



Department of Primary Industries

OUT15/22288

Mr Justin Woodhouse
Infrastructure Projects
NSW Department of Planning and Environment
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SYDNEY NSW 2001

21 SEP 2015

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Dear Mr Woodhouse,

**Northern Beaches Hospital Connectivity and Network Enhancements Stage 2
(SSI_6622)
Response to exhibition of Environmental Impact Statement**

I refer to letter from Mary Garland dated 17 July 2015 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment by DPI Water

DPI Water has reviewed the Environmental Impact Statement and provides the following comments and further detailed comments in Attachment A.

- Further work is required to provide for adequate understanding, management & mitigation of potential water related impacts.
- The EIS erroneously states that no issues were raised in consultation with DPI.
- DPI Water reiterates that a lined (sealed) slot is the preferred design. A lined slot provides improved environmental outcomes for all of the impact criteria considered in the application documents. No justification or analysis has been provided to pursue an unlined design.
- Tangible environmental (and potentially operational) benefits are apparent in the groundwater assessment through the adoption of a lined slot with pressure relief, and the assessment notes this as a feasible option. As no disbenefits to this option have been presented, DPI Water recommends that a condition of consent require the slot to be lined with a pressure relief system, as described in the groundwater assessment, unless the proponent can provide strong justification that it is in the public interest to adopt an alternative design.

Should the unlined slot option be adopted:

- The adequacy and duration of monitoring should be reconsidered to ensure that the impacts of potentially polluted water on the groundwater or the surface water systems can be adequately managed for the life of the project.

- There is insufficient detail to assess whether the preliminary mitigation measures relating to groundwater as outlined in the EIS are appropriate.
- The RMS should provide a comprehensive groundwater and dewatering management plan for the project prior to the development of any conditions of approval.

A meeting between DPI Water, DP&E and the RMS may assist to resolve the groundwater related issues.

For further information please contact Janne Grose, Planning and Assessment Coordinator (Penrith office) on 8838 7505 or at janne.grose@dpi.nsw.gov.au.

Yours sincerely



Kristian Holz
Director Policy, Legislation and Innovation

Attachment A

Northern Beaches Hospital Connectivity and Network Enhancements Stage 2 (SSI_6622) Response to exhibition of EIS Detailed comments by DPI Water

DPI Water provides the following comments on the EIS for Stage 2:

5.3.6 – Construction ancillary facilities

Section 5.3.6 of the EIS notes that the construction compounds are to be located more than 50 metres from a waterway (page 97). DPI Water repeats its recommendation that Table 21.1 includes this as an Environmental Management Measure.

9.4.3 Riparian impacts

The SEARs for SSI-6622 require impacts on riparian areas to be assessed. The EIS does not appear to have described if any waterfront land (as defined in the *Water Management Act 2000*) is affected, the likely impacts to that land, and proposed mitigation and management.

Figure 9.5 - Options for fauna connectivity

Figure 9.5 indicates there is to be an upgrade to the existing box culverts and proposes to install 'furniture' to facilitate fauna passage. If the culvert crossing at Aquatic Drive crosses a creek/drainage line, the culvert design should incorporate wet, and elevated dry cells and provision for the penetration of light (such as a grate) to assist enhance fauna connectivity. DPI Water recommends a Condition of Approval require that watercourse crossings are constructed in accordance with the Controlled Activity Guidelines for Watercourse Crossings (DPI 2012).

Table 15.2 Stage 2 Project safeguards and mitigation measures

Table 15.2 indicates a SWMP is to be prepared for each construction stage (page 329) but the SWMP also needs to outline measures for post construction.

16.2.3 – Erosion, sediment and water quality

Section 16.2.3 notes surface water sampling was carried out at five locations (SW1 to SW5) as shown on Figure 16-2 and four sample events have been completed (page 339). The surface water sampling is not considered adequate in terms of detecting impacts on the waterways potentially affected by Stage 2. Additional sampling sites need to be added to the monitoring locations, including longitudinal sampling sites along each relevant waterway and control /reference sites so as to interpret data from these sites and determine if an impact has occurred (ie detect any trends downstream) and to determine the recovery potential of the site.

