warringah Road. Council previously advised in its submission on Stage 1, that "These trees were originally thought to be apple trees however Council's recent Community Based Heritage Study Review has confirmed that they are actually pear trees. Also, as part of this Review, Council has resolved to extend this heritage listing to include a grove of pear trees on the Frenchs High School site, which were propagated from the original pear trees adjacent to Warringah Road. This proposed listing amendment is part of a current Heritage Planning Proposal which is awaiting legal drafting before being made in early 2014. The Historic Heritage Report should recognise this change in extent of the local heritage item in the vicinity." The Heritage Planning Proposal was made on 30 May 2014, which amended details of this heritage listing in the vicinity, extracted from Schedule 5 of Warringah LEP 2011, are as follows:- • Former Holland's Orchard and Commemorative Grove • Adjacent to Warringah Road and within The Forest High School grounds, as shown on Heritage Map • Lot 2, DP 234702 • Local Significance • I62 The correct heritage information should be identified and recognised.	

Comment	Response
As previously, it is noted that there may be the potential for archaeological relics to be found in those areas of the site which were previously developed. The recommendations within this Report for an Archaeological Management Strategy (AMS) are agreed to and this AMS should be adhered to during any construction phases. It is noted that this 2012 Historic Heritage Impact Report also examined a site on Aquatic Drive which is owned by Health Infrastructure, but which is not part of the State Significant Site for the new hospital. This has no relevance to the Stage 2 application for the new Northern Beaches Hospital.	
20. Aboriginal Heritage Comments	
The Northern Beaches Hospital (Stage 2) SSI 6792 – Appendix K Aboriginal Heritage Impact Report, has been reviewed. It is noted that a new Aboriginal Heritage Impact Report was not submitted for this Stage 2 application. Rather the Stage 1 Aboriginal Heritage Impact Assessment Report (dated September 2012), was submitted with a covering update letter which confirmed that the recommendations made in the 2012 Report were still valid for the Stage 2 EIS. As previously, the report appears to comprehensively assess the potential for Aboriginal sites within the study area. It is noted that no sites were identified, however that there may be potential for art/engravings on the sandstone outcrops which exist on the north-east portion of the study area. These sandstone outcrops are currently obscured by vegetation so the recommendations within this Aboriginal Heritage report should be adhered to during construction.	The inspection of the sandstone outcrops was identified as part of the approved Stage 1 works following site clearing of the north east corner. Any aboriginal objects exposed during the Stage 2 construction works will be reported to the Cultural Heritage Division of OEH in accordance with Section 89A of the NPW Act 1974.

Comment	Response
It is noted that this 2012 Aboriginal Heritage Impact Report also examined a site on Aquatic Drive which is owned by Health Infrastructure, but which is not part of the State Significant Site for the new hospital. This has no relevance to the Stage 2 application for the new Northern Beaches Hospital. On a minor matter, the Report title should be '<i>Aboriginal Heritage Impact Report</i>' not Aboriginal Impact Heritage Report.	
21. Urban Design Comments	
The Northern Beaches Hospital (Stage 2) SSI 6792 – Infrastructure Application and Environmental Impact Statement, Built form and Urban Design, has been reviewed. It is noted a shared pedestrian and cycling path along the western boundary of the site, providing a key north-south link to the Forest High School, will be built as part of the Stage 1. More information should be provided on the safety measures to be implemented for delivery and service vehicles accessing Forest High School from the internal road network and crossing the shared pedestrian and cycling pathway. It is also noted that end of cycling trip facilities will be provided for staff as part of the overall staff change zone in the hospital. The hospital design should also provide end of trip facilities for cyclists that are visitors. Facilities apart from bike racks and bicycle storage could include drinking fountains and bottle refill stations.	The provision of a dedicated entry to the school for delivery and service vehicles reflects detailed consultation between Health Infrastructure and Forest High School. The school will manage the controlled access electronically. The new relocated dedicated service / delivery entry point will result in a safer access to the school for students and staff from Frenchs Forest Road West. It is anticipated that the road kerb line will be maintained with a rollover kerb installed adjacent to the entry. This detail will provide the right of passage to the pedestrian or the cyclist. End of trip facilities are provided within the hospital staff rooms and change rooms on each level for staff. Public drink fountains will be available on the ground floor.

Comment	Response
Additionally future detailed design plans on the public domain need to be developed with reference to Warringah Council Policy No STR-PR350, Warringah Public Spaces Design Guidelines. The Design Guidelines serve as an operational tool to ensure high quality finishes and uniform standards of streetscape treatments throughout Warringah. The guidelines apply to all areas within the Warringah Local Government Area to achieve a co-ordinated and consistent palette of materials and long-term maintenance benefits.	Noted

Sydney Water

Comment	Response
1. Water	
For the proposed development, the drinking water main available for connection is the 450mm main on the Southern side of Frenchs Forest Road West.	The Stage 2 design approach incorporates a 150 Die Cold water connection and a 200 mm Fire service connection to the 450 mm water main located on the southern side of Frenchs Forest Rd.
2. Wastewater	
- The hospital site is serviced by two existing wastewater mains; a 200mm main located to the south and a 150mm main in the North Eastern portion of the site. - Sydney Water has previously carried out feasibility investigation that has indicated that these mains have limited capacity and may require amplification. - A servicing option has been developed (July 2013) by Warren Smith and Partners Pty Ltd for Health Infrastructure – NSW Health that comprised of a new wastewater extension connecting to a 300mm sewer main located approximately 800m South East of the development site. - It is understood that RMS propose road widening works in the area may impact on the proposed wastewater servicing option. - It is recommended that the proposed wastewater servicing of the hospital site is reviewed with consideration of the proposed road widening works. - Sydney Water is currently liaising with RMS and the NSW Health to ensure a suitable servicing solution is developed.	Noted

