

AGENDA

NORTHERN BEACHES LOCAL PLANNING PANEL

Notice is hereby given that the Northern Beaches Planning Panel will be held at Council Chambers on

MONDAY 25 SEPTEMBER 2023

Beginning at 10.30am for the purpose of considering and determining matters included in this agenda.



Peter Robinson
Executive Manager Development Assessment

Quorum

A quorum is three Panel members

Conflict of Interest

Any Panel Member who has a conflict of Interest must not be present at the site inspection and leave the Chamber during any discussion of the relevant Item and must not take part in any discussion or voting of this Item.

Agenda for an Extraordinary Meeting of the Northern Beaches Local Planning Panel to be held on Monday 25 September 2023

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	Nil	

3.0 PUBLIC MEETING ITEMS

ITEM 3.1	DA2021/1612 - 1196 PITTWATER ROAD, NARRABEEN - CONSTRUCTION OF COASTAL PROTECTION WORKS
AUTHORISING MANAGER	Daniel Milliken
TRIM FILE REF	2023/577222
ATTACHMENTS	1 ↓ Assessment Report 2 ↓ Site Plan & Elevations

PURPOSE

This application has been referred to the Northern Beaches Local Planning Panel as it is the subject of 10 or more unique submissions by way of objection.

RECOMMENDATION OF MANAGER DEVELOPMENT ASSESSMENT

That the Northern Beaches Local Planning Panel, on behalf of Northern Beaches Council as the consent authority, **approves** Application No. DA2021/1612 for Construction of coastal protection works on land at Lot 1 DP 7417, 1 Clarke Street, NARRABEEN, Lot C DP 312655, 1194 Pittwater Road, NARRABEEN, Lot CP SP 2808, 1192 Pittwater Road, NARRABEEN, Lot CP SP 971, 1204 Pittwater Road, NARRABEEN, Lot B DP 312655, 1196 Pittwater Road, NARRABEEN subject to the conditions set out in the Assessment Report.

DEVELOPMENT APPLICATION ASSESSMENT REPORT

Application Number:	DA2021/1612
Responsible Officer:	Daniel Milliken
Land to be developed (Address):	Lot 1 DP 7417, 1 Clarke Street NARRABEEN NSW 2101 Lot C DP 312655, 1194 Pittwater Road NARRABEEN NSW 2101 Lot CP SP 2808, 1192 Pittwater Road NARRABEEN NSW 2101 Lot CP SP 971, 1204 Pittwater Road NARRABEEN NSW 2101 Lot B DP 312655, 1196 Pittwater Road NARRABEEN NSW 2101
Proposed Development:	Construction of coastal protection works
Zoning:	Warringah LEP2011 - Land zoned R2 Low Density Residential
Development Permissible:	Yes, under Clause 2.16 of the State Environmental Planning Policy (Resilience and Hazards) 2021
Existing Use Rights:	No
Consent Authority:	Northern Beaches Council
Delegation Level:	NBLPP
Land and Environment Court Action:	No
Owner:	Paul Harrod Marshall The Owners Of Strata Plan 2808 Donald George Champion Eric Leonard Stanford Barnes The Owners Of Strata Plan 971 Richard David Barnes
Applicant:	Horton Coastal Engineering Pty Ltd
Application Lodged:	14/09/2021
Integrated Development:	No
Designated Development:	No
State Reporting Category:	Other
Notified:	22/09/2021 to 06/10/2021
Advertised:	22/09/2021
Submissions Received:	178
Clause 4.6 Variation:	Nil
Recommendation:	Approval
Estimated Cost of Works:	\$ 2,047,433.00

EXECUTIVE SUMMARY

There is a long history of properties at Collaroy-Narrabeen Beach being impacted by coastal storms. In June 2016, a large storm caused severe coastal erosion to the eastern side (i.e. the beach side) of the subject site. This storm resulted in significant damage to homes further south and damaged the existing rock protection in front of the subject site. This storm demonstrated the immediate and ongoing threat, properties at Collaroy-Narrabeen Beach are exposed to, including the sites that are the subject of this Development Application, and the need for coastal protection works to be implemented. Since then, Council has received multiple applications for coastal protection works on both private and public land consisting of a combination of rock revetment, hybrid and vertical designs. Most of these applications have been approved, with two large sections of vertical walls already constructed (between Stuart and Clarke Streets) and one section of rock revetment (between Stuart and Ramsay Streets).

This development application seeks consent for coastal protection works entirely on private land between Clarke and Mactier Streets (excluding a portion of land containing South Narrabeen Surf Club). These works are permitted with consent under Clause 2.16 of the *State Environmental Planning Policy (Resilience and Hazards) 2021*. As per section 2.19 and Schedule 6 Clause 8A (1)(a) of the *State Environmental Planning Policy (Planning Systems) 2021*, Council is the consent authority (subject to the Local Planning Panels Direction – Development Applications and Applications to Modify Development Consents dated 30 June 2020) as there is a certified Coastal Zone Management Plan in place for this beach (the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach 2016).



Image 1: Photomontage of the proposed works showing the median historical sand level with vegetation screening. The montage is made up of a series of images taken on 14 July 2023, approximately 40m from the eastern property boundaries. The beach was approximately 50m wide at the time the photos were taken.

The application is being referred to the Northern Beaches Local Planning Panel (NBLPP) for determination due to receiving 178 submissions.

Concerns raised in the submissions predominantly relate to whether the works: will increase coastal erosion, will cause a loss of public access to the beach, will be visually unappealing, are the most appropriate design for this site, will impact on the surf/wave quality and, whether there has been sufficient public consultation.

Coastal protection works are a permissible land use on these private properties. Extensive consultation on the construction of private coastal protection works at Collaroy-Narrabeen Beach was undertaken in the preparation of the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (2016) (CZMP) as well as the Northern Beaches Coastal Erosion Policy (2016). These policies, along with the Coastal Management Act 2016 (section 27 in particular) have set the broad direction for coastal protection along Collaroy-Narrabeen Beach.

Due to the broad range of complex technical and legislative matters requiring consideration for this application, Northern Beaches Council engaged Royal Haskoning DHV to consider the impacts of this proposal on coastal processes as well as compliance with the necessary legislation and policies. The resulting report is referred to as RHDHV 2023 throughout this assessment report.

The proposed works are generally consistent with these policies in terms of design, location, alignment and height. This is supported by the Statement of Environmental Effects (Horton Coastal Engineering 2021) and Coastal Engineering Report (Horton Coastal Engineering 2021). In its assessment and review of the potential impacts of the proposal, and its compliance with relevant legislation, Council has relied upon a number of technical reports including: The Collaroy-Narrabeen Beach Coastal Protection Assessment (MHL, 2016), A Review of Beach Width Impacts of Alternative Coastal Protection Works at Collaroy-Narrabeen Beach (MHL, 2020), The MHL2877 Collaroy-Narrabeen Beach seawall: Review of additional assessment items – Review of Development Application for 1190 to 1196 & 1204 Pittwater Road, Narrabeen (MHL 2022), and External peer review of the application from Royal Haskoning DHV (RHDHV 2023). These reports have been prepared by highly experienced coastal experts.

The expert reports and Council's internal assessment have confirmed that the works are not likely to result in increased erosion across the embayment from coastal storms or long-term shoreline recession, or prevent natural recovery of the beach following these storms. They have also confirmed that there will not be a loss of public access to the beach, other than to a small portion during construction. The technical reports indicate that access along the beach (i.e. beach width) will improve compared to a rock revetment alternative. The design is an appropriate outcome in the circumstances of this site and the works will not adversely impact on the surf/wave quality. The construction of these works would also reduce the risk of debris-related impacts to the beach caused by coastal storms and a reliance on emergency response to manage the impacts of coastal storms.

Finally, it is acknowledged that the visual impact of the structure has divided opinion. It is safe to say that a visible vertical wall will not be as attractive, to most people, as a natural sand dune, however, a natural vegetated sand dune does not currently exist at this site and would not provide the same level of protection. Comparing the visual impact of an uncovered rock revetment wall and a visible vertical wall is more difficult. A sloping rock revetment is not possible on these sites without extending further onto the beach (as the current rock protection does) and/or posing risks to structures on the private properties. A vertical wall is an appropriate design and finishing it in a sandstone colour, along with the use of vegetation to grow over the top and down the face of the wall, and the relatively high sand levels in front of the subject site will minimise the visual impact.

Given all the circumstances and constraints of this site, the need to align these works with works on adjoining land, the need to keep them as far landward as possible, the preference to keep them on private property (and off the public beach) and the choice of colours and finishes, the proposal will have an acceptable visual impact. In addition, the visual impact is offset by the benefits to coastal process and public amenity of having the works as far landward as possible.

Council has a strategic position through adopted policies and plans to allow protection works to be constructed and a priority for them to be located, as far as practical, on private land.

This report concludes with a recommendation that the NBLPP grant approval to the development application in the form of a time limited consent, subject to conditions.

PROPOSED DEVELOPMENT IN DETAIL

The proposal involves the construction of coastal protection works on the eastern side of the subject site (comprising No. 1 Clarke Street and Nos. 1192, 1194, 1196 and 1204 Pittwater Road). The works will be located entirely within the subject site and will sit either side of the South Narrabeen Surf Club.

In detail the proposal includes:

- Site preparation works including a temporary bund to protect the site during construction.
- The construction of an engineered coastal protection wall on the eastern side of the site. The concrete wall is a vertical design with sand-matching colours.
- Two sets of stairs are recessed into the southern section of the wall. One stair is located between No. 1 Clark Street and No. 1192 Pittwater Road and the second stair is located between Nos. 1194 and 1196 Pittwater Road.
- A 1.0m high, open style, stainless steel fence on top of the wall.
- The back filling of the coastal protection wall to provide a maintenance zone behind the works, on private property.
- Associated landscaping works behind the wall.
- The removal of all rocks off the public beach in front of the site.
- The covering of part the coastal protection wall with sand at the end of construction.



Image 2: Photomontage showing the works in a post storm state with sand scoured down to the cemented sand level (as low as it can go) and no vegetation.

The engineered coastal protection wall is located at the eastern (rear) boundary of the site. The main wall is setback 0.5m landward from the rear boundary with the wave return having a nil setback.

In detail, the works are:

- 49.75m long (from north to south) along No. 1 Clarke Street and Nos. 1192, 1194 and 1196 Pittwater Road and 29.85m long (north to south) along 1204 Pittwater Road,
- Maximum of 7.0m AHD in height to the top of the wall and 8.0m to the top of the balustrade.
- 350mm in width (with 500mm wave return projection cantilevered over sand), plus stair over a 1.5m width at two locations.

- Permanent rock anchors every 1.5m (behind the wall and buried).
- The height of the *exposed* wall will vary depending on the sand level as detailed below:

Typical lower sand level to the top of the wall

Height approximately 2.6m along the northern section (No. 1204 Pittwater Road), and between approximately 2.7m - 3.9m along the southern section (No.1190 - 1196 Pittwater Road).

Typical medium sand level to the top of the wall

Height varies between approximately 1.6m - 1.8m along the northern section and approximately 300mm - 1.5m along the southern section.

Typical high sand level to the top of the wall

The northern wall is either covered by sand or will be exposed for a height of approximately 200mm. The southern section will be exposed for a height of approximately 300mm - 800mm.

Note on sand levels provided by the applicant: Sand levels derived from analysis of 24 profiles captured from 1941 to 2021 in the nsw beach profile database. The typical upper sand level has been exceeded for about 10% of the time in the historical record. The typical lower sand level has been exceeded for about 90% of the time in the historical record.

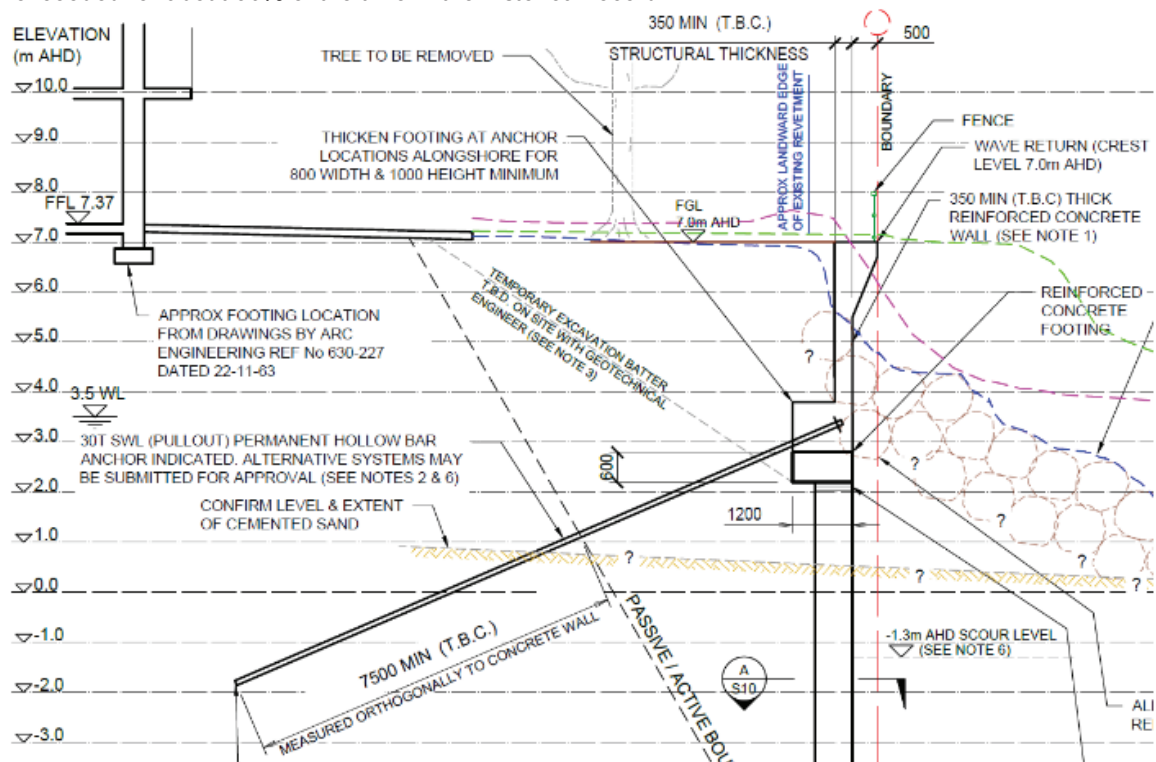


Figure 1: Cross section of the wall

The works will link with Council's proposed coastal protection works at Clarke Street, South Narrabeen SLSC and Mactier Street. This will be achieved by constructing returns at each end of the northern and southern sections of the works, entirely within the property boundaries.

Council works are planned and budgeted for within Council's Delivery Program, at the adjoining sites.

Detailed design, approval and construction of these works can proceed once the design and the timing of construction of the works subject to this DA are confirmed. The external engineering assessment for this application has confirmed that approval of these works would not significantly increase the risk of damage from a coastal storm to the adjoining sites, particularly South Narrabeen Surf Club. Consultation with key stakeholders such as the South Narrabeen Surf Club has been undertaken and concept plans for sites like South Narrabeen Surf Club have been prepared.



Image 3: Existing rock in front of the subject site with Clarke St on the left and the South Narrabeen Surf Club on the right.

The proposed works will require the removal of rock that currently extends onto the beach between 5m to 10m seaward of the surveyed property boundary.

ASSESSMENT INTRODUCTION

The application has been assessed in accordance with the requirements of the Environmental Planning and Assessment Act 1979 and the associated Regulations. In this regard:

- An assessment report and recommendation has been prepared (the subject of this report) taking into account all relevant provisions of the Environmental Planning and Assessment Act 1979, the Coastal Management Act 2016 and the associated regulations;
- A site inspection was conducted and consideration has been given to the impacts of the development upon the subject site and adjoining, surrounding and nearby properties;
- Notification to adjoining and surrounding properties, advertisement (where required) and referral to relevant internal and external bodies in accordance with the Act, Regulations and

- relevant Development Control Plan;
- A review and consideration of all submissions made by the public and community interest groups in relation to the application;
- A review and consideration of all documentation provided with the application (up to the time of determination);
- A review and consideration of all referral comments provided by the relevant Council Officers, State Government Authorities/Agencies and Federal Government Authorities/Agencies on the proposal.

SITE DESCRIPTION

Property Description:	<p>Lot 1 DP 7417 , 1 Clarke Street NARRABEEN NSW 2101</p> <p>Lot C DP 312655 , 1194 Pittwater Road NARRABEEN NSW 2101</p> <p>Lot CP SP 2808 , 1192 Pittwater Road NARRABEEN NSW 2101</p> <p>Lot CP SP 971 , 1204 Pittwater Road NARRABEEN NSW 2101</p> <p>Lot B DP 312655 , 1196 Pittwater Road NARRABEEN NSW 2101</p>
Detailed Site Description:	<p>The subject site includes five properties located along the eastern side of Pittwater Road, namely No. 1 Clarke Street (This property is referred to as 1190 Pittwater Road in the SEE and plans), Nos. 1192, 1194, 1196 Pittwater Road (the southern section) and No. 1204 Pittwater Road (the northern section). The subject site adjoins Collaroy Beach to the east, Clarke Street to the south and Mactier Street to the north. The South Narrabeen SLSC is located between the two sections of the works.</p> <p>No. 1 Clarke Street contains a detached single storey weatherboard cottage.</p> <p>No. 1192 Pittwater Road contains a three storey residential flat building</p> <p>Nos. 1194 and 1196 Pittwater Road both contain two storey detached dwellings.</p> <p>No. 1204 Pittwater Road contains a four storey residential flat building.</p> <p>Nos 1192, 1194, 1196 and 1204 have driveway access from</p>

Pittwater Road. No 1 Clarke Street has access from Clarke Street and No. 1204 Pittwater Road also has driveway access from Mactier Street.

The site(s) also have a loose rock barrier near the eastern boundaries that projects between 5.0m to 10m seaward of the subject site.

Coastal protection works have been constructed (after approvals since 2016) along the eastern boundaries of properties to the south of the subject site between Ramsay to Stuart Streets, Stuart to Wetherill Streets and, Wetherill to Clarke Streets.

Map:



SITE HISTORY

In June 2016, a large storm caused severe coastal erosion to the eastern side (i.e. the beach side) of the subject site.

Subject Development Application

The current DA is for coastal protection works on No. 1 Clarke Street, and Nos. 1192, 1194, 1196 and 1204 Pittwater Road only but will form a part of an overall coastal protection network running approximately 1.3km along Collaroy/Narrabeen Beach.

History of other sites

There have been no recent or relevant development applications for the five properties, however, groups of properties (fronting the beach) to the south have had recent approvals for coastal protection works. These applications are detailed below:

- DA2017/0591 - 1126-1144 Pittwater Road Approved (Local Planning Panel)
- DA2017/0825 - 1104 & 1106 Pittwater Road, Appeal Withdrawn (Land and Environment Court)
- DA2017/0947 - 1114-1118 Pittwater Road (Flightdeck), Approved (Local Planning Panel)
- DA2018/1289 - 1150-1168 Pittwater Road Approved (Local Planning Panel)
- DA2018/1878 - 1106 Pittwater Road Approved (Delegation)
- DA2019/1138 - 1122 Pittwater Road (Shipmates) Approved by (Delegation)
- MOD2019/0208 - 1106 Pittwater Road Approved (Land and Environment Court)
- DA2020/0301 - 1174-1182 Pittwater Road Approved (Delegation)
- DA2021/0042 - 1172 Pittwater Road Approved (Delegation)
- MOD2021/0508 - 1174-1182 Pittwater Road Approved (Delegation)

Status of Collaroy Coastal Protection Works Scheme



Figure 2: Property status for seawalls post June 2016 storm.

Other relevant matters

It is relevant to outline the history of the existing coastal protection works in the subject area of the DA, from Clarke Street to Mactier Street, inclusive of works protecting both private property and public land.

Rock seawall protection works at 1 Clarke Street (formerly 1190 Pittwater Road) and 1192 Pittwater Road, designed by HG Small Consulting Engineers, were approved by Council in July 1975 (Building Application number B982/75). Information associated with the application and approval includes:

- the works were in response to erosion experienced in previous years;
- the storm had exposed 'old rock filling normally covered by beach sand and which appears to have existed prior to Council adopting the wall line in 1968';
- the seawall works were approved on the basis that the rock the subject of the development application did not extend more than 3.5m beyond the private property boundary measured at mean sea level;
- Council did not object to the seawall works being carried across the end of Clarke Street, at the cost of the owners of 1190 and 1192 Pittwater Road;
- a Building Application was submitted for the works in August 1975;

There is also extensive documentation on emergency coastal protection works being placed to protect public and private assets in response to the threat of damage for coastal storms. Records of this emergency response date back to the 1920's. Evidence of this can be found in a number of documents including the following papers, reports and technical studies, Foster, DN; Gordon, AD and NV Lawson (1975) Public Works Department (1985 & 1987), Warringah Council (1997), Patterson Britton & Partners (1999 & 2011), Warringah Council (2014) and Northern Beaches Council (2016).

PWD (1987) provides a series of figures, based on aerial photography, showing the rock exposed and/or placed during historic erosion events. These figures are summarised in Figure 3. Note that Figure 3 includes only extracts of the original figures and the current DA location is annotated by blue arrows. These figures clearly indicate rock was present from Clarke Street to Mactier Street (the location of the current DA) by 1978 with much of the rock present in 1974, 1967 and earlier. In addition to the figures, PWD 1987 mentions, in its text, various emergency works including:

- In 1944 The Sydney Morning Herald reported that "Workmen were engaged all day erecting sandbag barricades along a stretch of seafront which until the previous night had been lawns, with wooden retaining walls".
- In 1945 "emergency protection measures including the dumping of "huge concrete tank traps" on the beach Arlington Hall (the present Beach services Club)"
- In 1967 protective works included:
 - Flight Deck foundations being protected "by the emergency dumping of hundreds of tonnes of fill and the construction of a rubble wall using heavy earthmoving equipment."
 - The house immediately north of Frazer St was "saved from collapse with cantilevered timber beams and the dumping of rock and fill"
 - "the construction of a reinforced concrete wall near Jenkins Street and a concrete cube sea wall near Stuart Street. The cube sea wall partially collapsed.... rebuilt and rubble toe protection was added"
- In 1974 "emergency dumping of large volumes of fill and rock particularly between Mactier and Devitt Streets.

