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Ms Angela Stewart
Planning and Assessment Group
Department of Planning, Industry and Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

Dear Ms Stewart

Subject: EES flood comments on Environmental Impact Statement for Sydney Metro West Stage 2 Project – The Bays to Sydney CBD - SSI-19238057

Reference is made to the Environment, Energy and Science Group's (EES) submission of 1 December 2021 on the Environmental Impact Statement (EIS) for this State significant development which relate to biodiversity and landscaping issues. Further to this submission EIS provides its recommendations and comments in relation to flooding at Attachment A.

If you have any queries regarding this matter, please contact Janne Grose, Senior Conservation Planning Officer on 02 8837 6017 or at janne.grose@environment.nsw.gov.au.

Yours sincerely

S. Harrison

02/12/21

Susan Harrison
Senior Team Leader Planning
Greater Sydney Branch
Biodiversity and Conservation Division

Attachment A

Subject: **EES flood comments on Environmental Impact Statement for Sydney Metro West Stage 2 Project – The Bays to Sydney CBD - SSI-19238057**

The Environment, Energy and Science Group (EES) has reviewed the following reports for this SSI:

- Environmental Impact Statement - Chapter 17 - Hydrology and flooding
- EIS Technical Paper 9 Hydrology and flooding - Part 1 Main Report to Appendix B

and provides the following comments.

Flooding

The submitted reports include the assessment of flooding impacts at construction sites at The Bays, Hunter Street in the CBD and Pyrmont. The Bays site will be used as the launching pad for the TBM (tunnel boring machine) and an above ground station.

A TUFLOW Model has been developed for the assessment of flooding impacts at The Bays. The model has been compared with the previously developed Sobek Model for the Leichhardt Flood Study by Inner West Council (2015). A comparative assessment of the outputs from these models has been undertaken to evaluate the consistency and reliability of these models in evaluating the baseline flooding conditions. The outputs are found to be comparable although predicted water levels from the TUFLOW Model are less than the Sobek Model in the vicinity of the proposed construction site at The Bays. The Hunter Street and Pyrmont sites used TUFLOW models developed from adopted studies by the Council of the City of Sydney.

The mapping of flood impacts (afflux) uses a band of -20mm to +20mm to show no significant change in flood levels. With this scale, impacts less than 20mm cannot be seen. Impacts greater than 10mm should be shown. The Conditions of Approval for Stage 1 require a maximum increase of 10mm in inundation at properties where floor levels are currently exceeded in the 1% AEP event. The same condition should be applied to this proposal for Stage 2 and it would be preferable to demonstrate this is achievable prior to approval. The mapping should be revised to show a band of -10mm to +10mm flood level change (afflux).

The modelling for the construction sites at The Bays, Hunter Street and Pyrmont adopted the final layout of the station and the underground tunnel as the construction footprint. The assessment of flooding conditions has been made by blocking off the construction footprint. This may underestimate the extent of flooding, which is expected in and around the construction site. The Bays site will have a number of temporary facilities (such as noise barriers) and will stockpile the excavated materials to support the construction activities. In addition, an access road to The Bays will be constructed under a separate planning approval to support the construction works. Again, the M4-M5 Link at the Rozelle Interchange will have twin tunnels with overlapping periods of construction activities and is likely to impact the flooding conditions at The Bays. These factors should be considered in the assessment of flooding conditions and the development of flood risk mitigation works at The Bays.

The submitted reports indicate that the flooding impacts at the construction site for the unmodeled temporary construction facilities and stockpile of excavated materials and the cumulative impacts from the M4-M5 Link at Rozelle will be undertaken along with mitigation measures during the detailed construction planning stage. This may not be adequate for the assessment of flooding risks and the development of flood mitigation measures for the construction site at The Bays and its adjoining areas due to qualitative nature of construction planning works. The completed modelling works included in the submitted reports will need to be updated in sufficient detail to include the unmodelled construction facilities and the cumulative impacts from other developments. The outputs from the updated model should be used to evaluate anticipated flooding risks during the construction stage and the development of appropriate flood risk mitigation measures at The Bays. This may include the augmentation of the

existing culvert at Robert Street located north of The Bays construction site, which has been included as a flood mitigation option in the Leichhardt Flood Study.

The submitted reports indicate that the flooding risks under the projected climate change scenarios may not be relevant for The Bays given the timeline for construction would be within 5-10 years. However, the flooding impacts under the climate change scenarios would be applicable during the operational stage of the Sydney Metro West given the asset and service life of the critical transport facilities would be 120 years or longer. The flooding conditions under the projected climate change scenarios in the 2100s should be evaluated for the development of adaptive and long-term flood risk mitigation measures.

For clarity, EES requests that future mapping of flood depths be revised so that the depth at a given location can be easily interpreted using the legend. The figures presented use so many similar shades of blue that it is very difficult to distinguish between them on the map. An alternative would be to mark and annotate sample and maximum depths at relevant locations.

End of Submission