RFS

Comment	Response
1. At the commencement of building works the entire property shall be managed as an asset protection zone (APZ) as outlined within Appendices 2 and 5 of <i>Planning for Bushfire Protection</i> 2006 and the NSW Rural Fire Service's document <i>Standards for asset protection zones</i>	The site will be managed to comply with the requirements of an APZ. A Vegetation Retention Plan was prepared by SMEC (July 2014) to detail the vegetation and trees to be removed from the former Blinking Light Reserve (east of Bantry Bay Road) to achieve bushfire APZ requirements. The remainder of the site will be maintained to a standard that complies with an APZ. The landscape plan prepared by 360 (13/11/2014) allows for compliance with APZ requirements whilst accommodating the retention of significant trees to the east (in the former Blinking Light Reserve) and screening along boundaries including dense screening along the southern boundary.
2. The new hospital shall be constructed to comply with section 3 and section 5 (BAL 12.5) Australian Standard AS3959-2009 Construction of buildings in bushfire-prone areas and section A3.7 Addendum Appendix 3 of <i>Planning for Bushfire Protection</i> 2006. Water, electricity and gas supplies shall comply with section 4.1.3 and 4.2.7 of <i>Planning for Bushfire Protection</i> 2006 An Emergency/Evacuation Plan is to be prepared in accordance with the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan	The deemed-to-satisfy approach in applying BAL-12.5 to a building requires all sides of the building to comply even if only part of the building is within the mapped BAL-12.5 zone. The proposed design will comply with the relevant requirements. An Emergency Response Plan including a Bushfire Evacuation Plan will be prepared prior to the issue of an Occupation Certificate.

OEH

Comment	Response
1. OEH notes the consent conditions for Stage 1 require the retirement of ecosystem credits and species credits from Bio banking Agreement 55 and Bio banking Agreement 38 as well as the execution of a Bio banking Agreement for the Aquatic Drive site (Lot 2782 DP46992) and retirement of credits within 12 months of the approval (dated June 2014). The required number and types of biodiversity credits from Bio banking Agreements 55 and 38 have been purchased but are yet to be retired. To date, OEH has not received an application for a Bio banking Agreement for the Aquatic Drive site. It is recommended that an application be submitted to OEH as soon as possible to ensure that the Bio banking Agreement is approved and registered on land title within the designated approval period.	Noted. This process is currently underway with retirement due June 2015.

EPA

Comment	Response
1. Overview Please consider the following comments in the context of our comments dated: • 18 June 2013 providing detailed input to the draft DGRs; • 28 November 2013 and 7 March 2014 concerning Stage 1; • 7 March 2014 concerning the Preferred Infrastructure Report; and • 12 December 2014 concerning modification of the Stage 1 consent. The EPS has identified the following site specific concerns based on the information in the Environmental Impact Statement as obtained from the Department's Major Projects web site and subsequent advice about 'extractive activity'. (a) The need for further detailed assessment of potential site contamination and engagement of an accredited site auditor; (b) Handling, transport and disposal of any asbestos waste; (c) Requirements to hold an Environmental Protection Licence in respect of any scheduled extractive activities; (d) Bulk earthworks, construction and construction-related noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work); (e) Bulk earthworks, construction and construction-related dust control and management; (f) Bulk earthworks, construction and construction-related erosion and sediment control and management;	Refer to individual responses set out below.

Comment

- (g) The need for further detailed assessment of operational noise and vibration impacts on noise sensitive receivers (especially surrounding residences and The Forest High School) arising from operational activities such as emergency service vehicle movements, waste collection, loading dock activities, mechanical services (especially air conditioning plant) and standby generator testing and operation;
- (h) Feasible and reasonable operational noise mitigation and management measures, including noise barriers and location of emergency service vehicle access to minimise impacts on surrounding residents;
- (i) Requirement to obtain a radiation management licence (or vary an existing licence) under the Radiation Control Act and Regulation; and
- (j) Operational storage, handling, transport and disposal of 'clinical and related wastes';

Comment	Response
2. Site Investigation and Remediation The EPA understands that Manly Area Health Service facilities buildings have been demolished and removed from the land and fibrous material identified on the land. And, although Bantry Bay Road has been acquired it has not been demolished and may be used during bulk excavation and construction as access from Warringah Road. The EPA further understands that there are no known underground fuel storage tanks on the land but part of the land was cleared and used for agriculture between 1906 and 1959. The EPA acknowledges the concurrent proposal to modify Stage 1 of the project consent to bring forward site levelling and services excavation into Stage 1. And, submitted comments in respect of that concurrent modification. The following comments concerning site investigation issues replicate those made in respect of the above mentioned Stage 1 modification proposal. Accordingly, the EPA's comments and recommendations concerning Stage 2 of the project take into account a review of the following documents:- • (Stage 1) EIS Appendix H Contamination Assessment (CA) • (Stage 1) Preferred Infrastructure Report; and • (Stage 2) EIS and EIS Appendix S Geotechnical Baseline Report	

Comment	Response
EPA recommended that:- The Proponent is required to engage a site auditor accredited under the Contaminated Land Management Act 1997 to review future investigation, remediation and validation work to be conducted on the site.	EPA has confirmed (letter dated 13 February 2015) that an accredited site auditor “is not required for contamination assessment, remediation and validation works at the site”. An unexpected finds protocol will remain in place and will form part of the Construction Environmental Management Plan (CEMP) and Waste Management Strategy.
2a. Asbestos The EPA notes that asbestos containing materials (ACM) have been identified on the site and the EPA has provided previous advice on the management and handling of asbestos waste on site during Stage 1. EPA recommended that:- The Proponent should inform itself of its obligations under the Protection of the Environment Operations (Waste) Regulation 2014, particularly in regard to the transport and disposal of asbestos waste. The Proponent be required (given the historical presence of asbestos containing material (ACM) at the site) to implement risk mitigation measures for unexpected finds of ACM encountered on the site.	Management of ACM at the site has been carried out in accordance with <i>NSW WorkCover Guidance for Managing asbestos in or on soil, 2014</i> and the documented Asbestos Management Plan (AMP). Suitable risk mitigation measures for unexpected ACM will be incorporated into the unexpected finds procedure within the Stage 2 CEMP.

