HARBOUR PLANNING
WATERFRONT CONSULTANCY

STATEMENT OF ENVIRONMENTAL EFFECTS

Submitted to
MID-COAST COUNCIL

Development Application For
CONSTRUCTION OF A SHARED JETTY WITH SEA STAIRS (MESH DECKED)

At
80, 82 & 84 COVE BOULEVARD,
NORTH ARM COVE,
NSW 2324

For the
HALEY, ROSS-HENRY & HOOD FAMILIES

MARCH 2025

Prepared by
Harbour Planning Pty Ltd
G04, 25-29 Tonkin Street,
CRONULLA NSW 2230
Tel: 9523 1455
Email: planner@harbourplanning.com.au

Table of Contents

ANNEXURES

Table of Figures

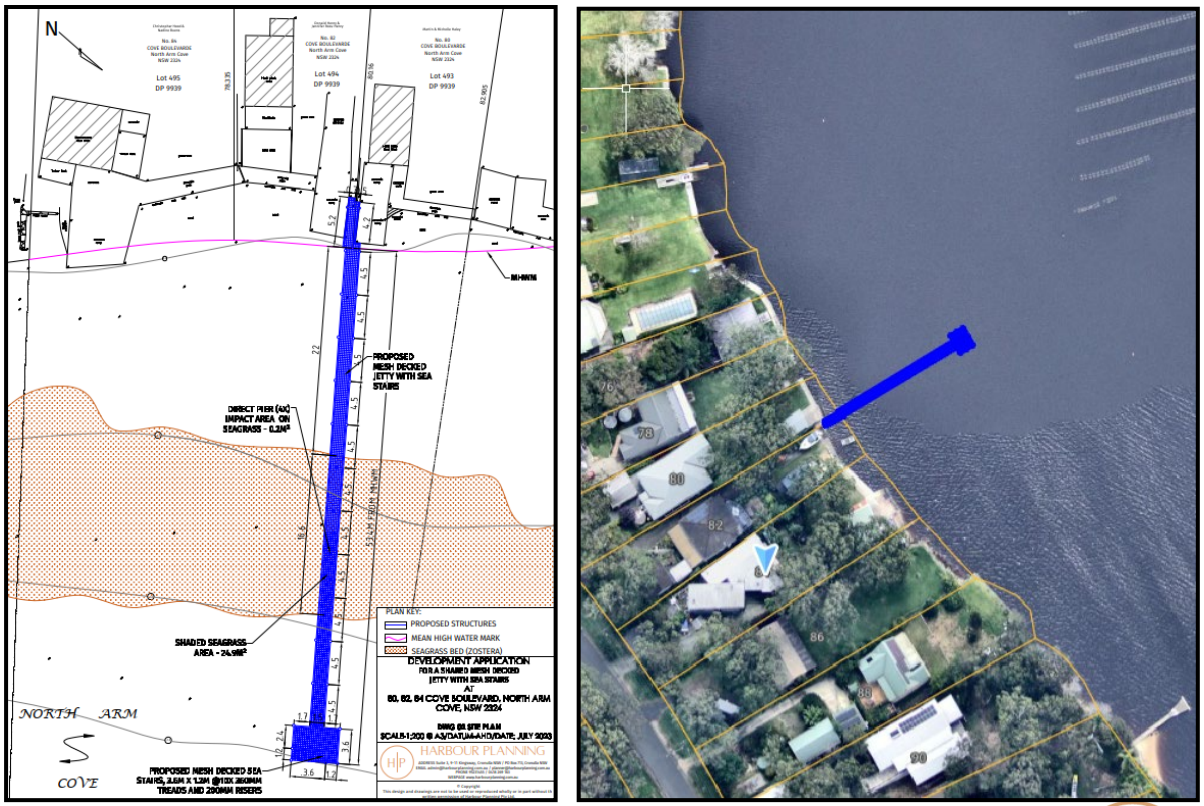
1. INTRODUCTION – PROJECT SUMMARY

The Haley, Ross-Henry and Hood families, owners at 80, 82 & 84 Cove Boulevard, North Arm Cove, NSW 2324, are submitting a Development Application for the **Construction of a Shared Jetty with Sea Stairs (Mesh Decked)** seaward of three separate landowners' properties for a joint facility, over the seabed of North Arm Cove to enjoy the safe and equitable use of their waterfront. This domestic marine facility, which will have a proposed length of 53.4m from MHWH, forms an integrated improvement to the waterfront areas of these properties. This proposal will provide the homeowners with an all-tide platform to load and unload people and goods at their properties from a watercraft. Also, the new facilities allow them to safely access North Arm Cove for the use of water sports and associated equipment, whilst berthing and disembarking from their watercraft. Given the adjacent features and developments e.g., Oyster Leases (north) and other jetties (south). The proposed water recreation structure will offer the most equitable and practical outcome, in keeping with the foreshore's visual amenity. Moreover, as per Fisheries' constructive feedback, we reattended the site and reviewed the water depth and all mapping information at hand, confirming that our proposal achieves the minimum 0.6m water depth and that the jetty end is not in or near the seagrass bed.

The proposed works are in part below the Mean High Water Mark (MHWM) and are under the care, control, and management of Transport for NSW - Maritime (Maritime), the Department of Primary Industries – Fisheries (Fisheries), NSW Department of Planning and Environment – Crown Lands (Crown Lands) and Mid-Coast Council. This Statement of Environmental Effects (SEE) is submitted to provide a succinct description of the proposed works' suitability to the surrounding locality and marine environment. The application is submitted on merit that the proposal both maintains the quality of the marine environment and retains the use and clear fairway access of the waterway for both public and neighbours. Finally, the proposed works will form a suitable occupation of Crown Land for domestic purposes. During our due diligence period, we consulted the adjacent oyster farmers (North) for their comments, see Annexure D (Letter of Support).

Figure 1 presents DWG 1 Site Plan prepared by Harbour Planning Pty Ltd and an aerial locality map noting: blue lines representing proposed structures on the site. For reference, scaled plans in A3 are appended to this report as Annexure C of this application.

Figure 1. DWG 1 Site Plan (L) and Aerial Images (R) (Source: Nearmap, 2023)



As shown in Figure 1, the proposed shared waterfront facility will be built seawards of the existing frontages and between the two existing concrete ramps (Lot 493 & Lot 494) forward of the seawall. The proposed structure's position and orientation have been designed based on the need to retain the existing concrete ramp that is in (generally) constant use, while also being part of the dominating feature along the site's foreshore and sympathetic to neighbouring waterfront facilities and orientations, compliance with requirements set by the Mid-Coast Development Control Plan (i.e. setbacks from the site's prolonged boundaries and water depths) while also conforming to the navigational line limit imposed by existing neighbouring water access facilities.

In support of the proposal, Harbour Planning has undertaken the required environmental due diligence in preparing a Marine Habitat Report (Attachment A refers) and a Hydrographic Survey (Attachment B refers). Results from both survey and report have determined that the proposed design for the new waterfront facility at the site is responsive to the site's capabilities and constraints. In particular, the Marine Habitat Report has determined the non-presence of Posidonia seagrass adjacent to and surrounding the proposed jetty's footprint areas. Zostera seagrass bed is positioned seaward 22-38m from MHWM, and the proposed jetty will feature single piers along the footprint of the Zostera seabed. Also, our design team were sympathetic to the seagrass habitat and featured an open mesh decking instead of a timber decking, which provides negligible negative impacts on the subject sites. Conversely, the Hydrographic Survey has confirmed that the sites have sufficient water depths (the proposed jetty end is -1.5m AHD) to accommodate the use of the proposed water access facilities. It will also have adequate setbacks to the adjacent neighbouring waterfront facilities.

