

8 December 2023

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CC: Kate Bartlett, Director, The Planning Studio: [kate@theplanningstudio.com.au](mailto:kate@theplanningstudio.com.au)

Dear Louise,

**Cooks Cove Planning Proposal (PP-2022-1748)**  
**Re: Response to Additional Submissions – Flooding**

The purpose of this memo is to support a technical response prepared under separate cover by ARUP (dated 7 December 2023) which addresses matters pertaining to flooding arising from the additional DPE EHC, SES and Bayside Council submissions. In support, this memo provides further justification from a planning context of the proposal and its acceptability under the Ministerial Direction relevant to flooding.

## 1.0 Background

### Net reduction to development density and hazard

An important consideration is that the site area pertaining to the Cooks Cove Planning Proposal already contains land zoned for intensive urban purposes under SEPP Precincts—Eastern Harbour City 2021 (SEPP EHC). Under SEPP EHC, the Trade and Technology zone permits advanced technology, commerce and trade related business uses, hotel and support retail land uses within a gross development footprint of 21.6 hectares (including a 2.7 hectare Roadway Allocation). The Cooks Cove Masterplan (2004) prepared by Hassell and considered a deemed Development Control Plan, envisions a projected employment of 11,000 workers centred on campus-style, trade-focused business park.

In contrast, the Cooks Cove Planning Proposal will result in a reduced gross development footprint (zoned SP4 Enterprise) of approximately 18 hectares and a net development footprint of 14.3 hectares. This has been arrived at through land dedications of some 1.6ha to effectively address regional flooding matters within the boundary of the Planning Proposal.

Despite the larger footprint of the current Trade and Technology zoning, which has a maximum floorspace of 270,000sqm, a different typology of logistics and warehousing under the Cooks Cove Planning Proposal has allowed an increase in overall floorspace to 343,250sqm. However, the indicative reference scheme which is considered 'highest and best use' for the purpose of technical analysis of the Planning Proposal, is expected to reduce the population to approximately 3,300 workers, primarily to less worker intensive trade-related logistics buildings which are now intended to be realised within Cooks Cove.

From a land use planning perspective, when considering the implications of flooding, the proposal offers a reduced potential hazard when compared to the current zoning. It is clear that the reduced development zone footprint together with the expected reduction of workers under the revised controls and indicative reference scheme, should be a significant factor in determining the acceptability of the proposal to proceed.

## Optimising the proposal through rigorous assessment

In response to submissions received during public exhibition, a Flood Impact Risk Assessment (FIRA) was prepared by Arup to the requirements of the current flood manuals and guidelines which came into effect on 30 June 2023. This includes flooding extent, depth, velocity, hazard, function and flood emergency response classifications.

In order to comply with the latest guidelines, significant modelling analysis and civil engineering studies were undertaken in the vicinity of the proposed Flora Street South access road and the TfNSW Arncliffe MOC. The specification of culverts and road design levels were reconsidered and set at 2.17mAHD to allow the 0.2% AEP flood to pass under the road. Importantly, this change ensures safe access to the future development by road in the event of a 1 in 500 year flood. There will not be any inundation of the developed parts of the site in all events up to a 1 in 2,000 year flood and all floor levels will be above the Probable Maximum Flood level. In conjunction with this, complex flooding analysis has ensured a landform design which continues to protect the Arncliffe MOC and road tunnels below from water ingress in a Probable Maximum Flood event.

Through extensive consultation with DPE, TfNSW and Bayside Council, Arup as technical experts for CCI developed an undercroft concept under Block 3C to accommodate a flowpath within the Planning Proposal site, which is not fully active in 1:100 AEP floods, but is fully active in 1:200 AEP floods. This is not required to address offsite or critical infrastructure afflux, but was devised to reduce the area of Pemulwuy Park inside the Planning Proposal boundary which is required to perform the function of an overland flow path in rare events.

The introduction of the undercroft approach means that no material alteration or disruption is expected to be required to the TfNSW Urban Design Landscape Plan (UDLP) for Pemulwuy Park in conjunction with the M6 project. What is more, these works will provide an overall flowpath that will be imperceptible to the average user of Pemulwuy Park as passive open space. The design will be addressed in detail through a DCP to be developed with Council and a public benefit commitment by CCI of some \$13.35 million, which Council may elect to spend on further Pemulwuy Park embellishments for the communities' benefit. In appropriately resolving Council's concerns, CCI's freehold lands (Lot 100) will accommodate approximately 43% of the overland flow path, or 53% downstream of Lot 14 – achieving a balanced outcome of spreading regional flooding impacts across both privately owned land and local passive open space.

In relation to Council's future Pemulwuy Park open space area, the proposal retains a flood hazard categorisation that has not changed from the prior hazard categorisation as a golf course and by comparison is similar to that of nearby Cahill Park. Due to the slow velocities of floodwater in the catchment, i.e. the fact the area is not prone to 'flash flooding', allows ample time for users of the open space to retreat to ground higher than the PMF or to leave the site, with adjacent public car park access which will permit safe egress in events up to 1:500 AEP, appropriately ensuring public safety as a result of the proposal.