Comment	Response
2b. Herbicides The EPA notes that as part of the Phase 1 Assessment, pesticides were measured in soil at the site, but the presence of herbicides was not assessed. EPA recommended that:- The Proponent be required to assess herbicide compounds in soil before undertaking site excavation.	In February 2015 GHD conducted an investigation of the soils in the western part of the site, adjacent to the former orchard (refer Appendix 6). Representative samples of the shallow natural soils were sent to a NATA-accredited laboratory for analysis of herbicides. The analytical results indicated that herbicide concentrations in the soil samples were non-detectable (below the laboratory limit of reporting).
2c. Groundwater Contamination The EPA notes that potential groundwater contamination in the underlying siltstone and shale bedrock was not assessed and thus the contamination status of site groundwater is unknown. Geotechnical assessment of conditions of the site underlying Bantry Bay Road has not been undertaken. In Section 5.2.2 of Stage 2 Appendix S, the report indicated rock coring was undertaken at BH6, BH10, BH22 and BH33 only. However, the EPA notes that according to the Phase 1 report NLMC diamond coring was undertaken at BH9 also.	

Comment	Response
The EPA notes that it appears that an assessment of the degree of fracturing and weathering of the bedrock has not been undertaken. The EPA further notes that groundwater underlying the site is reported at RL 157.5 metres and 152 metres AHD. And, that basement levels are proposed RL 154.2 which suggest that footing and basement excavations are likely to intersect the watertable.	
EPA recommended that:-	
The Proponent be required to assess baseline groundwater assessment contamination before undertaking excavation on the site.	Baseline groundwater monitoring was undertaken at the site in 2013, the findings of which are provided in <i>SMEC Factual Groundwater Report, Sept 2013</i> (refer Stage 1 SSI Application, Appendix M). This has been resubmitted to DP&E in response to EPAs comments on the Stage 1 Modification Application. The groundwater monitoring undertaken by SMEC included sampling of groundwater from nine monitoring wells. The samples were analysed for a variety of potential contaminants of concern including petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAH), organics, pesticides and heavy metals. In summary, the results found no concentrations of hydrocarbons, PAHs or pesticides, and concentrations of heavy metals recorded were considered to be indicative of background conditions.

Comment	Response
3. Bulk Excavation The EPA understands that the project involves excavation of an estimated 243,260 tonnes of material during the course of the project and that tonnage approximately 200,000 tonnes will be extracted in the course of bulk excavation works. The EPA is aware that site levelling, excavation for services and haul road construction are now proposed to be undertaken subject to a modification of the consent for Stage 1 of the project. And that, the EIS for Stage 2 appears to have been prepared prior to the application for that modification. However, the EPA anticipates that the bulk excavation activities will continue seamlessly across Stages 1 and 2. The EPA draws the Proponent's attention to the provisions of clause 19 to Schedule 1 of the Protection of the Environment Operations Act 1997 and the requirement to hold an environment protection licence for the purposes of undertaking 'land-based extractive activity'. Importantly, the Proponent should note that extractive activity during stages 1 and 2 should be viewed as an aggregate for the purposes of determining whether the scheduled activity threshold would be exceeded. The EPA is aware from previous major infrastructure projects that community concerns are likely to arise from noise impacts associated with the early arrival and idling of tip trucks and other construction vehicles at the development site and in the residential precincts surrounding the site.	

Comment	Response
EPA recommended that:- The Proponent be required to ensure that bulk excavation is undertaken in accordance with the recommendations under section 4 of these comments, including but not limited to those recommendations in respect of hours of operation, intra-day respite periods, reversing alarms, dust control and management, and erosion and sediment control.	Noted
EPA also recommended that:- The Proponent be required to ensure that tip trucks and other construction vehicles do not arrive at the project site or in surrounding residential precincts other than during the approved construction hours.	The site access is via Warringah Road and not through residential areas. These matters will be included in the Traffic management Plan for the site.

Comment	Response
4. Construction Phase The EPA anticipates that construction and construction-related activities (including bulk excavation) will be undertaken in an environmentally responsible manner with particular emphasis on – • Compliance with recommended standard construction hours • Intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting and vibratory rolling) • Feasible and reasonable noise and vibration minimisation and mitigation • Effective dust control and management • Effective erosion and sediment control • Waste management consistent with the waste management hierarchy • On-site concrete batching.	
5. Noise and vibration EIS Appendix E Noise and Vibration assesses predicted construction and construction-related noise and vibration impacts during the course of the project. The EPA considers that the project is likely to generate significant noise and vibration impacts on surrounding residences, the adjoining high school and other noise sensitive land uses during construction. The EPA provides guidance material on its website – • The Interim Construction Noise Guideline (ICNG) (2009), and • Assessing Vibration: a technical guideline (2006)	Noise and vibration from the proposed construction activities have been assessed in accordance with both documents referenced by the EPA.

Comment	Response
6. General Construction Hours Section 4.1.2 of EIS Appendix E proposes to extend construction hours on Saturdays by starting 1 hour earlier and finishing 4 hours later than the recommended standard hours of 8.00am to 1.00pm. And, implies that the extended hours are justified on the basis of allowing "...potentially noise and vibration sensitive works in proximity to the school to be carried out in out of school hours..." The EPA is concerned that the Proponent: (a) Does not appear at this time to have undertaken consultation with surrounding residents or the Forest High School (refer para 2, section 4.1.2 Appendix E); and (b) Proposes a general rather than a targeted extension of construction hours without adequate justification. EPA recommended that:- The Proponent be required to: (a) Comply with the standard construction hours as recommended in Table 1 Chapter 2 of the Interim Construction Noise Guideline, July 2009 except where any deviation from those hours is– (i) Fully justified in consultation with both the Department of Education and Communities and surrounding residents, and (ii) Limited to specific high noise impact works subject to an explicitly limited duration in the context of the justification referred to in (i) above, and Adopt special 'examination-time' arrangements in negotiation with the Department of Education and Communities	
	The proposed construction hours from 7.00 am to 6.00 pm on Monday to Friday are in accordance with the ICNG recommended standard hours for construction work. The application seeks extended work hours on Saturday (7.00 am - 5.00 pm) from the hours nominated in the ICNG (8.00 am – 1.00 pm). While normal construction activities are proposed between 8.00 am and 1.00 pm in accordance with ICNG, works during the proposed extended hours will be limited to those having minimal impact (such as fitout) on the nearest noise sensitive residential receivers.

