

8 May 2019

Ms Aditi Coomar
Principal Planner
Department of Planning and Environment
320 Pitt Street
Sydney NSW 2000

Dear Aditi,

New Tweed Valley Hospital SSD 18_9575 – Fourth Supplementary Response to Submissions, inclusive of Updated Drawing Package

I refer to your request for additional information (via email) dated 26 March 2019, and Health Infrastructure's initial correspondence provided on the 12 April 2019, in relation to the above-mentioned State Significant Development (SSD) application. A formal response to the Department of Planning and Environment's (DPE) request is provided below with additional supporting information attached to this correspondence.

As part of this response to DPE's request for additional information and pursuant to Clause 55 of the Environmental Planning and Assessment Regulation 2000 please find enclosed an updated drawing package for the above SSD application (refer Attachment A). These drawings supersede the previously submitted versions.

The submitted changes to the Concept Proposal and Stage 1 Early and Enabling Works application and associated drawings are generally in response to advice and feedback from DPE and other agencies, including the Government Architect NSW (GANSW) and Rural Fire Service (RFS). This includes a request from DPE for updated drawings and documentation to address / clarify a number of matters. Additionally, a range of other refinements and minor updates to the Stage 1 works have been included. These amendments are described in the following sections, are not considered significant and do not materially change the work that approval was originally sought for.

Asset Protection Zone (APZ) Design Amendments and Location of Planning/Building Envelopes

DPE has outlined that the proposed Asset Protection Zone (APZ) on the north-western side of the hospital's concept planning envelope is less than 50m (43m) from the western boundary since it relies on the rural land on this adjoining lot being classified as managed land. However, DPE has indicated that given the introduction of the Coastal Wetland mapping overlay and potential future changes to the management regime of this adjoining land (including extent and density of vegetation), this cannot be relied upon.

RFS has also advised that the submitted bush fire modelling identified that a minimum of 49m from the boundary of the adjoining land (Lot 3) is required to achieve 10k/W radiant heat exposure to this part of the proposed building. In this regard, the western most section of the building envelope would not comply with the maximum permissible radiant heat exposure level.

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DPE has therefore requested amended drawings and documentation to address / clarify these concerns.

In combination with responding to GANSW feedback and refining the schematic design of the clinical areas of the hospital (refer below), the Concept Proposal has been updated and is now able to accommodate the revised location of the classified hazard and subsequent relocation of the APZ boundary. This includes a number of relatively minor modifications to the site planning, internal road network, building envelope footprint, building envelope massing and site services. The podium levels have been pulled back from the north-west corner by around 25m and the building relocated towards Cudgen Road by 11.5m (in the direction of 'Project' south).

The previously provided Bushfire Constraint Assessment specifies a required 50m setback based on the NSW RFS Planning for Bushfire Protection (PBP 2006), while also noting a 67m setback is envisaged under the proposed draft PBP 2018 version. The revised Concept Proposal and masterplan provides an additional planning contingency by making allowance for a 67m APZ.

The internal road layout has been updated to suit the updated building footprint in consultation with the traffic consultant. These updates are geometric only; the principles of access and egress and the separation of public, staff, service and emergency vehicles remain the same.

Concern for how the masterplan might better respond to the site and conform to the topography

Changes to the building form, have pulled the north western corner of the main hospital building envelope more to the west, better aligning with the existing contours of the site and supporting refinements to the schematic design of some of the clinical areas of the hospital.

The area of the western podium retracted from the north has been relocated primarily to the west, with a much lesser extension to the east. The maximum planning envelope on the Masterplan Concept Proposal has been adjusted accordingly. At Basement and Lower Ground levels, vehicular access and hardstand areas for service vehicles and ambulances at the west have been relocated and reconfigured. Reshaping the western podium supports better clinical design outcomes for the Emergency Department and its interface with the public drop-off area and Green Spine.

Similarly, the building has been pulled towards Cudgen Road by around 10m, further complementing the natural plateau of the site and reducing the walking distance from the proposed bus stops on Cudgen Road.

The project team has worked to ensure the campus masterplan further addresses GANSW concerns and has met with GANSW to present the concept. It is understood that those concerns have now been addressed. In particular, arranging the future development areas such that buildings can more closely conform with the contours of the topography, thus further ensuring the campus reads more harmoniously with the site and allaying fears of a common grid being extrapolated across the site.

