
Attachment 11 – Water, Riparian Land, Flooding and Stormwater Response, Cardno

Blackwattle Bay

Response to Submissions

June 2022

Our Ref: AWE200202:DS
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Dear Mia,

BLACKWATTLE BAY SSP – RESPONSE TO SUBMISSIONS – WATER, RIPARIAN LAND, FLOODING AND STORMWATER

Cardno previously prepared a Water, Riparian Land, Flooding and Stormwater Report (May 2021) to inform the Blackwattle Bay State Significant Precinct Study (SSP Study).

Following public exhibition of the SSP Study, Infrastructure NSW has requested Cardno prepare this letter to respond to submissions received from City of Sydney (CoS) and the NSW EPA, in particular where these relate to Cardno's Water, Riparian Land, Flooding and Stormwater Report.

City of Sydney

It is considered that the key comment in the CoS submission (August 2021) relates to a perceived lack of development of a precinct scale WSUD Strategy. However, Cardno's report outlines a range of measures that could be adopted at either the lot scale and/or at the broader precinct scale, including in the public domain.

Cardno's Report includes:

"The general strategy that has been adopted is:

- Filtration devices (either bioretention/raingardens or cartridge systems) have been applied to all areas. These could ultimately be applied in various forms to suit the development (eg; cartridge systems within building footprints, tree pits within road reserves, small raingardens in road reserves or open spaces, larger bioretention basins in open spaces).*
- Potential to provide gross pollutant traps (GPTs) as end of pipe systems;*
- Potential to harvest rainwater from roofs for potable or non-potable purposes within buildings; and*
- Potential to harvest stormwater to reuse for irrigation or other non-potable purposes."*

While modelling was undertaken for a particular scenario to demonstrate that the development could meet Council's water quality targets, it is not considered appropriate at this point in the design process to prescribe any single approach and hence why a range of potential options have been identified for further consideration.

The WSUD strategy also supports the Ecologically Sustainable Development (ESD) strategy prepared by AECOM, which includes a commitment to water reuse and recycling to meet 100% of the public domain demands. There are a range of options within the WSUD strategy that could be used to achieve this (eg; stormwater harvesting and rainwater harvesting). It is expected these options would be further explored, along with how best to meet the broader WSUD objectives, at the next level of design.

NSW EPA

The key comment from the NSW EPA is that further consideration should be given to the NSW Water Quality and River Flow Objectives (NSW WQO), rather than simply the percentage reduction targets as included in Cardno's report.

The NSW WQO include objectives for the 'Lower Estuary' of Sydney Harbour to protect:

- Aquatic ecosystems
- Visual amenity
- Secondary contact recreation
- Primary contact recreation
- Aquatic foods (cooked)

At a minimum, given the Study area's history of industrial uses and no treatment of runoff, it is expected that the proposed development, with the inclusion of a range of WSUD elements, would contribute to a significant improvement to water quality when compared to existing conditions.

The NSW WQO do not include specific water quality targets, but does include 'trigger values' for indicators such as Total Phosphorus (TP) and Total Nitrogen (TN). Further detail has been extracted from the modelling that was undertaken for the single scenario in Cardno's report to provide a preliminary assessment of the performance relative to these trigger values. The modelling showed a median discharge concentration of 0.058 mg/L and 0.6 mg/L for TP and TN respectively for the single scenario that was modelled. These are higher than the NSW WQO trigger values of 0.03 mg/L and 0.3 mg/L for TP and TN respectively.

However, the modelled values are considered to be significantly higher than what the proposed development would likely ultimately achieve. For example, the modelling did not include rainwater or stormwater harvesting systems, both of which are likely to occur in some form to achieve ESD objectives and would be expected to significantly reduce stormwater discharge from the precinct, including any associated pollutants. The modelling also didn't consider the likely treatment of flows from external catchments through end of line treatment devices (eg; Gross Pollutant Traps) on the trunk stormwater lines which would again likely provide a significant improvement relative to existing conditions.

It is also important to note that the 'trigger values' are not themselves targets. They are levels at which, if exceeded, further investigation is typically warranted. As the WSUD strategy is further developed during subsequent design stages, it is expected that further investigations would be undertaken in parallel with the ecological consultants to ensure that the NSW WQO's are met.

I trust this meets your requirements. Should you have any questions, please don't hesitate to contact the undersigned.

Yours sincerely,



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