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Principal Planning Officer  
Key Sites Assessments  
Planning and Assessment Group  
NSW Department of Planning, Industry and Environment  
4 Parramatta Square  
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PARRAMATTA NSW 2150

Dear Mr Hand,

**Subject: Notice of Exhibition – Waterloo Metro Quarter Over Station Development – Northern Precinct (SSD 10440)**

Thank you for your e-mail dated 5 November 2020, inviting Environment, Energy and Science Group (EES) in the Department of Planning, Industry and Environment (DPIE) to comment on the Notice of Exhibition for Waterloo Metro Quarter Over Station Development – Northern Precinct. EES has reviewed the relevant documentation and make the following comments.

**Biodiversity**

A Biodiversity Development Assessment Report (BDAR) Waiver was approved on 24 July 2020.

**Flooding**

*Floodplain risk management*

The reports have not included flood level mapping for any scenarios, except the 1% AEP flood event plus climate change. This is a significant omission. This mapping, including water level contours at appropriate intervals, must be provided as a minimum for the 5% and 1% AEP flood events and the PMF event. It is not possible to verify any of the flood level information quoted in the report without this mapping. A proper review of the submission cannot be completed until this has been provided.

The frequency of typographical and grammatical errors does not give the reader any confidence that the appropriate degree of checking and verification has been completed in general.

*Flood impacts of the proposed development*

The individual buildings of the over station development are not expected to cause any flood impacts; however, the ancillary road works are predicted to cause unacceptable impacts.

The report notes that the Council of the City of Sydney was consulted and noted that an acceptable tolerance for flood level increase would be 10mm. This is considered reasonable and within the level of accuracy of current best practice flood modelling. The Concept Water Quality, Flooding and Stormwater Report of 2018 showed flood level increases that were within the limit of 10mm. It appears that road works were not included in the concept stage modelling.

The current report documents flood level increases that are well in excess of the 10mm tolerance. Increases of up to 100mm are documented for both the 1% and 5% AEP flood events. It appears that an attempt has been made to justify allowing the increase in levels on the premise that these occur for a short period of time, which is not appropriate.

Limited detail has been provided on the topographical changes that would cause the predicted increase. A reduced carriageway width and reconfiguration of two intersections are changes noted in the flood report. Reference is made to the “civil design report for a detailed discussion on the proposed development topography” however, no such discussion is available in that report.

The report states that mitigation measures to ameliorate the flood impacts are under development. This work would need to be finalised and submitted for review by EES before a recommendation could be given to approve the project.

If impacts cannot be reduced to a tolerable level, a detailed investigation of the affected properties, including at least three residential buildings on the other side of Cope St, including floor level survey would allow proper assessment of the impacts.

#### *Flood risk for the development – Flood Planning Levels*

The Concept Water Quality, Flooding and Stormwater Report of 2018 recommended Flood Planning Levels (FPLs) of either the 1% AEP flood level plus 500mm freeboard or the PMF level. This present 2020 report has adopted lower FPLs for retail areas of the 1% AEP flood level (without freeboard). The apparent justification for this change in strategy is that this is consistent with City of Sydney policy, which is not unreasonable.

It appears that all the floor levels meet the requirements. Generally, floor levels are above the 1% AEP flood level and generally above the PMF level. Where required at entries to basements, 500 mm freeboard to the 1% AEP flood level appears to have been provided.

However, the report has not adequately documented all the proposed finished floor levels (FFLs) to enable their comparison to the proposed FPLs. As a minimum, the FFLs need to be provided in Table 4 alongside the FPLs. A possible source of confusion is that the column in the table titled FPL may in fact be FFL. In any case, the FPL should be clearly stated, alongside the FFL. Area 10 FFLs are not visible on the plan provided at Appendix 15.

It appears that there are discrepancies and errors in report e.g. the 1% AEP plus climate change flood at Area 10 is quoted as 0.5m higher than the 1% AEP flood level without climate change, which is vastly inconsistent with the other levels and would require careful reconsideration of FPL level and FFL if that is the case. Consequently, it is recommended that all the flood levels should be checked to ensure no further errors are present.

#### *Flood risk for the development – Residual Risk and Emergency Management*

While it has been asserted, that “Safe refuge can be provided within the proposed development”, this has not been demonstrated. There are several issues regarding residual risk that have not been addressed and require amendments to the design. It is recommended that the proponent engage a suitably qualified and experienced professional to develop an appropriate strategy for flood emergency management. The Alexandra Canal Floodplain Risk Management Study and Plan should be considered along with all relevant emergency management documents by the SES.

The discussion regarding timing of flooding in relation to evacuation has not demonstrated an understanding of the principles involved and is not consistent with current available guidelines. Before the proposal moves to the next stage, a proper assessment of the flood behaviour as it relates to emergency management is required, together with the development of a strategy for flood emergency management. Detailed information on the timing/duration of extreme events should be considered and presented. Shorter and longer durations should be considered for emergency planning, not only the duration that generates the peak flood level.

An attempt has been made to identify areas where occupants could shelter in place. However, no consideration has been given to the number of persons at risk and whether there is enough space for these individuals in the nominated shelter areas. Any persons in external licenced seating areas, must be accounted for in emergency planning.

Lifts and escalators may not be operational during extreme floods. It is not considered acceptable for persons coming from the basement to exit onto the street in extreme floods. Direct stair access must be provided to refuge internal to the building.

Emergency response planning must consider human behaviour. It is not considered appropriate to expect a worker to remain alone inside a small meter room or similar until an extreme flood event passes. Consideration should be given to possible medical evacuations necessary during an extreme flood event.

The City of Sydney policy requires a raised area to be provided above the PMF level for shelter in place purposes. The reports have demonstrated cases where the raised area would only be above the 1% AEP flood level. In this case, alternative provisions must be in place for evacuation during extreme floods, specifically internal access to a shelter.

Consistent with the City of Sydney policy and the concept report, a raised area above the PMF level has been provided in the community area, which is otherwise below the PMF level. This area also provides internal access to other areas of the building. This is consistent with previous reporting and provides an outcome that is sensitive to needs of both urban design and flood emergency response.

All the retail tenancies are above the PMF and have internal access, which appears to be able to be used to reach upper levels in extreme flood events. The proponent needs to confirm the suitability of the shelter in place provisions.

Section 6 states that the Northern Precinct includes external licenced seating areas, but these are not discussed and not visible on the attached plans. Confirmation is required. The persons in this area must be accounted for in emergency planning.

Please note from 1 July 2020 Aboriginal cultural heritage regulation, including advice regarding SSIs and SSDs, is now managed Heritage NSW. The new contact for the ACH regulation team is [heritagemailbox@environment.nsw.gov.au](mailto:heritagemailbox@environment.nsw.gov.au).

Should you have any queries regarding this matter, please contact Bronwyn Smith Senior Conservation Planning Officer on 9873 8604 or [Bronwyn.smith@environment.nsw.gov.au](mailto:Bronwyn.smith@environment.nsw.gov.au).

Yours sincerely



26/11/20

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