Based on Harbour Planning's onsite inspections and supporting document, the SEE has determined that this proposal is a justified addition to the site and occupation of Crown Land. The application has been designed to meet the general requirements of all stakeholders and has received consent from Maritime, Fisheries and Crown Lands. This proposal is now submitted to Mid-Coast Council for assessment and award of Development Consent.

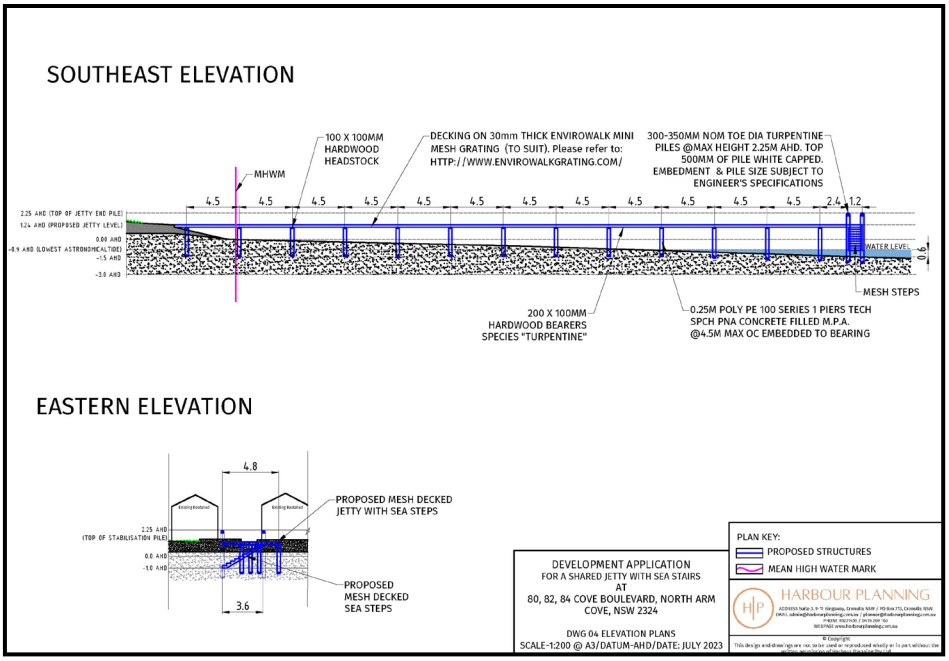
2. DESCRIPTION OF PROPOSAL

2.1. SCOPE OF PROPOSED WORKS

- Jetty-Mesh Decked 58.6m x 1.5m
- Sea Stairs- Mesh Decked 3.6m x 1.2m

  - ❖ TOTAL JETTY LENGTH = 53.4m from MHWM

Figure 2. DWG 4 Elevation Plan and DWG 1 Site Plan



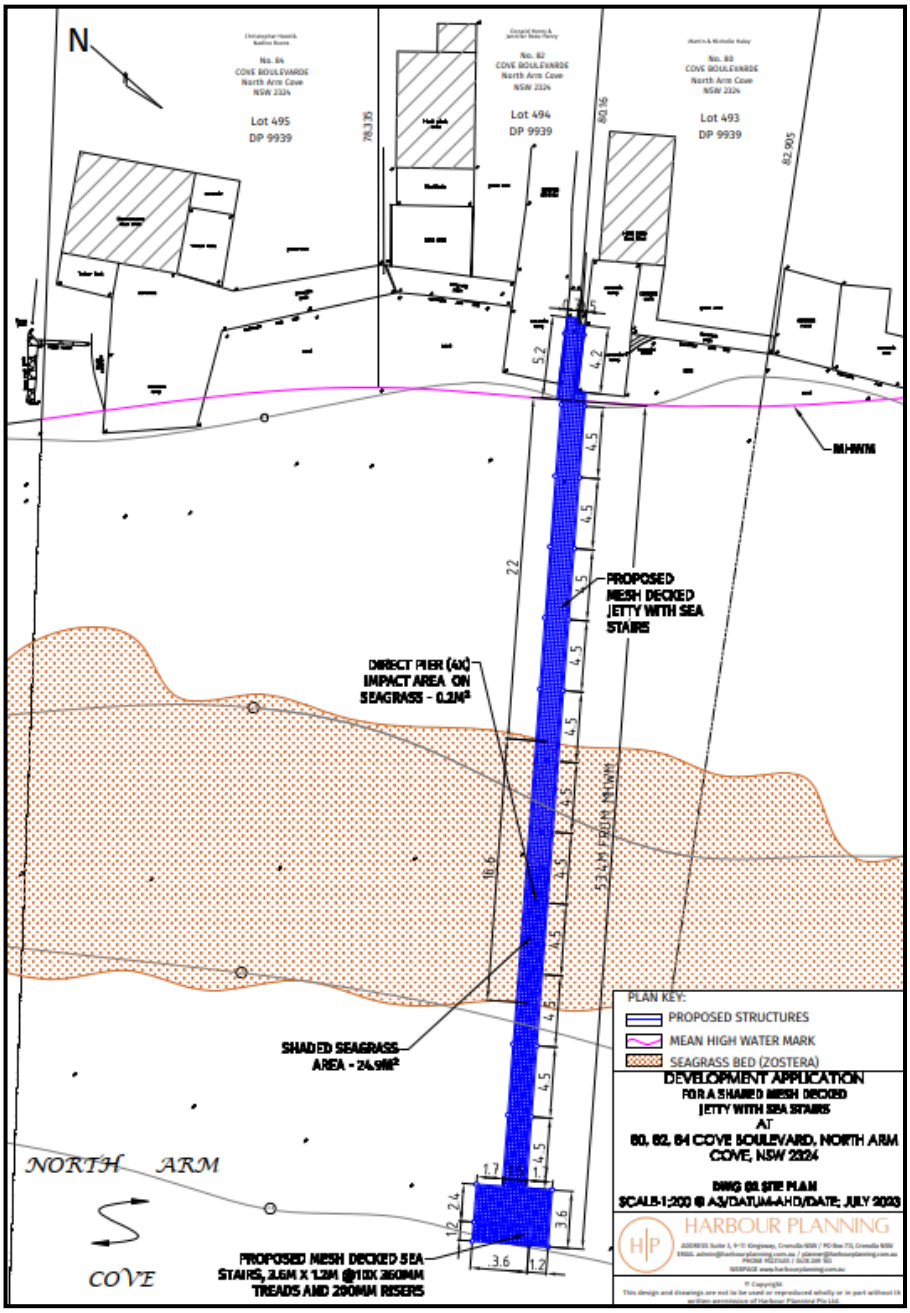


Figure 2 shows the site plan and elevation of the proposed works designed by Harbour Planning Pty Ltd. Architectural plans (Annexure C refers) presents the complete scaled DA plans and specifications in A3. The design generally aims for the proposed works to have minimal marine ecology and navigation impacts and to blend into the existing view lines whilst maintaining the site's visual amenity and offering all-tide watercraft accesses, an added benefit is the potential emergency exit point in case of bushfires.