Comment	Response
	The Proponent shall consult with The Forest High School and take reasonable steps to ensure that noise generating works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements acceptable to The Forest High School are made.

7. Intra-Day Respite Periods

ICNG section 4.5 specifies construction activities proven to be particularly annoying and intrusive to nearby residents and school students. The EPA anticipates that those activities generating noise with particularly annoying or intrusive characteristics would be subject to a regime of intra-day respite periods where –

- (a) They are only undertaken after 8.00am,
- (b) They are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours, and
- (c) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the work referred to in ICNG section 4.5.

EPA recommended that:-

The Proponent be required to schedule intra-day 'respite periods' for construction activities identified in the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers including surrounding residents the adjoining Forest High School.

Noise sensitive receptors are identified in the Revised Stage 2 Noise and Vibration Report included as Appendix 7 of this Preferred Infrastructure Report. The report also includes consideration of respite periods.

Comment	Response
	Residences The Revised Stage 2 Noise and Vibration Report did not identify exceedances of the 'highly noise affected' level. While a series of reasonable and feasible noise mitigation measures have been outlined in the report in accordance with Figure 1 of ICNG, the following condition is nevertheless proposed for the residential receivers should works exceed the 'highly noise affected' level: <i>'intra-day respite periods are to be adopted for noise sensitive residential receivers where the 'highly noise affected' level is exceeded'</i> The Forest High School While the ICNG identifies educational institutions as "other sensitive land uses", a 'highly noise affected' level is not specified. The ICNG recommends scheduling respite periods during examination periods, as well as the implementation of all feasible and reasonable work practices to minimise noise impacts. The Proponent will adopt all feasible and reasonable work practices to minimise noise impacts, the potentially affected receiver will be consulted and informed of scheduled activities, together with specific construction team contact information so that potential issues can be addressed as soon as practicable. Accordingly the following condition is proposed:

Comment	Response
	<i>"The Proponent shall consult with The Forest High School and take reasonable steps to ensure that noise generating construction works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements acceptable to The Forest High School are made."</i> The Revised Stage 2 Noise and Vibration Report and resultant recommendations for the mitigation and management of construction noise have been prepared in accordance with the ICNG. Where identified noise sensitive receivers may potentially be impacted by construction noise and vibration, all reasonable and feasible measures will be adopted to minimise noise impacts. In terms of intra-day respite periods, specific conditions for the nominated sensitive receivers have been proposed in accordance with the ICNG procedures and recommended work strategies.
8. Queuing & Idling Construction Vehicles The EPA is aware from previous major infrastructure projects that community concerns are likely to arise from noise impacts associated with the early arrival and idling of construction vehicles (including concrete agitator trucks) at the development site and in the residential precincts surrounding that site. EPA recommended that:- The Proponent be required to ensure construction vehicles (including concrete agitator trucks) do not arrive at the project site or in surrounding residential precincts outside approved construction hours.	The site access is via Warringah Road and not through residential areas. These matters will be included in the Traffic Management Plan for the site.

Comment	Response
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9. Reversing and Movement Alarms

The EPA has identified the noise from 'beeper' type plant movement alarms to be particularly intrusive and is aware of feasible and reasonable alternatives. Transport for NSW (nee Transport Construction Authority), Barangaroo Delivery Authority/Lend Lease and Leighton Contractors (M2 Upgrade project) have undertaken safety risk assessments of alternatives to the traditional 'beeper' alarms. Each determined that adoption of 'quacker' type movement/reversing alarms instead of traditional beepers on all plant and vehicles would not only maintain a safe workplace but also deliver improved outcomes of reduced noise impacts on surrounding residents.

Interim Construction Noise Guideline Appendix C provides additional background material on this issue.

EPA recommended that:-

The Proponent be required to undertake a safety risk assessment of construction activities to determine whether it is practicable to use movement alarms of a type that would minimise the noise impact on surrounding noise sensitive receivers, without compromising safety.

Noted

Comment	Response
10. Dust Control and Management The EPA considers dust control and management to be an important air quality issue during site excavation and subsequent construction. Bulk earthworks inevitably generate dust as a result of – (a) The excavation, processing and handling of excavation spoil, (b) Wind action on spoil stock piles, and (c) Wind action on and plant movement across areas bare of vegetation or other cover	
EPA recommended that:- The Proponent should commit to: (a) Minimising dust emissions on the site, and (b) Preventing dust emissions from the site.	Appendix U Preliminary Construction Management Plan, Section 7.1 stipulates that an Air Quality Management Plan will be developed with relevant strategies to manage dust emissions.
11. Erosion and Sediment Control The Managing Urban Stormwater Soils and Construction, 4th Edition published by Landcom (the so-called ‘Blue Book’) provides guidance material for achieving effective erosion and sediment control on construction sites. The EPA is aware that during Stage 1 there was at least one report alleging that on site erosion and sediment controls had failed during a weekend when storm events has been forecast well in advance.	The EPA’s comments are noted. A detailed Construction Environmental Management Plan (CEMP) will be prepared which will include a Soil and Water Management Plan.

Comment	Response
The EPA emphasises the importance of – (a) Not commencing earthmoving or vegetation removal until appropriate erosion and sediment controls are in place, and (b) Daily inspection of erosion and sediment controls which is fundamental to ensuring timely maintenance and repair of those controls.	
12. Waste Control and Management (general) All wastes generated during the project must be properly assessed, classified and managed in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those wastes. The EPA anticipates that during the course of the project concrete deliveries and pumping are likely to generate significant volumes of concrete waste and rinse water. The Proponent should ensure that concrete waste and rinse water is not disposed of on the project site and instead that – (a) Waste concrete is either returned in the agitator trucks to the supplier or directed to a dedicated watertight skip protected from the entry of precipitation, and (b) Concrete rinse water is directed to a dedicated watertight skip protected from the entry of precipitation or a suitable water treatment plant. (c) The EPA further anticipates that, without proper site controls and management, mud and waste may be tracked off the site during the course of the project.	