## Local Planning Direction – 4.1 Flooding

In response to further submissions received from DPE EHG, SES and Bayside Council, a revised assessment of the proposal, taking into account additional technical responses provided by ARUP, is provided in **Table 1** below.

**Table 1** Consistency with s9.1 Ministerial – Direction 4.1 – Flooding

Provision	Assessment	Consistency
(1) A planning proposal must include provisions that give effect to and are consistent with: (a) the NSW Flood Prone Land Policy,	The Flood Impact Risk Assessment (FIRA) prepared by Arup appropriately responds to the <i>Flood Risk Management Manual 2023</i> , which is NSW's current policy on flooding.  As noted above, the Planning Proposal is essentially seeking a revision of development controls applying to a site which is already zoned for intensive urban purposes. In fact, the proposal represents a net reduction in overall projected population within the site and should therefore be considered a reduced hazard risk. The FIRA includes a comprehensive assessment of flood behaviour and the constraints that have led to the proposed dedication of 16,000sqm to flood conveyance in rare floods, within a highly unnatural floodplain.	✓

Provision	Assessment	Consistency
	Further, using commonly accepted methodologies, the impacts of climate change are not significant on this site. The use of a merit-based approach has led to the adoption of floor levels above the Probable Maximum Flood. The FIRA includes a comprehensive assessment of the predicted changes to flood behaviour and demonstrates that all flood risks have been adequately managed. Accordingly Arup confirm consistency with the <i>NSW Flood Prone Land Policy 2023</i> .	
(b) the principles of the <i>Floodplain Development Manual 2005</i> ,	The NSW Government replaced the 2005 manual with the <i>Flood Risk Management Manual 2023</i> on 30 June 2023. The FIRA, prepared in response to submissions received, confirmed the amended approach to fill the development zone to above 1:2,000 AEP, provide finished floor levels above PMF and to provide an access route which was capable of being traversed in the 1:500 AEP. These specific measures demonstrate that the Planning Proposal appropriately manages flood risk and would not result in adverse flooding impacts.	✓
(c) the <i>Considering flooding in land use planning guideline 2021</i> , and	In response to the ' <i>Flooding in land use planning guideline 2021</i> ', the Planning Proposal seeks to categorise the site as a Flood Planning Area (FPA). This matches the land surrounding the site, such as Bayside West Precinct 2036 lands which have been designated by the Bayside LEP as an FPA. All finished floor levels within Cooks Cove will be above the PMF, which is greater than 0.5m freeboard allowance and is therefore consistent with the current flood planning provisions in the Bayside LEP. No Special Flood Considerations apply nor are proposed.	✓
(d) any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the <i>Floodplain Development Manual 2005</i> and adopted by the relevant council.	The FIRA has relied upon the Cooks River Flood Study (MWH-PB, 2009) which was carried out for Sydney Water, together with the Bonnie Doon, Eve Street/Cahill Park Pipe & Overland 2D Flood Study (WMAwater, 2015/2017). Detailed design will further consider and implement necessary provisions of the Bayside Flood Emergency Plan (endorsed May 2023).	✓
(2) A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Employment, Mixed Use, W4 Working Waterfront or Special Purpose Zones.	It is acknowledged the Planning Proposal seeks to rezone elements of the site (within the FPA) from open space / recreation to other zones. However, this is land which will be raised to above the PMF and in doing so this will ultimately result in a reduced quantum of developable area when compared to the current SEPP EHC zoning. This approach, together with contemporary flood planning and risk provisions, balances the rezoning of land in the flood planning area in a format which achieves a superior outcome in terms of flood safety.	✓ Note Consistency (a)-(d) below
(3) A planning proposal must not contain provisions that apply to the flood planning area which: (a) permit development in floodway areas,	The floodplain has been assessed by Arup to not exhibit any natural floodway characteristics. Notwithstanding, floodway areas on the site will be relocated through land reshaping, to new and expanded areas of zoned open space within the site. There will not be any development in these relocated floodway areas. These floodway areas continue to be heavily modified from the 1950s relocation of the Cooks River, to the 2020s reshaping of land arising from the M6/M8 projects and no longer resembles a natural floodplain adjacent to a natural river.	✓ Note Consistency (a)-(d) below