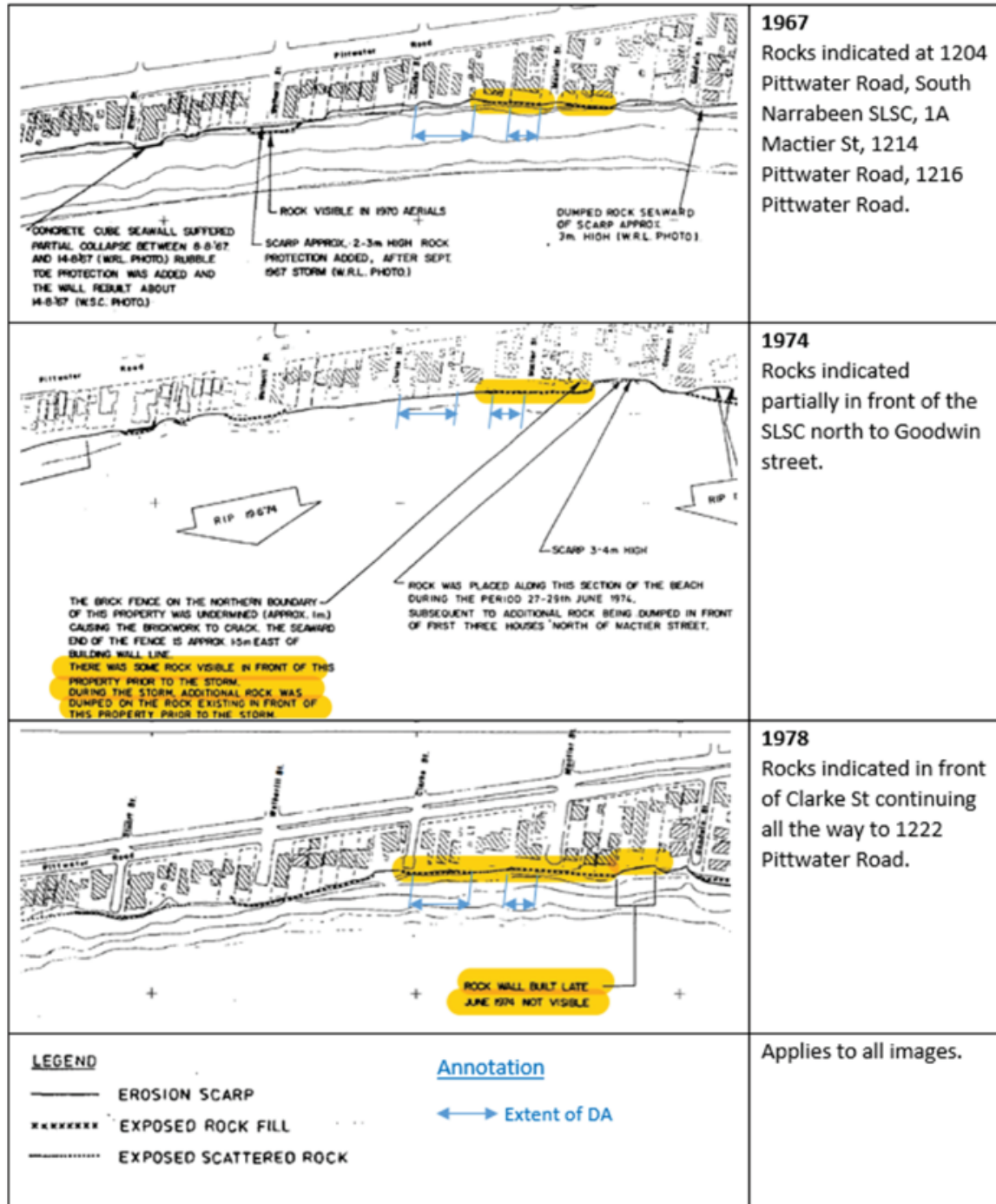


Figure 3: Extracts from figures included in PWD 1987 annotated with current DA location.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (EPAA)

The relevant matters for consideration under the Environmental Planning and Assessment Act, 1979, are:

Section 4.15 Matters for Consideration	Comments
Section 4.15 (1) (a)(i) – Provisions of any environmental planning instrument	See discussion on “Environmental Planning Instruments” in this report.
Section 4.15 (1) (a)(ii) – Provisions of any draft environmental planning instrument	There are no current draft environmental planning instruments.
Section 4.15 (1) (a)(iii) – Provisions of any development control plan	Warringah Development Control Plan applies to this proposal.
Section 4.15 (1) (a)(iia) – Provisions of any planning agreement	None applicable.
Section 4.15 (1) (a)(iv) – Provisions of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation 2021)	<p>Part 4, <u>Division 2</u> of the EP&A Regulation 2021 requires the consent authority to consider “Prescribed conditions” of development consent. These matters have been addressed via proposed conditions of consent.</p> <p><u>Clause 61</u> of the EP&A Regulation 2021 requires the consent authority to consider AS 2601 - 1991: The Demolition of Structures. This matter has been addressed via a condition of consent (see condition 4).</p> <p><u>Clause 69</u> of the EP&A Regulation 2021 requires the consent authority to consider the provisions of the Building Code of Australia (BCA). This matter has been addressed via a condition of consent.</p>
Section 4.15 (1) (b) – the likely impacts of the development, including environmental impacts on the natural and built environment and social and economic impacts in the locality	<p>(i) Environmental Impact The environmental impacts of the proposed development on the natural and built environment are addressed under the Coastal Management Act, environmental planning instruments and the Warringah Development Control Plan sections in this report.</p> <p>(ii) Social Impact The proposed development will not have a detrimental social impact in the locality considering the character of the proposal, refer to discussion under the relevant provisions of the Coastal Management Act, environmental planning instruments and WDCP and the submissions sections of this report.</p> <p>(iii) Economic Impact The proposed development will not have a detrimental economic impact on the locality considering the nature of the existing and proposed land use.</p>

Section 4.15 (1) (c) – the suitability of the site for the	The site is located on the foredune and suffered significant erosion during storms in June 2016.
Section 4.15 Matters for Consideration	Comments
development	<p>In order to protect the most vulnerable public and private assets along Collaroy and Narrabeen Beach (a stretch that includes this site), a series of connected coastal protection works will need to be constructed. This proposal will form part of this longer contiguous network.</p> <p>The site is therefore considered suitable for the proposed development.</p>
Section 4.15 (1) (d) – any submissions made in accordance with the EPA Act or EPA Regs	See discussion on “Notification & Submissions Received” in this report.
Section 4.15 (1) (e) – the public interest	<p>The proposed coastal protection works are permitted with consent under State Environmental Planning Policy (Resilience and Hazards) 2021. Public access to the beach will not be impeded by the works and natural coastal processes will not be significantly adversely affected. A small portion of the public beach that is immediately adjacent to the subject site will not be accessible during construction.</p> <p>Since the construction of the works between Stuart and Wetherill Streets and between Wetherill and Clarke Streets, there have been coastal storm and erosion events. There has been no observable increase or difference in erosion in front of these constructed walls when compared to the sites with existing rock protection or sites with no protection. In addition there will be no change in the volume of erosion during coastal storms and accretion following coastal storms within the embayment as a result of these works.</p> <p>There have also been vertical walls in places along Collaroy and Narrabeen Beach for 50 - 60 years (eg: Collaroy Surf Club, The Collaroy Beach Services Club and 'The Breakers' - No. 1096 Pittwater Road). There has been no observable difference in beach width or behaviour in front of these historic walls than the rest of Collaroy and Narrabeen Beach.</p> <p>The works will assist in the protection of public infrastructure and private property if they are approved and constructed, as they align with the overall coastal protection works network along Collaroy and Narrabeen Beach.</p> <p>In addition, the works include the removal of large amounts of existing rock from the beach, which will leave more of the public beach accessible after coastal erosion events.</p> <p>The works will have an overall public benefit.</p>

	In this regard, no matters have arisen in this assessment that would justify the refusal of the application in the public interest.
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COASTAL MANAGEMENT ACT 2016

Section 27 of the Coastal Management Act 2016 states:

27 Granting of development consent relating to coastal protection works

(1) Development consent must not be granted under the Environmental Planning and Assessment Act 1979 to development for the purpose of coastal protection works, unless the consent authority is satisfied that:

(a) the works will not, over the life of the works:

(i) unreasonably limit or be likely to unreasonably limit public access to or the use of a beach or headland, or

(ii) pose or be likely to pose a threat to public safety, and

(b) satisfactory arrangements have been made (by conditions imposed on the consent) for the following for the life of the works:

(i) the restoration of a beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by the presence of the works,

(ii) the maintenance of the works.

(2) The arrangements referred to in subsection (1) (b) are to secure adequate funding for the carrying out of any such restoration and maintenance, including by either or both of the following:

(a) by legally binding obligations (including by way of financial assurance or bond) of all or any of the following:

(i) the owner or owners from time to time of the land protected by the works,

(ii) if the coastal protection works are constructed by or on behalf of landowners or by landowners jointly with a council or public authority—the council or public authority,

(b) by payment to the relevant council of an annual charge for coastal protection services (within the meaning of the Local Government Act 1993).

(3) The funding obligations referred to in subsection (2) (a) are to include the percentage share of the total funding of each landowner, council or public authority concerned.

Comment:

Note: The assessment in the Coastal Management Act 2016 section has been informed by RHDHV 2023.

Background

In order for Section 27 to be satisfied, the consent authority must form the opinion that the matters in section 27(1) are achieved over the life of the works.

Information provided by the applicant

To assist Council and the consent authority, the applicant has submitted coastal engineering advice (prepared by a suitably qualified coastal engineer) that states that the structure has a design life of 60 years. This advice has been reviewed and agreed with by Council's internal and external coastal experts.

What is "the life of the works"?

Reference is made to 'the life of the works', hence it is important to have an understanding of what this expression may mean.

It is considered reasonable to adopt 'the life of the works' for the proposed works to be 60 years on the basis that:

- a design life of 60 years has been adopted by the Applicant for the proposed works; and
- any consent for the proposed works would include a condition of 'time limited consent' (see condition 71) requiring re-evaluation of the works leading up to the 60 years anniversary, as outlined further below.

It is customary for any approval of coastal protection works on Collaroy-Narrabeen Beach to include a condition of time limited consent stating that the consent operates for 60 calendar years from the date of the issue of the occupation certificate and such other period as may be extended only with the written approval of Council in accordance with a range of requirements.

These requirements include that, at a minimum of three (3) years prior to the date of 60 years, the owner(s) shall procure at no cost to Council, a Review Report, by a suitably qualified independent coastal engineer. The report must review the performance of the works using the evidence and coastal hazard predictions at that time. The time limited consent condition hence ensures the creation of a formal 'hold point' at 60 years at which time the performance of the works is evaluated and, among other things, the life of the works is re-assessed. This evaluation would include consideration of the planning laws in place at that time.

In conclusion, it is considered reasonable to adopt the life of the works as 60 years for purposes of the coastal engineering assessment.

Satisfying subsection 1(a)(i)

Firstly, consideration of headlands is not relevant as these features are remote from the proposed works.

The proposed works are located entirely on private property. Access to the beach by the general public would be via the road heads at Clarke Street and Mactier Street or via South Narrabeen SLSC. It is an action of the CZMP (2016) for Council to ensure continuing and undiminished public access to beaches by such means. The proposed works would not limit provision of such access.

Access to the beach by the owners and occupiers of four of the five subject properties would be via two sets of beach access stairs; one set at the common boundary of 1 Clarke Street and 1192 Pittwater Road, and one set at the common boundary of 1194 and 1196 Pittwater Road. The owners and occupiers of 1204 Pittwater Road are proposed to access the beach via the adjacent Mactier Street. The stairs built into the proposed works will also provide access off the beach during a coastal storm. As this level of access is not currently possible in the location of the works, it can be concluded that the works will improve public access to the beach.

In considering this section of the Act, regard should be given to potential impacts on beach width. The assessment of the impact of the proposed works on beach behaviour set out in Section 5 which included consideration of relevant information in the literature, observations of actual beach behaviour at Collaroy-Narrabeen Beach, and specific beach width modelling carried out by MHL (2022b), showed that the proposed works would not be expected to have any significant impact on beach width,

when compared with the existing ad-hoc rock protection works or a rock revetment design alternative.

Over time, during the life of the works, access to the beach or use of the beach may be affected by shoreline recession due to projected sea level rise. In so far as the proposed works are concerned, two points are relevant:

- the proposed works would have no impact on projected sea level rise as this is a consequence of global warming; and
- shoreline recession (a reduction in sandy beach width) due to a rise in sea level is the consequence of a cross-shore readjustment of the beach profile commonly predicted using the Bruun Rule (Bruun, 1962). Modelling by MHL (2022b), discussed in Section 5.3.2, has shown that the cross-shore behaviour of the beach in front of the proposed vertical wall would not be significantly different compared to that in front of the existing ad-hoc rock protection works or a rock revetment.

Council has recognised that shoreline recession due to sea level rise is a much broader issue beyond the capacity of individual property owners. Accordingly, the CZMP notes that management actions (beach nourishment) to address the impacts of shoreline recession due to climate change are the responsibility of Local Government and State Government.

On the basis of the above, it is concluded, and the consent authority can be satisfied, that, over the life of the works, the works will not unreasonably limit or be likely to unreasonably limit public access to or the use of a beach or headland.

Public access and use of the beach would benefit from the proposed removal, as part of the DA, of existing rock protection and inappropriate materials on the beach over a distance of 5 to 10m seaward of the private property boundary where encountered during excavation for the proposed works. Any additional existing rock protection or inappropriate materials visible on the beach beyond the above distance should be removed by Council as part of general beach safety and beach amenity improvements, as was the case recently following construction of the new coastal protection works further south along the beach.

Satisfying subsection 1(a)(ii)

The proposed works would not pose or be likely to pose a threat to public safety over the life of the works, for a number of reasons:

- the works have been designed taking into account sea level rise over the life of the works, noting that an increase in water level due to sea level rise affects (increases) the design wave conditions at the proposed works;
- the proposed works are not predicted to have a significant impact on beach behaviour compared to the existing conditions;
- the works have been designed to accommodate acceptably rare design conditions over the design life including consideration of water levels, wave conditions, scour levels and geotechnical stability;
- the design has been prepared in accordance with the relevant Australian Standards and would be certified prior to construction by suitably qualified structural, coastal and geotechnical engineers;
- the completed construction works would be certified by suitably qualified engineers (see condition 57);
- the completed works would be subject to a Maintenance Management Plan approved by Council (see condition 60); and

- conditions are recommended to address the public safety risk of wave overtopping (inundation), namely preparation of a Safety Management Plan and physical modelling to confirm the wave overtopping discharges (see conditions 11 and 59), as discussed further in Section 6.4.2 and Section 7 of RHDHV 2023.

The proposed works would reduce the existing public safety risk over the life of the works for a number of reasons:

- existing rock protection and inappropriate materials, where encountered in excavation for the works, would be removed from the public beach where currently they are a hazard, at times, to beach users;
- there would be reduced debris and undersized rock strewn over the public beach during and following storms;
- it would not be necessary to carry out emergency erosion protection works during and following storms (refer also to Coastal Erosion Emergency Action Subplan in Section 6.8 of the RHDHV Coastal Engineering Assessment); and
- owners and occupiers of the subject properties would be protected from erosion and substantially better protected from inundation risks.

On the basis of the above, it is concluded, and the consent authority can be satisfied, that the proposed works will not, over the life of the works, pose or be likely to pose a threat to public safety.

Satisfying subsection 1(b)(i) & (ii), 2(a)(i) and (3)

In practice, significant increased erosion of the beach by the presence of the works would not be expected. Nevertheless, an appropriate condition has been recommended (see condition 61).

In regard to adjacent land; namely Clarke Street, Mactier Street, and South Narrabeen SLSC, there is existing rock protection in each of these areas. This existing protection would provide a level of resistance to possible increased erosion due to enhanced 'end effects' from the proposed works, however the existing protection does not satisfy current coastal engineering standards and cannot be relied upon for complete protection of these lands.

Council proposes to upgrade the coastal protection at Clarke Street, Mactier Street and South Narrabeen SLSC, coordinated with the coastal protection works on private property, to resolve interaction between the respective works. Resolution of this interaction is the responsibility of Council under the CZMP (2016). These upgrading works are proposed to be completed within the next three years. In the interim, any increased erosion of the adjacent land would be expected to be limited to the upper face of the erosion escarpment as has been the case in past severe storm events. The assets behind the existing protection works, namely the roads and the SLSC, are considered to be at an acceptable level of risk from coastal hazards over this interim time frame.

In the event that increased erosion of the adjacent land did occur in the interim period, caused by the presence of the proposed works, the subject condition of consent would be triggered to restore the land.

A single condition has been recommended (see condition 61) to provide satisfactory arrangements to secure adequate funding in a legally binding manner for the restoration of the beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by the presence of the works, and for the maintenance of the works.

This condition requires an irrevocable bank guarantee (or other suitable legally binding obligation) in the amount of \$1000 per lineal metre of work to Council prior to the issue of any construction certificate. This money is intended to be used as a last resort for:

1. The owners, or Council to restore the beach or land adjacent to the beach from any increased erosion of the beach or adjacent land that is caused by the works; and
2. The owners to undertake maintenance of the coastal protection works in the event that they are damaged as a result of coastal storm, including to undertake any works required to remove any threat to public safety arising from the coastal protection works including the removal of rocks or debris, that have become dislodged from the works, from the public beach and adjacent public land and implement the Maintenance Management Plan (MMP).

In this condition “maintenance” means the restoration of the works to a standard in accordance with the approved plans and specifications and implementation of the MMP.

The bank guarantee (or other suitable legally binding obligation) is to be replenished if drawn upon and increased to allow for Consumer Price Index (CPI) every 10 years from the date of establishment.

The bank guarantee (or other suitable legally binding obligation) is to be in the favour of Council. The funds may be accessed by one or more owners, for the undertaking of works referred to in this condition and in the approved MMP, with the written consent of Council. Council is also able to access these funds.

This condition will satisfy subsections 1(b)(i) & (ii), 2(a)(i) and (3).

Conclusion

The conditions for adequate funding and for the time limited consent were supported by Justice Payne in *Salama v Northern Beaches Council [2020] NSWLEC 143*. Justice Payne found that the two conditions outlined above are sufficient to satisfy Section 27 of the Coastal Management Act 2016.

Having satisfied the subsections within Section 27 of the Coastal Management Act 2016, subject to the assessment outlined in the balance of this report, a time-limited development consent can be granted.

EXISTING USE RIGHTS

Existing Use Rights are not applicable to this application.

BUSHFIRE PRONE LAND

The site is not classified as bush fire prone land.

NOTIFICATION & SUBMISSIONS RECEIVED

The subject development application has been publicly exhibited from 22/09/2021 to 06/10/2021 in accordance with the Environmental Planning and Assessment Act 1979, Environmental Planning and Assessment Regulation 2021 and the Community Participation Plan.

As a result of the public exhibition process council is in receipt of 178 submission/s from:

Name:	Address:
Ms Gabrielle Jean Williams	2 / 33 Clarke Street NARRABEEN NSW 2101
Mr Richard Short Lennox	61 Grover Avenue CROMER NSW 2099
Mr Ryan Collins	3 / 14 Lismore Avenue DEE WHY NSW 2099
Phil Pettitt	
Jacob Beton	
Jack Lynch	
Kate Glasson	
Bruno Martinez	
Bronte Smoothy	
Michael Zippel	Address Unknown
Terry Fitzgerrald	12 Bilga Avenue BILGOLA PLATEAU NSW 2107
Mrs Rowan Sarah Hanley	9 The Serpentine BILGOLA BEACH NSW 2107
Claudia Haworth	18 Lindley Avenue NARRABEEN NSW 2101
Mr Nicholas Steven James	72 Cumberland Avenue COLLAROY NSW 2097
Sam Mozaffari	21 Eungai Place NORTH NARRABEEN NSW 2101
Annika Rose	Address Unknown
Vadim Nicolas Courtney	17 Lisle Street NARRABEEN NSW 2101
Stephen Patten	85 Griffin Road NORTH CURL CURL NSW 2099
Robert Campbell Cathels	30 Lisle Street NARRABEEN NSW 2101
Mr Martin John Porter	58 Wakehurst Parkway NORTH NARRABEEN NSW 2101
Brett Russell Ellem	C/- Angell Property PO Box 664 DEE WHY NSW 2099
Mrs Belinda Koorey	12 Pitt Street MANLY VALE NSW 2093
James Griffiths	Address Unknown
Mr Damien McClellan	45 Queens Parade NEWPORT NSW 2106
Alla Kouchnarenko	9 / 12 Mactier Street NARRABEEN NSW 2101
Ms Anne Josephine Breslin	43 South Creek Road DEE WHY NSW 2099
Mr Paul Anthony Stenmark	121 Bynya Road PALM BEACH NSW 2108
Mr Brian Lawson	101 Lagoon Street NARRABEEN NSW 2101
Lina Salerno	3 / 129 Ocean Street NARRABEEN NSW 2101
Andrew Short	Po Box 912 MORUYA NSW 2537
Mr Evan Matthews	6 Tanderra Place CURL CURL NSW 2096
Ms Christine Jane McKerrell	16 St Andrews Gate ELANORA HEIGHTS NSW 2101
Trudy Anderson	12 / 13 Frazer Street COLLAROY NSW 2097
Greg Howell	Address Unknown
Mrs Sheree Lesley Liddell	87 Gondola Road NORTH NARRABEEN NSW 2101
Elizabeth Wright	5 Wakehurst Parkway NORTH NARRABEEN NSW 2101
Mr Joshua Yorke	32 Sydney Road WARRIEWOOD NSW 2102
Ms Shannon O'Neill	220 Ocean Street NARRABEEN NSW 2101
Mr Paul Maddock	2 Oceania Crescent NEWPORT NSW 2106
Mr Stephen Kelly	147 / 2 Firetail Drive WARRIEWOOD NSW 2102

Name:	Address:
Leela Cross	18 Oconnors Road BEACON HILL NSW 2100
Mr Sheryn Marie Von Schwerin	75 Wimbledon Avenue NORTH NARRABEEN NSW 2101
Mr Luke Norman McArthur	6 Moira Place FRENCHS FOREST NSW 2086
James Proust	Address Unknown
Bret Lynch	Address Unknown
Michael Fairleigh	Address Unknown
Mrs Maria Bennett	117 Ocean Street NARRABEEN NSW 2101
Sandra Lynch	Address Unknown
Mr Ross Gordon Mcpherson	75 Therry Street AVALON BEACH NSW 2107
Mr Brendan Donohoe	35 Ramsay Street COLLAROY NSW 2097
Ms Prudence Mary Alison Harris	5 / 8 Park Street COLLAROY NSW 2097
Mr Stephen John Titus	2B Craig Avenue MANLY NSW 2095
Allen Grimwood	Address Unknown
Mr Brian John Clarke	110 Elimatta Road MONA VALE NSW 2103
Ms Wendy Gai Harmer	35 Ramsay Street COLLAROY NSW 2097
Mrs Megan Lynn Starling	33 Lisle Street NARRABEEN NSW 2101
Greg Reilly	5 / 8 Park Street COLLAROY NSW 2097
Edward Kirsop	10 Tourmaline Street NARRABEEN NSW 2101
Mr Tomas Lockhart Anderson	18 Collins Street NORTH NARRABEEN NSW 2101
Vicky Simister	7 / 6 Hill Street QUEENSCLIFF NSW 2096
Maeve Donohoe	35 Ramsay Street COLLAROY NSW 2097
Mr David Harold Wood	162 Fuller Street NARRABEEN NSW 2101
Jacob Smith	173 Ocean Street NARRABEEN NSW 2101
Ms Sharon Jean Hooper	8 / 168 Pacific Parade DEE WHY NSW 2099
Jorn Van Der Veken	14 Karabah Place FRENCHS FOREST NSW 2086
Mr Donald Oakley Norris	6 Ettalong Street WHEELER HEIGHTS NSW 2097
Mr Mitchell Smith	29 Arnott Crescent WARRIEWOOD NSW 2102
Emma Watson	47 Haigh Avenue BELROSE NSW 2085
Mr Carl Robert Musker	63 Blandford Street COLLAROY PLATEAU NSW 2097
Kate Berry	26 B Lakeview Parade WARRIEWOOD NSW 2102
Laura Trew	4 Blackwood Road NORTH CURL CURL NSW 2099
Rafe Skidmore	31 Ramsay Street COLLAROY NSW 2097
Mrs Rosemary Ramage	26 Wimbledon Avenue NORTH NARRABEEN NSW 2101
Mr John Anthony Green	131 Gondola Road NORTH NARRABEEN NSW 2101
Mrs Leonie Longley	7 / 2 Wetherill Street NARRABEEN NSW 2101
Kate McKay	5 Warruga Place NORTH NARRABEEN NSW 2101
Joel Foster	4 / 23 Park Street COLLAROY NSW 2097
Peter Morris	10 / 24 Goodwin Street NARRABEEN NSW 2101