Consideration for Civic Space

In response to GANSW feedback, the design of the civic space between the main hospital building and Cudgen Road has been further developed together with the Health Hub building and its surrounds. The resultant strengthening of the public boulevard concept and more direct link from the signalised intersection crossing and proposed bus stops provides for an improved pedestrian

experience by way of clearer and more intuitive journeys into and through the site, accompanied by higher amenity public spaces and enhanced pedestrian network connections and flows.

To the west, the concept of the Green Spine as a buffer, wayfinding reference, linking element to car parking and key civic interface with the hospital is maintained and reinforced at Lower Ground level.

The revised site planning preserves the Green Spine as a prominent focal point and, as the façade and design of interior spaces is developed, will be visualised as intrinsic to and integrated with these elements of the building.

Retaining Walls

The height and extent of retaining walls have been optimised through better alignment of the hospital buildings and campus roads with the natural contours and topography of the site. For example, in the steeper parts of the site the northern section of the service road has been cut into the final landform, with a retaining wall of less than 3.4m on each side of the road (rather than a more significant wall on one side) – this will reduce the visual impact of the road construction from both the north and south.

Other Amendments

In addition, and to complement the amendments described above, updated drawings that document other refinements and minor updates to the Stage 1 Early and Enabling Works scope, including architectural, civil and services components, have been prepared and included in this submission to DPE as Attachment A. These amendments are not considered significant and do not significantly depart from the works that approval was originally sought for. These amendments are detailed in Attachment B.

Impact of Amendments and Conclusion

Health Infrastructure submits that the changes to the Concept Proposal and Stage 1 Early and Enabling Works application and associated drawings described above are in response to advice and feedback from DPE and other agencies, GANSW and RFS.

Specifically, the review and refinement of the campus masterplan and building footprint provides a solution that positively addresses GANSW feedback while improving clinical design outcomes without fundamentally resetting the building chassis. The updated design should allay concerns raised by the GANSW enabling piling to remain as part of the Stage 1 SSD scope.

Although the described amendments result in some changes to the shape and siting of the maximum planning envelope and consequential adjustments to other elements of the Concept Proposal and Stage 1 works, the changes are relatively minor and not considered significant. The changes primarily respond to DPE and government agency feedback and would not result in additional or notably altered environmental or amenity related impacts. Substantial setbacks to the main building envelope are maintained from the Project Site boundaries and surrounding land uses, including residential areas. Minor adjustments / changes to the Stage 1 works are considered to be inconsequential, would not alter the findings of the assessment undertaken, and potential impacts can be effectively managed through implementation of the mitigation measures previously provided to DPE, including a Construction Environmental Management Plan.

Overall, the amendments provide for improved bushfire planning outcomes, consistent with the direction from DPE and RFS. This includes the ability for the Concept Proposal to meet the APZ provisions of PBP 2006 and satisfy the radiant heat requirement of not greater than 10kW/m² and provide additional planning contingency capable of satisfying the requirements of draft PBP 2018. There would be no consequential significant additional impact to the environment or community because of the changes. Further consideration and assessment of design and bushfire related matters would be undertaken as part of Stage 2 detailed design, as required.

Additional Response to DPI Agriculture and Sweet Potato Yields

Notwithstanding the recent rezoning of the Project Site to SP2 Infrastructure, and the supporting assessment/recommendation prepared by DPE that considered the impact to agricultural land and resources, attached (Attachment C) is a response from the Project's agricultural consultant (ARC) that addresses additional comments received from the Department of Primary Industries (DPI) Agriculture regarding crop rotation and yield.

The response from ARC provides further explanation about the consideration of, and assumptions made, around crop rotation periods and expected yield of sweet potatoes on the Project Site under its former agricultural use. Based on the information available, it is considered that the yields and the rotation duration used by ARC are suitably conservative and subsequently the possible gross margin used by ARC is reasonable (refer to attached full response by ARC for details).