Provision	Assessment	Consistency
<i>(b) permit development that will result in significant flood impacts to other properties,</i>	Arup confirm through the detailed FIRA that there is no impact to properties external to the site. This includes no unreasonable afflux to dwellings within the adjacent Bayside West Precincts area and to TfNSW's Arncliffe MOC facility. Whilst located within the Planning Proposal boundary, the amended scheme as implemented addresses overland flow in Pemulwuy Park to ensure no material impact to TfNSW's M6 UDLP. The intended undercroft arrangement (subject to detailed controls) will result in an appropriate sharing of the flowpath between public and private lands and accordingly addresses previous concerns that the proposal would 'burden' Council's open space lands.	✓
<i>(c) permit development for the purposes of residential accommodation in high hazard areas,</i>	Not applicable as residential land uses are not sought.	✓
<i>(d) permit a significant increase in the development and/or dwelling density of that land,</i>	As noted above, the Planning Proposal seeks a modest increase in GFA however, with the land uses envisioned in a highest and best use scenario, this is likely to result in a significant reduction in expected workers which compared to the current provisions of SEPP EHC. The area zoned for urban purposes has been reduced by approx 10% under the Planning Proposal.	✓
<i>(e) permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,</i>	Centre-based childcare facilities are continued to be proposed to support worker population amenity and in conjunction with the retail/tourist and visitor precinct proposed. These uses are currently permissible with consent under SEPP EHC within the site. Safe evacuation pathways have been addressed through amendments to access points to Marsh Street.	✓ Note Consistency (a)-(d) below
<i>(f) permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent,</i>	Not applicable.	✓
<i>(g) are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or</i>	Amendment to the Flora Street East entry road as presented in the FIRA, ensures that safe access and evacuation is allowed for in up to 1:500 AEP floods. The site would only become isolated from safe access from around the 1:2000 AEP flood (with sufficient management and mitigation safety measures in place) for a comparatively short period to up to 8-12 hours in a PMF scenario, which is considered by Arup as on the margins of statistical probability.	✓
<i>(h) permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event.</i>	Not applicable, hazardous land uses are not sought.	✓
<i>(4) A planning proposal must not contain provisions that apply to areas between the flood planning area and probable maximum flood to which Special Flood Considerations apply which:</i> <i>(a) permit development in floodway areas,</i>	No Special Flood Considerations apply to the Bayside LEP. The proposal does not impose flood related development controls between the flood planning area and probable maximum flood. All finished floor areas will be located above the PMF.	✓
<i>(b) permit development that will result in significant flood impacts to other properties,</i>		

Provision	Assessment	Consistency
(c) permit a significant increase in the dwelling density of that land,		
(d) permit the development of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,		
(e) are likely to affect the safe occupation of and efficient evacuation of the lot, or		
(f) are likely to result in a significantly increased requirement for government spending on emergency management services, and flood mitigation and emergency response measures, which can include but not limited to road infrastructure, flood mitigation infrastructure and utilities.		
(5) For the purposes of preparing a planning proposal, the flood planning area must be consistent with the principles of the Floodplain Development Manual 2005 or as otherwise determined by a Floodplain Risk Management Study or Plan adopted by the relevant council.	A detailed FIRA in support of the proposal, in line with the contemporary <i>Floodplain Management Manual</i> (DPE, 2023) has been prepared by specialist consultant Arup. This report detail is consistent with the Manual. Detailed design will further consider and implement necessary provisions of the Bayside Flood Emergency Plan (endorsed May 2023).	✓
<p>Consistency</p> <p>A planning proposal may be inconsistent with this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that:</p>		
(a) the planning proposal is in accordance with a floodplain risk management study or plan adopted by the relevant council in accordance with the principles and guidelines of the Floodplain Development Manual 2005, or	In the main, the Planning Proposal is consistent with the provisions of this Direction. However, in considering the responses to the Direction (as detailed above) and in response to feedback from NSW SES, DPE EHG and Bayside Council, a specific FIRA (under subsection (c)) has been prepared.	✓
(b) where there is no council adopted floodplain risk management study or plan, the planning proposal is consistent with the flood study adopted by the council prepared in accordance with the principles of the Floodplain Development Manual 2005 or	This FIRA, as prepared by Arup, has demonstrated consistency with the <i>Flood Risk Management Manual 2023</i> , which is NSW's current policy on flooding. Accordingly, the Planning Proposal is considered acceptable of proceeding to be finalised and implemented.	
(c) the planning proposal is supported by a flood and risk impact assessment accepted by the relevant planning authority and is prepared in accordance with the principles of the Floodplain Development Manual 2005 and consistent with the relevant planning authorities' requirements, or		
(d) the provisions of the planning proposal that are inconsistent are of minor significance as determined by the relevant planning authority.		

## Conclusion

As confirmed through technical expert Arup, the Planning Proposal provides an acceptable flooding outcome with respect to the applicable Ministerial Directions for flooding, which are implemented through the NSW Government's latest *Flood Risk Management Manual*, coming into effect on 30 June 2023.

Importantly, the Cooks Cove proposal seeks to optimise land already zoned for urban purposes. The proposal has been refined through extensive consultation which has involved the preparation of a detailed FIRA which has addressed all applicable matters including flooding extent, depth, velocity, hazard, function and flood emergency response classifications – all of which have been considered by Arup as being acceptable in the circumstances.

Arup confirm all technical appraisals are in line with the current flood policy with no offsite flood impacts and a suitable level of hazard achieved for any future occupants, which is capable of being mitigated subject to detailed management plans. The proposal also provides a suitable pathway forward, at the detailed design phase to suitably mitigate any flowpath impacts on Pemulwuy Park.

We trust that this information is sufficient to enable a prompt assessment and reporting to the SECPP to finalise the amended planning controls for Cooks Cove.

Yours sincerely,



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