Comment	Response
EPA recommended that:- The Proponent should be required to ensure that: (1) All waste generated during the project is assessed, classified and managed in accordance with the “Waste Classification Guidelines Part 1: Classifying Waste” (Department of Environment Climate Change and Water, December 2009); (2) The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste, or spoil from the vehicle or trailer; (3) Concrete waste and rinse water are not disposed of on the development site; and (4) Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the premises.	The issues will be addressed in the CEMP and respective sub-plans.
13. On-site concrete batching plant Whilst the EPA understands that the Proponent does not currently propose operation of an on-site concrete batching plant, the proposed introduction of any such plant to the development site would warrant a comprehensive environmental impact assessment.	Concrete for the NBH will be sourced from an external concrete batching plant.

Comment	Response
14. Operational phase The Hospital will represent a significant long-term infrastructure investment with potentially enduring long-term environmental impacts. The EPA considers that environmental impacts that arise once the new hospital facilities commence operation can largely be averted by responsible environmental management practices, particularly with regard to: (a) Feasible and reasonable noise avoidance and minimisation. (b) Proper assessment, storage, handling, transport and disposal of wastes, especially clinical and cytotoxic waste; (c) Management and use of regulated material under the Radiation Control Act 1990; and (d) Energy and water conservation.	

Comment	Response
15. Noise and vibration impacts (general) The EPA is aware from experience that significant risks of unacceptable noise impact arise from inadequate noise management and mitigation measures. The EPA has been obliged to undertake extensive investigation of ongoing complaints about avoidable noise impacts from air conditioning plant associated with newly commissioned hospital buildings. The EPA anticipates that the proposed hospital and multi-storey parking facilities are likely to change the nature and intensity of noise impacts on surrounding noise sensitive receivers (example: residences and the Forest High School). The NSW Industrial Noise Policy, January 2000 (INP) provides guidance material on noise impact assessment and feasible and reasonable noise mitigation. On 7 March 2014, the EPA advised the Department that the background noise monitoring locations used in the Acoustic Assessment (Acoustic Logic 2013) for Stage 1 were not acceptable for assessment of the noise impact of the construction and operation of the project. However, EIS Appendix E Noise and Vibration indicates that contrary to the guidance material in INP Chapter 3 the 'long-term' method was not used to determine existing noise levels at surrounding residences. Thus, the noise criteria applied to the assessment on operational noise impacts of the project were not appropriately derived. Accordingly, the EPA is unable to provide detailed comments on: (a) The acceptability of predicted operational noise impacts on surrounding residences; or (b) The adequacy of proposed noise impact mitigation measures.	

Comment	Response
EPA recommended that:- The Proponent be required to submit a revised noise and vibration impact assessment using noise criteria derived in accordance with and reported against the guidance material provided in the NSW Industrial Noise Policy, January 2000. The EIS indicates that – • The ambulance/emergency reception area is to be located on the northern side of the hospital building opposite residences on the northern side of Frenchs Forest Road West, • The mortuary is to be located on the southern side of the building, • The loading dock is to be located in the basement of the hospital with access from the southern side of the hospital building via a ramp running parallel to Warringah Road, • The grease arrestor (which will require regular pump out) is located on the southern side of the building, and The EPA considers that some feasible and reasonable operational noise control and management measures would include – • Establishing and fostering a good relationship with noise sensitive receivers, especially surrounding residents and the high school (including facilitation of the logging of noise complaints and obtaining an active and timely response to those complaints); • Limiting the operation of loading dock and waste collection (including grease trap pump out) activities to 'day-time', being the hours of – (i) 7.00am to 6.00pm Monday to Saturday, and (ii) 8.00am to 6.00pm Sundays and public holidays; and	A Revised Stage 2 Noise and Vibration Report has been prepared and is included as Appendix 7 in this Preferred Infrastructure Report. The report includes the results of recent long-term noise monitoring and establishes revised Project Specific Noise goals in accordance with the Industrial Noise Policy (INP). It is noted that the INP assessment for schools is based on fixed noise level criteria and is therefore independent of the acoustic environment.

Comment	Response
Negotiating with residents and the Department of Education and Communities (i.e. The Forest High School) the times at which standby emergency generators and fire alarms are tested.	
EPA also recommended that:- The Proponent be required to avert unacceptable noise impacts on surrounding noise sensitive receivers by undertaking the following:	
(a) Developing and implementing an effective community consultation and communication strategy (incorporating a responsive noise complaints management process);	It is noted that an effective working relationship with the school has been developed. The Stage 2 stakeholder engagement and communication plan recognises The Forest High School and site neighbours as key stakeholders and will keep them informed through all stages of the project. A 24/7 telephone hotline and complaints process is in place for community issues.
(b) Undertaking a noise monitoring program to 'ground truth' noise impact predictions at set periods following commencement of operation of the new facilities;	Noted
(c) Restricting loading dock, waste collection and standby emergency generator testing activities to 'day-time' as defined in the NSW Industrial Noise Policy, January 2000; and	Given the location of the loading dock and the distance from any sensitive receiver, any restriction on delivery hours to the hospital is unwarranted, and may place the operation of the hospital at risk if emergency deliveries are required outside hours.

Comment	Response
(d) Undertaking a noise monitoring program at various periods after commencement of operation of the each project element to verify that measured noise levels do not exceed levels predicted in the revised noise impact assessment and acceptable noise levels identified in the NSW Industrial Noise Policy, January 2000.	Noise will be managed by design and management measures and any complaints investigated on a case by case basis.

16. Noise impacts (helicopter operations)

The EPA understands that the hospital will be a round the clock major trauma centre and that the proposed helipad is vital to ensuring emergency access to intensive care and other acute services facilities for critical care patients.

The EPA anticipates that consistent with NSW Health and Ambulance Service protocols the helipad will be restricted to critical care flights which are directed to the hospital on a patient care basis by the Ambulance Service aeromedical operations centre in consultation with a senior trauma care doctor. And, the decision on where patients are sent is based of the best chance of survival for the patient.

Although clause 20 to Schedule 1 to the Protection of the Environment Operations Act 1997 identifies 'helicopter-related activity' as an activity requiring an environment protection licence, the schedule exempts "an activity that is carried out exclusively for the purposes of emergency aeromedical evacuation, retrieval or rescue."

