

Ms Vageesha Wellalage,
Major Projects
Department of Planning Housing and Infrastructure
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22 October 2025

Ref No: F2025/00214

Dear Ms Wellalage,

RE: Port Botany Quayline Equalisation Project (SSI-79878464)

I refer to the notification received from the Department requesting Council's input into the Port Botany Quayline Equalisation Project (SSI-79878464), located at Brotherson Dock, Port Botany. Please find outlined below Randwick Council's comments in response to the exhibition of the EIS and relevant Appendices for the project.

Ecological Impact and Marine Habitat Disruption

The proposed dredging and quayline extension will directly affect benthic habitats within Brotherson Dock. While these habitats have been previously modified, they continue to support a variety of marine life, including fish, invertebrates, and migratory species. Although the EIS acknowledges potential habitat loss, it lacks adequate detail in the following key areas:

- **Baseline biodiversity assessments for the affected zones**
 - The EIS acknowledges that benthic habitats in Brotherson Dock are already modified but does not provide a detailed inventory of current biodiversity.
 - There is limited site-specific data on species composition, abundance, or ecological function of the soft sediment habitats being impacted.
 - The absence of seasonal variation data (e.g. breeding, migration periods) weakens the ecological baseline.
- **Species-specific impact modelling, particularly for sensitive or protected species**
 - The EIS lacks quantitative modelling of how specific species—especially threatened or migratory species—will be affected by:
 - Habitat loss
 - Underwater noise
 - Water quality changes due to dredging
 - There is no population viability analysis (PVA) or predictive modelling of species displacement or mortality.
- **Monitoring plans to track post-construction ecological changes**
 - The EIS does not outline a robust post-construction ecological monitoring program.
 - There is no commitment to long-term monitoring of benthic recovery, species return, or offset effectiveness.
 - Lack of clarity on who will conduct monitoring, how frequently, and what indicators will be used

Marine Ecology and Habitat Loss

The Project would cause the permanent loss of approximately 6 hectares and 0.0474 hectares of unconsolidated soft sediment habitat (Type 3 KFH) for reclamation and piling operations, respectively. The EIS states that this would be offset under the Fisheries Management Act, and in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013). However, the EIS is unclear about the following concerns:

- The EIS states that offsets may be delivered via monetary compensation or strategic investment in existing Key Fish Habitat (KFH), but does not specify where the offset will occur; what habitat will be enhanced or protected; and how ecological equivalency will be ensured.
- Have suitable offset sites been evaluated or will enhancement be technically feasible? In this regard, there is no discussion of long-term management, monitoring, or legal protection of offset areas.
- If monetary compensation is adopted, how will funds be directed to timely or relevant habitat restoration; and what mechanism for tracking how funds are used will be applied to ensure transparency?
- The EIS refers to the application of a 2:1 offset ratio under the Policy and Guidelines for Fish Habitat Conservation and Management to account for “indirect impacts” – what analysis has been undertaken of what those indirect impacts are; and how and what are the cumulative impacts from existing port operations that will be factored into the offset ratio?

Council is of the view that the offset should be located as close to the site as possible to achieve the no net loss of habitat within the affected area (see 7.7.1 Offset Option)

Hazard and Risk

Cumulative risk

The Preliminary Hazard Analysis (Appendix G) states that compliance with HIPAP 4 and the Port Botany Land Use Safety Study (1996) is achieved. However, Council raises the following concerns:

- The analysis does not provide updated cumulative individual risk contours reflecting the relocation of BLB3 and the extended quayline.
- HIPAP 4 requires consideration of cumulative risk for future scenarios. The assumption that facilitated container operations will have minor risk impacts is not sufficiently robust. In this regard, when considering development near potentially hazardous facilities, HIPAP 4 emphasises that particular care must be taken to avoid introducing or exacerbating land use safety conflicts. While quantitative risk criteria provide an objective basis for decision-making, qualitative principles are equally critical and should not be overlooked. It is noted that Appendix G of the hazard assessment does not adequately address these qualitative principles. HIPAP 4 states that the risk from a major hazard should be reduced wherever practicable, regardless of the cumulative numerical risk level. If the consequences of a hazardous incident could significantly impact people or the environment, all feasible measures—including alternative site locations—must be implemented to ensure the likelihood of such an event is very low. This requires identifying all contributors to the overall risk and assessing the consequences of each potential incident. For example, relocating BLB3 closer to airport flight paths and the shipping channel could increase exposure to catastrophic scenarios, underscoring the need for rigorous qualitative assessment alongside quantitative analysis.

Accordingly, Council requests that updated cumulative risk contour mapping be prepared, incorporating the BLB3, extended quayline, and foreseeable changes in Dangerous Goods (DG) profiles.

Aircraft Impact Risk

BLB3 will be located approximately 1.26 km from Sydney Airport’s 3rd runway, closer than the existing BLB1. Facilitated container operations will further reduce separation distances. The PHA acknowledges aircraft impact qualitatively but does not quantify this risk in the QRA. Given the proximity of flight paths over Botany Bay, Council considers this omission significant and requests:

- A probabilistic assessment of aircraft strike frequency and consequence be undertaken.
- Evaluation of escalation scenarios involving LPG, flammable liquid inventories and lithium battery systems/products be undertaken.

It is noted that Appendix H – Aviation Safety Report primarily addresses physical impacts such as obstacle intrusion, lighting, and turbulence. However, it does not adequately consider the risks associated with the proposed bulk liquids terminal, particularly in relation to fire, smoke, or hazardous emissions. The report lacks modelling of smoke plume dispersion and does not assess how a worst-case incident—such as a major fire or explosion—could generate heat, smoke, or turbulence that may intrude into aircraft flight paths. A significant event at BLB3 could result in thermal radiation or particulate/smoke plumes that may impair pilot visibility or interfere with the operation of instrument landing systems at Sydney Airport.

The PHA does not incorporate detailed modelling of smoke or thermal plume dispersion in the context of aviation safety. Specifically, it does not assess how a major fire or smoke event at the Bulk Liquid Berth (BLB) could interact with aircraft approach corridors, instrument landing procedures, or visibility conditions at Sydney Airport. While aviation impacts are discussed separately in the Aviation Safety Appendix, this separation results in a fragmented assessment. These two areas of analysis—land-side hazard and aviation safety—should not be considered in isolation and require an integrated risk approach.

The PHA addresses vessel operations and harbour safety but does not model or quantify potential aerodynamic effects from large vessels, such as turbulence or complex wind interactions that could impact aircraft operations. Council understands from Sydney Airport that such aerodynamic interactions are an existing concern—particularly between ships berthed at the Hutchison terminal and aircraft using the third runway during wind conditions exceeding 20 knots. In these conditions, current operational arrangements require that aircraft do not land on the third runway when certain ships are in port, and conversely, vessels are held outside the heads of Botany Bay until conditions improve. This highlights the need for a thorough assessment of cumulative and dynamic aerodynamic risks arising from increased ship traffic at the proposed Bulk Liquid Berth.

Emerging Hazard Profiles

Appendix G - PHA assumes no change in DG types or volumes beyond current operations. This does not reflect foreseeable trade trends, including:

- Increased movement of lithium-ion battery systems.
- Potential introduction of hydrogen and other alternative fuels.

Council requests that these emerging hazards be incorporated into the risk assessment.

An additional and critical consideration for the proposed relocation of BLB3 is the existing approval for the storage of Dangerous Goods, including lithium batteries, at the container park located at 11–13 Friendship Road, Port Botany, granted in late 2024. The relocation of BLB3 brings it into closer proximity to this facility, significantly altering the overall risk profile of the area. This increased cumulative risk—arising from the co-location of hazardous materials—has not been addressed in the Appendix G - Hazard Analysis and warrants thorough assessment.