Ben Torning	20 / 49 - 51 Foamcrest Avenue NEWPORT NSW 2106
Mad Pelaez	67 A Woorarra Avenue NORTH NARRABEEN NSW 2101
Fynn Lawson	14 Narrabeen Park Parade WARRIEWOOD NSW 2102
Kerry Hunter	4 / 1187 Pittwater Road COLLAROY NSW 2097
Catherine Vaughan	162 Fuller Street NARRABEEN NSW 2101
Mr Justin Anthony Roberts	9 Berry Avenue NORTH NARRABEEN NSW 2101
Mr Michael Patrick Gleeson	14 Coutts Crescent COLLAROY NSW 2097
Mrs Dionne Cheryl Nicol	22 Totala Place ELANORA HEIGHTS NSW 2101
Mr Luca Altea	21 Morandoo Road ELANORA HEIGHTS NSW 2101
Deborah Dickson-Smith	Address Unknown
Ms Hazel Gillian Shepherd	30 Aitken Avenue QUEENSCLIFF NSW 2096
Ms Liane Wendy Fenwick	5 Mount Pleasant Avenue MONA VALE NSW 2103
Mr Peter Younes	420A Bobbin Head Road NORTH TURRAMURRA NSW 2074
Mr Michael Anthony Priddis	48 Ocean View Road FRESHWATER NSW 2096
Ms Bronwyn Joy Pierce	20 High Street MANLY NSW 2095
Sharee Chamberlain	58 Whale Beach Road WHALE BEACH NSW 2107
Mr Steven Edward Thomson	13 A Kitchener Street BALGOWLAH NSW 2093
Justin Hickey	Address Unknown
Mr Christopher James Nicol	22 Totala Place ELANORA HEIGHTS NSW 2101
Andrew James Tabner	33 Surfers Parade FRESHWATER NSW 2096
Mark Smith	1 / 12 James Street MANLY NSW 2095
Yanni Willis	Address Unknown
Mr Matthew Lee Coonan	3 Canungra Place ELANORA HEIGHTS NSW 2101
Mr Ian Nicholas Smallman	13 Georgina Avenue ELANORA HEIGHTS NSW 2101
Kristel Ness	7 Narrabeen Park Parade NORTH NARRABEEN NSW 2101
Mr Andrew Bryce Thornton	19 Coniston Street WHEELER HEIGHTS NSW 2097
Sophie Stone	6 Waterview Street SEAFORTH NSW 2092
Ms Kari Anne Scruby	117 Lagoon Street NARRABEEN NSW 2101
Mr Robert John Anthony Underwood	36 Clarke Street NARRABEEN NSW 2101
Ms Fran Young	1162 Pittwater Road COLLAROY NSW 2097
Kareece Goh	22 / 7 - 11 Collaroy Street COLLAROY NSW 2097
Mrs Naomi Anne Mico	11 / 1191 - 1195 Pittwater Road COLLAROY NSW 2097
Mr Ivan Barbar Signorelli	1 Tutus Street BALGOWLAH HEIGHTS NSW 2093
Carina Favoreto	Address Unknown
Mrs Angelique Green	60 Warraba Road NORTH NARRABEEN NSW 2101
Jill-Annette Bott	301 Lower Plateau Road BILGOLA PLATEAU NSW 2107
Mrs Kim Sullivan	12 / 1211 Pittwater Road COLLAROY NSW 2097
Jakub Bodnar	Address Unknown
Laura Kuhta Baskovic	405 / 9 - 15 Central Avenue MANLY NSW 2095
Daniel Cleary	41 Arthur Street DEE WHY NSW 2099

Name:	Address:
Mr Christopher Paul Edwards	93 Ryan Place BEACON HILL NSW 2100
Mrs Tracey Bernadette Byrne	18 Totala Place ELANORA HEIGHTS NSW 2101
Mr Matthew Charles Bruin	14 Alleyne Avenue NORTH NARRABEEN NSW 2101
Penelope Strickland	4 / 115 Ocean Street NARRABEEN NSW 2101
Jane Nolan	45 / 10 Goodwin Street NARRABEEN NSW 2101
Mr Jeremy Curtis Hestelow	9 / 6 Stuart Street COLLAROY NSW 2097
Mr David James Muirhead	10 Eastbank Avenue COLLAROY NSW 2097
Mrs Marian Furness	10 Park Street COLLAROY NSW 2097
Richard Cabala	19 Hillside Road NEWPORT NSW 2106
Mr Robert Ross Tebble	39 Grandview Parade MONA VALE NSW 2103
Jasmine Gabrielli	Address Unknown
Tom Morris	Address Unknown
Ms Penelope Ann Auburn	6 Stuart Street NEWPORT NSW 2106
Joanne Horsburgh	1 Norfolk Parade NORTH NARRABEEN NSW 2101
Mr Christopher Mark Davies	58 Cumberland Avenue COLLAROY NSW 2097
Mrs Christina Kirsch	58 Cumberland Avenue COLLAROY NSW 2097
Natalie Bull	Address Unknown
Mr Eric Stephane Lalaurie	11 Ennerdale Crescent WHEELER HEIGHTS NSW 2097
Katrina Brown	Address Unknown
Mr Jaymes Alan Triglone	118 Thompson Street SCOTLAND ISLAND NSW 2105
Gregg Zoltan Goldin	7 / 14 Graylind Close COLLAROY NSW 2097
Mr Donald George Champion	1194 Pittwater Road NARRABEEN NSW 2101
Mr Ian Selwyn Addinsell	3 / 1204 Pittwater Road NARRABEEN NSW 2101
Miss Rebecca Ann Mitchell	64 Frenchs Forest Road East FRENCHS FOREST NSW 2086
Paul Harrod Marshall	1 Clarke Street NARRABEEN NSW 2101
Mr Timothy Sabre	192 McCarrs Creek Road CHURCH POINT NSW 2105
Mrs Gail Denise Jacka Russell Guy Jacka	1 / 1204 Pittwater Road NARRABEEN NSW 2101
Mrs Mary Rosanne Tesoriero	17 / 11 Ocean Street NARRABEEN NSW 2101
Mrs Ebony Leigh Boyd	1 Clwydon Close BELROSE NSW 2085
Sharon Therese Dalitz	13 / 1204 Pittwater Road NARRABEEN NSW 2101
Mr Timothy Edward Minogue	3 / 22 Goodwin Street NARRABEEN NSW 2101
Teresa Maria Elizabeth Devine	3 / 1204 Pittwater Road NARRABEEN NSW 2101
Angus Gordon	Address Unknown
Mr Matthew Peter Hardy	24 Darius Avenue NORTH NARRABEEN NSW 2101
Mr Shannon John Rickersey	2 / 33 Palomar Parade FRESHWATER NSW 2096
Douglas Lewis Laird	21 Parkes Street MANLY VALE NSW 2093
Stephen Graham	Address Unknown
Paul Worsley	76 Alleyne Avenue NORTH NARRABEEN NSW 2101

Name:	Address:
Susie Crick	707 Lawrence Hargrave Drive COLEDALE NSW 2515
Rod Mckelvey	Address Unknown
Ms Mandy Moore	877A Pittwater Road COLLAROY NSW 2097
Mr Julian Keith Oscar Pulvermacher	53 Herbert Avenue NEWPORT NSW 2106
Mr Craig William Donaldson	45 D Taiyul Road NORTH NARRABEEN NSW 2101
Lachlan Brett Pavett	1 / 1227 - 1229 Pittwater Road COLLAROY NSW 2097
Mrs Creina Emily Hill	12 / 68 - 72 Park Street NARRABEEN NSW 2101
Ms Eve Bridgette Clark	1 / 25 Quirk Street DEE WHY NSW 2099
Jared Laurie	Address Unknown
Mr Christopher Alec Wright	61 Woorarra Avenue NORTH NARRABEEN NSW 2101
Andrew Moss	Address Unknown
Kerrylee Rogers	Address Unknown
Mr Peter Russell Foster	11 / 26 Macpherson Street WARRIEWOOD NSW 2102
Ms Judith Lynette Roberts	40 / 1 - 5 Collaroy Street COLLAROY NSW 2097
Mr Paul Groenendyk	PO Box 1276 DEE WHY NSW 2099
Catrina Hodges	Address Unknown
Figen Mizrak	19 Jenkins Street COLLAROY NSW 2097
Samuel Peter Mackay	C/- Delmege Property Group PO Box 356 MONA VALE NSW 1660
Renee Jessica Ilich	6 / 14 Stuart Street COLLAROY NSW 2097
Alexander Quinten Gagnet	18 / 1 Mactier Street NARRABEEN NSW 2101
Mr Brett Darrell Groth	1 / 1192 Pittwater Road NARRABEEN NSW 2101
Dee Cartmel	Address Unknown

Council received a number of submissions relating the impact of the proposed coastal protection works on the coastal processes, amenity and public safety. The concerns raised and their consideration in the assessment of the application are addressed below. The following documentation and technical advice were reviewed in undertaking the assessment and considering all issues raised in submissions on this application:

- The Statement of Environmental Effects for Construction of Upgraded Coastal Protection Works at 1190-1196 and 1204 Pittwater Road Narrabeen (Horton Coastal Engineering dated 13 July 2021)
- Coastal Engineering Report for Construction of Upgraded Coastal Protection Works at 1190-1196 and 1204 Pittwater Road Narrabeen (Horton Coastal Engineering dated 1 July 2021)
- The Collaroy-Narrabeen Beach Coastal Protection Assessment (MHL, 2016)
- Review of Beach Width Impacts of Alternative Coastal Protection Works at Collaroy-Narrabeen Beach (MHL, 2020)
- MHL2877 Collaroy-Narrabeen Beach seawall: Review of additional assessment items – Review of Development Application for 1190 to 1196 & 1204 Pittwater Road, Narrabeen (MHL 2022)
- External peer review of the application from Royal HaskoningHDV (2023)
- Seawall Structural Design report prepared by James Taylor & Associates dated 26 July 2021;

- Survey prepared by Lawrence Consulting Group dated 31 August 2021 and a letter, in response to the request for additional information, dated 20 February 2023;
- Architectural plans prepared by Horton Coastal Engineering Pty Ltd and James Taylor & Associates dated 23 July 2021; and
- Shadow Diagrams prepared by Complete Thought Studio dated 14 December 2021.

The assessment concluded that, based on the information submitted with the DA, combined with the additional external technical reports and advice, the issues raised in the submissions are not reasons to refuse the application.

When taking into account the strategic intent of Council's adopted approach to the management of Collaroy-Narrabeen Beach, the impacts to amenity, public safety and access, the present situation and alternative design solutions such as a rock revetments, the proposal was considered to improve amenity, public safety and access at this site without negatively impacting the natural coastal processes that occur within the embayment.

The full list of specific concerns raised in the submissions are:

- Compliance with the Coastal Management Act and SEPP Resilience and Hazards
- Property boundaries
- Impacts on coastal erosion
- Loss of public access
- Impacts of sea level rise
- Alternative Solutions
- Visual impact
- Shadow impact
- Impact on tourism
- Illegal / unauthorised works
- Impact on surf amenity / wave quality
- Public funds used for private gain
- Conditions of consent
- Insufficient public consultation
- Work proposed on public land
- Lack of detail
- Ecological impacts
- Precedent

The matters raised within the submissions are addressed as follows:

- **Do the works meet the objectives and requirements of the Coastal Management Act 2016 and SEPP Resilience and Hazards 2021?**

Some submissions noted a view that the proposed works were inconsistent with the objectives and requirements of the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021

This matter is addressed in detail in Sections 6.3 and 6.4 of RHDHV 2023. In summary, Council has considered the preconditions and matters required for consent to be granted and considers that the works proposed in this application are consistent with the Coastal

Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021.

- **Will the works be constructed within the private property boundaries?**

Some submissions raised concerns that the eastern boundaries of the private properties are not correct, resulting in the works being built on public land.

The applicant has provided information (including surveys in accordance with Part 2 of the Surveying and Spatial Information Regulation 2017) depicting the exact location of the proposed works in relation to the property boundaries and confirmation that the works will remain within the private property boundary for the life of the works.

It is also important to note that the works are proposed as far landward as possible, as discussed in Section 2.2 of RHDHV 2023.

- **Will the works increase coastal erosion leading to the loss of the beach?**

Many submissions were concerned that the proposed coastal protection works would lead to increased erosion and loss of the beach.

This matter is addressed in detail in Section 5.2 and the assessment of compliance of the proposal with the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021 of RHDHV 2023.

An overarching environmental assessment of coastal protection improvement works along Collaroy-Narrabeen Beach and their expected impacts on coastal processes and beach amenity relative to the present situation has been provided in the Collaroy-Narrabeen Beach Coastal Protection Assessment (Manly Hydraulics Laboratory [MHL], 2016) and a Review of Beach Width Impacts of Alternative Coastal Protection Works at Collaroy-Narrabeen Beach (MHL, 2020). These assessments found that the presence of the proposed works would not be expected to result in sustained loss of additional sand than would occur under present conditions. This technical information and assessment of the application concluded that the proposed coastal protection works would not change the natural coastal process within the embayment or result in increased erosion leading to the loss of the beach.

Erosion and accretion are natural coastal processes that will continue to occur following construction of the proposal outlined in the development application. The extent of erosion or ability for the beach to recover naturally will not be significantly impacted by the proposed works. This has been demonstrated recently since the construction of new coastal protection works on private property between Stuart and Wetherill Streets and Wetherill and Clarke Streets, and historically in front of long term vertical walls (1096 Pittwater Road and the Beach Services Club have both had vertical walls protecting them, for decades). The beach in front of these works is just as wide as the beach in front of the existing loose rock wall or in front of properties with no existing protection.

It is widely accepted that the Collaroy-Narrabeen Beach embayment is essentially a stable closed system: see, for example Collaroy-Narrabeen Beach Coastal Protection Assessment (Manly Hydraulics Laboratory [MHL], 2016) and an Addendum Review of Beach Width Impacts of Alternative Coastal Protection Works at Collaroy-Narrabeen Beach (MHL, 2020).

Historically, during significant storms, the beach has been eroded back to the protection works

comprising largely ad-hoc rock protection and some vertical seawalls. Following the storms, the sand that has eroded from the beach is contained within nearshore sand bars and then reworks onshore to re-form the dry sandy beach.

The recovery behaviour of Collaroy-Narrabeen Beach observed historically would be expected to continue in front of the future mix of coastal protection works, providing the new works are located suitably landward in the cross-shore profile, as is the case for the proposed vertical seawall between Mactier Street and Clarke Street.

General observations of post-storm recovery in front of existing vertical walls along Collaroy-Northern Beach have indicated no significant differences compared to other locations along the beach where sloping permeable rock revetments, or no rock, exist.

The situation regarding additional toe scour is also assisted along Collaroy-Narrabeen Beach by the existence of the cemented sand layer, located typically around 0m AHD, which is a constraint on the depth of scour.

Therefore, the proposed works will not result in increased erosion even following severe coastal storms, such as that experienced in 2016, or prevent natural recovery following these storms.

- **Will the works result in a loss of public access to and along Collaroy-Narrabeen Beach?**

Many submissions raised concerns that the proposed seawall would result in a loss of public access to and along Collaroy-Narrabeen Beach.

This matter is addressed in detail in Section 5.3 and the assessment of compliance of the proposal with the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021 of RHDHV 2023.

Loss of public access to and along the beach is related to erosion and the ability of the beach to recover following storms. The assessment of the application concluded that overall, the proposed coastal protection works would not negatively impact public access to and along Collaroy-Narrabeen Beach.

Public access is already limited along sections of the beach for short periods following coastal storms due to the erosion and safety issues created by the current historic informal rock protection. Implementation of formal coastal protection works will actually improve this situation.

The proposed seawall in this development application is to be retained entirely within private property and within the footprint of the existing historic informal rock protection present on the beach. Through the removal of this rock from the public beach, the proposal will improve public access and safety by minimising the impacts of storm events (i.e., debris, safety hazards, clean-up closures), compared to the current situation.

The stairs, built into the works, will improve access to and from the beach. In addition, the wall will not impact on beach width (as seen by historical observations of post-storm recovery in front of existing vertical walls along Collaroy-Northern Beach), ensuring access along the beach.

Considering the impact of differing coastal protection works designs on beach width, and in turn public access, the MHL 2020 assessment concludes that: "The performance of new

seawall designs was predominantly dependent upon their cross-shore alignment, with structures placed further landward performing the best in terms of beach amenity (width). Hybrid and vertical seawalls that could be retained within private property and positioned further landward than rock structures at the same sites are considered preferable in order to maintain beach width."

In addition, the report titled 'Review of additional assessment items – Review of Development Application for 1190 to 1196 & 1204 Pittwater Road, Narrabeen' prepared by MHL in association with the Water Research Laboratory (WRL) specifically considered the expected impacts on beach width for coastal protection works between Mactier Street and Clarke Street. MHL considered the proposed vertical seawall would not have a significant impact on beach width.

- **Will the works make the impacts of sea level rise on the beach worse?**

Many submissions were concerned that the proposed works would result in a loss of the beach and public access due to sea level rise.

This matter is addressed in detail in Section 2.2 (note 1) and the assessment of compliance of the proposal with the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021 of RHDHV 2023.

The impact of sea level rise on beaches in NSW has been comprehensively investigated. These investigations conclude that all beaches will experience recession because of sea level rise. Such impacts at Collaroy-Narrabeen Beach will not be made worse by the continued existence of coastal protection works of any design, including those proposed as part of this application.

As noted in the information provided with the application, "It is recognised that long term recession due to projected sea level rise is expected to translate beach profiles upward and landward, thus reducing average beach widths over the long term where profiles are truncated at protection works (assuming that beach scraping and beach nourishment is not undertaken). This will occur no differently than the existing situation, and indeed be improved with the removal of existing rock off Crown Land."

It is important to recognise that, given the extent of existing protection works at the subject properties being further seaward than the proposed works, in the "do-nothing scenario" there would be a more severe narrowing of beach width as long-term recession is realised" (Horton 2021).

The assessment has concluded that the proposal will not increase the impacts of sea level rise within the embayment.

- **Isn't a sloped rock revetment wall a better outcome than a vertical design?**

Some submissions noted a preference for alternative designs of coastal protection works, such as a rock revetment structure, instead of the vertical wall proposed in the application.

This matter is addressed in detail in Section 5.3 and the assessment of compliance of the proposal with the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021 of RHDHV 2023.

Considering the impact of differing seawall designs on beach width, and in turn public access,

the MHL 2020 assessment concludes that: "The performance of new seawall designs was predominantly dependent upon their cross-shore alignment with structures placed further landward performing the best in terms of beach amenity (width)." Hybrid and vertical seawalls that could be retained within private property and positioned further landward than rock structures at the same sites, are considered preferable in order to maintain beach width."

A rock revetment structure cannot be placed further landward than the proposed vertical wall due to the location of the existing dwellings on these sites. As such, a rock revetment would have to be placed further onto the beach. This would reduce beach width more than a vertical wall within the private properties during times of erosion.

As the proposed design submitted with the application is able to be retained within the private property boundaries, entirely within the footprint of the existing historic rock protection and significantly further landward than an alternative rock revetment structure located on the public beach, it is the most appropriate design for this location. In addition, the proposal will result in the removal of a significant amount of rock from the public beach.

- **Visual impact of the proposed works**

Many submissions raised concerns that the proposed works will have an adverse visual impact.

These matters have been covered in the detailed Visual Impact Assessment, below in this report. In summary, the combination of the naturally and artificially higher sand levels in front of the subject site, the sandstone finish of the wall, the addition of vegetation (via conditions of consent), and the context of the existing coastal and built environment (consisting of dwellings, residential flat buildings, a surf club and previously constructed seawalls) contribute to a development that will have an acceptable visual impact.

- **Shadow impact**

Some submissions raised concerns that the works would overshadow the beach, particularly in the afternoons.

It is correct that the works will result in shadow falling on the beach from approximately 1pm and increasing until sunset. During the periods of highest use of the beach (8am to 5-6pm in summer) the shadow will only affect the beach for a 4-5 hour period and will be at its widest late in the afternoon/evening.

It must be noted that the maximum height of the wall is similar to the height of the existing works (which are inaccessible to the public) and will therefore cast a similar shadow.

The impacts of this shadowing are partly dependent on beach width. A wider beach will have a smaller percentage of it in shadow.

Given the normal width of the beach and the height of the existing rear yards (similar to the height of the works) and buildings on these properties, the additional shadow cast by the works is not unreasonable.

- **Impact on tourism**

Some submissions raised concerns that the works would result in a reduction of tourists to

Narrabeen/Collaroy Beach.

No evidence has been provided to substantiate this claim. Looking at other beaches with coastal protection walls, such as Manly, Dee Why and Bondi, it does not appear that the existence of a vertical sandstone coloured wall at these beaches has affected tourism.

- **Wasn't the existing historic informal rock protection put there illegally and therefore shouldn't be considered?**

Some submissions noted that it is erroneous to consider the existing informal rock protection present on Collaroy-Narrabeen Beach and as such, it should not be used as the basis for comparisons.

This matter is addressed in detail in Section 3 of RHDHV 2023 and the Site History description of this report.

The rock protection works present at Collaroy-Narrabeen Beach have been historically placed on the beach in response to properties being exposed to damage during coastal storms. This practice of placing rock in front of properties to prevent damage from erosion began in the 1920's with the majority of the rock present being placed on the beach during significant erosion events between 1968 and 1978. In relation to the existing rock at the private properties the subject of this DA, their presence is the outcome of either approved development applications in 1975 or historical coastal management practices.

Private property owners are entitled to submit development applications for the installation of coastal protection works in accordance with the EP&A Act and the Coastal Management Act 2016.

Construction of approved coastal protection measures (i.e. seawalls) will result in the removal of old, less resilient, structures and prevent the public from being exposed to potential hazards (i.e. protruding rocks).

As the majority of the historic rock protection has been in place for over 50 years, it has shaped the character of the beach. It will also continue to present public access and safety issues until it is removed. For these reasons, it is appropriate that the presence of historic rock protection be considered in the impact assessment and the public benefits of having this rock removed from public land attributed to the construction of the proposed coastal protection works in this application.

- **Will the seawall impact on surf amenity and wave quality?**

Submissions raised concerns that the proposed works would adversely impact surf amenity and surf quality through a loss of sand and altered coastal process within the embayment.

This matter is addressed in detail in Section 5.2 and the assessment of compliance of the proposal with the Coastal Management Act 2016 and State Environmental Planning Policy (Resilience and Hazards) 2021 of RHDHV 2023.

The works are positioned further landward than the existing ad-hoc works and will not interfere with the surf zone to a greater level than the present situation. In addition, the technical assessments, technical peer review of the application and the information submitted with the DA concluded that the proposed works will not affect surf amenity and wave quality from that currently experienced within the embayment.

Surf amenity and wave quality are influenced by prevailing coastal processes and sand volumes. As established in the assessment of impacts to erosion and public access, these two characteristics of the embayment will not be altered by the proposal.

- **Why are public funds being used for the construction of private coastal protection works?**

Some submissions opposed the use of funds for the construction of private coastal protection works. While this matter is not relevant to the assessment of this application, a response has been provided for completeness.

Under the Northern Beaches Council Coastal Erosion Policy, local government will make a maximum contribution of 10%, provided the State or Federal Government matches this funding. The balance is to be paid by landowners. This is an adopted position of Council and was widely consulted on in the preparation of the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (2016) (CZMP) as well as the Northern Beaches Coastal Erosion Policy (2016).

- **Conditions of consent**

Some submissions sought for conditions of consent requiring a responsibility for sand nourishment to be applied to the development consent to comply with section 27(b)(i) of the Coastal Management Act.