The EPA notes that the helipad is to be located towards the south eastern corner of the roof of the hospital building with a view to minimising noise impacts on surrounding residents.

Comment	Response
The EPA further notes that the following noise minimisation measures have been adopted for operations at the Royal North Shore Hospital helipad – • Shutting down aircraft engines as soon as practicable after landing, and • Providing aircraft pilots with remote control of helipad landing lights.	
EPA recommended that:- The Proponent be required to investigate and implement reasonable and feasible measures to minimise helipad noise impacts on surrounding residents where those measures would not compromise patient, staff, aircrew or aircraft safety.	The preparation of a management plan for the operation of Critical Emergency Helicopter events will be prepared taking into account the siting of the helipad, the number of flights and the operational requirements of the facility.

Comment	Response
17. Clinical and related waste The EPA anticipates that the hospital will generate 'clinical and related waste' which is defined in Schedule 1 to the Protection of the Environment Operations Act 1997. Clinical and related waste includes clinical waste; cytotoxic waste; pharmaceutical, drug or medicine waste; and sharps waste. EIS Appendix Q briefly outlines waste management and confirms that the hospital will generate clinical and related waste. However, section 3.3 of Appendix Q (How legislative....requirements will be adhered to) does not appear to reference statutory responsibilities under the Protection of the Environment Operations (Waste) Regulation 2014. Clinical and related waste has been pre-classified as a 'special waste'. Schedule 1 to the Protection of the Environment Operations (Waste) Regulation 2014 identifies certain clinical and related waste as category 1 trackable wastes. Hospital waste managers/operators who consign, transport, store, treat or dispose of clinical and related waste should familiarise themselves with the requirements of the Protection of the Environment Operations Act 1997 and the Protection of the Environment Operations (Waste) Regulation 2014 for licensing and other requirements in relation to clinical and related wastes. EPA recommended that:- The Proponent be required to undertake proper assessment, handling, storage, transport, treatment and disposal of clinical and related waste arising from operation of the hospital to ensure compliance with Protection of the Environment Operations Act 1997 and the Protection of the Environment Operations (Waste) Regulation 2014.	As noted in Appendix Q – Waste Management Strategy (Stage 2 Infrastructure Application & EIS), the designated Contractor is licenced under the POEO Act.

Comment	Response
18. Radiation Control Act and Regulation Section 4.2 of EIS Appendix R Hazardous Materials confirms that diagnostic and clinical treatment radiation equipment will be installed and operated at the hospital. However, the plans for the hospital do not appear to show a radiation oncology department. The EPAZ administers the Radiation Control Act 1990 (and Radiation Control Regulation 2013) and anticipates that 'regulated material' will be stored and possessed on the hospital campus. 'Regulated material' means - (a) Radioactive substances, (b) Ionising radiation apparatus, (c) Non-ionising radiation apparatus of a kind prescribed by the regulations, and (d) Sealed source devices. A 'person responsible' within the meaning of Section 6 of the Radiation Control At 1990 is obliged to hold an appropriate 'radiation management licence' in respect of regulated material at the hospital campus. A natural person who uses regulated material at the hospital campus must hold a 'radiation user licence' and must comply with any conditions to which the licence is subject. Frequently asked questions about radiation management licences is available via the following link: www.epa.nsw.gov.au/radiation.management/faq.htm The EPA notes that section 4.2 Appendix R addresses shielding requirements for imaging apparatus but appears to overlook compliance requirements in respect of the installed apparatus. Whilst the EPA acknowledges the importance of shielding as an essential consideration during construction of the radiology department, compliance of the installed apparatus with the Radiation Control Act and Regulation is equally important.	

Comment	Response
The EPA is also concerned about the currency of Standards referenced in section 4.2 as it understands at least one of those Australian Standards has been withdrawn. And in that regard, draws the Proponent's attention to EPA publications concerning best practice for shielding and imaging apparatus standards being: (a) Radiation Guideline 7 Radiation shielding design assessment and verifications requirements; and (b) Radiation Guideline 6 Radiation Management Licence requirements and industry best practice for ionising radiation apparatus used in diagnostic imaging. The above mentioned guidelines are available on the EPA website. Whilst the Stage 1 EIS (Concept Plan) acknowledges the EPA's Waste Classification Guidelines including Part 3: Waste Containing Radioactive Material, the Stage 2 EIS (Appendix Q) appears to overlook the issue of waste containing radioactive material.	
Recommendation	
The Proponent be required to consult with the Environment Protection Authority in regard to –	
(a) A 'radiation management licence' in respect of regulated material on the hospital campus, and (b) The management and handling of any waste containing radioactive material.	Noted. As noted in Appendix Q – Waste Management Strategy (Stage 2 Infrastructure Application & EIS), the designated Contractor is licenced under the POEO Act.

Comment	Response
19. Energy and Water Conservation The EPA emphasises that energy and water conservation are essential components of ecologically sustainable development particularly pursuant to the principle of inter-generational equity. Hospitals are typically heavy users of – • Electricity which in NSW is for the most part generated by burning non-renewable fossil fuel resources, and • Potable water which is expensive and energy intensive to deliver on demand at quality consistent with NHMRC Drinking Water Quality Guidelines. The EPA considers the design stage of the project to be the optimum time to integrate measures to achieve – • Energy efficiency (with resultant running cost savings), • Water conservation through stormwater collection, treatment and re-use for non-potable purposes such as ground maintenance, and • Water efficiency The EPA acknowledges that EIS Section 4.4 Ecologically Sustainable Development proposes a number of broad initiatives (including stormwater re-use) to conserve energy and water during operation of the hospital, the hospital campus and its supporting infrastructure.	
	Noted