Agricultural Offset / Soil Management

The Soil Management Plan (as referred to in your information request) surmises that the red volcanic soils located at the site would be relatively fertile and would provide a good basis for growing media. However long-term cultivation may have led to a reduction of nutrients on site. To further assist in determining the value of the topsoil for re-use, additional details on soil attributes will be required through a soil sampling and laboratory analysis program.

The intent is for the existing site soils to be utilised / managed on-site. If (following additional testing) the topsoil is deemed suitable for use as growing media, the topsoil will be used as part of the overall landscaping of the site – not re-used in filled areas.

If in the event there is a resultant excess of topsoil requiring removal from site, the requirements under the *Natural Excavated Material Order 2014* will be met prior to removal and opportunities for agricultural offset avenues including translocation of soil or mixing soil with organic material for continued re-use by a Landscape Supply Businesses will be further investigated.

Drainage

Robert Bird Group (RBG) as civil engineering consultants for the Project and Greencap (ecological consultants) have provided responses (Attachment D) to queries from DPE regarding stormwater modelling results and nutrient loads and runoff volumes (after treatment) discharged from the site after completion of Stage 2.

RBG has reviewed the concept stormwater design for the proposed Tweed Valley Hospital in relation to the Secretary's Environmental Assessment Requirements (SEARs) and relevant Office of Environment and Heritage (OEH) and Tweed Shire Council (TSC) requirements/feedback.

RBG has modelled the discharge rates from the site using DRAINS software (refer attached for results). Since the stormwater discharge from the site cannot be diverted into an adjacent Council stormwater system, a reduction in post-development discharge to match the pre-development runoff rate will be achieved by detaining stormwater in detention basins along the northern side of the site. The DRAINS model shows that the basins are sufficient to restrict the flow well below the pre-development runoff rate (2.7 m³/s in ARI 5 and 4.6m³/s in ARI 100) which means that the basins can be reduced in size if desired. The discharge rate will be controlled by flow controls (orifice plates) in the outlet pipes for each basin. The basins will not be imperviously lined and will therefore allow some infiltration of stormwater into the subgrade.

RBG has also modelled the stormwater quality discharging from the 16.3 Ha disturbed site area using MUSIC software for the different stages of development (refer Attachment E for results). Stormwater treatment will be provided by using a range of Water Sensitive Urban Design (WSUD) measures in a treatment train approach. Such measures will include proprietary pit baskets (eg. Enviropods), grass buffer strips, grass swales and bio-retention basins. Preliminary modelling of the concept design using MUSIC software demonstrates that the proposed treatment system can be used to meet the TSC development specification water quality objectives and would also reduce the post-development nutrient and pollutant levels below the pre-existing (agricultural use) levels as shown in Table 2 of the attached response. The preliminary MUSIC model demonstrates that the TSC target reductions in pollutant loads can be achieved using filter baskets and approximately 1,500m² of bioretention, which will be provided within the proposed detention basins utilising some of the spare capacity detailed above.

Greencap has reviewed the stormwater response prepared by RBG and has advised that the runoff from the development would result in:

- no increase in pre-development peak flows from rainfall events with a 1 in 5-year and 1 in 100-year recurrence interval;
- no increase in the natural annual average load of nutrients and sediments; and
- no increase in the natural average annual runoff volume.

Greencap has confirmed that the WSUD measures proposed for the final development, which are designed to provide a reduction in nutrient levels, would be beneficial to ecological receptors in the wetlands.

Greencap has advised that when used in accordance with both the manufacturers recommendations and in accordance with the proposed Erosion and Sediment Control Plan the use of Turbiclear as a flocculant in the onsite sediment basins during Stage 1 and Stage 2 construction works is not expected to be detrimental to downstream ecological receptors in the wetlands. Greencap's full response is attached (Attachment F).

Further to this, and the follow up queries received from DPE via email correspondence dated 15 April 2019, the following is provided based on advice from RBG and Greencap:

- With regard to queries around flow characteristics and that the total stormwater volume would be increased in the future, RBG believe that this could be a misinterpretation of the original Bonacci civil design report at Section 6.3.3 which contained Table 6-1 showing discharge rates. It is possible that this has been misinterpreted as it shows post development

flows > pre-development flows. However, these would be the post development flows if no detention basins or other measures to detain stormwater were provided, rather than the proposed flows.