2.2. PROPOSED SAFEGUARDS / MEASURES TO MINIMISE ENVIRONMENTAL IMPACTS

To minimise environmental impacts, the following measures will be undertaken during construction:

- Site environmental safe guards (i.e., floating booms) will be established around the barge to trap off cuts & like materials
- All works are to be undertaken from the waterway
- Materials/waste products to be removed via barge daily – no material storage

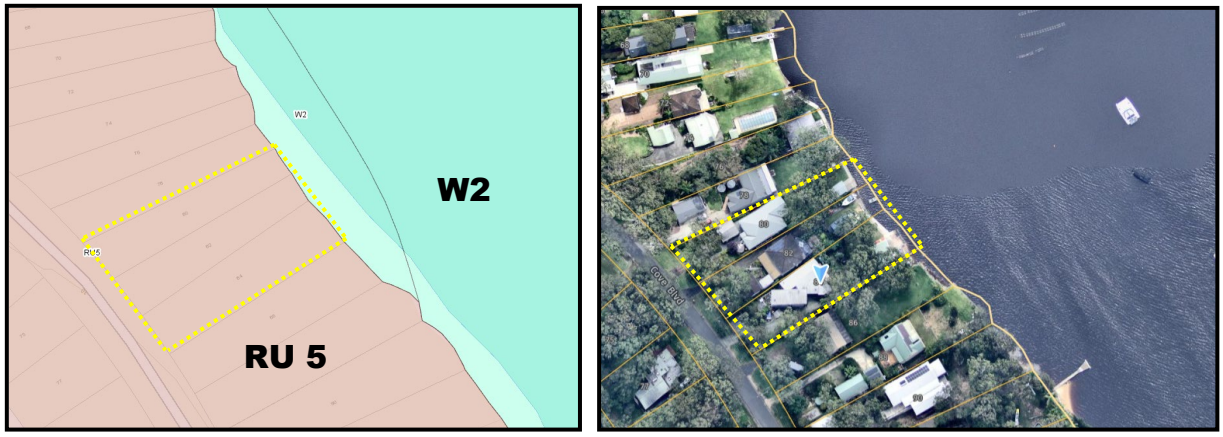
- Materials delivered by barge.
- Barges are to be moored in deep water where possible
- Anchors should only be used for mooring a barge as a last resort.
- Barges must have floating oil boom catching equipment in the event of any hydraulic leaks into the waterway.
- Any excess materials such as cleaning paintbrushes and water from tool cleaning must not be washed into the storm water system or waterway.
- Works are to be continuous so as to minimise the duration of works

3. SITE ANALYSIS

The properties are known as 80 (Lot 493 DP 9939), 82 (Lot 494 DP 9939) and 84 (Lot 495 DP 9939) Cove Boulevard, North Arm Cove, NSW 2324. These waterfront properties are located along the shoreline of North Arm Cove. The proposed works are below the MHWM and are under the care, control and management of Maritime, Fisheries, Crown Lands and Mid-Coast Council.

After reviewing Great Lakes Local Environmental Plan 2014, the property is currently classified within RU5 - Village, with the waterway classified as W2 Recreational Waterways. The proposed development, the jetty with sea stairs is defined as a water recreation structure and are permissible, subject to Council consent.

Figure 3. Great Lakes LEP 2014 Zoning Map and Aerial Locality Map



The three properties' total land area is 4025.66m², and the topography descends to the foreshore of North Arm Cove in the northeast of Cove Boulevard. The combined land-water interface is approximately 45m. Each homeowner has a backyard access leading to the grass reclamation area. From their primary residence, they use the concrete paths already on the foreshore, connecting the existing water recreation structures (the boatsheds and ramps) with the proposed structure. Also, inshore the proposal seeks to use the existing structurally sound concrete seawall to support the commencement point for the new jetty.

The existing concrete seawall and ramp characterise the foreshore, below MHWM is a sandy and lightly muddy unvegetated seabed that supports the general reclamation along the east foreshore boundary. Figure 4, as shown on the next page, presents the landward (L), seaward view (R), and the existing concrete ramp and seawalls position. Notably, the existing concrete ramp of the subject site is highlighted in both images, with the unvegetated intertidal area. The closest mooring from the subject site is owned by Mr Hood, the 84 Cove Boulevard property and is highlighted in both below images (Figure 5 refers). Each homeowner has an individual boatshed to store their small watercraft. However, the current concrete ramp is insufficient to launch and retrieve Mr Haley's (80 Cove Boulevard) current black-and-white "SeaRay" boat which sits on an offshore mooring. Therefore, the shared use proposal would benefit the “all tide” larger boats' access to his property, noting Mr Hood's large vessel is currently under repair. Hence, all access to the waterfront is currently limited to the top of a full high tide (1/2 hours windows at best).

Figure 4. Landward view of the site from North Arm Cove during low tide (L), seaward view of foreshore area to the North Arm Cove (R)

Figure 5. View of individual watercraft for each homeowner in the aerial map (L) and photos (R)

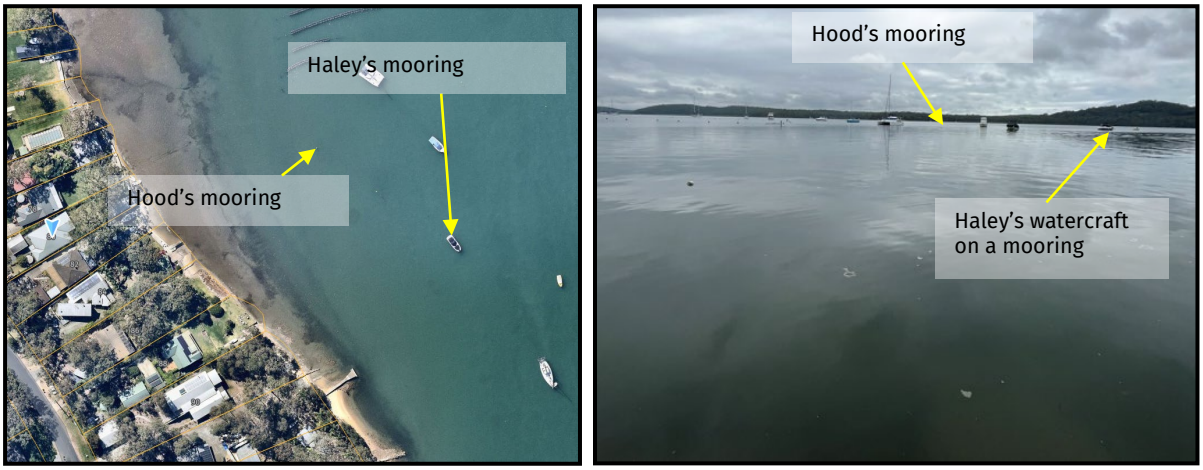
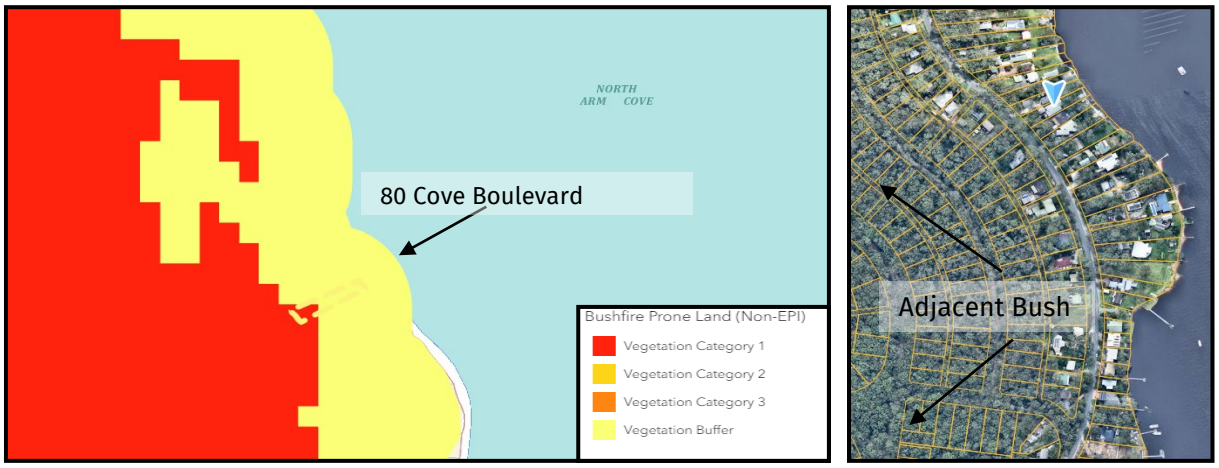


Figure 6 below illustrates the existing waterfront in low tide which demonstrates the need for 50 meters plus access jetty given the shelving contours and water depth of North Arm Cove. Similar to nearby structures, the proposed works will be constructed of earthy/neutral-toned materials and at a suitable length. This will result in minimal impacts on the visual amenity and quality of the locality. Also, as this is a shared facility, the jetty layout is stepped from the angle of the concrete ramp to match the angle of the prolongation line. This allows the jetty to be centrally located between the properties of 80 and 82 Cove Boulevard, North Arm Cove.