TfNSW

Comment	Response
1. The submitted plans also show that the left in and left out Ambulance Only access on Frenchs Forest Road West may be enforced by a median. Details of any requirements to this median to allow right turn movements for emergency vehicles is to be submitted to Roads and Maritime as part of the Connectivity and Network Enhancement Project.	It is noted that the Stage 1 RMS reference drawing indicates a break in the Frenchs Forest Road West median. Details of the emergency right turn movement requirements will be submitted to the RMS once defined.
2. The configuration proposed for the southern access on Warringah Road needs to be amended to ensure the access is restricted to Left in and Left Out only. The layout as shown may promote through traffic movement in the south bound direction towards Hilmer Street. Consideration should be given to providing emergency access at this point. TfNSW requests the Proponent address this issue in the response to submissions.	Traffic movements from this intersection are left in; left out; right out and right in only for emergency vehicles.
3. The plans submitted in support of Stage 2 show emergency access on Frenchs Forest Road West at 120m east of the main entrance to the hospital. Roads and Maritime's current concept design and environmental impact assessment have been based on the emergency access being 90m east of the main entrance. It is requested that the plans are amended to reflect the emergency access being 90m east of the main access. TfNSW requests the Proponent address this issue in the response to submissions.	It is noted that there is a discrepancy between the proposed RMS emergency access location and that identified by TfNSW. The location of the emergency access point provides for maximum emergency vehicle efficiency and minimises internal traffic conflicts on internal roads and traffic flowing from the main entrance. Detailed design discussions are currently underway with RMS which will resolve this issue.

Comment	Response
4. The Transport Accessibility Study, submitted as supporting documentation for Stage 2 Public Exhibition, has some discrepancies with some figures when compared to those being adopted by Roads and Maritime. These are in relation to traffic volumes along Frenchs Forest Road West and Levels of Services for the intersections of Frenchs Forest Road West/Wakehurst Parkway and Warringah Road/Wakehurst Parkway. TfNSW requests the Proponent address this issue in the response to submissions.	The conclusions drawn in the Stage 2 Transport Accessibility Study (TAS) (refer Appendix 1) have been reviewed against the Connectivity and Network Enhancements (CaNE) data and a revised TAS prepared with particular attention directed toward NBH Trip Generation and the performance of key intersections. ▪ Trip Generation There is a slight variation of less than 5% in the peak hour trip generation rates identified in the revised TAS (843 trips) compared with the 887 trips (rounded to 900 in the modelling) identified in the (CaNE) EIS. The NBH EIS data was based on the RMS guide to traffic generating developments while the CaNE EIS adopted traffic generation potential based on a similar hospital. It is noted that the traffic network modelling carried out by RMS incorporated the higher trip generation figures. The detailed traffic network modelling that has been carried out by RMS has been reviewed and has been identified as the most comprehensive, detailed and substantive information available. Accordingly, the RMS modelling of the impact of trip generation volumes on the network and intersections has been adopted as part of the Revised Transport Accessibility Study. ▪ Intersection Performance Given the comprehensive and substantive nature of the RMS traffic modelling, the levels of intersection performance have been carefully reviewed and aligned with the CaNE data in the Revised Transport Accessibility Study.

Comment	Response
5. The swept path of the longest vehicle (including garbage trucks) entering and exiting the subject site from all access points, as well as manoeuvrability through the site, shall be in accordance with AUSTROADS. In this regard, a plan shall be submitted to Roads and Maritime for approval which shows that the proposed development complies with this requirement.	Noted. All vehicles will enter and exit the hospital in a forward direction. Details of the swept path of the longest vehicle accessing the site will be prepared.
6. It is not clear where bicycle parking will be placed in the parking garage. TfNSW supports provision of bicycle racks to be located in secure, convenient, accessible areas close to the main hospital entries incorporating adequate lighting and passive surveillance, close to end of trip facilities. TfNSW requests the Proponent clarify this issue in the response to submissions.	Provision for both staff and public bicycle parking has been made at ground level within the carpark structure (refer Figure 11).
Facilities for pedestrians and cyclists are to be provided in accordance with the required standards and to align with those being proposed by Roads and Maritime as part of the Connectivity and Network Enhancement Project and Warringah Council's pedestrian and bicycle plan.	The CaNE EIS notes that as part of Stage 1 (CaNE EIS, Section 5.2.2, Naree Road and Frenchs Forest Road West, page 52, SMEC, October 2014): <i>"A 1.5 metre concrete path would be provided on the northern side of Naree Road and Frenchs Forest Road West within a 3.5 metre footpath reservation. A verge would be provided, and would vary between one to two metres in width depending on topography"; and</i> <i>"A 3.5 metre concrete path would be provided within the footpath reservation on the southern side of Naree Road and Frenchs Forest Road West."</i>

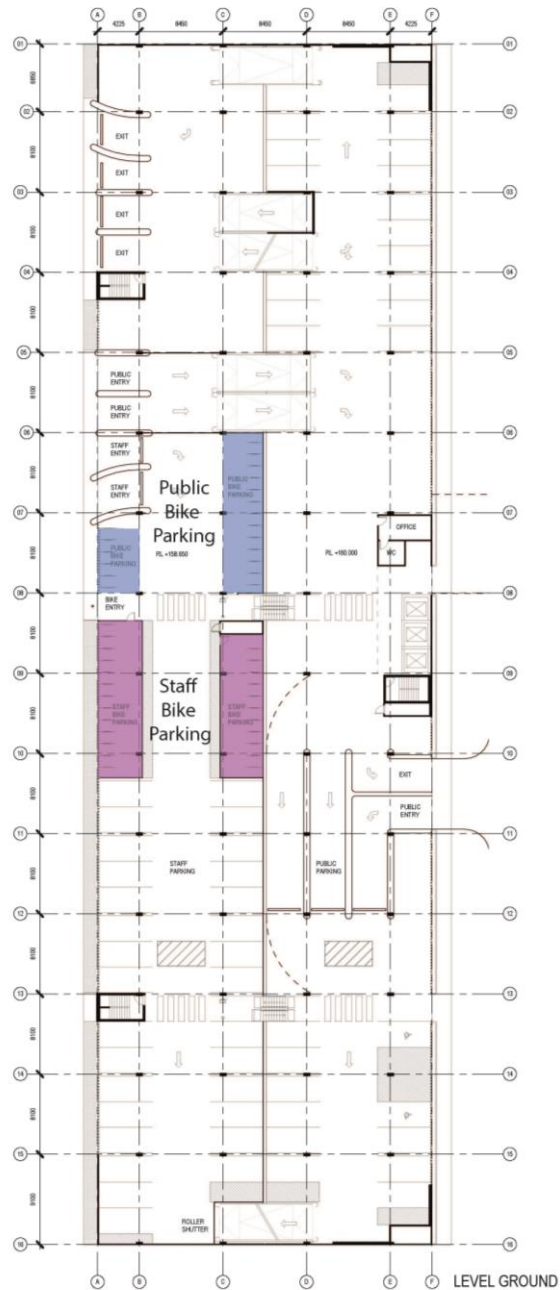


Figure 11: BICYCLE PARKING
(4.02.15)

