

Ms Leone McEntee
Manager Planning
HEALTH INFRASTRUCTURE
Level 14
77 Pacific Highway
North Sydney New South Wales 2060
02/04/2020

Dear Ms McEntee

Tweed Valley Hospital Stage 2 (SSD-10353)
Request for Additional Information

I refer to Response to Submissions (RtS) for the Tweed Valley Hospital Stage 2 (SSD-10353). After careful consideration, the Department is requesting that you provide additional information.

Hydrology assessment

The Department has reviewed the Hydrology Assessment Report (report) submitted with the Tweed Valley Hospital Stage 2 (Stage 2) application. The report has undertaken an assessment of the impact of the additional stormwater runoff from the development on the adjoining coastal wetlands to the north.

The report includes a broad assessment of the increase in water depth within the coastal wetlands if an additional 30 - 36 megalitre (ML) / year runoff is discharged from the development. The assessment assumes that the runoff would be evenly distributed across the entire wetland area of 30.7 hectare (ha) over one / two / three events every year. However, this will not be practically achieved as the coastal wetlands are not uniform in topography or are the outlets equally distributed. The micro-topographic variations would result in an increased frequency of wetting and inundation of localised areas for extended periods. Consequently, the vegetation in these areas may not survive where it is unable to tolerate increased frequency and extended wetting periods.

Further the changes to the post-development seasonal flows into the wetland are likely to impact on the existing vegetation more than the infrequent large flooding events (coastal wetlands are well adapted to such events). In this regard, the Department notes that the report does not assess the impacts of the post development flow regime in each season on the critical habitat of the existing vegetation within the coastal wetlands. Consequently, the report is required to be updated to answer the following key questions:

- are there particular periods / seasons in each of the year where increased wetting due to increased runoff volumes would occur and be detrimental to sensitive vegetation communities?
- how would the distribution of average annual runoff volume to the wetland change post-development considering longer periods (i.e. monthly and seasonal periods such as 30, 60 or 90 days)?

- are there areas in the wetland where increased runoff volumes would increase the inundation extents, depths and periods significantly?
- are the vegetation communities in the identified areas (above) susceptible to impacts from increased period of wetting and related reduced periods of drying?
- would the increase of impervious areas and lower rate of recharge of groundwater within the site impact on the groundwater flow into the wetlands?

The Department notes that the report utilised flow results from event-based models prepared in the DRAINS software as a basis for their assessment of flow regime changes and the MUSIC model to estimate increases in estimated total average annual runoff volumes. The Department considers that the flow outputs from the continuous simulation MUSIC models would be more appropriate to answer the questions above. The assessment should be amended to utilise simulation MUSIC models.

If the assessment results indicate that there are possibilities of additional runoff into the coastal wetlands during the dry seasons, additional harvesting measures are to be proposed within the site to ensure that the critical habitat of the vegetation within the wetlands is not impacted significantly. Additional harvesting of rainwater within the site (through infiltration trenches, rainwater garden) would result in capturing water from the frequent small runoff events that cumulatively represent the bulk of the increase in post-development stormwater volume. The Department notes that there are geotechnical constraints within the site and recommends that engineering solutions should be sought to provide additional harvesting measures, if needed.

Traffic assessment

The Department has reviewed the Traffic Impact Assessment Report (TIA) for the Stage 2 application and compared it with the TIA of the Concept Proposal. The Department notes the following discrepancies:

- the background traffic volumes for the Stage 1 and Stage 2 TIA do not match. This is highly unlikely as there should be no difference in the background traffic modelling for year 2023 and 2033 in both Stages. The TIA must address this discrepancy in the results.
- the SIDRA modelling results for design traffic at the Tweed Coast Road / Cudgen Road intersection, as provided in the Concept Proposal and the Stage 2 application vary slightly. While this is evident as the Stage 2 application includes more hospital capacity and additional intersection upgrade works, the following discrepancies are noted:
 - some of the lanes in Tweed Coast Road would have a lower Level of Service (LoS) in 2023 for the Stage 2 application, than that anticipated in the Concept Proposal. The TIA must address why this occurs noting that the proposed number of beds in the Stage 2 application in 2023 is 391 (plus the additional upgrade works) whereas the Concept Proposal was based on 430 beds in 2023.
 - similar variation in results are noted in the intersection performance for 2033, when the Concept Proposal and Stage 2 applications are compared. The Stage 2 TIA needs to

address whether the additional delays and lower LoS noted in some lanes for Tweed Coast Road / Cudgen Road for Stage 2 in 2033 are due to the additional hospital capacity proposed. If this is the case, the TIA must also address whether any additional management, mitigation measures are needed at this intersection to improve the delays / queuing for the individual lanes.

Infrastructure Management Plan

The proposed Infrastructure Management Plan (Appendix R of the Environmental Impact Statement) is required to be updated to include the additional response provided with the RtS.

You are requested to provide the information, or notification that the information will not be provided, to the Department by Thursday 30 April 2020. If you are unable to provide the requested information within this timeframe, you are requested to provide, and commit to, a timeframe detailing the provision of this information.

If you have any questions, please contact Aditi Coomar, who can be contacted on 8217 2097 or at aditi.coomar@planning.nsw.gov.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'KH', with a long horizontal flourish extending to the right.

Karen Harragon
Director, Social And Infrastructure Assessments
Social & Infrastructure Assessments