Pre-construction sampling needs to continue as 4 sampling events do not cover a sufficiently long period of time to be representative

16.3 Stage 2 project drainage design description

Section 16.3 notes the slot drainage design would include provision for separation of groundwater inflow and surface water and include capture, treatment and discharge requirements for groundwater. This would only need to occur if an unlined slot is constructed instead of a lined slot. DPI Water recommends a lined slot is constructed.

16.5.1– Erosion, sediment and water quality impacts

Section 9.4.3 indicates that the risk of scour and erosion is no worse under the Stage 2 project than existing conditions (page 232) but Section 16.5.1 implies scour and erosion could occur at drainage outlets in Catchment 3 and 4 downstream of the project and these should be monitored for erosion/scour. It indicates where erosion is apparent control measures such as gabion baskets, concrete lining etc. should be implemented (page 348). It is unclear if the proposed solutions to mitigate erosion/scour such as concrete lining, gabions baskets etc) are likely to remove/ degrade riparian vegetation. Clarification is required on this. If the assessed impact is minimal, it is recommended soft engineering solutions are used where possible to mitigate

erosion/scour along drainage lines in preference to hard engineering solutions. It is recommended a mitigation measure is included to reflect this.

16.5.2 Water quantity and stormwater impacts

Section 16.5.2 indicates the project is expected to have little impact on the flow regime entering catchments or wetlands downstream of the study area (page 353) but no details are provided on the wetlands, for example the location and number of wetlands, the approximate distance downstream from the project, whether the wetlands include coastal upland damp heath swamp which is shown on Figure 4 in the Biodiversity Assessment Report, Coastal upland swamps. DPI Water previously recommended the EIS includes some details on the downstream wetlands and repeats this recommendation.

Table 16.6 Safeguard and mitigation measures

It is recommended Table 16.6 is amended to include a mitigation measure to prepare a comprehensive surface water quality monitoring program for the Stage 2 project to cover pre-construction, construction and operation of the project.

Groundwater

DPI Water previously advised as part of its review of the draft EIS that the adoption of an unlined excavation was not supported as indicated below:

"The ongoing take of groundwater during operation of the Stage 2 project is of considerable concern to the Office of Water in terms of potential impacts on the environment including groundwater, watercourses and surface water quality, stream baseflows, GDEs etc. The Office of Water does not regard the unlined slot as a viable construction alternative. A lined slot with the inclusion of a pressure release system to transfer groundwater build up from the up-gradient side to the down-gradient side is the Office of Water's preferred option."

Most importantly, the modelling results presented and discussed in the Groundwater Assessment report (GHD, 2015) identify that improved environmental outcomes result for every impact criteria considered where the construction of a lined slot is adopted for the project.

DPI Water reiterates that "A lined slot" remains the preferred option to reduce the environmental impacts of the project, as well as simplifying the ongoing monitoring and management requirements for the proponent.

Tangible environmental (and potentially operational) benefits are described in the groundwater assessment through the adoption of a lined slot with pressure relief, and the assessment notes this as a feasible option. As no disbenefits to this option have been presented, DPI Water recommends that a condition of consent require the slot to be lined with a pressure relief system (or equivalent alternative), as described in the groundwater assessment, unless the proponent can provide strong justification that it is in the public interest to adopt an alternative design.

Groundwater Dependent Ecosystems

DPI Water has concerns over the impact of the take of groundwater on potential Groundwater Dependent Ecosystems, particularly given the identified presence of springs in the sandstone and potential groundwater dependent ecosystems and threatened species it is likely they could be affected by the changes to hydraulic conditions particularly from perpetual dewatering.

Requirement for access licence

DPI Water notes that an exemption is provided in the *Water Management (General) Regulation 2011* for roads authorities in relation to the requirement to hold a water access licence for construction and maintenance.

DPI Water is currently liaising with RMS to determine a position on the requirement to hold a licence for ongoing take of groundwater, however notes and appreciates the commitment to obtain an appropriate water access licence in a future controlled allocation order as a mitigation measure to the take of groundwater.