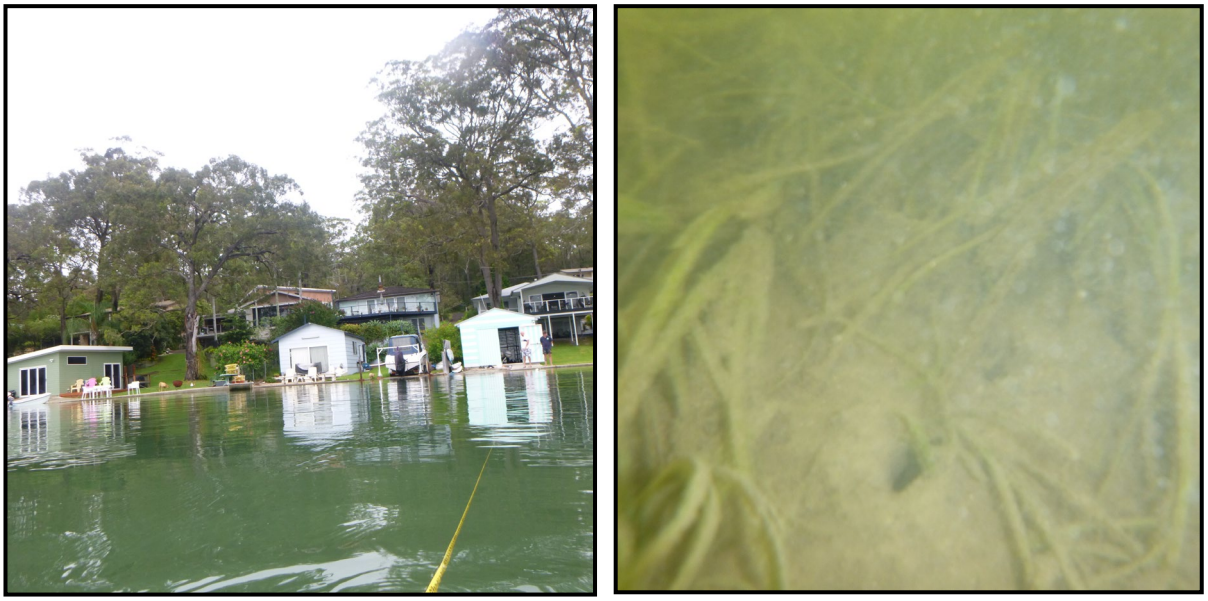
Figure 6. Surrounding water recreation structure to the north (L) & south (R) during the low tide

Figure 7. Bursh Fire Land Mapping from ePlanning Spatial Viewer (R) and Arial images of site



According to research from NSW rural fire service guidelines, the site is located in Bushfire Prone Lands, Part within Vegetation Category 1 and Vegetation Buffer (Figure 7). With this, the subject properties may be at risk during bushfire hazards, and this development application will support those homeowners to benefit from an emergency communal waterfront facilities access point. When potential bushfire disasters happen, they can use the proposed jetty and sea stairs for access and egress of the waterway to assist and mitigate the vehicle (road) associated access dangers.

Figure 8. View of the foreshore during high tide (L) and underwater view of subtidal area (R)



As per our site investigation, the foreshore area and neighbouring lots do not have any threatened or endangered species. The underwater seabed condition under the proposed structure is sandy and muddy, with an offshore Zostera seagrass bed observed. Figure 8 above shows the seabed during high tide (L), depicting that its intertidal area has sufficient water depths, and the underwater view (R) demonstrates the current deeper tidal seabed situation. However, according to Marine Habitat Report (Annexure A), the Zostera seagrass bed is 22-38 meters from the MHWM, and the proposed works will be positioned to pass over the Zostera Seabed.

Figure 9. Proposed water recreation structure along the foreshore area during the high tide

Figure 9 on this page shows the diagrammatical impression and approximate location of the proposed structure's shoreward commencement footprint in the foreshore area designed by Harbour Planning Pty Ltd (Figure 2 refers). With these, the proposed structures can be used in conjunction with their existing concrete ramps. There is an existing accessway between the three dwellings which can be connected to the proposed jetty. The proposed jetty with sea stairs will function ancillary to the existing waterfront structures. Thus, their respective families are willing and happy to jointly utilise this one facility so as to gain the same recreational and practical benefits currently afforded to other homeowners along this stretch of the foreshore to the west. The proposed shared structure also has minimal construction work impact on the environment. Equally, the water recreation structure will assist in the safe access and equitable use of North Arm Cove with regard to the embarking and disembarking of their watercraft for recreational purposes (Bushfires as noted).

Additionally, it can be determined that the proposal will not influence the fairways of the adjacent properties. Because the structure has been designed along the prolongation line between 80 and 82 Cove Boulevard and does not have a neighbouring water recreation structure to the north respectively. Furthermore, this development application has been viewed by adjacent wet lease holder of XL Oyster, and the owner have no objections to the development. Please find the letter of support signed by Mark Salm (Annexure D). At the same time, with the proposed jetty with sea stairs, watercraft can be safely secured for temporary docking during periods of high wave attenuation and winds, the additional benefit is sufficient coverage water depth which offers again safe all-tide accesses, whilst protecting the inshore seabeds from propellor scouring during lower tides. Note: This is no intension for full time berthing.

In terms of noise, the addition of the proposed marine structures at the site will result in a nominal increase in water traffic noise considering the active domestic use existing maritime environment. As previously discussed, the site is located in a well-established built-up area with a dynamic marine setting.

As a result of the above points, the statement has determined that the works subject to the DA are fair uses and occupation of Crown Land and will have minimal impact on the marine environment and visual amenity along North Arm Cove. The proposal is supportable and has satisfied the criteria set by the Maritime, Fisheries and Crown Land support with received consents (Attachment E, F and G refers). Now, this application is submitted to Mid- Coast Council for their assessment and issue of Development Consent.

4. ENVIRONMENTAL IMPACT ASSESSMENT

The following section of the SEE is divided into separate impact assessments, which are specifically related to relevant stakeholders, Fisheries and Maritime.

4.1. NAVIGATION

Transport for NSW absorbed Roads & Maritime Services in 2019 under s.46 of Transport Administration Act 1988. Maritime, specifically, is an operating subgroup under the Transport for NSW tasked to assess development proposals and their navigational impacts to existing and future water recreation structures of adjacent properties, as well as other navigational aspects in relation to the main body of water and the general public's enjoyment.

In compliance with the requirements of Transport for NSW and to establish the suitability of the development works to the maritime use of this section of North Arm Cove in respect to navigation, the Development Application has been lodged to Transport for NSW – Maritime and has subsequently been issued Consent (Annexure E refers).