Comment	Response
7. The connection (and any relocation) of utility services for the hospital site needs to be taken into consideration of the works being proposed by Roads and Maritime as part of the Connectivity and Network Enhancement Project.	The Stage 2 NBH utilises an existing 300 mm sewer connection on the northern side of Warringah Road.
8. If it is necessary to excavate below the level of the base of the footings of the adjoining roadways, the person acting on the consent shall ensure that the owner/s of the roadway is/are given at least seven (7) days' notice of the intention to excavate below the base of the footings. The notice is to include complete details of the work.	Noted
9. Roads and Maritime will work closely with Health Infrastructure to ensure the groundwater assessments prepared for the Connectivity and Network Enhancement Project takes account of any groundwater impacts from the Northern Beaches Hospital.	Noted
10. The Department should ensure that post-development storm water discharge from the subject site into the Roads and Maritime drainage system does not exceed the pre-development discharge.	Stage 2 SMS & P (Hyder, Section 5.2) proposes a strategy to maintain predevelopment catchment areas to key discharge points and on site detention to restrict post development peak flows for the 5,20 and 100 year ARI events. Details of the site drainage system modelling (utilising DRAINS software) will be provided prior to connection to the external stormwater system.

Comment	Response
11. Should there be changes to Roads and Maritime drainage system then detailed design plans and hydraulic calculations of any changes to the stormwater drainage system are to be submitted to Roads and Maritime for approval, prior to the commencement of any works.	Noted. All connections to the RMS drainage system are shown on the NBH EIS Stage 2 Plans.

4 RESPONSE TO COMMUNITY SUBMISSIONS

This section provides responses to issues raised by members of the public. The total number of submissions received from the community was 14.

The issues raised included:-

- The need for defined construction traffic routes and provision for construction vehicles to turn right at the Warringah Road site entry outside traffic peak periods. (1)
- Critical comment related to loss of remnant bushland. (1)
- The need for a birth centre as part of, or adjacent to the NBH. (8)
- Support for the project. (1)
- Comment on alternative road paving systems. (1)
- Critical review of the design philosophy associated with NBH, including a comparison with a Danish hospital project. (1)
- Comment / criticism related to the NBH location / road works / car parking / sustainability design rating. (1)

Comment	Response
1. Defined Construction Traffic Routes	Traffic management measures will be defined in the Construction Environmental Management Plan which will include haulage routes leading up to and leaving the site. Similar to NBH Stage 1, haulage routes for construction vehicles would be along the arterial and sub-arterial road network where practicable. Construction traffic will not be permitted to access the site from Frenchs Forest Rd West and Naree Rd. This will minimise noise and traffic impact on residences and the Forest High School. Traffic management rules, including haulage routes, will be communicated to all subcontractors in their inductions prior to commencing works on-site.

Comment	Response
	To ensure the safety of pedestrians and through traffic on Warringah Road, a Traffic Management Plan will be developed and will be implemented for construction traffic entering and leaving site or any works required on the peripheral roads.
2. Loss of Remnant Bushland	An independent biobanking assessment was undertaken for the proposed NBH development as part of Stage 1. The biodiversity offset strategy provided for the clearing of the total hospital site (refer Biobanking Agreements, ID 55 and ID 38).
3. Birth Centre	The Birthing Suite is integrated with and designed to complement community based services, providing continuity of care delivered by the interdisciplinary team located at community clinics within the catchment. The Birthing Suite will provide inpatient beds and facilities to accommodate the social and emotional needs of the woman throughout the antenatal and delivery period of their pregnancy, including pregnancy loss. In addition to the 40 beds within the Maternity Services, 10 Birthing Suites are provided.
4. Support for the Project	Noted.
5. Alternative Road Paving Systems	Noted.
6. Review of Design Philosophy	The comments are noted but do not appear to reflect the NBH site constraints, nor the design framework defined in the Stage 1 Concept Plan approval.

Comment	Response
7. Criticism related to the NBH location / Road Works / Car Parking / Sustainability Design Rating	The critical comments are noted, together with the author's conclusion that: <i>“Government should find a more suitable location, closer to the demographic centre (future) of the peninsula area, not in existing residential area and with better arterial access.”</i>

5 CONCLUSION

This report has been prepared to support HI's State Significant Infrastructure application and EIS for Stage 2 of the Northern Beaches Hospital. The report should be read in conjunction with the *Northern Beaches Hospital (Stage 2) Application* and the supporting documentation.

The key issues identified by DP&E, as well as the issues raised in the submissions made during the public exhibition process have been carefully considered. Further detailed information, where relevant, has been provided in response to highlight actions and commitments aimed at mitigating any potential negative impacts associated with the Stage 2 application.

Accordingly, it is recommended that the Stage 2 State Significant Infrastructure application be approved.

LIST OF APPENDICES

1. REVISED TRANSPORT ACCESSIBILITY STUDY (Prepared by Hyder – February 2015)
2. CARPARK PLAN (Prepared by Healthscope April 2015)
3. ECO LOGICAL LETTERS (14 January 2015 and 2 April 2015)
4. PHASE 2 ENVIRONMENTAL SITE ASSESSMENT (Prepared by SMEC – November 2014)
5. OEH LETTER (19 December 2014)
6. VALIDATION OF HERBICIDES IN SOIL (Prepared by GHD – March 2015)
7. REVISED STAGE 2 NOISE AND VIBRATION REPORT (Prepared by Renzo Tonin – March 2015)