Technical Memorandum

To	Department of Defence	**From**	Cardno
Date	9th November, 2021		
Project	140a Hawthorne Parade, Haberfield		
Subject	Flood Risk Management Report Summary		

Flood Risk Management Report Summary

1.1 Background Information

The Department of Defence is seeking to complete a 22 lot subdivision of the 1.9 hectare Commonwealth owned property at 140a Hawthorne Parade, Haberfield to accommodate future residential and public open space development.

Cardno in collaboration with other expert civil engineering consultants, have developed a detailed approach to address Inner West Council's flood mitigation requirements in the Development Application for the Defence site. This approach has been informed by years of extensive investigation to ensure the engineering works for the Defence site will enable the 22 lot subdivision for future residential development.

From a flood perspective, the proposed engineering works have been assessed to ensure:

- There is no adverse impact on existing dwellings; and
- The proposed 22 lot development is compatible with the flood risk in accordance with Inner West Council requirements for the Defence site.

To ensure the above is achieved, development of the scope of works undertaken in preparation of the flood risk assessment included:

- Detailed analysis of the available flood information and flood-related consent requirements;
- Multiple on-site visits and inspections;
- A detailed survey to inform the update and refinement of Inner West Council's regional flood model (developed as part of the Hawthorne Canal Floodplain Risk Management Study and Plan by WMAwater) to be more specific to this project;
- Model design events for existing and proposed conditions;
- Mapping of flood outputs which include flood depths, flood levels, flood velocity and flood hazards for the 100-year ARI; and
- A Flood Impact Assessment.

Cardno's assessment identifies the following:

1.2 O'Connor Street & Deakin Avenue Drainage Upgrades

- The stormwater drainage network in O'Connor Street and Deakin Avenue is proposed to be upgraded to provide increased inlet capacity and conveyance. This in turn is expected to reduce flooding on the surrounding properties. The overland flow through the intersection of Deakin Avenue and O'Connor Street is also expected to be reduced.

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1.3 Flood Behaviour

- In a 100 year Average Recurrence Interval (ARI) event, the site is affected by mainstream Hawthorne Canal flows from the east, and overland flow paths from the north and west.
  - From the north, overland flow along Deakin Avenue and O'Connor Street passes through the existing pedestrian laneway near the western corner of the site as well as through a number of properties on the southern side of O'Connor Street; and
  - From the west, there is an overland flowpath which passes through properties fronting Tressider Avenue and the rear of properties fronting O'Connor Street.
- For the proposed scenario, which includes the additional subdivision works and proposed drainage upgrades, in a 100 year ARI event, it was found there was minimal differences in flood behaviour and hazard between the existing and proposed scenarios. The differences include: - O'Connor Street – the upgrades to the pit and pipe network result in minor reductions in flood levels near the intersection with Deakin Avenue and within the properties adjacent to the pedestrian laneway:
  - O'Connor Street – the upgrades to the pit and pipe network result in minor reductions in flood levels near the intersection with Deakin Avenue and within the properties adjacent to the pedestrian laneway;
  - Western Overland Flowpath (from Tressider Avenue) – within the site, there are local increases in flood levels where 200 mm high kerbs are proposed to control a small portion of flow between lots 10 and 11. There are no modelled increases in flood levels in properties external to the site; and
  - There are some other areas of minor reductions and increases in the northern portion of the site.

1.4 Floor Levels

All proposed dwellings would have adequate protection from ingress of runoff, with floor levels set at a minimum of the 100 year ARI flood level plus 500mm freeboard.

1.5 Evacuation

During extreme events, it is recommended that a 'shelter in place' strategy be adopted for the development. The limited duration of flooding (less than 2 hours for overland flow events) suggests this approach would be appropriate, and it is consistent with Council's 2015 Hawthorne Canal Flood Study. Flood warning signage is proposed to be included to minimise the risk of people entering flood waters.

1.6 Conclusion

The assessment undertaken to inform this report has demonstrated that:

- The necessary works that Defence's contractors will be undertaking to address flood mitigation in support of the subdivision will have no adverse effects on adjoining properties.
- There is adequate protection for the proposed buildings from ingress of runoff, with floor levels set at a minimum of the 100 year ARI flood level plus 500mm freeboard.

There are no significant changes to local flood hazards as a result of Defence's proposed development and a 'shelter in place' strategy during extreme storm events is the recommended flood emergency response.

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