The Consent Letter for the proposed work seaward of 80, 82 and 84 Cove Boulevard, North Arm Cove, NSW 2324 was issued on the 31 October, 2023 (Annexure E) and states; **"Transport for NSW advise that the proposal, as per the attached stamped plan, has been assessed as having minimal impact on the safety of navigation under the Marine Safety Act 1998."**

Hence, the applicant has satisfied the navigation assessment aspect of Council for the issue of a Development Consent.

4.2. MARINE ECOLOGY

DPI Fisheries, being the State Stakeholder responsible for the conservation of fish stocks and key fish habitats, ensures that all developments comply with the stringent requirements of the Fisheries Management Act 1994 as well as the related Policy and Guidelines for Fish Habitat Conservation and Management (2013). Through DPI Fisheries' careful assessments and elimination of unfavourable applications during the preliminary stages of the development consent process, the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture, marine parks and aquatic reserves within NSW is ensured.

In compliance with the requirements of DPI Fisheries and to establish the suitability of the development works to the marine habitat of the seabed of North Arm Cove abutting the site, in respect to ecological impact, the Development Application has been lodged to the Department of Primary Industries – Fisheries and issued a Consent (Annexure F refers)

As a result of Fisheries' assessment of the submitted plans and the Marine Habitat Report (Annexed F), an approval letter was issued on the 5 September 2023. With reference to the DA it stated, "**DPI Fisheries has reviewed the proposal in light of these provisions and has no objections.**" These concurrences are subject to adherence to safeguards as list in Part 2.2 of this SEE. The approval also noted that "This letter and attached plan (date stamped 5/9/2023) may be forwarded to the Crown Lands Division of DPE for their consideration in assessing your application for land owner's consent."

An assessment of the surrounding aquatic environment (Annexure A refers) has been conducted by Harbour Planning between 10:30 am to 12:30 am on 13 May 2022 and 15 July 2023. Provided below is a summary of the aquatic ecological environment fronting those properties as observed from this seabed inspection:

- The intertidal habitat consists of the silty and sandy with small loose rubble fronting the MHWM. Also located along the MHWM is a man-made habitat consisting of the existing concrete seawall and concrete ramp.

- The subtidal habitat beyond the intertidal sandy seabed consists of a muddy seabed. To the east of the foreshore is a Zostera seagrass bed from approxmately 22 to 38 meters from MHWM.

- No impact on threatened or endangered species. In particular, the Posidonia seagrass and the Coastal Saltmarsh community are absent at the site and locality. The banding and patches of Zostera seagrass were found at the site, but are located 22 meters beyond the MHWM. Also, no seabed environmental impacts will occur from the proposed works as there is no dredging required in the work.

- Additional shading areas (24.9m²) of benthic habitats will occur for the construction of the proposed jetty. Also, this may lead to the loss of a small amount of benthic habitat (4 X 250mm dia. jetty piers -0.2m² Zostera Seagrass). The impact will be minimal considering the primarily muddy sediments in the subtidal area, and the use of single piers and mesh material.

- The construction works will result in the loss of a small amount of benthic habitat consisting of intertidal, sandy and silty sediments. To minimise the impact on the site's marine ecology, silt curtains should be used during the installation of piles and the rest of the proposed works to contain suspended sediments within the locality.

- In the permanent presence of the proposed structures at the site, an artificial habitat for underwater flora and fauna will be created. The structures will provide additional substrates for sessile invertebrates to attach to and may also result to increased fish presence in the area.

Other Potential Impacts which may then affect marine vegetation

- Short term increase in water turbidity during the installation of the proposed works. However, because the silt curtains will be use and construction works are being undertaken following environmentally friendly measures, impact to water quality is likely to be minimal.

In summary, the potential impacts from the proposal along the foreshore area are expected to be minimal, temporary and unlikely to cause significant damage to any marine life (except a small area of Zostera). To mitigate the potential shading impact from the proposed jetty structures, the decking of the entire jetty and sea stairs would be constructed of 'seagrass friendly' mesh with apertures wide enough to allow adequate levels of sunlight to pass through to the underlying seagrass. Also, the jetty has been incorporated to mitigate harm to the seagrass habitat by using single piers above the seagrass bed. Therefore, providing consent will not adversely impact the integrity of the marine habitat. However, appropriate environmental safeguards should be implemented to minimise impacts on benthic habitats during construction. In particular, using silt curtains would minimise turbidity by containing suspended sediments within the locality, shading impacts for seagrass. Care should also be taken to ensure construction equipment is clean and does not introduce invasive species to the site.

Based on the analysis from above, the proposal has been submitted to Fisheries with the consent letter issued dated 5/9/2023. Hence, this application is now submitted to Council for assessment and issue of Development Consent.

5. PLANNING CRITERIA TABLES

This application has been prepared to strike a balance between the State and Council's planning charter and the practical land use development of these foreshore sites. Relevant planning instruments applicable to this proposal are:

- State Environmental Planning Policy – Resilience & Hazards 2021 (RH SEPP)
- MidCoast Local Environmental Plan ("MDLEP 2025");

An assessment of this application in context to the objectives and controls as detailed in this document is provided below in both the compliance tables and associated comments.

5.1. PERFORMANCE ASSESSMENT – RH SEPP 2021

These sites have been identified, in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 to be located within Part 2.2 Coastal Management Area. The proposed work follows performance assessment in relation to Division 1 Coastal wetlands and littoral rainforests area, Division 2 Coastal vulnerability area, Division 3 Coastal environment area, Division 4 Coastal use area, and Division 5 General of the SEPP provided in satisfaction of the assessment requirements of this application.

Generally, the planning approval path for domestic waterfront structure is consistent with the objectives of the RH SEPP 2021, as it is a precautionary graduating process. According to the Coastal Wetlands and Littoral Rainforests Area Map, these properties are **not** located on Coastal Wetlands or Littoral Rainforests Area in proximity. Therefore, Division 1 doesn't apply in this circumstance, and this application should not be considered designated development

The proposal aims to construct a new shared jetty facility that is able to obtain the same equitable benefit of use as afforded to surrounding properties, while provide a water access facility during the bushfire period. The proposed water recreation structure will be offering a safe and all-tide facility with minimal or no impact on the marine ecology, navigation and visual amenity of the locality. The locality is characterised by dwellings surrounded by trees and open grassed landscaping. The application has considered the cumulative implications of the proposed works and deemed its impact on the waterway to be minimal. It will follow the precedent set by neighbouring jetties in locality. As the scale and form works are in keeping with the locality, especially when juxtaposed with the houses and natural topography of the land in the background.

In designing water recreation structures, the environmental aspects of marine ecology and navigational safety (public access and use) have been assessed and determined at the preliminary stage of project engagement. For this proposal, Harbour Planning has commissioned a Marine Habitat Survey (Annexure A refers) to assess the surrounding marine habitat for both suitability of the type of use and practical construction outcomes.

Similarly, Harbour Planning has also undertaken site dives and depth soundings. These findings have helped Harbour Planning design and position the proposed works to avoid any possible environmental impacts on marine ecology. The surveys have also confirmed that there are no threatened species or communities and have also confirmed the most efficient length for the proposed structure in terms of water depth and navigation.

The applicant has submitted the proposal to Maritime, Fisheries and Crown Lands for assessment and has been awarded consent (Annexure D, E, & F refers refers). Part 2.2 of this report discusses the different safeguards/measures that will be adopted during construction works that are particularly relevant to RH SEPP. Amongst these is the use of a silt curtain during construction to capture and localise debris and that the support piers of the proposed structure will be driven into the seabed, not excavated. These will all ensure that construction will have a minimal impact on the seabed, with intermittent turbidity dissipating within the tide cycle.