Should the application be approved, conditions of consent have been recommended to be applied which are appropriate and necessary to ensure the development is compliant with relevant legislation. With regard to section 27(b)(i) of the Coastal Management Act, there are no end effects (increased erosion on adjacent land) expected as a result of the proposed works, as the proposed works are replacing existing historic rock protection, can stand alone, and will eventually tie into adjacent works (Council road ends and surf club).

See condition 61 which requires the provision of a bank guarantee to satisfy the satisfactory arrangements requirement under section 27(b)(i) of the Coastal Management Act.

- **Public consultation**

Some submissions expressed the view that there had been insufficient public consultation on previously approved development applications for coastal protection works. The public consultation of other development applications is not relevant to the assessment of the current application.

Extensive consultation with all stakeholders, on the allowance of protective works at Collaroy-Narrabeen Beach was undertaken in the preparation of the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (2016) (CZMP) as well as the Northern Beaches Coastal Erosion Policy (2016).

The intent to allow private coastal protection works, including those in this application, that are retained on private property and do not change coastal processes or impact the amenity of Collaroy-Narrabeen Beach is outlined in a number of strategic and policy documents. These include the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans

Beach and Northern Beaches Coastal Erosion Policy. There was significant public consultation on both these documents and widespread community acceptance that private coastal protection works would be implemented as a result of their adoption. Up to and immediately following the June 2016 storm, Council's expectation was that that these coastal protection works would largely comprise rock revetment structures.

However as private property owners began preparing applications for coastal protection works it became evident that alternative designs such as hybrid and vertical structures could be retained within private property and provide for, on balance, a better outcome in relation to coastal processes, public safety and amenity compared to rock revetment structures or maintaining the presence of existing historic rocks placed on the beach. As a result, the decision to allow these structures is considered appropriate and in accordance with the relevant plans and strategies as well as the expectations of the Northern Beaches community that the beach be maintained and not adversely impacted by private coastal protection works.

- **Works on public land**

Submissions raised opposition to private coastal protection works extending onto public land.

The works for this particular application are retained entirely within the benefiting private properties. This outcome is able to be achieved due to the selection of a vertical design. Had the works been designed as a rock revetment structure they would have likely extended further onto the beach.

Where designs for coastal protection works are not able to be accommodated within private property, Council will, and has, assessed these in coordination with Crown Lands on their merit and in accordance with the relevant policies and legislation.

- **How can these works be approved if we don't know the exact design of the adjoining public works?**

The coastal protection works that form this application adjoin three public assets, Clarke Street road end to the south, South Narrabeen Surf Club between 1194 and 1204 Pittwater Road and Mactier Street road end to the North.

The works assessed as part of this application will be structurally independent of the adjoining public works. The public works will be assessed through a separate pathway. Council is required to consider the application as submitted and has the necessary information to undertake a full and thorough assessment.

Council works are planned and budgeted for at the adjoining sites. Detailed design, approval and construction of this works can proceed once the design and the timing of construction is confirmed. The external engineering assessment for this application has confirmed that approval of these works would not significantly increase the risk of damage from a coastal storm to the adjoin sites, particularly South Narrabeen Surf Club.

- **Ecological impacts**

Some submissions raised concerns that the proposal would result in negative ecological impacts including the loss of habitat and reduction in biodiversity.

As presented in the Statement of Environmental Effects submitted with the application, the

proposed construction area is already highly developed, with minimal vegetation and mostly disturbed sand. Threatened species or ecological communities for the purposes of the Biodiversity Conservation Act 2016 are not present within the proposed site. Any disturbance during construction is expected to be localised, minor and will not impact terrestrial or marine flora and fauna or biodiversity values. This information is consistent with the ecological information Council has for the site.

Therefore, the assessment has concluded that there will be no adverse ecological impacts during construction or post-construction from the proposal.

- **Precedent**

Some submissions considered the approval of this application will cause more sea walls and negative impacts on the coastal environment.

It is assumed that the submissions are concerned about an undesirable precedent being established. As has been outlined above, the works are not considered to have negative impacts on the coastal environment.

The strategic intent to allow the construction of private coastal protection works at Collaroy-Narrabeen Beach was set out in the preparation of the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (2014), then when amendments were made to the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (2016) (CZMP) as well as the Northern Beaches Coastal Erosion Policy (2016).

Council is required to assess each development application on its own merit in line with the existing legal framework. Development applications are required to be supported by objective technical assessments undertaken by expert practitioners who take into consideration the local environmental context when designing and assessing solutions.

Coastal protection works are a permitted land use on these sites. There is law that allows them to be approved. Provided all the relevant legislation is addressed, the works can be approved.

The works are permitted with consent, they form part of a well established and researched plan for this beach, and they will not have negative impacts on the coastal environment, given the full context of the existing site. As a result, an undesirable precedent will not be set if these works are approved.

REFERRALS

Internal Referral Body	Comments
Building Assessment - Fire and Disability upgrades	Supported No objections to proposal and no special conditions.
Environmental Health (Acid Sulfate)	Supported subject to conditions Updated Environmental Health comments based on the information that acid sulfate soil investigations were not required for seawall repair works associated with DA2017/0591, DA2017/0825, DA2017/0947, DA2018/1289, DA2018/1878, DA2019/1138,

Internal Referral Body	Comments
	DA2020/0301, or DA2021/0042. We therefore support the application and recommend a condition.
Environmental Health (Industrial)	<p>Supported subject to conditions</p> <p>This proposal is similar to a number of other 'protection works' occurring along Collaroy/South Narrabeen beachfront, including Council's own. Noting the existing private works approved through Mod2020/0626, we recommend the same set of conditions with construction times extending beyond what is considered 'normal' - including Saturday afternoon and Sunday - this is to help expedite works that are of critical structural importance.</p>
Landscape Officer	<p>Supported subject to conditions</p> <p>The application seeks consent for construction of upgraded coastal protection works at 1190-1196 and 1204 Pittwater Road Narrabeen.</p> <p>Council's Landscape Referral section has considered the application against the Warringah Local Environmental Plan, and the following Warringah DCP 2011 controls:</p> <ul style="list-style-type: none"> • D1 Landscaped Open Space and Bushland Setting • E1 Preservation of Trees or Bushland Vegetation • E7 Development on land adjoining public open space • E9 Coastline Hazard <p>Construction of coastal protection works as described in the application will require significant excavation within the sites to remove existing structures and construct engineered sea wall protection.</p> <p>One significant landscape element, described below, will be required to be removed with other minor landscape elements along the eastern boundaries.</p> <p>1 x <i>Araucaria heterophylla</i> (Norfolk Island Pine, approx. 20m height) at No.1204 Pittwater Road is required to be removed as part of the works. The tree forms part of the iconic beach front landscape along the Collaroy/Narrabeen coastal strip. Whilst the tree is too close to the excavation and construction works to be retained. It is recommended that the tree be replaced to maintain the character of the landscape.</p> <p>A landscape plan is indicated in the drawing set submitted, however no specific planting is nominated on the plans. It is noted that the SEE provides details of suitable coastal planting to assist with stabilisation and integration of the structures into the landscape. The concept as described in the SEE is considered suitable for the sites and requirements for landscaping following works can be incorporated into conditions of consent if the proposal is to be approved.</p>

Internal Referral Body	Comments
	No objections are raised to approval with regard to landscape issues subject to conditions as recommended.
NECC (Bushland and Biodiversity)	<p>Supported subject to conditions</p> <p>The application seeks approval for the construction of upgraded coastal protection works at 1190-1196 and 1204 Pittwater Road Narrabeen. Council's Environment & Climate Change Unit - Biodiversity referral team have reviewed the application for consistency against the relevant environmental legislation and controls, including:</p> <p>Biodiversity Conservation Act 2016 (BC Act) State Environmental Planning Policy (Coastal Management)</p> <ul style="list-style-type: none"> • Coastal Environment Area <p>Warringah Development Control Plan (WDCP)</p> <ul style="list-style-type: none"> • Clause E2 Prescribed Vegetation • Clause E4 Wildlife Corridors • Clause E6 Retaining unique environmental features <p>The proposal requires the removal of one Norfolk Island Pine (<i>Araucaria heterophylla</i>). Although not locally native, the species has value to a number of protected and threatened avian species in the Northern Beaches.</p> <p>Siting options to retain this tree are limited due to the nature of the proposal, therefore Council's Environment & Climate Change Unit - Biodiversity have no objections to its removal subject to replacement. Subject to conditions the Bushland and Biodiversity referral team find the application to be consistent against relevant environmental controls.</p>

NECC (Coast and Catchments)	<p>Supported subject to conditions</p> <p>The assessment of this application in relation to coastal processes as well as relevant coastal legislation, policy and plans was undertaken by an eternal coastal engineer. This assessment has been informed by RHDHV 2023.</p> <p>The application has been assessed against the requirement of the Coastal Management Act 2016 SEPP, Coastal Management 2018, Northern Beaches Coastal Erosion Policy, Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach as well as the Warringah Local Environment Plan 2011 and Warringah Development Control Plan 2011.</p> <p>In addition to the information supplied with the application, the following reports were considered in the assessment of the works:</p>
Internal Referral Body	Comments
	<ul style="list-style-type: none"> • The Collaroy-Narrabeen Beach Coastal Protection Assessment (MHL, 2016) • Review of Beach Width Impacts of Alternative Coastal Protection Works at Collaroy-Narrabeen Beach (MHL, 2020) • MHL2877 Collaroy-Narrabeen Beach seawall: Review of additional assessment items – Review of Development Application for 1190 to 1196 & 1204 Pittwater Road, Narrabeen (MHL 2022) <p>Overall the assessment recommends that the application be approved subject to condition. This application sits within a larger whole of embayment approach to managing the impacts of coastal hazards and is consistent with the strategic intent of the CZMP for Collaroy-Narrabeen Beach and Fishermans Beach. It can be concluded from the information submitted with the application and additional technical reports that the proposed development will not adversely change coastal process within the embayment and will not result in increased erosion or negative impacts to public access and public safety.</p>
NECC (Development Engineering)	<p>Supported subject to conditions</p> <p>The proposed works will require construction access via Council's road network which will require security bonds for any potential damage as a result. Suitable conditions for this requirement are included in the assessment.</p> <p>No objection to the proposal, subject to conditions as recommended.</p>

Parks, reserves, beaches, foreshore	<p>Supported subject to conditions</p> <p>The development application is for the construction of upgraded coastal protection works.</p> <p>Council's Parks Referral staff have assessed the proposal against the Coastal Zone Management Plan at Collaroy-Narrabeen Beach and the following Warringah DCP Controls:</p> <ul style="list-style-type: none"> • C5 Erosion and Sedimentation • C8 Demolition and Construction • E7 Development on Land Adjoining Public Open Space <p>The proposed works are located within private property. No permanent structures nor built elements are proposed nor are permitted beyond the boundaries. The face of the proposed concrete wall is located 0.5m landward of the seaward property boundaries, thus no physical encroachment onto the public beach is proposed, and the works are consistent with the Coastal Zone Management Plan at Collaroy-Narrabeen Beach.</p>
Property Management and Commercial	Supported
Internal Referral Body	Comments
	No objections raised.
Road Reserve	<p>Supported subject to conditions</p> <p>There is no impact on existing road infrastructure assets. A dilapidation report on existing road assets of Clarke and Mactier Streets will be required prior to commencing works.</p>
Strategic and Place Planning (Heritage Officer)	<p>Supported</p> <p>Discussion of reason for referral</p> <p>The proposal has been referred to Heritage as it is within the vicinity of a heritage item:</p> <p>I25 - House - 1184-1186 Pittwater Road, Narrabeen</p> <p>Details of heritage items affected</p>

Details of the item as contained within the Warringah inventory is as follows:

Statement of Significance:

A rare example of a late Victorian residence, which although altered retains important original fabric. Historically the building provides evidence of 19th century development and the importance of beach-side leisure accommodation.

Physical Description

Two storey residential building being used as 8 flats. Rendered masonry walls & roughcast piers to verandah. Hipped tiled roof with skillion corrugated iron roof to 1st floor verandah (infilled). Original joinery details. Timber sash windows on ground level with half-round heads; original 4 panel doors with half-round fanlights; rendered mouldings around windows & doors. Substantially modified.

Other relevant heritage listings

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	No	
Australian Heritage Register	No	
NSW State Heritage Register	No	
National Trust of Aust (NSW) Register	No	
RAIA Register of 20th Century Buildings of Significance	No	
Other	N/A	

Consideration of Application

Internal Referral Body	Comments
	<p>The proposal is for a new sea wall for 5 properties located at 1190-1196 and 1204 Pittwater Road Narrabeen. The proposed seawall will run along the rear eastern boundaries of these properties where they adjoin Narrabeen Beach and will replace the existing protection works. The heritage item is located to the south of 1190 Pittwater Road (also known as 1 Clarke Street) across the Clarke Street road head.</p> <p>Given that the proposed sea wall is located at the rear of the properties away from the primary Pittwater Road elevation of the heritage item, is separated from the heritage item by Clarke Street and is to be mostly screened by sand and plantings, the proposal is considered to be unlikely to impact upon the heritage item or its significance.</p> <p>Therefore, Heritage raises no objections to the proposal and requires no conditions.</p> <p>Consider against the provisions of CL5.10 of WLEP.</p> <p>Is a Conservation Management Plan (CMP) Required? No Has a CMP been provided? No Is a Heritage Impact Statement required? No Has a Heritage Impact Statement been provided? No</p>
Traffic Engineer	<p>Supported subject to conditions</p> <p>The proposed coastal protection works are not opposed on traffic grounds subject to appropriate traffic management measures being in place during construction.</p>
External Referral Body	Comments
Ausgrid - SEPP (Transport and Infrastructure) 2021, s2.48	The proposal was referred to Ausgrid. No response has been received within the 21 day statutory period and therefore, it is assumed that no objections are raised and no conditions are recommended.

ENVIRONMENTAL PLANNING INSTRUMENTS (EPIs)*

All, Environmental Planning Instruments (SEPPs and LEPs), Development Controls Plans and Council Policies have been considered in the merit assessment of this application.

In this regard, whilst all provisions of each Environmental Planning Instruments (SEPPs and LEPs), Development Controls Plans and Council Policies have been considered in the assessment, many provisions contained within the document are not relevant or are enacting, definitions and operational provisions which the proposal is considered to be acceptable against.

As such, an assessment is provided against the controls relevant to the merit consideration of the application hereunder.

State Environmental Planning Policies (SEPPs) and State Regional Environmental Plans (SREPs)**SEPP (Transport and Infrastructure) 2021**Ausgrid

Section 2.48 of Chapter 2 applies to, relevantly, any development application (or an application for modification of consent) for any development carried out:

- within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists).
- immediately adjacent to an electricity substation.
- within 5.0m of an overhead power line.
- includes installation of a swimming pool any part of which is: within 30m of a structure supporting an overhead electricity transmission line or within 5.0m of an overhead electricity power line.

If this section applies to the development application, the consent authority must notify the relevant electricity supply authority of the development, inviting comments about potential safety risks. The consent authority must consider any response received within 21 days of giving notice.

Comment:

The relevant electricity supply authority is Ausgrid. The proposal was referred to Ausgrid on 14 September 2021. No response has been received within the 21 day statutory period and therefore, it is assumed that no objections are raised and no conditions are recommended.

Section 2.119 Development within frontage to classified road

- (2) The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that—*
- (a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and*
- (b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of—*
- (i) the design of the vehicular access to the land, or*
- (ii) the emission of smoke or dust from the development, or*
- (iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and*
- (c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.*

Comment:

The subject site fronts a classified road known as Pittwater Road. The proposal is for a vertical sea wall only, which is not considered to impact the safety, efficiency and ongoing operation of Pittwater Road. Therefore, the requirements of section 2.119 are considered to be satisfied.

SEPP (Biodiversity and Conservation) 2021

Chapter 2 Vegetation in non-rural areas

Section 2.6 Clearing that requires permit or approval, states:

(1) A person must not clear vegetation in a non-rural area of the State to which Part 3 applies without the authority conferred by a permit granted by the council under that Part.

Comment:

Council's Landscape Officer has raised no objections to the removal of the *Araucaria heterophylla* (Norfolk Island Pine, approx. 20m height) at No.1204 Pittwater Road, subject to replacement planting.

This has been included as a condition of consent in the recommendation of this report and therefore satisfies section 2.6 (see conditions 48 and 66).

Chapter 9 Hawkesbury-Nepean River

Chapter 9 applies to the land, however, the aim of this Chapter is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.

The subject site does not drain into the Hawkesbury-Nepean River system and therefore no further assessment is considered necessary.

SEPP (Resilience and Hazards) 2021

Chapter 2 – Coastal Management

Coastal protection works are permitted to be carried out at the site with development consent: section 2.16. The site is subject to Chapter 2 of the SEPP. Accordingly, an assessment under Chapter 2 has been carried out as follows:

Note: *The assessment of the SEPP (Resilience and Hazards) 2021 has been informed by RHDHV 2023.*

Division 2 Coastal vulnerability area

2.9 Development on land within the coastal vulnerability area

Development consent must not be granted to development on land that is within the area identified as "coastal vulnerability area" on the Coastal Vulnerability Area Map unless the consent authority is satisfied that—

- (a) if the proposed development comprises the erection of a building or works—the building or works are engineered to withstand current and projected coastal hazards for the design life of the building or works, and*
- (b) the proposed development—*
 - (i) is not likely to alter coastal processes to the detriment of the natural environment or other land, and*
 - (ii) is not likely to reduce the public amenity, access to and use of any beach, foreshore, rock platform or headland adjacent to the proposed development, and*
 - (iii) incorporates appropriate measures to manage risk to life and public safety from coastal hazards, and*

(c) measures are in place to ensure that there are appropriate responses to, and management of, anticipated coastal processes and current and future coastal hazards.

Comment:

While there is no Vulnerability Area Map currently adopted, an assessment against the clauses in this division has been conducted as follows:

(a) if the proposed development comprises the erection of a building or works—the building or works are engineered to withstand current and projected coastal hazards for the design life of the building or works, and

The design life of the works adopted by the Applicant is 60 years. The key coastal hazards are beach erosion (including localised beach scour), shoreline recession and coastal inundation.

In particular it is noted:

- the proposed works have been designed assuming complete erosion of all beach sand in the design 100 year Average Recurrence Interval (ARI) storm event, including scour in front of the works to be level of -1.3m AHD (well below the existing cemented sand level) which is considered to be a greater than a 2,000 year ARI event;
- there is no shoreline recession due to net sediment loss predicted for Collaroy-Narrabeen Beach, being essentially a stable closed system (refer Section 5.1). There is, however, future shoreline recession predicted due to projected sea level rise. This has been taken into account in the design scenario referred to above, notwithstanding it is an action in the CZMP (2016) for Council to manage future shoreline recession due to sea level rise by means of beach nourishment;
- structural design of the proposed works has been based on a projected sea level rise corresponding to the end of the design life. Since sea level rise affects water level and water depth (in conjunction with scour level), and water depth in turn affects design wave conditions and wave loading, adoption of the projected sea level rise corresponding to the end of the design life from 'day one' is a conservative approach, also reducing the potential need for implementation of adaption strategies; and
- in regard to coastal inundation, a crest level for the works of 7.0m AHD is proposed together with a wave return wall at the crest to manage wave overtopping (inundation) over the life of the works. Calculations of wave overtopping rates in Horton Coastal Engineering (2021a), indicated the following for the proposed crest level and wave return wall for the adopted 100 year ARI storm event and 100 year ARI water level combined with the greater than 2,000 year ARI scour level:
 - for the present day (then 2021), no significant wave overtopping would be expected and safety criteria for humans near the crest would be met,
 - at the end of the 60 year design life (2081), only minor damage to landscaping is predicted but safety criteria for humans near the crest would not be met. It would be necessary for persons to remain landward of the wall crest in severe storms, over time, as recognised by the Applicant's Coastal Engineer, or adapt the crest to reduce overtopping.

Setting a crest level for coastal protection works is a balance between the risk associated with wave overtopping (risk to property and risk to life), visual impact, cost, and the ability to adapt the structure over time in response to increased overtopping due to sea level rise, if required. It would be uncommon to design a coastal protection structure for zero overtopping over its design life due to implications for cost and visual impact, and where other measures exist to manage the risk.

It is considered:

- (a) advisable for small scale physical modelling to be carried out to determine appropriate risk treatments in the final design; and
- (b) appropriate to require physical modelling as a condition of consent for a number of reasons set out below:

- the proposed works should remain a vertical structure, to minimise its footprint and avoid encroachment onto the public beach;
- the proposed works should not be positioned further seaward, to avoid impacts on coastal processes and beach behaviour, and encroachment onto public land;
- the crest level should not be raised above the existing proposed level of 7.0m AHD, for visual impact reasons; and
- achievement of an engineered drainage solution landward of proposed works should be feasible for the current coastal protection works concept.

It is concluded that the proposed works themselves are engineered to withstand the assessed current and projected coastal hazards for the design life of the works.

To address the potential safety hazard to persons due to wave overtopping and to inform drainage design landward of the proposed works, it is recommended that conditions of consent require preparation of a Safety Management Plan and physical modelling to confirm wave overtopping discharges (see conditions 59 and 11 respectively).

(b) the proposed development—

(i) is not likely to alter coastal processes to the detriment of the natural environment or other land, and

Section 5 of the RHDHV Coastal Engineering Assessment sets out a discussion of the potential impact of the proposed works on coastal processes based on:

- an understanding of the key coastal processes along Collaroy-Narrabeen Beach;
- information in the literature, in particular the authoritative Coastal Engineering Manual (CEM) (US Army Corps of Engineers, 2006);
- observations of post-storm beach recovery in front of existing vertical coastal protection structures along Collaroy-Narrabeen Beach; and
- numerical modelling of beach width behaviour in response to the proposed vertical wall compared to the existing ad-hoc rock protection works and a rock revetment, completed by MHL (2022b).

It was found that:

- concerns that seawalls cause additional toe scour and greatly delay post-storm beach recovery were probably false as there is no known data or physical arguments to support these concerns. Further, the common perception that sloping permeable surfaces (rock revetments) produce less effects on the beach than vertical, impermeable walls has been negated;
- general observations of post-storm recovery in front of existing vertical walls along Collaroy-Northern Beach have indicated no significant differences compared to other locations along the beach where sloping permeable rock revetments exist; and
- modelling results showed that the proposed vertical wall would be expected to have no significant impact on beach width compared to the existing ad-hoc rock protection works or a

rock revetment.

It is concluded that the proposed works are not likely to alter coastal processes to the detriment of the natural environment.

The proposed works have the potential to enhance 'end effects' on the adjacent land. This matter has been noted above in Section 6.3 wherein it has been indicated that:

- Council propose to upgrade the existing coastal protection on the adjacent public land within the next three years;
- any increased erosion of the adjacent land would be expected to be limited to the upper face of the erosion escarpment;
- assets behind the existing protection works are considered to be at an acceptable level of risk from coastal hazards over the interim time frame of three years prior to the upgrading works; and
- in the event that increased erosion of the adjacent land did occur in the interim period, caused by the presence of the proposed works, the condition of consent referred to in Section 6.3 would be triggered to restore the land.

(b) the proposed development—

(ii) is not likely to reduce the public amenity, access to and use of any beach, foreshore, rock platform or headland adjacent to the proposed development, and

Firstly, consideration of rock platforms and headlands is not relevant as these features are remote from the proposed works.

For reasons noted in the discussion on the Coastal Management Act 2016, above in this report, the proposed works would not be likely to reduce access to and use of the beach or foreshore adjacent to the proposed works. These reasons include:

- the proposed works are located entirely on private property and access to the beach by the general public would be via the road heads at Clarke Street and Mactier Street or via South Narrabeen SLSC; and
- the proposed works would not be expected to have any significant impact on beach width when compared with the existing ad-hoc rock protection works or a rock revetment.