- The MUSIC model output shows that there would be an overall increase in the average annual runoff volume from 92.3 ML/yr (existing) to 143 ML/yr (post-development) as a result of increasing the overall impermeable ratio of the site.
- The purpose of the detention basins is specifically to allow the project to match the post-development peak flows of stormwater as closely as possible to the pre-development peak flows rather than to manage the overall volume of water discharging from the site. However, the detention basins will allow infiltration so that in dry spells the runoff will mirror the existing case, where the vast majority of surface water would soak into the ground rather than runoff into the receiving watercourse.
- With regard to the nutrients, both the original Bonnaci report and the RBG report show a reduction in nutrient loads. The bioretention basins will reduce the annual average Total Nitrogen (TN) discharged from site from 214 Kg/yr (existing) to 159 Kg/yr (post-development). Other pollutants will also be reduced from the existing case.

On this basis the proposed concept stormwater management strategy is acceptable and will not result in any significant environmental impact. There will be stormwater runoff improvements for the receiving environment compared to existing conditions. The final stormwater management strategy/design will be provided as part of the Stage 2 application based on detailed design.

I refer also to your query regarding the fifth sediment basin. This basin, shown in drawing no. C005 within the second supplementary Response to Submission Report, was located adjacent to Cudgen road and was identified as temporary. This fifth basin (unlike the other four basins) was not built as part of the preliminary works. It should be noted that drawing no. C030, also included within the second supplementary Response to Submissions Report, did not include this temporary fifth basin.

The current plans attached to this fourth supplementary Response to Submissions Report show only four basins. The updated stormwater management plan and associated modelling has been undertaken based on four basins. In addition to the above advice, Robert Bird Group has reviewed Bonacci's latest design and has advised that the four northern basins were designed for a total disturbed ground area of 12.48 ha and that the fifth (temporary) basin was designed for a disturbed ground area of 0.88 ha. This provides for a total of 13.36 ha of disturbed ground. The Bonacci design calculations did not account for the fact that part of this 13.36 ha cannot be physically drained to the basins. The current Stage 1 SSD design has allowed for a total disturbed area of 13.99 ha. However, 1.61 ha of this cannot be drained to the basins due to site topography. The remaining 12.38 Ha has been split between Basins 1 to 4 and will take up less than their total design capacity. The runoff from the remaining 1.61 ha, which bypasses the basins, will be treated by sediment fences around the northern and western sides of the site. This is documented in the attached sediment and erosion control plan (refer Attachment A).

Piling Works

As outlined earlier, a meeting was held between Health Infrastructure (HI), GANSW and DPE on 9 April 2019 to discuss this matter. Based on the design study undertaken and presented, HI are of the view that it is reasonable for piling to remain as part of the Stage 1 works scope, and conditions

of consent can adequately manage this component to ensure acceptable outcomes. Further design development as enabled a more detailed piling plan to be prepared for the Stage 1 Early Works. This plan has been included in the updated drawing package (refer Drawing no. SK02.01 and SK02.00 Attachment A).

Tweed Coast Road / Cudgen Road intersection

With respect to the Departments request for clarification dated 2 May 2019 regarding the proposed upgrade works for the Tweed Coast Road / Cudgen Road intersection and follow up queries, a formal response from Bitzios Consulting is attached for your information as Attachment G.

Updated Coastal Wetland Illustration

As requested in your email dated 3 May 2019, please find enclosed (refer Attachment H) an updated illustration showing the revised concept plan with respect to the adjacent mapped Coastal Wetland and Proximity Area.

Health Infrastructure trusts this information satisfies the information request and allows for an efficient assessment of this state significant project. If you have any questions, please contact Leone McEntee at leone.mcentee@health.nsw.gov.au.

Yours sincerely,



Rebecca Wark
Executive Director Rural and Regional

Attach:

- Attachment A - Amended Application Drawing Package
- Attachment B - List of amendments to drawings
- Attachment C - ARC agricultural response
- Attachment D - Robert Bird Group stormwater management response
- Attachment E – MUSIC modelling
- Attachment F- Greencap stormwater response
- Attachment G - Bitzios traffic response
- Attachment H - Updated Coastal Wetland Map