By exercising all these environmental due diligences, this submission is made to Council with the pre-determination that the works can operate at this site whilst satisfying coastal management objectives and controls. The works will have minimal or no impact on water quality, marine ecology, public access or use of the North Arm Cove, overshadowing, funnelling, visual amenity or cultural values.

With these, the application satisfies the assessment criteria of the RH SEPP for Development Consent.

5.2. PERFORMANCE ASSESSMENT – GLLEP 2014

The following tables and discussions demonstrate to Mid Coast Council that the proposed work below the MHWM satisfy the specific assessment criteria set by Greak Lakes Local Environmental Plan 2014.

Table 1. Performance Assessment Table to the relevant provisions of the GLLEP 2014

Provisions	Proposal	Complies
Land Use Table RU5 - Village W2 -Recreational Waterways	The proposed works are permissible under W2 Recreational Waterways zone.	Yes
7.1 Acid sulfate soils (2) Development consent is required for the carrying out of works at Class of Land 1 to 5	Although the works are in within the Class 2 and Class 1 land, the proposed works will be driven into seabed will not require any excavation works. As such, there is no potential to lower the water table and less than 1 tonne of soil is expected to be disturbed. Accordingly, there is no requirement to submit an ASS Management Plan.	Yes
7.10 Limited development on foreshore area (1) The objective of this clause is to ensure that development in the foreshore area will not…	The proposed works will not impact natural foreshore processes or affect the significance and amenity of the area. The proposed jetty can be granted development consent as the work as jetties form permissible works per (2): (c) in Cl 7.10.	N/A

6. CONCLUSION

This Statement of Environmental Effects is submitted to Crown Lands in support of a Development Application for the construction of **a Shared Jetty with Sea Stairs (Mesh Decked)** seaward of 80, 82 & 84 Cove Boulevard, North Arm Cove NSW 2324. The concurrence of this development application will provide all the adjacent homeowners and their families with a means of practical and efficient tidal access to North Arm Cove and in the disastrous event of a bushfire, provide emergency accesses and a method of egress and outside assistance during bushfire. The statement has made specific references justifying the positioning and length of the proposed structures from the MHWM, taking into account the shallow water depths and sandy and muddy seabed of the foreshore. Also, this application has received a letter of support from the adjacent oyster farmer to the north who has throughly vetted the proposal and understands its advantages as he works the lease areas daily.

Council has been provided with a succinct description of the suitability of the proposed water recreation facilities to the site conditions and marine climate. The SEE has established that the submission satisfies the specific assessment criteria set by the stakeholders and that the works are a justified addition to North Arm Cove to afford the homeowners an equitable, practical and safe use of their waterfront, whilst combining a single joint shared facility.

The applicant has undertaken the required environmental due diligence in the execution of specialist reports, i.e., Marine Habitat Report and Hydrographic Survey, which both provided significant inputs to the design and positioning of the proposed structures. With these, the design is responsive to the opportunities and constraints of the site and achieves a development outcome that is suitable and forms a supportable occupation of Crown Land.

Finally, the design that has been achieved is responsive to the opportunities and constraints of the site whilst sympathetic to the site's conditions. It also achieves a development outcome that forms a supportable occupation of Crown Land. As the application has fulfilled the general compliance criteria of the relevant stakeholders and this application has received consecutive consent from Maritime, Fisheries and Crown Lands. Hence, this submission is now tendered to Mid Coast Council for their assessment and award of Development Consent.

7. COMPANY DETAILS

Harbour Planning Pty Ltd:

Involved in the Marine Consulting and Contracting industry for over 45 years. Our company works predominantly along the East coast including Lake Macquarie, Brisbane Water, Hawksbury River, Port Jackson, Botany Bay, Georges River, Port Hacking and Shoalhaven River areas. We also have extensive experience within Sydney Harbour. Our knowledge of the waterways has been obtained by a combination of both hands-on experiences as well as through our in-house consultancy services. We submit approximately 120 to 150 applications per year, which involve liaisons with Crown Lands, DPIRD - Fisheries, Transport for NSW – Maritime and Local Council Authorities. As an aside, our professionals are multilingual and can converse fluently in Mandarin and Cantonese.

Consultant Details:

Shirley Lee:

Diploma of Building Design and Graduate Certificate in Planning UTS – continuing – Town Planner and Project Coordinator at Harbour Planning Pty. Ltd.

She has risen through the ranks of consultancy, liaising with professionals and government stakeholders to assist the team in achieving favourable outcomes. Her knowledge and experience of the planning industry is embedded with marine construction and maritime culture of the river systems within and surrounding Sydney and the East Coast of NSW.

Adrian Leung:

Bachelor of Design in Architecture, USYD and Master of City Planning, UNSW – Town Planner at Harbour Planning Pty Ltd.

He has recently joined the team and is providing academic and technical support whilst embracing everything nautical.

Han Hu:

Bachelor of 3D & Product Design, Griffith University and Master of Urban Design, USYD – Town Planner at Harbour Planning Pty. Ltd

He is our incumbent latest Town Planner with a Masters in Urban Design. Although without any maritime experience (he is quickly learning) he brings additional management skills and design flair with an energetic passion to our current team of Planners and Architects.

Puneet Kaur:

Bachelor of Architecture, Amity University India and Master of Construction Project Management and Property Development, UNSW – Town Planner at Harbour Planning Pty Ltd.

Our newest team member is exceptionally qualified in the urban environment and like Han and Adrian, she is quickly adapting to the Maritime and Fisheries Guidelines.

Aubrey Zhang:

Bachelor of Landscape Architecture, Qingdao University and Master of Landscape Architecture, UTS, Master of Urban Design, USYD. The Australian Institute of Landscape Architects (AILA) Member – Landscape Architect at Harbour Planning Pty. Ltd

She is remarkably qualified in Landscape Architecture and is providing another fact to our clients' waterfront consulting needs.

Craig Turner:

Consultancy Manager

Has no formal qualifications except for evolving, since 1978, to the guidelines and the ever-changing rigours of both marine construction and marine consultancy. He has been intimating to the ever ongoing and expanding raft of requests, legislation, personalities and changes that continue through the ranks of Government and Semi Government Stakeholders.

Lyn Watson:

Office Manager and Office Mum as well as Credit Accounts Supervisor.