As also noted previously, the proposed removal of existing rock protection and inappropriate materials from the public beach as part of the development would be a benefit for beach access.

In regard to the potential for the proposed works to reduce public amenity, it is firstly necessary to consider what may be meant by public amenity as there would not appear to be a definition in the State Environmental Planning Policy or in the Coastal Management Act 2016.

Frampton (2010) in a paper which reviewed amenity beach management noted that 'amenity is identified as a perception of beach users of a location's elements that provide a positive, enjoyable benefit'. The paper identified a number of issues that affect the amenity provided by beaches and grouped them broadly as those involving direct interaction with the physical/natural environment and those involved with managing beach use. The latter included beach safety and the provision of facilities, services, and access.

MHL et al (2021) in a coastal protection amenity assessment for the proposed Wamberal Terminal Coastal Protection, considered the following potential beach amenity impacts:

- available dry beach width impact;
- end erosion impact;
- surf amenity impact;
- post-storm existing ad-hoc protection on the beach;
- visual amenity impacts;
- foreshore access impacts; and
- safety impacts.

Of the amenity considerations raised by Frampton (2010) and MHL et al (2021), the following have already been addressed above – dry beach width impact, end erosion impact, post-storm existing ad-hoc protection on the beach, foreshore access impacts, and safety impacts. Visual amenity is considered further below in response to Division 4 Coastal use area.

The issues raised by Frampton (2010) regarding the provision of facilities and services do not apply to the subject DA, noting that facilities and services for beaches such as car parking, professional lifeguards, and beach cleaning are the responsibility of Council.

The amenity consideration that remains from the above matters is the direct interaction of beach users with the physical/natural environment. This is considered below.

Collaroy-Narrabeen Beach is a significantly modified environment in the back beach area due to the history of building development and construction of erosion protection works dating from the 1920s. Consequently, the back beach area does not represent a natural environment as would be the situation for example, with a vegetated dunal system. Beach users would be accustomed to the built environment and the sight of rocks along the beach when the beach levels are low following erosion events and while the beach is recovering naturally.

The question would seem to be whether the construction of the proposed works, being a vertical wall located 500mm within the private property boundary (with wave return wall located at the crest coincident with the property boundary), would diminish the positive, enjoyable experience of beach users compared to the situation of existing ad-hoc rock protection, or for the existence of other forms of possible coastal protection works such as a rock revetment meeting the Design Specifications (2016).

The relative impact on the beach experience is likely to be subjective and dependent on the state of the beach at the time, whether accreted or eroded.

Figure 4-6 presented previously shows the relative position of the proposed works and the existing rock protection at each of the subject properties. Figure 5-5 presented previously shows the relative position of the proposed works and a rock revetment alternative as modelled in MHL (2022b). Figure 6-1 and Figure 6-2 show the relative position of the proposed works, existing rock protection, and a rock revetment alternative, at 1204 Pittwater Road and 1194 Pittwater Road respectively, together with 24 historical beach profiles from the NSW beach profile data base covering the 80 year period 1941 to 2021.

It is apparent from Figure 6-1 and Figure 6-2 that when the beach is well accreted sand levels along the property boundary are at 6m AHD and above. At such times the existing rock protection, the proposed works, and a rock revetment alternative, would all be substantially buried with only the upper crest levels visible, if visible at all. At such times the relative beach experience between each situation is likely to be essentially the same, with a wide sandy beach berm in place.

At times of an erosion event impacting on a well accreted beach, the rock protection would become visible on the beach, and affect beach use, earlier than the vertical wall, since the rock works would be located further seaward.

Following an erosion event which fully exposes the rock protection or a vertical wall, the rate of natural sand recovery for both forms of protection would be expected to be generally similar (refer discussion in Section 5). Studies by Phillips on beach recovery at Collaroy-Narrabeen Beach, referred to in MHL et al (2021), show that this rate of recovery is relatively quick at 0.1 to 0.2m³/m/day in the initial 1-2 months following the storm. Within 12 months after a storm (using the 2016 East Coast Low as an example) MHL et al (2021) noted that the beach berm had recovered to a width of approximately 30m and to a height of 2 to 3m AHD16. Natural recovery of beach levels above about 3m AHD is a much slower process, being dependent on aeolian (wind) process and can take years. Council often accelerate the recovery by the practice of beach scraping, as noted further below.

While the rate of natural sand recovery following an erosion event may be similar for rock protection and a vertical wall, there is likely to be some difference between the character and use of the beach in these two situations, for a period of time, which could influence the beach experience. In order to provide a sandy beach surface suitable for recreation (and access along the beach) the sand in the case of the rock protection must first fill the voids in the rocks and cover the rocks, whereas for the case of a vertical wall the sand is able to immediately create a sand surface directly against the wall.

Based on the rates of sand recovery referred to above and the volume of voids to be filled to a level of say 2 to 3m AHD, the useability of the beach could be affected for a period of possibly 3 to 6 weeks per recovery event in the case of the rock protection compared to the vertical wall.

In conclusion, the proposed works would be expected to have a neutral to slightly positive impact on beach amenity where considered in the context of use of the sandy beach area. Accordingly, the proposed works are not likely to reduce the public amenity of the beach in regard to beach use.

It is also worth noting from a beach amenity perspective that Council currently takes actions to address beach amenity, in the form of covering exposed rock protection, by carrying out beach scraping to assist in accelerating natural beach recovery after storms and by beach replenishment using sand from Narrabeen Lagoon entrance clearance operations. These actions are included in the CZMP (2016) and it is understood would continue into the future. As such, these actions would also assist in mitigating any beach amenity issues attributed to the proposed works.

(b) the proposed development—

(iii) incorporates appropriate measures to manage risk to life and public safety from coastal hazards, and

The proposed works incorporate a range of measures to manage risk to life and public safety from coastal hazards, as noted below. The relevant coastal hazards are beach erosion and coastal inundation, noting that shoreline recession due to projected sea level rise would be managed by Local Government and State Government, as set out in the CZMP (2016):

- the proposed works have been satisfactorily structurally designed to combat the beach erosion hazard over the life of the works;
- the proposed works reduce the public safety hazard of rocks on the public beach by removing such rocks where encountered in excavation for the proposed works;
- the proposed works avoid the need to carry out emergency erosion protection works during and following storms at which times staff of emergency agencies and volunteers place themselves at some safety risk (refer also to Section 6.6); and

- the proposed works have been designed to address the risk to life and public safety from coastal inundation, over the life of the works, by virtue of the proposed crest level and inclusion of a wave return wall. At some point during the life of the works, due to projected sea level rise, the degree of wave overtopping is predicted to exceed safety criteria for humans near the crest of the wall. It is recommended that a condition of consent require preparation of a safety management plan to manage this hazard and the carrying out of physical modelling to confirm the wave overtopping discharges, as noted in Section 6.4.2.

In conclusion, it is considered that the proposed works include appropriate measures to manage risk to life and public safety from coastal hazards. Management of the wave overtopping risk by way of a Safety Management Plan informed by physical modelling is considered preferable to measures such as increasing the crest level of the wall.

(c) measures are in place to ensure that there are appropriate responses to, and management of, anticipated coastal processes and current and future coastal hazards.

It is considered that suitable measures are in place to ensure that there are appropriate responses to and management of anticipated coastal processes and current and future coastal hazards, in that:

- the existing and future coastal processes and coastal hazards over the life of the works have been assessed;
- the design of the works has taken into account the future coastal processes and coastal hazards over the life of the works, to accepted practice;
- a Maintenance Management Plan would be prepared and implemented by the owners of the properties; and
- it has been recommended that conditions of consent be included to require preparation of a Safety Management Plan and the carrying out of physical modelling to manage the wave overtopping risk (see conditions 59 and 11 respectively).

Division 3 Coastal environment area

2.10 Development on land within the coastal environment area

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

- (a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,*
- (b) coastal environmental values and natural coastal processes,*
- (c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,*
- (d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,*
- (e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*
- (f) Aboriginal cultural heritage, practices and places,*
- (g) the use of the surf zone.*

(2) Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that—

- (a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or*
- (b) if that impact cannot be reasonably avoided—the development is designed, sited and will be*

managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

Comment:

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,

From a coastal engineering perspective, the relevant considerations in subsection (1)(a) are surface water and groundwater. Comment is also provided in relation to the biophysical and ecological environment.

Groundwater would not be expected to be adversely impacted by the proposed works on the basis that free-draining granular backfill would be placed behind the vertical wall and weep holes would be included below the footing/capping beam at a level of approximately 2m AHD to allow groundwater to flow to the beach. A local increase in groundwater level may temporarily occur behind the wall in heavy rainfall prior to the groundwater draining through the wall. This has been taken into account in the design of the proposed works.

Surface water from the properties which is not directed to Council's stormwater systems in the adjacent roads, or which does not directly enter the groundwater system, could be captured and directed parallel to the alignment of the works, via an interallotment drainage system as required, to discharge through coastal protection works at the road heads (Clarke Street and Mactier Street), subject to details being confirmed with Council. It would also be possible to grade the private land towards the crest of the vertical wall so that any excessive wave overtopping water flowed back over the crest of the wall between waves. The final drainage solution would be dependent on the outcome of the recommended physical modelling of wave overtopping, over the life of the works.

It is concluded that the proposed works are not likely to cause an adverse impact on the groundwater and surface water.

The DA was referred to Council's Environment & Climate Change Unit – Biodiversity for review against the relevant environmental legislation and controls including the Biodiversity Conservation Act 2016, State Environmental Planning Policy (Resilience and Hazards) 2021, and Warringah Development Control Plan 2011 (Clause E2 Prescribed Vegetation, Clause E4 Wildlife Corridors, and Clause E6 Retaining Unique Environmental Features). The Environment & Climate Change Unit supported the proposal and recommended a number of conditions be imposed (see conditions 24, 31, 48, 49, 50, 51, 64, 65 and 66).

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(b) coastal environmental values and natural coastal processes,

The coastal environmental value of Collaroy-Narrabeen Beach of most significance from a coastal engineering perspective is that included as Objective 1 to guide preparation of the CZMP (2016), namely - '1 Council seeks to maintain beach amenity, and surf quality in the future as its highest priority'.

The proposed works are not likely to cause an adverse impact on the coastal environment values and natural coastal processes. As noted elsewhere in the assessment it has been determined that the works will not change or adversely impact on coastal process within the embayment. The coastal environment values most relevant to this application include the maintenance of the sandy beach and the surf quality. These are shaped by the prevailing coastal processes that occur within the embayment. As the coastal process that shape these values will not be altered as a result of these works, the ability of the sandy beach to be maintained will not change.

A number of matters relating to beach amenity have been discussed above. It is considered that the proposed works would not impact adversely on those matters and in some cases would improve beach amenity, e.g. in relation to the matter of beach safety and access along the beach following storms.

For the reasons outlined previously, including the results of modelling by MHL (2022b), the proposed works are not considered likely to cause an adverse impact on natural coastal processes, including surf quality.

In addition, the proposed works are located at the back of the beach on private property and interact with the surf zone only at times of severe erosion during storms. This is not expected to significantly impact on surfing activity.

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,

The proposed works are not likely to cause an adverse impact on the water quality of the marine estate. The proposed works are constructed primarily of reinforced concrete which is essentially inert with no risk of leaching of contaminants or the like when in contact with surface water, groundwater or ocean waters.

Conditions of consent for the temporary bund design, construction and maintenance have been recommended to prevent the construction of the works having a negative impact on the beach and public safety through failure of the bund during a coastal storm.

It is noted that the proposed works would reduce the risk of debris from the subject properties entering the ocean at times of storms, which is a benefit.

The proposed works do not impact on any sensitive coastal lakes listed in Schedule 1 of the State Environmental Planning Policy (Resilience and Hazards) 2021.

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,

Firstly, consideration of undeveloped headlands and rock platforms is not relevant as these features are remote from the proposed works. Impacts on native vegetation and fauna and their habitats were considered by Council's Environment & Climate Change Unit – Biodiversity. The proposal was supported with conditions (see conditions 24, 31, 48, 49, 50, 51, 64, 65 and 66).

The proposal works are located wholly on private property at the back of the beach. At times when the sandy beach may be eroded back to the proposed works, natural beach recovery is relatively rapid and marine vegetation would not become established. Accordingly, impact on marine vegetation is not an issue.

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

The proposed works are not likely to cause an adverse impact on existing public open space, noting that the proposed works are located entirely on private land and are not expected to impact significantly on existing beach behaviour.

The proposed works are not likely to cause an adverse impact on safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability, as covered in the discussion on the Coastal Management Act, 2016, above in this report.

Safe access would be improved by the proposed removal of existing rock and inappropriate materials on the public beach over a distance of 5 to 10m seaward of the private property boundary where encountered during excavation for the proposed works.

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(f) Aboriginal cultural heritage, practices and places,

The location of the works is heavily disturbed and it is highly unlikely that there are any Aboriginal heritage places or items. Notwithstanding, a condition of consent (see condition 30) has been recommended to ensure the protection of sites of significance during works.

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

(g) the use of the surf zone.

The proposed works are not likely to cause an adverse impact on use of the surf zone as the works are not expected to impact significantly on existing coastal processes, as covered previously in this report. In addition, the proposed works are located at the back of the beach on private property and interact with the surf zone only at times of severe erosion during storms.

(2) Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that—

(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or

(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

Based on the assessment above, the consent authority can be satisfied that the development is designed, sited and will be managed to avoid an adverse impact on the matters referred to in section 2.10(1).

Division 4 Coastal use area**2.11 Development on land within the coastal use area**

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,

(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,

(iv) Aboriginal cultural heritage, practices and places,

(v) cultural and built environment heritage, and

(b) is satisfied that—

(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or

(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and

(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

Comment:

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

The matter of impact on safe access has been considered previously in this report. In summary, the proposed works are not likely to cause an adverse impact on existing safe access as the proposed works are located entirely on private property and would not impact significantly on the rate of beach recovery and beach width when compared to the existing ad-hoc rock protection. Safe access would be improved by the proposed removal of existing rock protection and inappropriate materials on the public beach. The proposed works would not impact on existing access to the beach from Clarke Street, Mactier Street, or South Narrabeen SLSC.

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,

(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,

These matters have been covered in the detailed Visual Impact Assessment, in the next section of this report, below. In summary, the combination of the naturally and artificially higher sand levels in front of the subject site, the sandstone finish of the wall and the addition of vegetation (via conditions of consent) contribute to a development that, if approved and constructed, will not cause an adverse impact on overshadowing, wind funnelling and the loss of views from public places to foreshores, or the visual amenity and scenic qualities of the coast, including coastal headlands.

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(iv) Aboriginal cultural heritage, practices and places,

The location of the works is heavily disturbed and it is highly unlikely that there are any Aboriginal heritage places or items. Notwithstanding, a condition of consent (see condition 30) has been recommended to ensure the protection of sites of significance during works.

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(v) cultural and built environment heritage, and

The proposal was referred to Council's Heritage Officers as the site is in the vicinity of a heritage item. The Heritage Officers commented:

"The proposal is for a new sea wall for 5 properties located at 1190-1196 and 1204 Pittwater Road Narrabeen. The proposed seawall will run along the rear eastern boundaries of these properties where they adjoin Narrabeen Beach and will replace the existing protection works. The heritage item is located to the south of 1190 Pittwater Road (also known as 1 Clarke Street) across the Clarke Street road head.

Given that the proposed sea wall is located at the rear of the properties away from the primary Pittwater Road elevation of the heritage item, is separated from the heritage item by Clarke Street and is to be mostly screened by sand and plantings, the proposal is considered to be unlikely to impact upon the heritage item or its significance.

Therefore, Heritage raises no objections to the proposal and requires no conditions."

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(b) is satisfied that—

(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or

(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and

Based on the assessment above, the consent authority can be satisfied that the development is designed, sited and will be managed to avoid an adverse impact on the matters referred to in section 2.11(1)(a).

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

These matters have been covered in the detailed Visual Impact Assessment, in the next section of this report, below. In summary, the combination of the naturally and artificially higher sand levels in front of

the subject site, the sandstone finish of the wall, the addition of vegetation (via conditions of consent), and the existing coastal and built environment (consisting of dwellings, residential flat buildings, a surf club and previously constructed seawalls) contribute to a development, if approved with the recommended conditions, will have a bulk, scale and size that will be compatible with the existing and future surrounding coastal and built environment.

Division 5 General

2.12 Development in coastal zone generally—development not to increase risk of coastal hazards

Development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.

Comment:

The proposed works are not likely to cause increased risk of coastal hazards on the subject land. In fact, the proposed works eliminate the beach erosion hazard and manage the coastal inundation hazard on the subject land over the life of the works.

The Coastal Management Act defines the following seven coastal hazards:

- (a) beach erosion,
- (b) shoreline recession,
- (c) coastal lake or watercourse entrance instability,
- (d) coastal inundation,
- (e) coastal cliff or slope instability,
- (f) tidal inundation,
- (g) erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters.

Beach erosion, shoreline recession and coastal inundation are the hazards relevant to this assessment. Sections 5 (Discussion of Key coastal processes along Collaroy-Narrabeen Beach and impact of coastal structures) and 6 (Review of Development Application) of RHDHV 2023 confirm that coastal processes and therefore coastal hazards will not be altered as result of this proposal as well as compliance with the relevant legislation and controls.

The risk of increased erosion on adjacent public lands at Clarke Street, Mactier Street and South Narrabeen SLSC due to possible enhanced 'end effects' from a vertical wall is mitigated by the existing rock protection in these areas. The risk would be fully addressed by Council's proposal to upgrade the existing protection in these areas, noting that the resolution of interaction between public land and coastal protection works on private property in a coordinated manner is the responsibility of Council under the CZMP (2016).

2.13 Development in coastal zone generally—coastal management programs to be considered

Development consent must not be granted to development on land within the coastal zone unless the consent authority has taken into consideration the relevant provisions of any certified coastal management program that applies to the land.

Comment:

A certified Coastal Zone Management Plan (CZMP) is in place for Collaroy Narrabeen Beach. The proposed works have been specifically assessed in relation to the objectives and relevant provisions of the CZMP. The proposed works are considered to be consistent with the objectives of the CZMP

and to comply with the relevant provisions of the CZMP.

Chapter 4 – Remediation of Land

Section 4.6 (1)(a) of Chapter 4 requires the consent authority to consider whether land is contaminated. Council records indicate that the subject site has been used for residential purposes for a significant period of time with no prior land uses. A search of the public register on 5 August 2022 confirmed the site is not significantly contaminated land for the purposes of the *Contaminated Land Management Act 1997*. Council has no other records that indicate the site is contaminated.

In this regard it is considered that the site poses no risk of contamination and therefore, no further consideration is required under section 4.6 (1)(b) and (c) of this Chapter and the land is considered to be suitable for the coastal protection land use.

Visual Impact Assessment

This visual impact assessment is being undertaken to assist with the following clauses in *State Environmental Planning Policy (Resilience and Hazards) 2021*:

Division 4 Coastal use area

2.11 Development on land within the coastal use area

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

(a) has considered whether the proposed development is likely to cause an adverse impact on the following—

(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,

(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,

(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

Proposed works

The proposal involves the construction of coastal protection works in the form of a vertical seawall.

In detail, the works are:

- 49.75m long (from north to south) along No. 1 Clarke Street and Nos. 1192, 1194 and 1196 Pittwater Road and 29.85m long (north to south) along 1204 Pittwater Road,
- A maximum of 7.0m AHD in height to the top of the wall and 8.0m to the top of the fence.
- 350mm in width (with 500mm wave return projection cantilevered over sand), plus two sets of stairs to access Nos. 1190 and 1192, and Nos. 1194 and 1196 Pittwater Road.
- The height of the exposed wall will vary depending on the sand level as detailed below:

Typical lower sand level to the top of the wall

Height approximately 2.6m along the northern section (No. 1204 Pittwater Road), and between approximately 2.7m - 3.9m along the southern section (No.1190 - 1196 Pittwater Road).

Typical medium sand level to the top of the wall

Height varies between approximately 1.6m - 1.8m along the northern section and approximately 300mm

- 1.5m along the southern section.

Typical high sand level to the top of the wall

The northern wall is either covered by sand or will be exposed for a height of approximately 200mm. The southern section will be exposed for a height of approximately 300mm - 800mm.

Note on sand levels provided by the applicant: Sand levels derived from analysis of 24 profiles captured from 1941 to 2021 in the nsw beach profile database. The typical upper sand level has been exceeded for about 10% of the time in the historical record. The typical lower sand level has been exceeded for about 90% of the time in the historical record.

The works, like the two existing stretches of vertical wall already constructed, will be finished in a sandstone colour to match the natural sand of the beach.



Image 4: An angled, morning, view of the two stretches of vertical wall already constructed between Stuart and Clarke Streets.

Location of the works

The majority of the seawall is proposed 500mm from the eastern boundary of the subject sites. The wave return has a nil setback to the boundary.

As has been previously established, the works have been positioned as far landward as possible.

The visual catchment

The works will be visible from the public beach, the water and areas adjacent to the beach such as the

Collaroy carpark, public reserves to the north and south, and private properties - both residential and commercial.

The wall will be most visible from the public beach adjacent to the works. Public and privately owned places further away from the works, will have distant views and therefore be less impacted.

The legislation requiring this visual impact assessment focuses on views from public places, foreshores, the coast, and coastal headlands. As the subject site is more two kilometres from either Long Reef or North Narrabeen Headlands, it is the visual impact from Collaroy/Narrabeen Beach and the ocean in the vicinity of the beach, that is most relevant.

Surrounding coastal and built environment

To the north, west and south of the subject site, the surrounding development consists of single and two storey detached dwellings, residential flat buildings and the South Narrabeen Surf Club building.

To the east of the subject site is Collaroy/Narrabeen Beach and the ocean.

The final elements that are key to the coastal and built environment here, are the existing coastal protection works either in the form of rock revetments (the Collaroy carpark, the properties between Ramsay and Stuart Streets), vertical walls (Collaroy Surf Club, Collaroy Beach Services Club, 1096 Pittwater Road know as 'The Breakers', the properties between Stuart and Wetherill Streets, and the properties between Wetherill and Clarke Streets), or rocks placed through historical consents or emergency management works (eg: in front of the subject site).



Image 5: View of the southern section of the subject site from the South Narrabeen Surf Club during the June 2016 storm.



Image 6: View of the rock revetment wall protecting the Collaroy carpark.

Other matters affecting visual impact

Other elements that affect the visual impact include the viewing angle, viewing distance and the time of day.

During the mornings, with the sun hitting the face of the wall, the works appear as a very similar colour to the natural sand. In the afternoons, the shadow caused by the wall causes a differentiation between it and the sunlit sand.

When viewed from an angle, and particularly when viewed from a distance, the works become less obvious as the angle and distance increases (see image 4, above).

The bulk, scale and size of the proposed works are driven by satisfying the requirements of State Environmental Planning Policy (Resilience and Hazards) 2021.

The Applicant has sought to reduce the bulk, scale and size of the proposed works by adopting a design solution having the minimum cross-shore footprint (vertical wall, less than 1m width) and for which the structural systems that support the wall, comprising the vertical secant piles and permanent ground anchors, are mostly or wholly always out of view below beach level or ground level in the rear (seaward) yard of the private properties.

Minimising the visual impact

Possible methods to minimise the visual impact of the proposed seawall on the public beach and ocean in the vicinity of the beach are:

- Reduce its height,

- Move it further landward,
- Change the design to a rock revetment (although, given the current state of some rock revetments along the beach, this point is arguable),
- Finish it in a colour that matches the sand on the beach,
- Cover it in sand,
- Grow vegetation that hangs over the eastern face of the wall down to the sand.