Escalation and Emergency Response

While mitigation measures for BLB3 are detailed, Appendix G - PHA does not adequately address:

- Escalation scenarios involving multiple DG classes across berths and container yards.
- Emergency response capacity for simultaneous incidents, including aircraft crash scenarios.

Council seeks clarification on integrated emergency response planning for multi-incident scenarios.

Reclaimed land contamination

The project proposes the dredging of approximately 600,000 m³ of material from within Brotherson Dock, which would be repurposed as fill for land reclamation. The EIS concludes via a Preliminary Site Investigation (PSI) with management strategies and mitigation measures reliant on the findings of the PSI. Given the risks and the complexity of the proposed works within a sensitive marine environment:

1. A Detailed Site Investigation (DSI) must be undertaken where contamination is likely (rather than relying solely on a PSI). The DSI should include all relevant elements to properly characterise contamination risks, especially in reclaimed areas, known impacted sediments, and locations with potential PFAS contamination. The DSI should fully characterise: stratified, depth-discrete sampling sediment and fill chemistry across depth profiles; potential sources, pathways, and

receptors of contaminants (including PFAS); and spatial extent of contamination in both fill and natural substrate.

2. A NSW EPA-accredited Site Auditor should be appointed to independently oversee and review all aspects of site contamination assessment, remediation (if required), and management. The Site Auditor should be responsible for certifying the adequacy of investigations and issuing formal sign-offs at appropriate stages.
3. The proposed Construction Environmental Management Plan(s) (CEMP) should be informed by the findings of the DSI and Site Auditor recommendations, with specific and enforceable measures to prevent mobilisation of contaminants during marine works.
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In summary, while the PSI concludes that contamination risks can be managed through mitigation measures, Council considers that the uncertainty around historical contamination, the potential for PFAS and other legacy pollutants, and the marine setting of the Project all warrant a more precautionary approach. A DSI and the involvement of an independent Site Auditor will provide greater assurance that human health and environmental values are protected prior to a determination.

Sediment Contamination and Testing Methodology

The conclusions of the Sediment Contamination Assessment, that risk is low, is based on a limited program of elutriate testing and assumptions about ambient background concentrations. Council raises concerns that these inferences may not be robust in the context of the Port Botany Brotherson Dock precinct, and are insufficiently underpinned by data across the full footprint of the proposed dredging and reclamation.

Dredging activities risk increasing turbidity and releasing contaminants trapped in sediments, which can affect water quality and marine organisms. While mitigation measures are proposed in the EIS, they rely heavily on operational controls without clear thresholds or contingency plans. Additionally, rearmouring the seabed to stabilise the dredged area as a method of construction is predicted to cause additional seabed disturbance and resuspension of sediment and sediment increasing turbidity.

The EIS must clearly outline robust monitoring protocols to manage both turbidity (and PFAS mobilisation – see section below) during construction. Turbidity should be maintained within thresholds specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality and the National Assessment Guidelines for Dredging (2009). Anecdotal observations of pre-existing turbidity (e.g., from vessel activity or rainfall events) are not an acceptable basis for allowing elevated levels during construction. Real-time, continuous turbidity monitoring using electronic meters is recommended, alongside physical mitigation controls.

In particular, consideration should be given to implementing effective sediment containment measures—such as sea curtains—to screen and isolate turbidity and potential contaminants from dispersing into the broader Botany Bay environment. These should be deployed and maintained throughout all dredging and reclamation works to reduce the risk of sediment and contaminant migration.