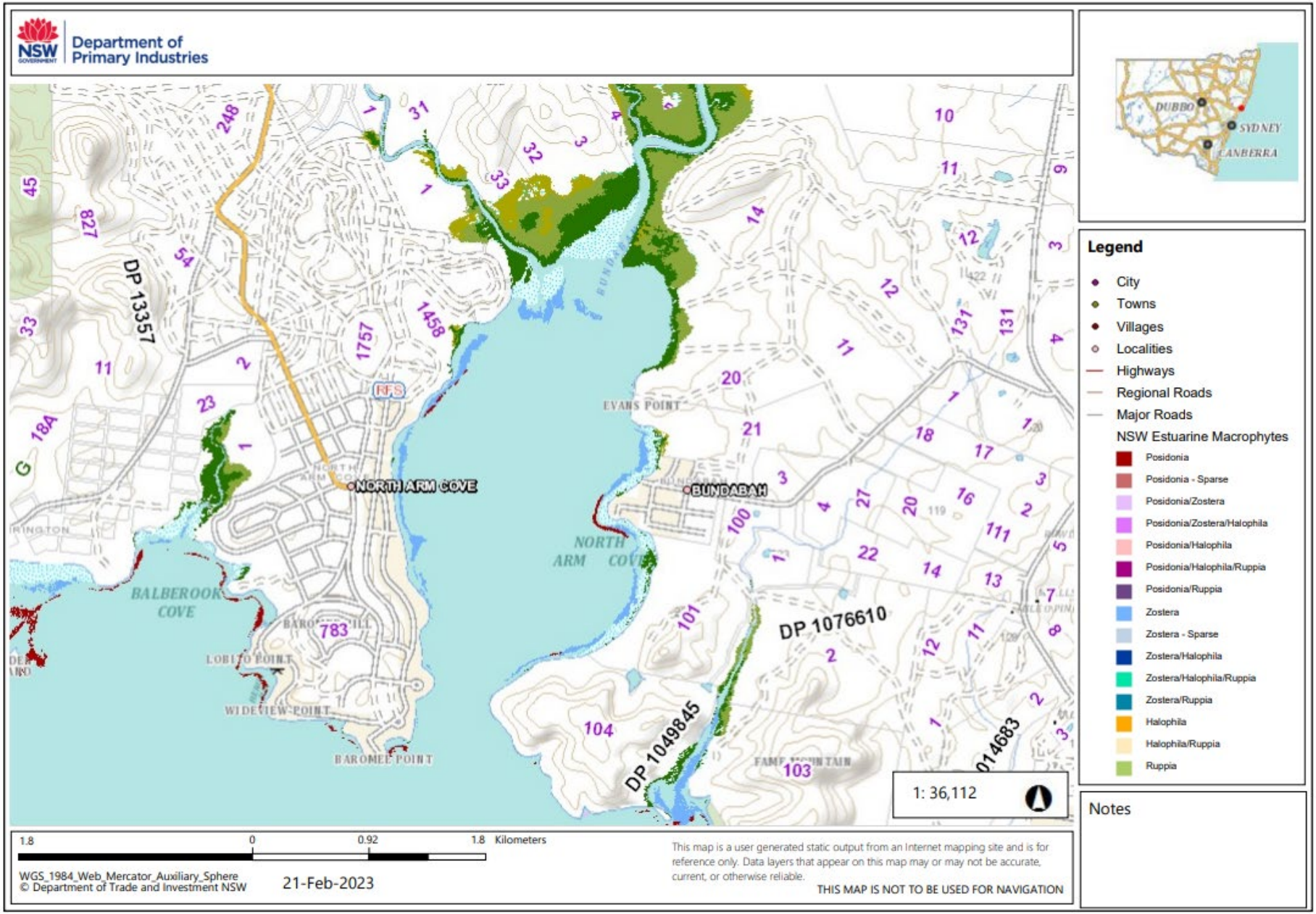
Lyn coordinates the interface between our clients, their initial expectations and then directs the Planners with our in-place systems to commence the processes to the numerous Government Stakeholders.

ATTACHMENT A: AERIAL LOCALITY MAP

Aerial Locality Map:
80, 82 & 84 Cove Boulevard, North Arm Cove, NSW 2324 (Source: Near Map, 2025)

ATTACHMENT B: ENVIRONMENTAL MAP

Supplied by NSW Fisheries


Department of Primary Industries
NSW
DUBBO
SYDNEY
CANBERRA
Legend
City
Towns
Villages
Localities
Highways
Regional Roads
Major Roads
NSW Estuarine Macrophytes
Posidonia
Posidonia - Sparse
Posidonia/Zostera
Posidonia/Zostera/Halophila
Posidonia/Halophila
Posidonia/Halophila/Ruppia
Posidonia/Ruppia
Zostera
Zostera - Sparse
Zostera/Halophila
Zostera/Halophila/Ruppia
Zostera/Ruppia
Halophila
Halophila/Ruppia
Ruppia
NORTH ARM COVE
BUNDABAH
EVANS POINT
BALBEROOK COVE
LOBLOLLY POINT
WIDE VIEW POINT
BAROMEE POINT
DP 13357
DP 1076610
DP 1049845
1: 36,112
Notes
1.8 0 0.92 1.8 Kilometers
WGS_1984_Web_Mercator_Auxiliary_Sphere
© Department of Trade and Investment NSW
21-Feb-2023
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ATTACHMENT C: SITE PHOTOGRAPHS

Seaward view of reclamation area to the North Arm Cove

View of homeowners' backyard down to the foreshore area

View of the existing jetty on 108 Cove Boulevard (Looking East)

Part of on-shore view of the site's foreshore area

Seaward view of the adjacent neighbouring waterfront facilities (Looking South)

Seaward view of the adjacent neighbouring waterfront facilities (Looking North)

ATTACHMENT D: THREATENED SPECIES REPORT

REPORT ON THE THREATENED SPECIES

80, 82 & 84 Cove Boulevard, North Arm Cove, NSW 2324

Part 1 **Endangered Species**	
Name of Species	**Effect of Proposed Structure**
The Grey Nurse Shark *Carcharias Taurus (Rafinesque, 1810)*	The Grey Nurse Shark is found in the waters of Bate Bay and parts of Botany Bay; however, it is unlikely that the Grey Nurse Shark would be found in the North Arm Cove. It is unlikely that the Grey Nurse Shark would be affected by the proposed structure.
The Murray Hardyhead *CraterocephalusFluviatilis (McCulloch, 1913)*	The Murray Hardyhead is a fresh water fish that is common to the Murray River in Victoria. It will not be affected by this proposed structure.
The Eastern Freshwater Cod *MaccullochellaIkei Rowland*	The Eastern Freshwater Cod is a freshwater fish which is found in the Richmond River System. It will not be affected by this proposed structure.
The Trout Cod *MaccullochellaMacquariensis (Cuvier)*	The Trout Cod is a freshwater fish found in southern New South Wales and northern Victoria. It will not be affected by this proposed structure.
The Oxleyan Pygmy Perch *NannopercaOxleyana Whitley*	The Oxleyan Pygmy Perch is a freshwater fish that would not be affected by the proposed structure.
The River Snail *NotopalaSublineatat (Conrad, 1850)*	The River Snail is a freshwater snail that would not be affected by the proposed structure.
The Green Sawfish *PristisZijsron (Bleeker, 1851)*	The Green Sawfish occurs mainly in the tropics from Broome to Southern Queensland with some individuals found as far south as Sydney. The Green Sawfish is a bottom dweller and is unlikely to be affected by this proposed structure as no excavation of the sea bed will be undertaken.

Part 2 Endangered Populations	
Name of Species	**Effects of Proposed Structure**
The Purple Spotted Gudgeon *MogurndaAdspersa (Castelnau, 1878)*	The Purple Spotted Gudgeon is a freshwater fish found in the Murray Darling Region. It will not be affected by this proposed structure.
The Olive Perchlet *AmbassisAgassizii (Steindachner, 1966)*	The Olive Perchlet is a freshwater fish found in the Murray Darling System, Queensland, Western New South Wales, Victoria, and Western Australia. It is unlikely to be affected by the proposed structure.

Part 3 The Aquatic Ecological Community in the Natural Drainage System of the Lower Murray River Catchment
Will not be affected by the proposed structure.

Part 4 Species Presumed Extinct	
Name of Species	**Effects of Proposed Structure**
Bennetts Seaweed *VanvoorstiaBennettiana (Harvey) Papenfuss (1956)*	Bennetts Seaweed has only been collected from two localities in Port Jackson. It is unlikely that Bennetts Seaweed would be affected by the proposed structure.
Adams Emerald Dragonfly *ArchaeophyaAdamsi (Fraser, 1959)*	Adams Emerald Dragonfly has only been found in four (4) localities in New South Wales which does not include the Port Hacking River. It is unlikely that Adams Emerald Dragonfly would be affected by the proposed structure.
Silver Perch *BidyanusBidyanus (Mitchell, 1838)*	The Silver Perch is a vulnerable species that is freshwater. It is unlikely that the Silver Perch would be affected by the proposed structure.
Buchanans Fairy Shrimp *BranchinellaBuchananensix (Geddes, 1981)*	Buchanans Fairy Shrimp is a small crustacean that is found in lakes that dry during periods of the year. It is unlikely that the Buchanans Fairy Shrimp will be affected by the proposed structure.