As has been established by the coastal assessments, it is not possible to reduce the height of the wall (as it will then not achieve its intended purpose) or move it landward (due to the existing development, particularly the vehicle manoeuvring areas at the rear of Nos. 1192 and 1204 Pittwater Road).

The alternative design solution to the proposed works would be a sloping rock revetment conforming to the requirements of the Coastal Protection Works Design Specifications (2016). Such a revetment would have a minimum cross-shore footprint of approximately 15m and, by necessity, owing to this footprint and the location of the beachfront buildings and infrastructure, would extend beyond the private property boundary onto the public beach by up to around 8m measured at 0m AHD.

In relation to covering the works in sand, this would require either an extended period (i.e. years) of the right weather patterns (onshore winds that can blow and pile sand up against the wall but do not cause erosion) or human intervention, or both. While the weather patterns are possible, they are unlikely and cannot be relied upon. However, human intervention does and will continue to occur in two ways.

Firstly, the clearance works at the Narrabeen Lagoon entrance every few years, result in a volume of sand being trucked down to Mactier Street (immediately to the north of the site). From here, the sand is spread north and south of Mactier Street, including in front of the subject site. This sand is also used to ensure the South Narrabeen Surf Club maintains access for surf life saving equipment and patrols. Narrabeen Lagoon entrance clearing will continue to occur into the future due to the need to prevent the low lying development around the lagoon from flooding. The entrance clearing sand will continue to be brought to Mactier Street for the foreseeable future, as it has the southern most set of traffic lights that the sand carrying trucks can use.

The second method of human intervention is beach scraping. This is a method of speeding up the accretion of sand, that occurs naturally, by scraping sand from the waters edge up onto the beach. The natural wave motion then more quickly refills the space left with more sand. This is a well established practice along many beaches, including Collaroy/Narrabeen Beach, and will continue to be used for the foreseeable future.

At this point, it is important to note that no beach scraping has occurred in front of the vertical walls between Stuart and Clarke Streets since they were completed (except for minor sand restoration on road ends adjoining the works). The sand that currently sits in front of these walls has naturally accreted.

These interventions and natural accretion have resulted in historical sand levels in front of the subject site as shown on plans provided by the applicant (see Drawing No. S30), reproduced in part, below:

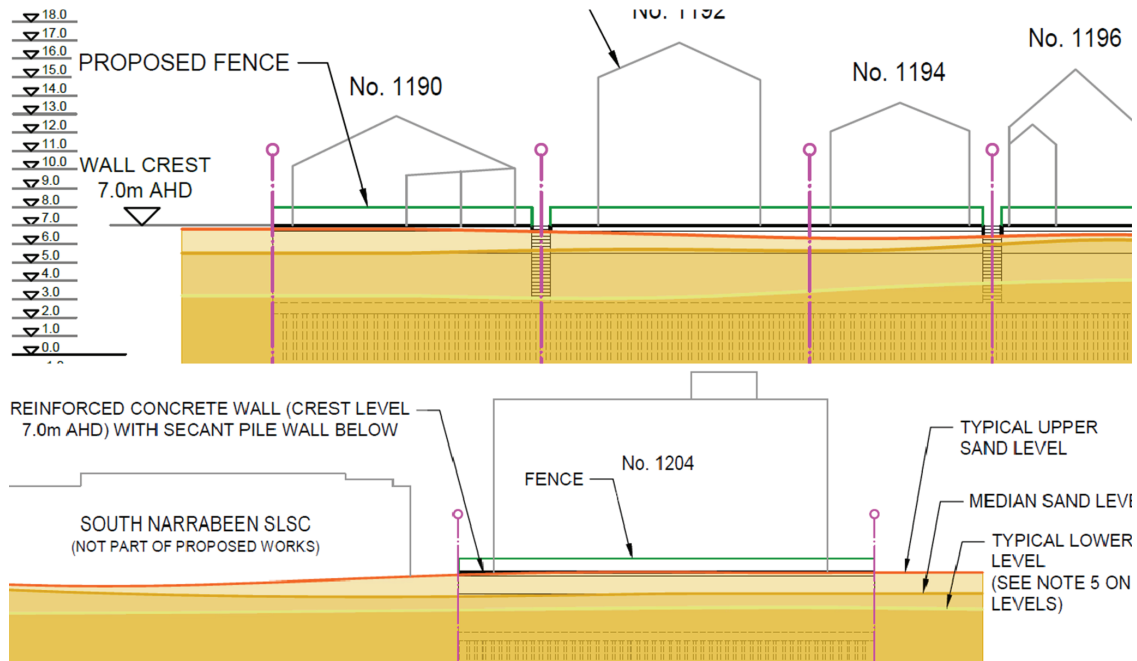


Figure 4: Elevation plans showing typical sand levels.

These plans show that the typical upper sand level is at or just below the top of the wall, with the median level between approximately 1.6m - 1.8m below the top of the wall along the northern section and approximately 300mm - 1.5m along the southern section. This is a higher natural sand level than that in front of the walls between Stuart and Clarke Streets.

Human intervention into sand levels will occur in front of these works, if approved and constructed, into the future and will, in conjunction with the following two additional methods, work to ensure an acceptable visual impact.

Firstly, finishing the wall in a sand colour, closely matching the natural sand on the beach, has assisted the walls between Stuart and Clarke Streets to better blend into the beach (see image 4, above). This should occur with the proposed works and, while it is included in the proposal it is recommended that this also be ensured via a condition of consent (see condition 13).

Secondly, growing vegetation such as pigface (*Carpobrotus glaucescens*) down the face of the wall and onto the sand will greatly reduce the visual impact and could, if thick enough, completely screen the wall. The image below is an example of pig face currently growing in front of some of the properties between Wetherill and Clarke Streets.

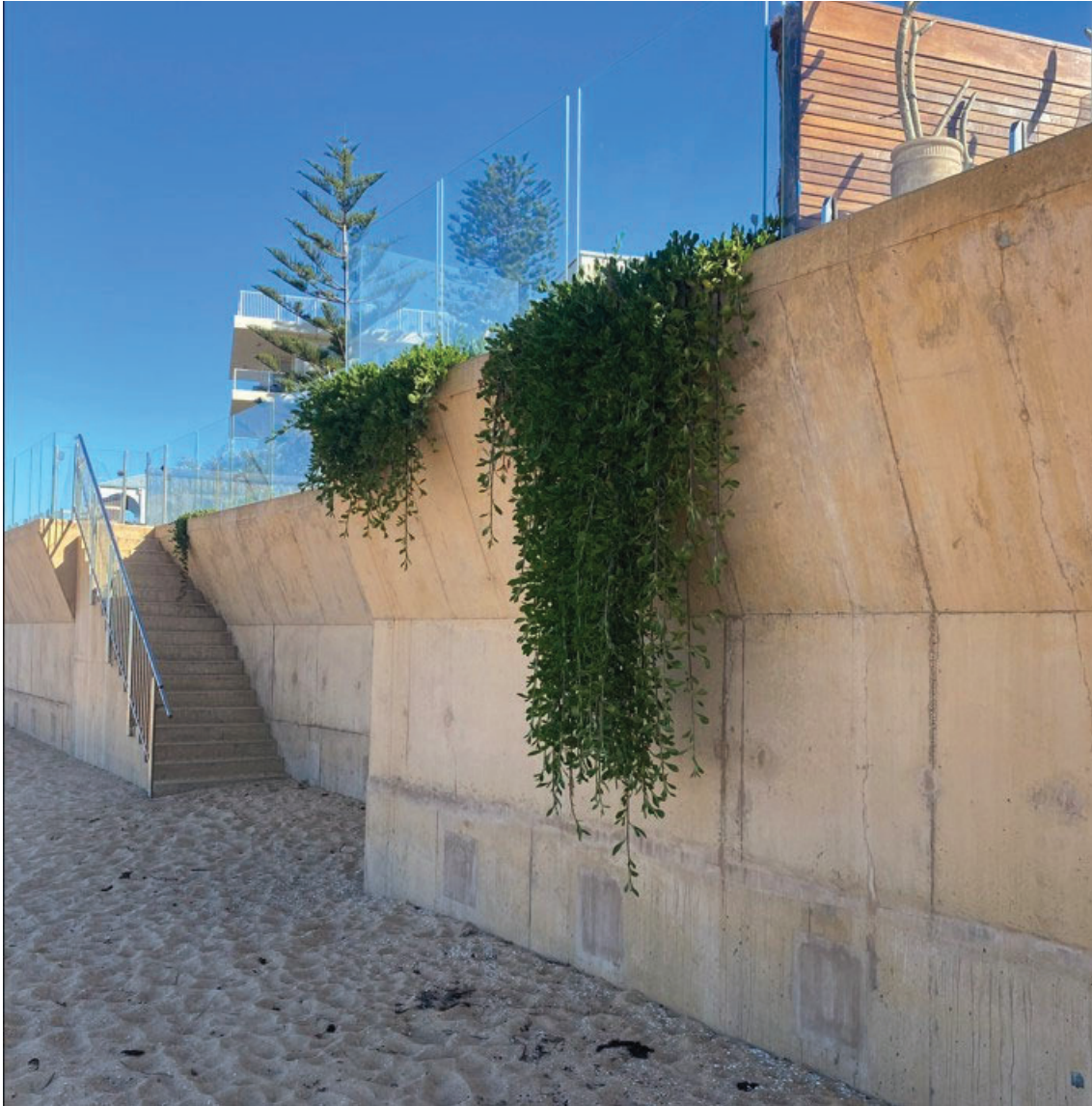


Image 7: Pig face currently growing in front of one of the properties between Wetherill and Clarke Streets.

Planting requires good management to thrive, which will be ensured via conditions of consent. In this case, conditions of consent requiring planting to be completed prior to the issue of an occupation certificate, maintained in perpetuity and replanted in the event a storm results in its removal, have been recommended (see conditions 64 and 65).

Conclusion

The combination of the naturally and artificially higher sand levels in front of the subject site, the sandstone finish of the wall and the addition of vegetation (via conditions of consent) contribute to a development that, if approved and constructed, will, for the majority of the time (i.e. other than in the aftermath of a storm that causes severe erosion) look like this:



Copy of Image 1: Photomontage of the proposed works showing the median historical sand level with vegetation screening.

This result is not likely to cause an adverse impact on the loss of views from public places to foreshores or the visual amenity and scenic qualities of the coast, including coastal headlands. The development, if approved with the recommended conditions, will have a bulk, scale and size that will be compatible with the existing and future surrounding coastal and built environment.

Warringah Local Environmental Plan 2011

Is the development permissible?	Yes (pursuant to section 2.16 of the Resilience and Hazards SEPP)
After consideration of the merits of the proposal, is the development consistent with:	
aims of the LEP?	Yes
zone objectives of the LEP?	Yes

Principal Development Standards

Standard	Requirement	Proposed	Complies
Height of Buildings:	8.5m	The coastal protection works will sit at a maximum RL of 7.0m AHD. The proposed fence on top of the wall will be at 8.0m AHD.	Yes

Compliance Assessment

Clause	Compliance with Requirements
4.3 Height of buildings	Yes
6.1 Acid sulfate soils	Yes
6.2 Earthworks	Yes
6.4 Development on sloping land	Yes
6.5 Coastline hazards	Yes

Detailed Assessment

6.2 Earthworks

The objectives of Clause 6.2 - 'Earthworks' require development:

- (a) to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land, and*
- (b) to allow earthworks of a minor nature without requiring separate development consent.*

In this regard, before granting development consent for earthworks, Council must consider the following matters:

- (a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality*

Comment: The proposal is unlikely to unreasonably disrupt existing drainage patterns and soil stability in the locality.

- (b) the effect of the proposed development on the likely future use or redevelopment of the land*

Comment: The proposal will not unreasonably limit the likely future use or redevelopment of the land.

- (c) the quality of the fill or the soil to be excavated, or both*

Comment: The excavated material will be processed according to the Waste Management Plan for the development. A condition has been included in the recommendation of this report requiring any fill to be of a suitable quality. A condition of consent will also be applied to ensure that only suitable excavated fill is utilised in the temporary construction bund.

- (d) the effect of the proposed development on the existing and likely amenity of adjoining properties*

Comment: The proposed earthworks will not result in unreasonable amenity impacts on adjoining properties. Conditions have been included in the recommendation of this report to limit impacts during excavation/construction. Conditions related to the design, construction and maintenance of the temporary construction bund will also be applied to ensure the proposed development does not impact the amenity of the adjoining beach (see conditions 16, 40, 41 and 42).

- (e) the source of any fill material and the destination of any excavated material*

Comment: The excavated material will be processed according to the Waste Management Plan for the development. A condition has been included in the recommendation of this report requiring any fill to be of a suitable quality.

- (f) the likelihood of disturbing relics*

Comment: The site is not mapped as being a potential location of Aboriginal or other relics.

- (g) the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area*

Comment: The site is not located in the vicinity of any watercourse, drinking water catchment or environmentally sensitive areas.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the aims and objectives of WLEP 2011, WDCP and the objectives specified in s.5(a)(i) and (ii) of the Environmental Planning and Assessment Act, 1979. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

6.4 Development on sloping land

Under this clause, development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the application for development has been assessed for the risk associated with landslides in relation to both property and life, and

Comment: No Geotechnical Assessment Report is required as the site is listed as Area A on the Landslip Risk Map. The consent authority can be satisfied that the development does not need to be assessed for the risk associated with landslides in relation to both property and life.

(b) the development will not cause significant detrimental impacts because of stormwater discharge from the development site, and

Comment: No Geotechnical Assessment Report is required as the site is listed as Area A on the Landslip Risk Map. The consent authority can be satisfied that the development will not cause significant detrimental impacts because of stormwater discharge from the development site.

(c) the development will not impact on or affect the existing subsurface flow conditions.

Comment: No Geotechnical Assessment Report is required as the site is listed as Area A on the Landslip Risk Map. The consent authority can be satisfied that the development will not result in adverse impacts or effects on the existing subsurface flow conditions.

6.5 Coastline hazards

Under this clause, development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

(a) will not significantly adversely affect coastal hazards, and

Comment: This matter has been covered in detail under the Coastal Management Act 2016 and SEPP Resilience and Hazards 2021 sections in this report. Based on that assessment, the consent authority can be satisfied that the development will not significantly adversely affect coastal hazards.

(b) will not result in significant detrimental increases in coastal risks to other development or properties, and

Comment: This matter has been covered in detail under the SEPP Resilience and Hazards 2021 section in this report. In addition, conditions to ensure appropriate integration with adjoining private land have been included in the recommendation (see condition 14). Based on that assessment, the consent authority can be satisfied that the proposal will not result in significant detrimental increases in coastal risks to other development or properties.

(c) will not significantly alter coastal hazards to the detriment of the environment, and

Comment: This matter has been covered in detail under the Coastal Management Act 2016 and SEPP Resilience and Hazards 2021 sections in this report. Based on that assessment, the consent authority can be satisfied that the development will not significantly alter coastal hazards to the detriment of the environment.

(d) incorporates appropriate measures to manage risk to life from coastal risks, and

Comment: This matter has been covered in detail under the Coastal Management Act 2016 and SEPP Resilience and Hazards 2021 sections in this report. Based on that assessment and the recommended conditions, the consent authority can be satisfied that the development incorporates appropriate measures to manage risk to life from coastal risks.

(e) avoids or minimises exposure to coastal hazards, and

Comment: This matter has been covered in detail under the Coastal Management Act 2016 and SEPP Resilience and Hazards 2021 sections in this report. Based on that assessment, the consent authority can be satisfied that the coastal protection works will minimise exposure to coastal hazards.

(f) makes provision for relocation, modification or removal of the development to adapt to coastal hazards and NSW sea level rise planning benchmarks.

Comment: A number of conditions of consent have been recommended to make provision for relocation, modification or removal of the development to adapt to coastal hazards and NSW sea level rise planning benchmarks. These include maintenance management plan and time limited consent conditions (see conditions 60 and 71). The consent authority can be satisfied that the development makes provision for relocation, modification or removal of the development to adapt to coastal hazards and NSW sea level rise planning benchmarks.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the foundations of the development have been designed to be constructed having regard to coastal risk.

Comment: This matter has been covered in detail under the SEPP Resilience and Hazards 2021 section in this report. In addition, conditions to ensure appropriate protection of the well designed foundations have been included in the recommendation (see condition 69). Based on that assessment, the consent authority can be satisfied that the foundations of the development have been designed to be constructed having regard to coastal risk.

Warringah Development Control Plan

Built Form Controls

Built Form Control	Requirement	Proposed	% Variation*	Complies
B1 Wall height	7.2m Existing ground level = approx 6.0m	2.0m The wall will reach 7.0m AHD (excluding the fence). When measured from the existing ground, the wall will be approximately 2 metres (including the fence).	N/A	Yes

B3 Side Boundary Envelope	North - 4m	No encroachments	N/A	Yes
	South - 4m	No encroachments	N/A	Yes
B5 Side Boundary Setbacks	North - 0.9m	Nil	100%	No
	South - 0.9m	Nil	100%	No
B7 Front Boundary Setbacks	West - 6.5m	Approximately 50m	N/A	Yes
B9 Rear Boundary Setbacks	East - 6.0m	Nil	100%	No
D1 Landscaped Open Space (LOS) and Bushland Setting	40%	Existing - approx 32.1% Proposed - approx 31%	19.75% 22.5%	No No

Compliance Assessment

Clause	Compliance with Requirements	Consistency Aims/Objectives
A.5 Objectives	Yes	Yes
B5 Side Boundary Setbacks	No	Yes
B7 Front Boundary Setbacks	Yes	Yes
B9 Rear Boundary Setbacks	No	Yes
C2 Traffic, Access and Safety	Yes	Yes
C4 Stormwater	Yes	Yes
C6 Building over or adjacent to Constructed Council Drainage Easements	Yes	Yes
C7 Excavation and Landfill	Yes	Yes
C8 Demolition and Construction	Yes	Yes
C9 Waste Management	Yes	Yes
D1 Landscaped Open Space and Bushland Setting	No	Yes
D6 Access to Sunlight	Yes	Yes
D7 Views	Yes	Yes
D8 Privacy	Yes	Yes
D9 Building Bulk	Yes	Yes
D10 Building Colours and Materials	Yes	Yes
D12 Glare and Reflection	Yes	Yes
D15 Side and Rear Fences	Yes	Yes
E1 Preservation of Trees or Bushland Vegetation	No	Yes
E2 Prescribed Vegetation	Yes	Yes
E3 Threatened species, populations, ecological communities listed under State or Commonwealth legislation, or High Conservation Habitat	Yes	Yes
E4 Wildlife Corridors	N/A	Yes
E5 Native Vegetation	Yes	Yes

Clause	Compliance with Requirements	Consistency Aims/Objectives
E6 Retaining unique environmental features	Yes	Yes
E7 Development on land adjoining public open space	Yes	Yes
E8 Waterways and Riparian Lands	Yes	Yes
E9 Coastline Hazard	Yes	Yes
E10 Landslip Risk	Yes	Yes

Detailed Assessment

B5 Side Boundary Setbacks

Description of non-compliance

The control requires a minimum of 0.9m setback from the side boundaries.

The coastal protection works have a nil setback to all northern and southern side boundaries for all properties.

The proposal includes the construction of returns (vertical walls) along a portion of the northern and southern boundaries of No. 1204 Pittwater Road, the northern boundary of No. 1196 Pittwater Road, and the southern boundary of No. 1190 Pittwater Road.

The returns have a nil setback to the respective side boundaries and measure between 2.8m - 2.6m in length. The SEE notes that the returns are required to ensure that proposed coastal protection works link with the Council's protection works at Clarke Street, South Narrabeen SLSC and Mactier Street.

Merit consideration

With regard to the consideration for a variation, the development is considered against the underlying Objectives of the Control as follows:

- *To provide opportunities for deep soil landscape areas.*

Comment:

The vertical wall takes up a minimal amount of area of the site. As such, sufficient opportunities for deep soil landscaping will remain. Details on the plans and in the SEE are provided of suitable coastal planting to assist with stabilisation and integration of the structures into the landscape. The requirements for landscaping following works are recommended to be incorporated into conditions of consent.

- *To ensure that development does not become visually dominant.*

Comment:

The normal purpose of the side setback control is to ensure spatial separation between buildings. Leaving 900mm (or 1.8m between two private properties) gaps along a coastal

protection wall would result in outflanking and is clearly impractical.

The wall must be a contiguous structure and built to a particular height for it to serve its only purpose. This necessitates breaches to the side setback controls and determines the only possible location and height for a vertical structure of this type.

The works will be finished in a sandstone colour to better blend in with the beach and will link up with works on the properties to the north and south (as well as the surf club). In this regard, the proposal will not become unreasonably visually dominant.

- *To ensure that the scale and bulk of buildings is minimised.*

Comment:

As above, the works are proposed at an appropriate height and location to serve the purpose of coastal protection while remaining on private property. The materials and finishes will assist in blending the wall in with the beach, and the works will link with the full length of coastal protection works along Collaroy/Narrabeen Beach. In addition, existing rock, currently sitting on the public beach, will be removed.

As such, the bulk and scale of the structure has been minimised and will be acceptable.

- *To provide adequate separation between buildings to ensure a reasonable level of privacy, amenity and solar access is maintained.*

Comment:

The proposed works will not result in any unreasonable privacy, amenity or solar access impacts to adjoining properties. In addition, the works must link up with the adjoining rocks (and the Council's protective works, which will be constructed in the future), otherwise outflanking would occur defeating the purpose of the coastal protection works. In this regard, a nil setback is necessary and appropriate.

The works will result in shadow falling on the beach from approximately 1pm and increasing until sunset. During the periods of highest use of the beach (8am to 5-6pm in summer) the shadow will only affect the beach for a 4-5 hour period and will be at its widest late in the afternoon/evening.

It must be noted that the maximum height of the wall is similar to the height of the existing works (which are inaccessible to the public) and will therefore cast a similar shadow.

The impacts of this shadowing are partly dependent on beach width. A wider beach will have a smaller percentage of it in shadow.

Given the normal width of the beach and the height of the existing rear yards (similar to the height of the works) and buildings on these properties, the additional shadow cast by the works is not unreasonable.

- *To provide reasonable sharing of views to and from public and private properties.*

Comment:

The coastal protection works will sit close to natural ground level at the rear of the subject site and will therefore not result in the unreasonable loss of any views from any private property. Similarly, there will be no view loss from any public property, including the surf club.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of the B5 Side Boundary Setbacks. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

B9 Rear Boundary Setbacks

Description of non-compliance

The control requires a minimum rear setback of 6.0m.

The coastal protection works have a 0.5m setback to both the pile wall and the concrete wall, and a nil setback to the top of the wall (the wave return).

Merit consideration:

With regard to the consideration for a variation, the development is considered against the underlying Objectives of the Control as follows:

To ensure opportunities for deep soil landscape areas are maintained.

Comment:

The proposal will include the removal of the existing rock located on both the subject site and the public beach, and occupy a significant footprint compared to the proposed vertical wall. Backfilling the area, approximately 7.5m in depth for the length of the site, to allow for future landscape works has the potential to allow for an increase in the area of landscape open space to some properties, particularly the properties along the southern section of the wall, refer to image below. In summary, the proposal has the potential to provide enhanced opportunities for landscaping.

