



Office of Environment & Heritage

Your Reference SSI 4951
Our reference: Doc12/47153

Mr Andrew Beattie
Infrastructure Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Beattie,

I refer to your letter received by the Office of Environment and Heritage (OEH) received on 9th November 2012, inviting a submission on the Environmental Impact Statement (EIS) for the Windsor Bridge Replacement project (SSI - 4951).

OEH has reviewed the EIS and has the following comments on Aboriginal cultural heritage and flooding.

Aboriginal Cultural Heritage

The test excavations undertaken by Kelleher Nightingale at the site of the proposed Windsor Bridge were adequate to establish the nature of the archaeological values of the area. The southern bank includes a location of high scientific significance, including evidence that links this location to the highly significant site immediately to the west at the Museum site, which indicated late Pleistocene occupation along the Hawkesbury River. The Aboriginal community have expressed that the area in general is of high cultural significance. The report notes that

"It is likely that similar or superior quality archaeological deposits exist along other parts of the Windsor ridge. Conserving these less disturbed archaeological deposits rather than the disturbed W-SP 45-5-3581 deposit, would be important to heritage conservation" (page 213, Vol.1 Main Report EIS).

The report does not identify any such locations and whether in fact such deposits may in fact occur. Such data would have been essential to support the conclusion that a significant site, even is slightly disturbed, can be impacted.

The presence of a site of significant archaeological and cultural value such as this usually results in a recommendation of conservation of the site. Where this is not possible other options include:

- identification and protection of another location/s along the River that support similar significant archaeological and cultural material; and
- comprehensive salvage of the site to enable 'conservation by record' as proposed in the Kelleher Nightingale Report.

It is recommended that the consent authority give consideration to these mitigation measures.

Flooding

The primary objective of the Government's Flood Prone Land Policy is to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone land and reduce private and public losses resulting from floods. The most appropriate method to assess the development of flood prone land is through the floodplain risk management process which is detailed in the NSW Floodplain Development Manual (2005).

After considering the floodplain management issues in the EIS (SKM 2012), against the Director General's Environmental Assessment Requirements, OEH offers the following comments.

It should be noted that Hawkesbury City Council has finalised and publically exhibited the Hawkesbury Floodplain Risk Management Study and Plan final report (Bewsher Consulting, July 2012), which contains relevant and important information in regards to floodplain risk management in the Hawkesbury Local Government Area.

OEH has acknowledged that a comprehensive flood impact assessment has been undertaken for the current project (SKM, June 2012) to include the proposed project and adjacent areas. The assessment covers the full range of flooding up to the probable maximum flood (PMF). However, further consideration should also be given to the following.

Section 7.7.4 - Operational Impacts (page 359 - 360)

The assessment indicates the following impacts:

- 5 year ARI flood event - flood levels would increase by up to 0.12m just upstream of the project. This would affect approximately 360 lots, increasing flood levels by up to 15% in about 50 of these properties. One additional residential dwelling would experience over floor flooding due to the project, while two buildings would experience an increase in flood depth of more than 25%. These three buildings would be most at risk from the increased flood levels from the project. Flood levels would decrease downstream of the project.
- 20 year ARI flood event - flood levels would increase by up to 0.03m just upstream of the project. This would affect approximately 580 lots, increasing flood levels by less than 5%. It is estimated that four additional residential dwellings would be flooded above flood level due to the project.
- 100 year ARI flood event and greater - there would be negligible increase in flood levels as a result of the project in the 100 year ARI flood event and larger.

The potential increases in flood levels are of concern, particularly in the 5 year ARI flood event and for those additional properties affected by over floor flooding.

Section 7.7.5 - Environmental Management Measures Operational Measures (page 367)

The Report states that '*flood mitigation requirements and options for buildings potentially impacted by the project will be investigated **during the detailed design phase** in consultation with landholders*' (bold added).

It is of concern that this statement pre-supposes that the increases in flood level are acceptable to those affected. It is therefore recommended that this issue be discussed with Hawkesbury City Council in the first instance so that a community engagement strategy is developed prior to any determination of this project. One suggestion for Council would be to individually write to all affected property owners and occupiers.

It is also recommended that the State Emergency Service (SES) be consulted at the same time on how increased flood levels from the project could impact on its emergency management procedures, particularly the evacuation of properties.

Section 7.7.4 - Operational Impacts (page 365)

Section 8.1.1 - Climate Change and risk context (page 416)

The NSW Government announced its Stage One Coastal Management Reforms on 8 September 2012. As part of these reforms, the NSW Government no longer recommends state-wide sea level rise benchmarks for use by local councils, with councils having the flexibility to consider local conditions when determining local future hazards.

Ideally the EIS should have considered information on historical and projected future sea level rise that is widely accepted by competent scientific opinion. This may include information in the NSW Chief Scientist and Engineer's Report entitled 'Assessment of the Science behind the NSW Government's Sea Level Rise Planning Benchmarks' (April 2012), available at www.chiefscientist.nsw.gov.au/Home/Reports.aspx

The NSW Chief Scientist and Engineer's Report notes the evolving nature of the science, which will provide a clearer picture of the changing sea levels into the future. The report identified that:

- the science behind sea level rise benchmarks from the NSW Sea Level Rise Policy Statement (October 2009) was adequate;
- historically, sea levels have been rising since the early 1880s;
- there is considerable variability in the projections for future sea level rise;
- the science behind future sea level rise projections is continually evolving and improving.

However, as the majority of the tasks associated with this current EIS were completed prior to the announcement of the NSW Government's Coastal Management Reforms in September 2012, the potential impacts of sea level rise have been based on sea level rise projections from the 2009 NSW Sea Level Rise Policy Statement. Given that the Chief Scientist and Engineer's Report identifies the science behind these sea level rise projections is adequate, the potential impacts of sea level rise that has been adopted for use in the EIS, has been based on the best available information at the time of preparation this report.

Section 11.2 - Conclusion (page 468)

The 4th paragraph of this section states: *"Other operational impacts of the project such as noise, air quality and **flooding would be similar to impacts from the existing bridge and approach roads**" (bold added).*

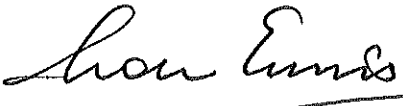
It is considered that this statement about flood impacts is misleading. Impacts from flooding from the project are in fact worse than the current bridge. It is therefore recommended that the measures that will be implemented both in the short-term (as recommended above) and during the detailed design phase (as stated in 7.7.5 of the Report) be included as conditions of approval.

References

- SKM, Windsor Bridge replacement project - Environmental Impact Statement - Volume 1 - main report, November 2012.
- SKM, Windsor Bridge replacement project - hydrology working paper - working paper 8, November 2012.
- NSW Government, Floodplain Development Manual, (April 2005).

If you have any queries please contact Susan Harrison at susan.harrison@environment.nsw.gov.au or on 9995 6864.

Yours sincerely

 17/12/12

LOU EWINS
Manager Planning & Aboriginal Heritage
Regional Operations, Metropolitan
Office of Environment and Heritage