PFAS contamination

The project involves dredging and reclamation activities that may disturb PFAS-contaminated sediments on the seafloor. PFAS compounds are highly persistent and mobile in aquatic environments. How are the following matters addressed in the EIS:

- Dredging may resuspend contaminated sediments, increasing PFAS concentrations in surface water, groundwater and marine biota. This can lead to bioaccumulation in fish and other aquatic organisms, posing risks to ecosystems and human health.
- PFAS may migrate beyond the dredging zone via tidal currents, sediment plumes and groundwater flow. This could affect nearby sensitive environments, including Key Fish Habitat (KFH) and protected coastal areas.
- Using dredged material for reclamation may introduce PFAS into land-based environments, potentially contaminating soils, stormwater runoff and any groundwater recharge zones.
- The SEARs for the project specifically require the EIS to consider existing contamination from the IXOM/Orica site, which includes PFAS. There is a risk of cumulative contamination or cross-contamination if dredging disturbs PFAS plumes migrating from Orica via groundwater.

- PFAS is increasingly regulated under the Contaminated Land Management Act 1997 and may be designated a hazardous substance under federal law. If PFAS levels exceed thresholds, the site may require remediation, monitoring and reporting to EPA.

Council notes that, while sediment investigations for the project did not detect PFAS in the sediments to be dredged within Brotherson Dock, PFOS (a PFAS compound) was detected in surface water at one location (BD2 in central Brotherson Dock) during a dry weather event, exceeding the guideline value of 0.0091 µg/L. Even low concentrations of PFAS can become significant over time due to cumulative effects and ongoing inputs from other sources (e.g., firefighting foam legacy contamination at nearby sites).

(PFAS) are of significant environmental concern due to their extreme persistence, primarily resulting from the strength of the carbon-fluorine bonds that resist degradation in aquatic environments. These compounds are also highly mobile in water and sediments, allowing even trace concentrations to disperse widely through tidal currents, sediment plumes, and groundwater flows.

Once introduced into the marine environment, PFAS compounds – particularly long-chain variants such as PFOS and PFOA – can bioaccumulate in marine organisms including fish and shellfish. This bioaccumulation poses ecological risks and facilitates trophic transfer through the food chain, potentially leading to human exposure via seafood consumption.

Both the PFAS National Environmental Management Plan (NEMP 3.0) and international best practice guidance advocate for a precautionary approach to PFAS management. Due to their persistence, mobility, and potential for long-range environmental transport, the presence of PFAS—regardless of concentration—should trigger precautionary controls. This is especially critical in contexts where there are existing or legacy sources of PFAS contamination, such as from historical use of firefighting foams at nearby facilities. Even low-level concentrations can become environmentally significant over time through cumulative effects and continued inputs.

The hydrodynamic setting of Botany Bay is such that Brotherson Dock connects to the bay, a dynamic estuarine system with tidal exchange. This increases the likelihood that PFAS, if present, could migrate beyond the dredging zone and affect sensitive habitats such as Key Fish Habitat and protected coastal areas.

Council is of the view that the project should not underestimate the need to provide PFAS-specific sampling and analysis as per the protocols outlined in the PFAS National Environmental Management Plan (NEMP). This includes strict measures to avoid cross-contamination, proper sample handling, and the use of accredited laboratories and approved analytical methods.

Construction Noise

Dredging and reclamation works would be required 24 hours a day, seven days a week. Therefore the proposal requires thorough assessment including all sensitive sites from historical complaints related to the Port activities and received by NSW EPA and Council.

While Council acknowledges the strategic importance of Port Botany's operations to the NSW economy, Council remains concerned about residential amenity impacts, especially as the EIS does not provide adequate justification for the noise impacts in regard to the following:

- Four residential receivers are predicted to exceed construction noise management levels during the nighttime construction hours clarification is required as to what works will be occurring during the night-time period and the duration of these works. Specifically, what night-time construction activities may result in sleep disturbance?
- Background noise creep has not been considered in sufficient detail. A noise ceiling for the area needs to be established at the planning stage and verified upon completion. What are the predicted exceedances of construction noise management levels?
- Logging station locations require justification.
- Lack of detailed mitigation measures and response protocols in the EIS;
- Insufficient community consultation and response planning.
- Use of the Transport for NSW's Construction Noise and Vibration Guidelines 2016 for this type of project is unclear, noting that the 2016 version has been superseded by the 2024 version. The TfNSW Construction Noise & Vibration Guideline (CNVG) is tailored to Transport works (roads/rail) this is not comparable to construction works such as piling. If being used to justify exceedances and perceptions of the project noise it should only be used for noise types that have a similar

noise spectrum as traffic e.g. One pile/day assumed; up to 1,000 strikes this type of noise is a lot more intrusive than traffic noise.