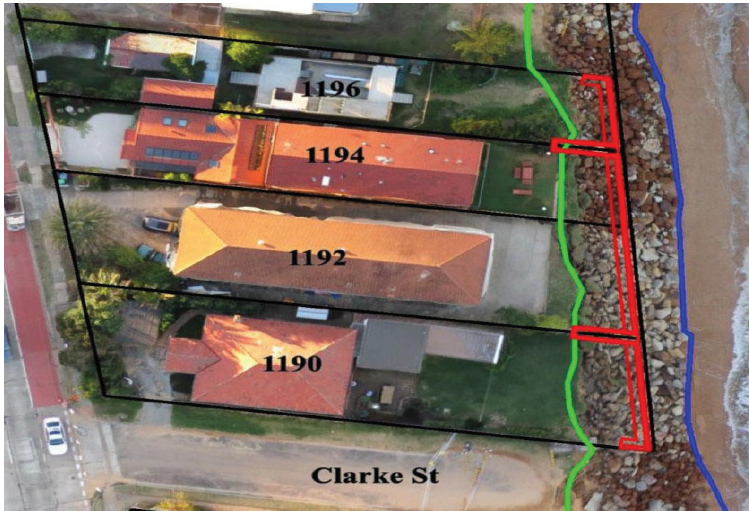


Image 8: Aerial photo post-storm (8 June 2016) of the southern section of the subject properties (black), seaward (blue) and landward (green) edge of existing protection works, and proposed works (red) (source: SEE Horton Coastal Engineering)

- To create a sense of openness in rear yards.

Comment:

The vertical wall takes up a minimal amount of area on the site and will leave the rear yards of the site open.

- To preserve the amenity of adjacent land, particularly relating to privacy between buildings.

Comment:

The proposed works will not result in any significant privacy, amenity or solar access impacts to adjoining properties due to the works sitting close to natural ground level at the rear of the subject site.

- To maintain the existing visual continuity and pattern of buildings, rear gardens and landscape elements.

Comment:

The subject, surrounding and nearby sites contain detached dwellings, residential flat buildings and a surf club. These properties have mostly turf rear gardens with minimal substantial vegetation (the large pine tree on No. 1204 Pittwater Road being a notable exception). All beachfront properties in the vicinity contain some form of coastal protection works (either recently built vertical walls or historic rock revetment style structures). These sites form the existing visual continuity and pattern of buildings, rear gardens and landscape elements.

The works must link up with the adjoining rocks (and the Council's protective works, which will be constructed in the future), otherwise outflanking would occur defeating the purpose of the

coastal protection works. In this regard, a nil setback is necessary and appropriate. In light of the existing coastal protection works within the vicinity of the development and the intention to create a 1.3km coastal protection barrier (in accordance with the CZMP, the proposal will maintain the existing and future visual continuity and pattern of buildings, rear gardens and landscape elements along this stretch of coast.

- *To provide opportunities to maintain privacy between dwellings.*

Comment:

The proposed works will not result in any significant privacy, amenity or solar access impacts to adjoining properties due to the works sitting close to natural ground level at the rear of the subject site.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of B9 Rear Boundary Setbacks. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

D1 Landscaped Open Space and Bushland Setting

Description of non-compliance

The control requires 40% of the site to be retained as landscape open space. The SEE notes that the current sites have a typical landscapes area of 32% and it is anticipated that the proposal will increase the impervious area by about 1.1% of the total area of the subject lots which will reduce the landscape area to 31%. In detail, the additional impervious area relates to the footprint of the wall which has a width of 350mm plus the two stair projections over a 1.5m width.

Merit consideration

With regard to the consideration for a variation, the development is considered against the underlying Objectives of the Control as follows:

- *To enable planting to maintain and enhance the streetscape.*

Comment:

The works will have a limited impact on planting given they adjoin only small sections of Mactier Street and Clarke Street.

There will be no changes to the Pittwater Road streetscape.

A landscape plan has been submitted and details of planting has been provided in the SEE. Council's Landscape Officer has reviewed the application and offers no objection subject to conditions.

- *To conserve and enhance indigenous vegetation, topographical features and habitat for wildlife.*

Comment:

The proposal includes the removal of a Norfolk Pine tree, approximately 20m in height) located within the rear boundary of No. 1204 Pittwater Road. Other minor landscape elements are also proposed to be removed along the eastern boundaries.

The Norfolk Pine tree forms part of the iconic beach front landscape along the Collaroy/Narrabeen coastal strip. Council's Landscape Officer has confirmed that the tree is too close to the excavation and construction works to be retained. The removal of the tree is supported subject to a condition requiring the tree to be replaced to maintain the character of the landscape.

Overall, the limited footprint of the works and the fact that they are located on already heavily disturbed land will mean that there will be minimal impact on indigenous vegetation, topographical features and habitat for wildlife. The establishment of the rear yards behind the wall will allow for additional permanent landscape areas free from the impact of coastal erosion.

- *To provide for landscaped open space with dimensions that are sufficient to enable the establishment of low lying shrubs, medium high shrubs and canopy trees of a size and density to mitigate the height, bulk and scale of the building.*

Comment:

The establishment of the rear yards behind the wall will allow for additional permanent landscape areas free from the impact of coastal erosion.

The removal of the Norfolk Island Pine is supported subject to a condition requiring the tree to be replaced.

Overall, the limited footprint of the works will still allow the sites to provide for landscaped open spaces with dimensions that are sufficient to enable the establishment of low lying shrubs, medium high shrubs and canopy trees of a size and density to mitigate the height, bulk and scale of the existing buildings.

- *To enhance privacy between buildings.*

Comment:

The coastal protection works will have no unreasonable privacy impacts. The establishment of the rear yards behind the wall will allow for additional permanent landscape areas, free from the impact of coastal erosion, to enhance privacy.

- *To accommodate appropriate outdoor recreational opportunities that meet the needs of the occupants.*

Comment:

The establishment of the rear yards behind the wall will allow for additional permanent landscape areas, free from the impact of coastal erosion, to accommodate appropriate outdoor recreational opportunities that meet the needs of the occupants.

- *To provide space for service functions, including clothes drying.*

Comment:

The sites will retain sufficient space for service functions, including clothes drying.

- *To facilitate water management, including on-site detention and infiltration of stormwater.*

Comment:

The footprint of the wall is relatively small and sits entirely within the footprint of the existing rock. Stormwater will either drain to the beach or onto the rear yards of the private properties. This drainage will be partly informed by the physical modeling. Conditions of consent have been recommended to ensure that any drainage or stormwater from the site will not negatively impact the adjoining public land. Overall, and particularly in relation to landscaped open space, the proposal is acceptable.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of D1 Landscape Open Space and Bushland Setting. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

E1 Preservation of Trees or Bushland Vegetation

The control requires

Development is to be sited and designed to minimise the impact on remnant native vegetation, including canopy trees and understorey vegetation, and on remnant native ground cover species.

Where the applicant demonstrates that no reasonable alternative design exists and a tree must be removed, suitable compensatory tree planting is required. Details including proposed species and the location of replacement planting are to be provided.

Merit consideration:

With regard to the consideration for a variation, the development is considered against the underlying Objectives of the Control as follows:

- *To protect and enhance the urban forest of the Northern Beaches..*

Comment:

The proposal includes the removal of a Norfolk Pine tree, approximately 20m in height) located within the rear boundary of No. 1204 Pittwater Road. Other minor landscape elements are also proposed to be removed along the eastern boundaries.

The Norfolk Pine tree forms part of the iconic beach front landscape along the Collaroy/Narrabeen coastal strip. Council's Landscape Officer has confirmed that the tree is too close to the excavation and construction works to be retained. The removal of the tree is supported subject to a condition requiring the tree to be replaced to maintain the character of

the landscape.

- *To effectively manage the risks that come with an established urban forest through professional management of trees.*

Comment:

Council's Landscape Officer has included conditions in the recommendation relating to the protection, future planting, completion and maintenance of landscape works. Subject to these conditions, the proposed and existing landscape will be effectively managed.

- *To minimise soil erosion and to improve air quality, water quality, carbon sequestration, storm water retention, energy conservation and noise reduction.*

Comment:

The removal of the Norfolk Pine tree and the required replacement planting will not result in unreasonable impacts on soil erosion, air quality, water quality, storm water retention, energy conservation or noise impacts. Condition 53 of the consent requires the Norfolk Island Pine to be replaced.

- *To protect, enhance bushland that provides habitat for locally native plant and animal species, threatened species populations and endangered ecological communities.*

Comment:

The development application does not impact bushland as defined in the Development Control Plan. As mentioned above, condition 53 of the consent requires the Norfolk Island Pine to be replaced.

- *To promote the retention and planting of trees which will help enable plant and animal communities to survive in the long-term.*

Comment:

The proposal will result in the planting of a new tree to replace the one that must be removed. This new tree will help enable plant and animal communities to survive in the long-term. In addition, the planting of pig face, or a similar type of ground plant will add additional opportunities for plant and animal communities to occupy.

- *To protect and enhance the scenic value and character that trees and/or bushland vegetation provide.*

Comment:

The Norfolk Pine tree must be removed to facilitate the works. A condition for it to be replaced in a more suitable location is recommended to be included in the consent. With the replacement tree, the development will not impact the scenic value and character that the existing Norfolk Island Pine provides.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of E1 Private Property Tree Management. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

E7 Development on land adjoining public open space

Merit consideration:

The development is consistent with the requirements under this clause and is considered against the underlying Objectives of the Control as follows:

- *To protect and preserve bushland adjoining parks, bushland reserves and other public open spaces.*

Comment:

The coastal protection works will assist in preserving the public beach and will link with other neighbouring coastal protection works to form a network of coastal protection.

- *To ensure that development responds to its adjacent surroundings to preserve and enhance the natural qualities of the environment.*

Comment:

The coastal protection works will link with the neighbouring private coastal protection works. The proposed works will form part of a continuous 1.3km length of protection works and will be finished in a natural sandstone look to minimise visual impacts.

From a coastal engineering and processes perspective, this is an appropriate outcome in these circumstances, given the demolition of all development on the foredune is not a reasonable proposition.

In this regard, the proposed works will be the best option to rebuild and enhance the natural qualities of this environment.

- *Development on land adjoining open space is to complement the landscape character and public use and enjoyment of the adjoining parks, bushland reserves and other public open spaces.*

Comment:

As previously discussed, the works will complement neighbouring protection works, help preserve private and public land and ensure the beach is usable for longer periods of time (due to less damage during large coastal storms).

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of E7 Development on land adjoining public open space. Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

E9 Coastline Hazard

Merit consideration:

The development is considered against the underlying Objectives of the Control as follows:

- *To minimise the risk of damage from coastal processes and coastline hazards for proposed buildings and works along Collaroy Beach, Narrabeen Beach and Fisherman's Beach.*

Comment:

The coastal protection works will serve to minimise the risk of damage to the existing buildings on the subject site. The works will form part of a longer contiguous protection wall along Collaroy and Narrabeen Beach.

Without these works, the subject site will have no suitable protection against erosion and storm damage and will eventually be washed into the sea. This will destabilise the neighbouring public and private land, resulting in exponentially more damage.

- *To ensure that development does not have any adverse impact on the scenic quality of Collaroy, Narrabeen and Fisherman's Beaches.*

Comment:

This matter has been discussed in detail in the Visual Impact Assessment, above in this report. In summary, the structure is designed to blend in with the natural sand by using a sandstone colour finish and conditions of consent will require vegetation to further screen the wall. A vertical wall is the most appropriate result for this particular site (see the "Minimising the visual impact" section for supporting arguments). In this regard, the scenic quality of Collaroy and Narrabeen Beaches will be reasonably maintained.

- *To ensure that development does not adversely impact on the coastal processes affecting adjacent land.*

Comment:

Coastal experts, as outlined above in this report, have confirmed that on their own, and when combined with the works to the north and south of the site, the development will not adversely impact on the coastal processes affecting adjacent land.

- *To retain the area's regional role for public recreation and amenity.*

Comment:

The works will not limit public access to the beach and will help provide a beach free from rocks and debris after any storm so that it is usable for longer periods for public recreation and amenity.

Having regard to the above assessment, it is concluded that the proposed development is consistent with the relevant objectives of E9 Coastline Hazard.

The requirements of this control are as follows:

1. The risk of damage from coastal processes is to be reduced through having appropriate setbacks and foundations, as detailed in Criteria for the Siting and Design of Foundations for Residential Development (see Policy volume).
2. For development in the area affected by the certified Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach (Coastal Zone Management Plan), the applicant must demonstrate compliance with the Northern Beaches Coastal Erosion Policy, the Coastal Zone Management Plan and the Collaroy-Narrabeen Protection Works Design Specifications (as amended from time to time).

No. 1 is not relevant to the proposed works.

No. 2 has been achieved, as follows:

Northern Beaches Coastal Erosion Policy

The proposed works are broadly consistent with the Northern Beaches Coastal Erosion Policy. The proposal is unable to comply with the policy requirement 4(b)(iii), however, this is considered reasonable as the benefits of a vertical wall in terms of its reduced footprint, landward position off the public beach, and the proposal to remove existing rock and inappropriate materials off the beach, are considered to justify non-compliance with this requirement.

The Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach.

The proposed works are consistent with the CZMP for Collaroy-Narrabeen Beach and Fishermans Beach. This plan outlines Council's intent that private property owners be permitted to construct coastal protection works.

Collaroy-Narrabeen Protection Works Design Specifications

The proposed works are consistent with the Collaroy-Narrabeen Protection Works Design Specifications for the design proposed.

A deferred commencement condition has also been recommended (see condition 1) requiring an enforceable agreement between the landowners to fund and construct the works.

Accordingly, this assessment finds that the proposal is supported, in this particular circumstance.

THREATENED SPECIES, POPULATIONS OR ECOLOGICAL COMMUNITIES

The proposal will not significantly affect threatened species, populations or ecological communities, or their habitats.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The proposal is consistent with the principles of Crime Prevention Through Environmental Design.

POLICY CONTROLS

Northern Beaches Section 7.12 Contributions Plan 2022

The proposal is subject to the application of Northern Beaches Section 7.12 Contributions Plan 2022.

A monetary contribution of \$20,474 is required for the provision of new and augmented public

infrastructure. The contribution is calculated as 1% of the total development cost of \$2,047,433.

CONCLUSION

The site has been inspected and the application assessed having regard to all documentation submitted by the applicant and the provisions of:

- Environmental Planning and Assessment Act 1979;
- Coastal Management Act 2016;
- Environmental Planning and Assessment Regulation 2021;
- All relevant and draft Environmental Planning Instruments;
- Warringah Local Environment Plan;
- Warringah Development Control Plan; and
- Codes and Policies of Council.

This assessment has taken into consideration the submitted plans, Statement of Environmental Effects, all other documentation supporting the application and public submissions, and does not result in any unreasonable impacts on surrounding, adjoining, adjacent and nearby properties subject to the conditions contained within the recommendation.

In consideration of the proposal and the merit consideration of the development, the proposal is considered to be:

- Consistent with the objectives of the DCP
- Consistent with the zone objectives of the LEP
- Consistent with the aims of the LEP
- Consistent with the objectives of the relevant EPIs
- Consistent with the objects of the Environmental Planning and Assessment Act 1979

Concluding Comments

This proposal, for coastal protection works has been referred to the Northern Beaches Local Planning Panel (NBLPP) due to receiving 178 submissions.

The concerns raised in the submissions have been addressed and/or resolved by an appropriate design and suitable conditions of consent.

The works are permitted with consent under Clause 2.16 of the *State Environmental Planning Policy (Resilience and Hazards) 2021* and as per Schedule 6 Clause 6A (1)(a) of the *State Environmental Planning Policy (Planning Systems) 2021*, Council is the consent authority as there is a certified coastal management program in place for this beach (the Coastal Zone Management Plan for Collaroy-Narrabeen Beach and Fishermans Beach 2016), subject to the Local Planning Panels Direction – Development Applications and Applications to Modify Development Consents dated 30 June 2020.

The critical assessment issues have been reviewed by highly experienced coastal experts.

These experts and Council's internal assessment have confirmed that the works will not result in increased erosion following severe coastal storms, across the embayment from coastal storms or

long-term shoreline recession, or prevent natural recovery of the beach following these storms. They have also confirmed that, once constructed, there will not be a loss of public access to the beach (access may even be improved given the removal of a large amount of rock from the public beach) and that the design is the most appropriate outcome in the circumstances of this site. The works will not adversely impact on the surf/wave quality.

Doing nothing and allowing the subject sites and the critical infrastructure behind them (eg: Pittwater Road) to be at immediate risk of damage from coastal storms, is not a responsible or reasonable proposition as it would expose the properties and beach to ongoing damage from coastal storms and a reliance on emergency response. Given all the circumstances and constraints of this site, the need to align these works with adjoining works, the need to keep them as far landward as possible, the preference to keep them on private property and the choice of colours and finishes, the proposed vertical wall is the most appropriate design.

Overall, the development is an appropriately engineered design that has been subject to a detailed level of technical review, will perform its primary purpose, is consistent with all relevant legislation and will not result in unreasonable impacts to the beach, coastal processes, adjoining or nearby properties, or the natural environment.

The proposal has therefore been recommended for approval, in the form of a time limited consent, subject to conditions.

It is considered that the proposed development satisfies the appropriate controls and that all processes and assessments have been satisfactorily addressed.

RECOMMENDATION

THAT the Northern Beaches Local Planning Panel, on behalf of Northern Beaches Council as the consent authority grant Development Consent to DA2021/1612 for Construction of coastal protection works on land at Lot 1 DP 7417, 1 Clarke Street, NARRABEEN, Lot C DP 312655, 1194 Pittwater Road, NARRABEEN, Lot CP SP 2808, 1192 Pittwater Road, NARRABEEN, Lot CP SP 971, 1204 Pittwater Road, NARRABEEN, Lot B DP 312655, 1196 Pittwater Road, NARRABEEN, subject to the conditions printed below:

Terms and Reasons for Conditions

Under section 88(1)(c) of the EP&A Regulation, the consent authority must provide the terms of all conditions and reasons for imposing the conditions other than the conditions prescribed under section 4.17(11) of the EP&A Act. The terms of the conditions and reasons are set out below.

DEFERRED COMMENCEMENT CONDITIONS

1. Demonstration of agreement between multiple properties

The owners of the properties 1 Clarke Street (Lot 1 Sec 18 DP 7417) and 1192 (Lot CP SP 2808), 1194 (Lot C DP 312655), 1196 (Lot B DP 312655) and 1204 (Lot CP SP 971) Pittwater Road, Narrabeen ('the owners') are to provide evidence to Council of an enforceable agreement that all owners will fund and construct the coastal protection works as a single project to be completed within 24 months of the on-site commencement of the construction works, or a longer period as agreed to by Council in writing. The agreement must restrain transfer, assignment or novation by any owner unless the transferee/assignee enters into an agreement in similar terms. If the owners create a trust or corporate entity for the purposes of construction of the works, such entity is to be bound by the terms of the agreement. The agreement may provide that it will cease to operate upon the issue of a final occupation certificate.

Reason: To ensure satisfactory completion of the coastal protection works.

Evidence required to satisfy the deferred commencement condition/s must be submitted to Council within two (2) years of the date of this consent, or the consent will lapse in accordance with Clause 76 of the Environmental Planning and Assessment Regulation 2021. This evidence is to be submitted along with a completed 'Deferred Commencement Document Review Form' (available on Council's website) and the application fee, as per Council's Schedule of Fees and Charges.

Upon satisfaction of the deferred commencement condition/s, the following conditions apply:

GENERAL CONDITIONS

2. Approved Plans and Supporting Documentation

Development must be carried out in accordance with the following approved plans (stamped by Council) and supporting documentation, except where the conditions of this consent expressly require otherwise.

Approved Plans

Plan Number	Revision Number	Plan Title	Drawn By	Date of Plan
S01	H	General Notes	Horton Coastal Engineering Pty Ltd	16 December 2021
S02	H	Coastal Protection Works Plan	Horton Coastal Engineering Pty Ltd	16 December 2021
S03	H	Landscaping Plan	Horton Coastal Engineering Pty Ltd	16 December 2021
S04	H	Erosion and Sediment Control Plan and Waste Management Plan	Horton Coastal Engineering Pty Ltd	16 December 2021
S10	H	Section 1 (at 1204)	Horton Coastal Engineering Pty Ltd	16 December 2021
S11	H	Section 2 (at 1194)	Horton Coastal Engineering Pty Ltd	16 December 2021
S16	H	Deadman Anchor Alternative	Horton Coastal Engineering Pty Ltd	16 December 2021
S20	H	Access Stairs	Horton Coastal Engineering Pty Ltd	16 December 2021
S30	H	Eastern Wall Elevation	Horton Coastal Engineering Pty Ltd	16 December 2021
S31	H	Return Walls Elevations Sheet 1	Horton Coastal Engineering Pty Ltd	16 December 2021
S32	H	Return Walls Elevations Sheet 2	Horton Coastal Engineering Pty Ltd	16 December 2021

Approved Reports and Documentation			
Document Title	Version Number	Prepared By	Date of Document
Coastal Engineering Report for Construction of Upgraded Coastal Protection Works at 1190-1196 and 1204 Pittwater Road Narrabeen	1	Horton Coastal Engineering Pty Ltd	13 July 2021
Structural Engineering Report	1	Horton Coastal Engineering Pty Ltd	26 July 2021
Safe Design Risk Assessment	1	Horton Coastal Engineering Pty Ltd	23 February 2023

In the event of any inconsistency between the approved plans, reports and documentation, the approved plans prevail.

In the event of any inconsistency with the approved plans and a condition of this consent, the condition prevails.

Reason: To ensure all parties are aware of the approved plans and supporting documentation

that applies to the development.

3. Prescribed Conditions

- (a) All building works must be carried out in accordance with the requirements of the Building Code of Australia (BCA).
- (b) A sign must be erected in a prominent position on any site on which building work, subdivision work or demolition work is being carried out:
 - (i) showing the name, address and telephone number of the Principal Certifying Authority for the work, and
 - (ii) showing the name of the principal contractor (if any) for any building work and a telephone number on which that person may be contacted outside working hours, and
 - (iii) stating that unauthorised entry to the work site is prohibited.

Any such sign is to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

- (c) Residential building work within the meaning of the Home Building Act 1989 must not be carried out unless the Principal Certifying Authority for the development to which the work relates (not being the Council) has given the Council written notice of the following information:
 - (i) in the case of work for which a principal contractor is required to be appointed:
 - A. the name and licence number of the principal contractor, and
 - B. the name of the insurer by which the work is insured under Part 6 of that Act,
 - (ii) in the case of work to be done by an owner-builder:
 - A. the name of the owner-builder, and
 - B. if the owner-builder is required to hold an owner-builder permit under that Act, the number of the owner-builder permit.

If arrangements for doing the residential building work are changed while the work is in progress so that the information notified under becomes out of date, further work must not be carried out unless the Principal Certifying Authority for the development to which the work relates (not being the Council) has given the Council written notice of the updated information.

- (d) Development that involves an excavation that extends below the line of influence of the base of the footings of a building on adjoining land, the person having the benefit of the development consent must, at the person's own expense:
 - (i) protect and support the adjoining premises from possible damage from the excavation, and
 - (ii) where necessary, underpin the adjoining premises to prevent any such damage.
 - (iii) must, at least 7 days before excavating below the level of the base of the footings of a building on an adjoining allotment of land, give notice of intention to do so to the owner of the adjoining allotment of land and furnish particulars of the excavation to the owner of the building being erected or demolished.
 - (iv) the owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this clause, whether carried out on the allotment of land being excavated or on the adjoining allotment of land.

In this clause, allotment of land includes a public road and any other public place.

Reason: Legislative requirement.

4. General Requirements

- (a) Unless authorised by Council:
Building construction and delivery of material hours are restricted to:

- 6:30am to 7.00 pm inclusive Monday to Friday,
- 8.00 am to 6.00 pm inclusive on Saturday,
- No work on Sundays and Public Holidays.