Part 5 Additional List of Endangered Species	
Name of Species	**Effects of Proposed Structure**
Great White Shark *CarcharodonCarcharias (Linnaeus, 1758)*	The Great White Shark is normally found in deep sea water off the coast of New South Wales and surrounding areas. The Great White Shark is pelagic and would be unlikely to enter the North Arm Cove on a regular basis and therefore would be unlikely to be affected by the proposed structure.
Black Cod *EpinephelusDaemelii (Gunther, 1876)*	The Black Cod is found on coastal and off-shore reefs and islands from southern Queensland to eastern Victoria. Due to the non excavation of the seabed, the Black Cod is unlikely to be affected by the proposed structure.
Macquarie Perch *Macquarie Australiasica (Cuvier, 1830)*	The Macquarie Perch is a vulnerable freshwater species. It is unlikely to be affected by the proposed structure.
Southern Pygmy Perch *Nannoperca Australis (Gunther, 1861)*	The Southern Pygmy Perch is a freshwater fish and therefore is unlikely to be affected by the proposed structure.

Part 6 Key Threatening Processes	
The introduction of fish to freshwaters within a river catchment outside their natural range.	No fish are to be introduced into the proposed site during construction.
The degradation of native riparian vegetation along New South Wales water courses.	There will be no significant increase in the amount of sediment and nutrients reaching into the bay during construction. There will be no reduction of the input of organic carbon, via leaves, twigs, and branches during construction. The river bank in this specific case has been replaced by a seawall and therefore cannot be destabilized. No overhanging vegetation will be removed resulting in loss of shade and shelter for fish.
The installation and operation of in-stream structures and other mechanisms that alter natural flow regimes of rivers and streams.	There will be installation of in-bay structures and other mechanisms, however, they are in keeping with the existing marina structure and subsequently would not alter the tidal flow of the river.

ATTACHMENT E: STANDARD EROSION & SEDIMENT

STANDARD SEDIMENT AND EROSION CONTROL DETAILS

80, 82 & 84 Cove Boulevard, North Arm Cove, NSW 2324

Waterfront Facilities –

Generally:

1. Where tidal movement allows, materials are to be delivered by barge so as to not disturb the seabed.

2. Barges are to be moored in deep water were possible so as to not disturb the seabed.

3. Anchors should only be used as a last resort for mooring of barges.

4. Barges must have floating oil boom catching equipment in the event of any hydraulic leaks into the waterways.

5. Any land-based excavation into the seawall should be carried in a manner so as to protect the waterways from soil overflow i.e.: bunding/ hay bales.

Harbour Planning Pty Ltd

ATTACHMENT F: CONSTRUCTION MANAGEMENT PLANS

CONSTRUCTION MANAGEMENT PLAN

80, 82 & 84 Cove Boulevard, North Arm Cove, NSW 2324

Before start of construction:

1. Erosion & sediment control details to be installed before any site disturbance takes place.

Site access

Barge/Boat access to the site must be via a single-entry point that is stabilised to prevent tracking of sediment into the waterway.

Measures taken during construction period of watercraft facility
(Jetty, ramp, pontoons, skid ramp & berthing areas)

2. Where tidal movement allows, materials are to be delivered by barge so as not to disturb the seabed.
3. All materials are to be stored on barge.
4. Barges are to be moored in deep water were possible so as to not disturb the seabed, spud (pole supported) style.
5. Anchors should only be used as a last resort for mooring of barges.
6. Barges must have floating oil boom catching equipment in the event of any hydraulic leaks into the waterways.
7. Any land-based excavation into a seawall should be carried in a manner so as to protect the waterways from soil overflow i.e.: bunding/ hay bales, seaward floating booms.
8. Any disturbance to the existing structures or seabed shall be reinstalled to original condition prior to site disestablishments.

Materials used for construction

1. All floating devices are to be prefabricated at the factory so no unnecessary noise or odours are produced on site.
2. All small batch concrete is mixed, in a concrete mixer prior to installation into piers (inshore) so that no concrete slurry leeches into water. Large batch concrete is delivered, pumped after mixing offsite.
3. All steel components are to be treated with hot dipped galvanised agents so that steel fasteners do not rust and therefore do not leech minerals into the sea bed or river.
4. All timber to be used in construction is Australian hardwood. It comes from private plantation and is not purchased from the state forest.

Construction Methodology

- **250 HDPE POLY PE 100 SERIES 1 PIER**
- **300mm Toe Turpentine Pile**

1. Site information is limited and the descriptions of the materials and conditions on site may vary. No

guarantee is given that those site conditions encountered will not vary across the frontages.

2. The contractor shall be responsible for assessing the information provided and conducting any further investigation they may deem necessary, further contact for confirmations care of Engineer.

3. Piles to be installed using appropriate plant and techniques using an experienced and skilled licensed piling, crane or excavator operator.

4. Supply piles in one continuous length. Piles are not to be spliced unless approved by engineer in writing.

5. The founding level at the toe of the piles shown on the drawings are indicative only. These levels do not necessarily represent the actual founding levels. Engineer to confirm onsite.

6. All socketing/driving depths to be as specified. The contractor shall determine the pile lengths into rock or sediment to achieve adequate bearing.

7. Drilled socket holes to have a diameter slightly less than the diameter of the pile to ensure that pile is hard up against foundation for its full depth and circumference (Turpentine Piles) 1.2 - 1.5mt into rock, subject Eng. and Geo. information.

8. No excavation or jetting of piles shall be permitted.

9. The nominated pile design capacities and embedment are to be achieved. Engineering to confirm.

10. Pile records shall be sufficient to satisfy the engineer that the foundation requirements have been achieved; pile embedment have been reached and that the pile design capacity has been reached.

11. Leave bark on all exposed turpentine piles. Paint top 1.2mt of pile white.

12. All timber pile heads to be ringed with a snug fit gal steel ring 50mm fitted.

13. If the seabed is rock or there is not sufficient overburden to achieve sleeve penetration, then core drill the pile diameter to 0.6 - 0.8mt deep and socket the pile sleeve into sound rock (Poly Piers).

14. Contractor shall establish the ground conditions and determine poly pier lengths in advance.

15. 50 MPA concrete. Poly Pier minimum wall thickness 6.0mm. Prepare and clean rock surface level.

16. Remove all loose seabed material from out of the drilled pier hole base to achieve a firm fit/bond.

17. Concrete shall be continuous pour by tremie. Without penetrating of the Poly Pier to install any attachments or bolts.

18. The design assumptions are shown on the drawings. Conditions may vary. The contractor shall make their own assessment of the geotechnical conditions. The contractor shall be responsible for assessing the information provided and conducting any further investigations they may deem necessary to ensure proper founding of the piles to ensure the design pile loads are achieved. Engineer to confirm.

Harbour Planning Pty Ltd

ATTACHMENT G: ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS) SEARCH RESULT

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 84 Cove Boulevard North A
Client Service ID : 985590

Craig Turner

Date: 17 March 2025

PO Box
Cronulla New South Wales 2230
Attention: Craig Turner

Email: planner@harbourplanning.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Address : 84 COVE BOULEVARD NORTH ARM COVE 2324 with a Buffer of 200 meters, conducted by Craig Turner on 17 March 2025.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

HARBOUR PLANNING

WATERFRONT CONSULTANCY