The EIS defers the identification of noise mitigation and management strategies to a future Construction Noise and Vibration Management Plan (CNVMP), to be developed post-approval. Council is of the view that this approach is inadequate, particularly where known exceedances have already been identified through modelling. In particular, no details are provided in the EIS regarding:

- Specific feasible and reasonable mitigation measures for affected residential receivers;
- How mitigation will be tailored to night-time construction activities;
- Whether respite periods, alternative accommodation, or real-time noise monitoring will be considered;
- Response protocols in the event of confirmed exceedances or complaints.

This lack of detail significantly undermines confidence that the community will be appropriately protected from adverse noise impacts during construction. The following measures are recommended:

A. Require a Detailed CNVMP Prior to Project consideration for Approval

A fully developed Construction Noise and Vibration Management Plan (CNVMP) should be required prior to approval, and must include:

- A full list of specific mitigation measures for all noise-affected receivers;
- Controls for night-time construction activities (e.g., limited scheduling, acoustic enclosures, low-noise plant);
- Real-time noise monitoring at residential receiver locations;
- Contingency and escalation measures if noise exceeds predicted levels.

B. Night-Time Construction Controls

Council requests a review of the justification for 24-hour construction activities, and strongly recommends:

- Restricting or minimising high-noise activities during night-time hours (10pm–7am) only after careful consideration and the necessity demonstrated;
- Mandatory respite periods for affected residents;
- Provision of temporary alternative accommodation where significant disturbance is predicted.

C. Community Engagement and Complaint Response Framework

A clear and transparent community consultation strategy should be included, which outlines:

- Advance notification of high-impact activities;
- Consideration of advising the community of the confirmed impacts and strategies to address
- Community feedback mechanisms;
- A formal complaints procedure with response timeframes;
- Public reporting of monitoring data and exceedance incidents.

Operational Noise

To ensure that the proposed development does not unfairly exacerbate existing noise problems, It is recommended that Council take the following actions (as conditions or additional request information Noise Impact assessment comprehensively assessing noise from the proposal and cumulative impacts):

1. Comprehensive Noise Impact Assessment (NIA)

- Must include cumulative noise modelling: existing port operations + road + rail + the proposed development, considering night time, low frequency, impulsive, transient noises.
- Use monitoring at multiple local residential receiver locations over extended periods (including evenings & nights, varying weather conditions) to capture real ambient noise patterns.

2. Specific Consideration of Low Frequency Noise & Vibration

- Require specialized analysis for low frequency components (hum, throb) which can be particularly disruptive.
- Examine vibration where relevant (e.g. from rail or heavy machinery).

3. Tight Operational Controls / Limits

- Hours of operation: limit noisy activities during evening and night.

- Controls on the types of equipment, directional orientation, maintenance schedules (to reduce transient loud events).
- Alarm / reversing beeper regimes: consider quieter alternatives.

4. Noise Attenuation & Design Measures

- Building design (double glazing, mechanical ventilation so windows can remain closed), setback distances, barrier structures, landscaping buffers.
- Where the proposed development is industrial or mixed use, insist that the proposals incorporate high standard of sound insulation for residential components.

5. Traffic, Rail, Trucking Mitigation

- Manage traffic routing (e.g. avoid idling on local streets, enforce truck curfews, limit heavy vehicle movement at sensitive times).
- Investigate possibilities for noise dampening along the railway line (barriers, track maintenance, resilient material).