Monitoring

In order to adequately assess the potential impacts of the project on groundwater, the information to be generated for the detailed design of the construction needs to be considered by DPI Water. The components requiring additional input from RMS to enable adequate assessment of the impacts are as follows:

- **Monitoring bore network.** It is not clear if the network used to collect the limited baseline data has been sited to permit the ongoing monitoring of groundwater for the operational life of the project. Examination of maps identifying the locations of monitoring bores suggests some of the bores are likely to be damaged, destroyed or removed as part of the hospital development or road network upgrade works. There does not appear to be any replacement plan for damaged or destroyed bores within the documentation provided. A purpose-drawn monitoring bore network layout needs to be provided by Roads and Maritime Services to illustrate the long-term points of reference for determining groundwater impacts.
- **Groundwater level monitoring.** Whilst the Groundwater Assessment alludes to baseline monitoring for the Stage 2 project, there appears to be no data being collected after December 2014. It is not documented whether data loggers were deployed within the monitoring bore network after December 2014, or even if any manual measurements are being collected in advance of the commencement of the Stage 2 project. As the ongoing monitoring of potential impacts is a requirement of the NSW Aquifer Interference Policy to enable comparison with modelling predictions, RMS needs to provide documentation of the proposed groundwater level monitoring to be undertaken for the project, including baseline measurements. The use of automatic water level recording instruments (loggers) in all of the monitoring bores is preferred.
- **Groundwater quality monitoring.** The alignment of groundwater quality monitoring for discharge to stormwater during construction with the likely Environmental Protection Licence limits during construction is well documented, with quarterly monitoring for a specific analytical suite being proposed. Quarterly monitoring for a minimum period of 3 years for the same specific analytical suite as during construction has been proposed for the initial operating period.

Should an unlined slot be adopted, the adequacy and duration of this proposed monitoring should be reconsidered to ensure that the impacts of potentially polluted water on the groundwater or the surface water systems can be adequately managed for the life of the project.

- **Discharge measurements.** The management of discharge volumes arising from groundwater inflows in isolation of any other inputs are identified within the documentation. Despite the comprehensive work required to establish the isolation of groundwater seepage from other water inputs, the hydrogeological consultant recommends not to undertake flow monitoring.

The monitoring of the volumes of groundwater take (measurement method and schedule) are essential to effective management of impacts from the project. The use of approved water measurement devices on groundwater-only flows need to be detailed by the proponent, in addition to the frequency at which such measurements are to be taken. The use of automatic measuring instruments (loggers) to capture continuous readings and the monthly reconciliation of those data are preferred.

- **Baseline monitoring.** The NSW Aquifer Interference Policy requires baseline monitoring at an appropriate frequency and scale. In that regard, the monitoring data provided in the Groundwater Assessment report is not considered appropriate (being only for a maximum period of 10 months). The lack of a detailed plan to manage and identify impacts arising from the dewatering exacerbates concerns in relation to inadequate baseline data.

- *Make good provisions*

- The proponent has identified drawdown at private water supply bores, and needs to ensure adequate monitoring and mitigation for any impact to water supply.

17.4.3 Groundwater Quality

Section 17.4.3 indicates additional investigations need to be undertaken including a more detailed assessment of the quality of each creek and the capacity of the creeks to receive groundwater seepage (page 385). If an unlined slot is used, this detailed assessment needs to be undertaken and it should be included as a condition of approval

18.3.1 Waste

The EIS notes potential sites have been identified to receive the spoil generated by the Stage 2 project including Hornsby Quarry (see Section 18.3.1, page 394). Clarification is required on this as the EIS for SSI-7066 (Hornsby Quarry Road Construction Spoil Management project) indicates the quarry would only receive spoil generated from the NorthConnex project and not from any other source. The listing of Hornsby Quarry in the EIS to receive spoil from SSI-6622 is not consistent with the EIS for SSI-7066.

Table 21.1 Summary of safeguard and management measures

Hydrology, surface water quality and flooding:

It is suggested the management measure to prepare a Soil and Water Management Plan is amended to ensure:

- the SWMP is prepared in consultation with the DPI Water,
- erosion and sediment control measures if required along watercourses/ drainage lines incorporate soft engineering techniques where possible (instead of hard engineering solutions such as gabion baskets etc.),
- the monitoring program includes the monitoring of erosion/scour along watercourses/ drainage lines and any mitigation measures that are used to mitigate impacts

End Attachment A