6. Monitoring, Reporting and Accountability

- Ongoing noise monitoring (with data publicly accessible) of the development once operational.
- Mechanism for residents to lodge complaints, and enforceable remediation if operational noise exceeds permitted levels.
- Specify penalties or remedial requirements if noise breaches occur.

7. Cumulative Amenity Considerations

- Consider the cumulative impact not just in noise terms, but on overall amenity (sleep, recreation, health) when assessing proposals.
- Reject or impose stricter conditions on sensitive land uses close to high noise sources, unless they can clearly demonstrate they will meet high acoustic performance.
- Clearly establish that the proposed impact assessed through all facets of proposed operations will not adversely impact existing noise impacts from the Port Botany Area.

Underwater noise impacts

The EIS includes a requirement to assess underwater noise impacts, particularly in relation to marine ecology and construction activities.

- Has the technical report on noise (Appendix L) aligned threshold levels with modern literature such as:
 - Southall, B. L., Finneran, J. J., Reichmuth, C., Nachtigall, P. E., Ketten, D. R., Bowles, A. E., Ellison, W. T., Nowacek, D. P., & Tyack, P. L. (2019). Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects (PTS/TTS). *Aquatic Mammals*, 45(2), 125–232 (and supporting parts on methods/hearing groups).
 - National Marine Fisheries Service (NMFS). (2024). Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0): Underwater Thresholds for Onset of Auditory Injury and Temporary Threshold Shifts. NOAA Technical Memorandum NMFS-OPR-59.
- Consider encircle the pile with a (double) bubble curtain or equivalent enclosure (e.g., cofferdam, pile sleeve) sized for local depth/current; require commissioning tests showing ≥ 10 –20 dB SEL reduction at 100–500 Hz bands that dominate piling energy, consistent with peer-reviewed findings. Provide justification as to why this has not been considered.
- Given humpback migration (low frequency group), confirm if the schedule impact piling occurs outside peak passage windows.

Transport and Traffic

Council raises the following concerns regarding traffic and transport impacts associated with the Port Botany Quayline Equalisation Project—particularly in relation to coordination with relevant agencies, infrastructure capacity, modal shift to rail, and protection of residential amenity—which should be addressed proactively as part of the project planning and approvals process, rather than deferred to the future operator, especially given that the intended operator of the new quayline is already known. In this regard, the following matters should be considered:

- Has traffic impact assessments been undertaken in coordination with Transport for NSW.
- What upgrades to Foreshore Road and surrounding infrastructure are required with the increase in freight handling and movement from the port expansion.

- What assessment has been undertaken of the promotion of rail freight to reduce truck dependency. Have expected changes in truck and rail movements post-construction been factored into this assessment?
- What measures are proposed to protect residential amenity in surrounding suburbs from increased road freight traffic.
- What traffic noise management measures are proposed during construction and operation.

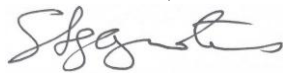
Community Consultation and Engagement

Council emphasises that community consultation on the Port Botany Quayline Equalisation Project should not be limited to the minimum legal requirements of the public exhibition period under the EP&A Act, but should also involve proactive, transparent, and accessible engagement—particularly given the complexity of the proposal—including meaningful outreach to local residents, Aboriginal stakeholders, ecological experts, and the Port Botany Community Consultation Committee, supported by plain-language materials and community workshops. In this regard, the following matters should be considered:

- Community has raised concerns around transparency and consultation, despite drop-in sessions and surveys.
- Extent of proactive engagement with local residents, Aboriginal stakeholders, and ecological experts.
- Feedback from the Port Botany Community Consultation Committee on the EIS.
- Provision of plain-language summaries or community workshops to improve accessibility.

If you have any questions regarding Council's comments, please do not hesitate to contact David Ongkili Coordinator Strategic Planning on 9093 6793 9093 or David.ongkili@randwick.nsw.gov.au

Yours sincerely,



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