Sand excavation and pilling is permitted from:

- 6.30 am to 7.00pm inclusive Monday to Friday,
- 8.00 am to 6.00pm Saturday.

Other demolition and excavation works are restricted to:

- 8.00 am to 5.00 pm Monday to Friday only.

(Excavation work includes the use of any excavation machinery and the use of jackhammers, rock breakers, excavators, loaders and the like, regardless of whether the activities disturb or alter the natural state of the existing ground stratum or are breaking up/removing materials from the site).

- (b) Should any asbestos be uncovered on site, its demolition and removal must be carried out in accordance with WorkCover requirements and the relevant Australian Standards.
- (c) At all times after the submission the Notice of Commencement to Council, a copy of the Development Consent and Construction Certificate is to remain onsite at all times until the issue of a final Occupation Certificate. The consent shall be available for perusal of any Authorised Officer.
- (d) Where demolition works have been completed and new construction works have not commenced within 4 weeks of the completion of the demolition works that area affected by the demolition works shall be fully stabilised and the site must be maintained in a safe and clean state until such time as new construction works commence.
- (e) Onsite toilet facilities (being either connected to the sewer or an accredited sewer management facility) for workers are to be provided for construction sites at a rate of 1 per 20 persons.
- (f) Prior to the release of the Construction Certificate, payment of the Long Service Levy is required. This payment can be made at Council or to the Long Services Payments Corporation. Payment is not required where the value of the works is less than \$25,000. The Long Service Levy is calculated on 0.35% of the building and construction work. The levy rate and level in which it applies is subject to legislative change. The applicable fee at the time of payment of the Long Service Levy will apply.
- (g) The owner/s shall bear the cost of all works associated with the development that occurs on Council's property.

- (h) No skip bins, building materials, demolition or excavation waste of any nature, and no hoist, plant or machinery (crane, concrete pump or lift) shall be placed on Council's footpaths, roadways, parks or grass verges without Council Approval.
- (i) Demolition materials and builders' wastes are to be removed to approved waste/recycling centres.
- (j) No trees or native shrubs or understorey vegetation on public property (footpaths, roads, reserves, etc.) or on the land to be developed shall be removed or damaged during construction unless specifically approved in this consent including for the erection of any fences, hoardings or other temporary works.
- (k) Prior to the commencement of any development onsite for:
 - i) Building/s that are to be erected
 - ii) Building/s that are situated in the immediate vicinity of a public place and is dangerous to persons or property on or in the public place
 - iii) Building/s that are to be demolished
 - iv) For any work/s that is to be carried out
 - v) For any work/s that is to be demolished

The person responsible for the development site is to erect or install on or around the development area such temporary structures or appliances (wholly within the development site) as are necessary to protect persons or property and to prevent unauthorised access to the site in order for the land or premises to be maintained in a safe or healthy condition. Upon completion of the development, such temporary structures or appliances are to be removed within 7 days.
- (l) A "Road Opening Permit" must be obtained from Council, and all appropriate charges paid, prior to commencement of any work on Council property. The owner/applicant shall be responsible for all public utilities and services in the area of the work, shall notify all relevant Authorities, and bear all costs associated with any repairs and/or adjustments as those Authorities may deem necessary.
- (m) The works must comply with the relevant Ausgrid Network Standards and SafeWork NSW Codes of Practice.

Reason: To ensure that works do not interfere with reasonable amenity expectations of residents and the community.

FEES / CHARGES / CONTRIBUTIONS

5. Policy Controls

Northern Beaches Section 7.12 Contributions Plan 2022

A monetary contribution of \$20,474.33 is payable to Northern Beaches Council for the provision of local infrastructure and services pursuant to section 7.12 of the Environmental Planning & Assessment Act 1979 and the Northern Beaches Section 7.12 Contributions Plan (as amended).

The monetary contribution is based on a development cost of \$2,047,433.00.

The total amount payable will be adjusted at the time the payment is made, in accordance with the provisions of the Northern Beaches Section 7.12 Contributions Plan (as amended).

Details demonstrating compliance, by way of written receipts issued by Council, are to be submitted to the Certifier prior to issue of any Construction Certificate or, if relevant, the

Subdivision Certificate (whichever occurs first).

A copy of the Contributions Plan is available for inspection at 725 Pittwater Road, Dee Why or on Council's website at Northern Beaches Council - Development Contributions.

Reason: To provide for contributions in accordance with the Contribution Plan to fund the provision of new or augmented local infrastructure and services.

6. **Security Bond**

A bond (determined from cost of works) of \$10,000 and an inspection fee in accordance with Council's Fees and Charges paid as security are required to ensure the rectification of any damage that may occur to the Council infrastructure contained within the road reserve adjoining the site as a result of construction or the transportation of materials and equipment to and from the development site.

An inspection fee in accordance with Council adopted fees and charges (at the time of payment) is payable for each kerb inspection as determined by Council (minimum (1) one inspection).

All bonds and fees shall be deposited with Council prior to Construction Certificate or demolition work commencing, and details demonstrating payment are to be submitted to the Certifier prior to the issue of the Construction Certificate.

To process the inspection fee and bond payment a Bond Lodgement Form must be completed with the payments (a copy of the form is attached to this consent and alternatively a copy is located on Council's website at www.northernbeaches.nsw.gov.au).

Reason: To ensure adequate protection of Council's infrastructure.

7. **Construction, Excavation and Associated Works (Security Bond)**

A bond of \$50,000 as security against damage to Council's roads providing the construction access to the site caused by the transport and disposal of materials and equipment to and from the site and as security against damage to Council managed reserves (e.g Collaroy Beach) caused by the construction of and/or the failure to maintain permanent and temporary works (including but not limited to the temporary bund) associated with the development.

Details confirming payment of the bond are to be submitted to the Certifier prior to the issue of the Construction Certificate.

Reason: Protection of Council's infrastructure.

BUILDING WORK – BEFORE ISSUE OF A CONSTRUCTION CERTIFICATE

8. **Boundary Identification Survey**

The plans submitted for the Construction Certificate are to accurately reflect the property boundaries as shown on the boundary identification survey prepared by LCG Global Pty Ltd, dated 31 August 2021, with setbacks between the property boundaries and the approved works consistent with those nominated on the Approved Plans of this consent.

Details demonstrating compliance are to be submitted to the Certifying Authority prior to the

issue of any Construction Certificate.

Reason: To ensure all approved works are constructed within the subject site and in a manner anticipated by the development consent.

9. Construction Traffic Management Plan

As a result of the site constraints, limited vehicle access and parking, a Construction Traffic Management Plan (CTMP) and report shall be prepared by an RMS accredited person and submitted to and approved by the Northern Beaches Council Traffic Team prior to issue of any Construction Certificate.

Due to heavy traffic congestion along Pittwater Road through Collaroy & Narrabeen, truck movements will be restricted during the major commuter peak times being 8.00-9.30am and 4.30-6.00pm. Truck movements must be agreed with Council's Traffic Engineer prior to submission of the CTMP.

The CTMP must address following:

- The proposed phases of construction works on the site, and the expected duration of each construction phase
- The proposed order in which works on the site will be undertaken, and the method statements on how various stages of construction will be undertaken
- Make provision for all construction materials to be stored on site, at all times
- The proposed areas within the site to be used for the storage of excavated materials, construction materials and waste containers during the construction period
- The proposed method of access to and egress from the site for construction vehicles, including access routes and truck routes through the Council area and the location and type of temporary vehicular crossing for the purpose of minimising traffic congestion and noise in the area, with no access across public parks or reserves being allowed
- The proposed method of loading and unloading excavation and construction machinery, excavation and building materials, formwork and the erection of any part of the structure within the site. Wherever possible mobile cranes should be located wholly within the site
- Make provision for parking onsite.
- Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site are not permitted unless approved by Council prior
- Include a Traffic Control Plan prepared by a person with suitable RMS accreditation for any activities involving the management of vehicle and pedestrian traffic
- The proposed manner in which adjoining property owners will be kept advised of the timeframes for completion of each phase of development/construction process. It must also specify that a minimum Fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measure
- Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes and concrete pumps, structures proposed on the footpath areas (hoardings, scaffolding or shoring) and any tree protection zones around Council street trees
- Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the CTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities, such as (but not limited to) concrete pours, crane lifts and dump truck routes. These communications must be documented and

- submitted to Council prior to work commencing on site
- The proposed method/device to remove loose material from all vehicles and/or machinery before entering the road reserve, any run-off from the washing down of vehicles shall be directed to the sediment control system within the site
 - Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council
 - The proposed method of support to any excavation adjacent to adjoining properties, or the road reserve. The proposed method of support is to be designed and certified by an appropriately qualified and practicing Structural Engineer, or equivalent
 - Proposed protection for Council and adjoining properties
 - The location and operation of any on site crane

The CTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – “Manual of Uniform Traffic Control Devices”, RMS’ Manual – “Traffic Control at Work Sites”.

All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Construction Traffic Management Plan is submitted.

Reason: To ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems.

10. Pre-commencement Dilapidation Report

The applicant must prepare and submit a pre-commencement dilapidation report providing an accurate record of the existing condition of adjoining public property and public infrastructure (including roads, gutter, footpaths, etc). A copy of the report must be provided to Council, any other owners of public infrastructure.

The pre-construction / demolition dilapidation report must be submitted to Council for written approval and the written approval is then to be submitted to the Certifying Authority prior to the issue of the any Construction Certificate and the commencement of any works including demolition.

Reason: Protection of Council's infrastructure during construction.

11. Confirmation of Overtopping Discharge

Physical modelling is to be undertaken by a suitably qualified coastal engineer prior to the issue of a construction certificate and a report provided to the Council for approval. The scope of the physical modelling shall be submitted to Council for approval prior to commencement of modelling.

The physical modelling shall be undertaken to inform, to the satisfaction of Council:

- (a) The content of the Safety Management Plan, which is to be submitted to Council for approval prior to the issue of the Occupation Certificate, including in relation to trigger levels for plan activation, exclusion distances from the seawall crest and the risk to landward property;
- (b) The drainage design associated with wave overtopping and whether drainage will occur by absorption or returned back over the seawall;
- (c) The wave return; and
- (d) The design of the balustrade.

Consideration in the report shall also be given to the matters listed below, having regard to the results of the physical modelling:

- (a) Whether the seawall level shall be lowered below 7.0 m AHD for all or part of the works; and
- (b) Whether the seawall alignment should be moved further landward, and, if so, to what extent.

Details demonstrating compliance to be provided to the Certifier prior to issue of Construction Certificate.

Reason: To ensure public safety during incidences of wave overtopping, adequate drainage, and full account of physical modelling results.

12. Confirmation of Balustrade Design

Detailed design drawings of the balustrade to be placed along the top of the works and aside the steps, shall be prepared and submitted to the Executive Manager, Development Assessment at Northern Beaches Council, for approval prior to the issue of the construction certificate. This shall include confirmation that the balustrade has been suitably designed for coastal processes and hazards and will not create a public safety hazard during storm events. If considered appropriate by Council, the balustrade design shall be considered in the physical modelling of overtopping discharge.

The balustrade must also have a sufficient gap at the base to allow vegetation to grow through and down the face of the wall.

Details demonstrating compliance are to be submitted to the Certifier prior to the issue of the construction certificate.

Reason: To maintain public safety and allow the growth of vegetation to minimise the visual impact of the works.

13. Colouring and Finish of Concrete

The works, including returns, are to be finished using a sand matching colour and a minimum Class 3 finish as per Australian Standard AS3610-1995 Formwork for Concrete. A test panel is required to be approved by Council prior to the issue of the construction certificate.

Reason: To ensure a good visual quality when the works are viewed as a whole.

14. Interaction with adjoining coastal protection works

The proposed works must comply with the following:

- be structurally independent from any adjoining works, not in any way relying on any existing or future coastal protection works on adjoining land for structural stability of integrity during a storm event.
- not impact on the performance of any existing coastal protection works or on the ability to construct future coastal protection works on adjoining land.
- all landward returns shall extend far enough to allow for construction of rock revetments on adjacent land, without creating an unreasonable burden to Council or unacceptable construction risk to adjacent private land.

A detailed plan and cross section(s) at the common boundaries are to be prepared confirming

the method and location for integration of the proposed works and the existing protection on the adjoining properties.

All works required to ensure stability of the works are to be completed at the cost of the owner(s) this includes any temporary or permanent works on adjoining land that may be required. No assumptions should be made on the timing of future adjoining coastal protection works.

Details demonstrating the actions required to ensure compliance with this requirement are to be prepared by a suitably qualified coastal engineer and submitted to Northern Beaches Council for approval prior to issue of the construction certificate

Reason: To enable the works to be constructed without impacting adjoining coastal protections works or the ability for adjoining works to be upgraded in future.

15. **Performance of coastal protection works**

A statement is to be prepared by a suitably qualified coastal engineer that the proposed works, in the absence of formal coastal protection works being constructed on the adjoining land within the next 5 years:

- will maintain their structural integrity during the design storm event; and
- will not adversely impact coastal processes to cause unacceptable risk to the adjoining land.

Details demonstrating the actions required to ensure compliance with this requirement are to be prepared by a suitably qualified coastal engineer and submitted to Northern Beaches Council for approval prior to issue of the construction certificate.

Reason: To ensure ongoing structural integrity and performance of the proposed works.

16. **Temporary bund design**

The design for any temporary bund constructed on the beach to provide protection from coastal processes must be undertaken by a suitably qualified coastal engineer and submitted to the Executive Manager, Development Assessment at Northern Beaches Council, for approval prior to the issue of the construction certificate. The design requirements are to be included in the construction contract.

Reason: To prevent pollution of the beach.

17. **Design Drawings**

The following changes relevant to the drawings submitted with the application must be made prior to issue of the construction certificate:

- Drawing 6355-S02 Rev H: Note to be amended that the length of the seawall returns at Clarke Street, Mactier Street and the South Narrabeen SLSC will be determined in consultation with the structural engineer and Council.
- Drawing 6355-S04 Rev H: Notes 1 and 3 to be amended to state that all conditions of consent related to any temporary bund design, construction and maintenance will be adhered to during construction.
- Any design changes required by the Council arising from the physical modelling of the seawall, as agreed by the Council, under Condition 11.

Reason: To ensure sufficient information is provided with the design drawings.

18. **Access for construction and maintenance works**

The works are to be designed and constructed in accordance with the approved plans and specifications of this consent.

Details demonstrating compliance with this requirement are to be prepared by a suitably qualified coastal engineer and submitted to the Certifier for approval prior to issue of the Construction Certificate. This includes maintenance of minimum requirements.

Reason: To ensure suitable access for construction and maintenance of coastal protection works.

19. **Public Access Plan**

In recognition of the need to maintain beach access for Council Lifeguards, Surf Life Savers, and the general public, from South Narrabeen Surf Club and the adjoining road ends, a public access plan is to be prepared and approved by Council prior to issue of construction certificate. The plan is to outline the actions to be undertaken by the contractor to maintain safe public access to the beach from South Narrabeen Surf Club and the adjoining road ends during the construction of the works.

Details demonstrating compliance are to be provided to the Certifier prior to the issue of the construction certificate.

Reason: To maintain safe public access to the beach.

20. **Confirmation of Global stability**

Confirmation of global stability based on updated information on ground conditions is required prior to the issue of the construction certificate.

Reason: To ensure structural stability of the works.

21. **Compliance with Standards**

The development is required to be carried out in accordance with all relevant Australian Standards.

Details demonstrating compliance with the relevant Australian Standard are to be submitted to the Certifier prior to the issue of the Construction Certificate.

Reason: To ensure the development is constructed in accordance with appropriate standards.

22. **Sydney Water "Tap In"**

The approved plans must be submitted to the Sydney Water Tap in service, prior to works commencing, to determine whether the development will affect any Sydney Water assets and/or easements. The appropriately stamped plans must then be submitted to the Certifying Authority demonstrating the works are in compliance with Sydney Water requirements.

Please refer to the website www.sydneywater.com.au for:

- "Tap in" details - see <http://www.sydneywater.com.au/tapin>
- Guidelines for Building Over/Adjacent to Sydney Water Assets.

Or telephone 13 000 TAP IN (1300 082 746).

Reason: To ensure compliance with the statutory requirements of Sydney Water.

23. **Concrete and soil extent**

The concrete at the top of the wall is to be minimised, while still meeting coastal engineering standards, so that soil can be placed as close as possible to the eastern edge of the wall.

Details demonstrating compliance are to be submitted to the Certifier prior to the issue of the construction certificate.

Reason: To allow the growth of vegetation to minimise the visual impact of the works.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO ANY COMMENCEMENT

24. **Tree Removal Within the Property**

This consent approves the removal of the following tree:

1 x *Araucaria heterophylla* located on the eastern boundary forward of No. 1204 Pittwater Road

Note: Exempt Species as listed in the Development Control Plan or the Arboricultural Impact Assessment do not require Council consent for removal.

Reason: To enable authorised building works.

25. **Works on Land Owned or Managed By Council / Working and Access on Reserves**

No works are to be carried out on land owned or managed by Council without owners consent.

Works (undertaken by principal contractors working without Council supervision) on land owned or managed by Council require a "Working and Access on Reserves" permit prior to commencement. Applications can be obtained from Council's website or the Parks and Recreation business unit.

Details demonstrating Permit approval are to be submitted to the Certifying Authority.

Note: Separate approval from Council is required for access driveways, paths, stairs, connections to underground utilities (stormwater, gas, sewer, electricity, telecommunications etc.) and landscaping works on land owned or managed by Council.

Reason: Public safety and the protection of Council land and infrastructure.

26. **Construction Management Plan - Council Assets**

Prior to commencement of works on site, appropriate environmental site management measures must be in place and incorporate the following throughout demolition and construction:

- i) access to and from the site during construction and demolition,
- ii) safety and security of the site, road and footpath area including details of proposed fencing, hoarding and lighting,
- iii) methods of loading and unloading machinery and building materials,
- iv) location of storage materials, excavation and waste materials,
- v) methods to prevent material being tracked off the site onto surrounding roadways,
- vi) erosion, sediment and dust control measures, and
- vii) protection of existing trees and vegetation including the tree protection zone, in accordance with AS 4970-2009 Protection of Trees on Development Sites.

During works, the site management measures listed above must remain in place and be maintained until the completion of works.

Construction materials must not be stored on Land owned or managed by Council unless approval is provided by Council. Safe pedestrian access free of trip hazards must be maintained at all times on or adjacent to any public access routes connected to Land owned or managed by Council.

Reason: To protect the surrounding environment from the effects of sedimentation and erosion from the site.

27. Installation and Maintenance of Sediment and Erosion Control

Prior to commencement of works on site, sediment and erosion controls must be installed along the immediate downslope of the works area in accordance with Landcom's 'Managing Urban Stormwater: Soils and Construction' (2004).

The erosion controls shall be maintained in an operational condition until the development activities have been completed and the site fully stabilised. Sediment shall be removed from the sediment controls following each heavy or prolonged rainfall period. Techniques used for erosion and sediment control on site are to be adequately maintained and monitored at all times, particularly after periods of rain, and shall remain in proper operation until all development activities have been completed and the site is sufficiently stabilised with vegetation.

Reason: To protect the surrounding environment from the effects of sedimentation and erosion from the site.

28. Property / Reserve Boundary Identification

Prior to commencement of work, the property/reserve boundary is to be surveyed by a registered surveyor and such boundary is to be clearly marked on site.

Reason: property/reserve management.

29. Public Liability Insurance - Works on Public Land

Any person or contractor undertaking works on public land must take out Public Liability Insurance with a minimum cover of \$20 million in relation to the occupation of, and approved works within Council's road reserve or public land, as approved in this consent. The Policy is to note, and provide protection for Northern Beaches Council, as an interested party and a copy of the Policy must be submitted to Council prior to commencement of the works. The Policy must be valid for the entire period that the works are being undertaken on public land.

Reason: To ensure the community is protected from the cost of any claim for damages arising from works on public land.

DURING BUILDING WORK

30. Protection of Sites of Significance

a) Should any Aboriginal Cultural Heritage items be uncovered during earthworks, works should cease in the area and the Aboriginal Heritage Office contacted to assess the finds.

b) Under Section 89a of the NPW Act should the objects be found to be Aboriginal, NSW Biodiversity and Conservation Division, Heritage NSW and the Metropolitan Local Aboriginal

Land Council (MLALC) should be contacted.

Reason: Preservation of significant cultural features.

31. Tree and Vegetation Protection

- a) Existing trees and vegetation shall be retained and protected including:
 - i) all trees and vegetation within the site not indicated for removal on the approved plans, excluding exempt trees and vegetation under the relevant planning instruments of legislation,
 - ii) all trees and vegetation located on adjoining properties,
 - iii) all road reserve trees and vegetation.
- b) Tree protection shall be undertaken as follows:
 - i) tree protection shall be in accordance with Australian Standard 4970-2009 Protection of Trees on Development Sites including the provision of temporary fencing to protect existing trees within 5 metres of development,
 - ii) existing ground levels shall be maintained within the tree protection zone of trees to be retained unless authorised by an Arborist with minimum AQF Level 5 in arboriculture,
 - iii) removal of existing tree roots at or >25mm (Ø) diameter is not permitted without consultation with an Arborist with minimum AQF Level 5 in arboriculture,
 - iv) no excavated material, building material storage, site facilities, nor landscape materials are to be placed within the canopy dripline of trees and other vegetation required to be retained,
 - v) structures are to bridge tree roots at or >25mm (Ø) diameter unless directed by an Arborist with minimum AQF Level 5 in arboriculture on site,
 - vi) excavation for stormwater lines and all other utility services is not permitted within the tree protection zone without consultation with an Arborist with minimum AQF Level 5 in arboriculture including advice on root protection measures,
 - vii) should either or all of v), vi) and vii) occur during site establishment and construction works, an Arborist with minimum AQF Level 5 in arboriculture shall provide recommendations for tree protection measures. Details including photographic evidence of works undertaken shall be submitted by the Arborist to the Certifying Authority,
 - viii) any temporary access to or location of scaffolding within the tree protection zone of a protected tree or any other tree to be retained during the construction works is to be undertaken using the protection measures specified in sections 4.5.3 and 4.5.6 of Australian Standard 4970-2009 Protection of Trees on Development Sites,
 - ix) the activities listed in section 4.2 of Australian Standard 4970-2009 Protection of Trees on Development Sites shall not occur within the tree protection zone of any tree on the lot or any tree on an adjoining site,
 - x) tree pruning from within the site to enable approved works shall not exceed 10% of any tree canopy and shall be in accordance with Australian Standard 4373-2007 Pruning of Amenity Trees,
 - xi) the tree protection measures specified in this clause must: i) be in place before work commences on the site, and ii) be maintained in good condition

during the construction period, and iii) remain in place for the duration of the construction works.

The Certifying Authority must ensure that:

- e) The activities listed in section 4.2 of Australian Standard 4970-2009 Protection of Trees on Development Sites do not occur within the tree protection zone of any tree and any temporary access to or location of scaffolding within the tree protection zone of a protected tree or any other tree to be retained on the site during the construction is undertaken using the protection measures specified in sections 4.5.3 and 4.5.6 of that standard.

Note: All street trees within the road verge and trees within private property are protected under Northern Beaches Council development control plans except where Council's written consent for removal has been obtained. The felling, lopping, topping, ringbarking or removal of any tree(s) is prohibited.

Reason: Tree and vegetation protection.

32. **Road Reserve**

The owners/contractor shall ensure the public footways and roadways adjacent to the site are maintained in a safe condition at all times during the course of the work.

Reason: Public safety.

33. **Storage of Materials on Land Owned or Managed by Council Prohibited**

The dumping or storage of building materials, spoil, vegetation, green waste or any other material in land owned or managed by Council is prohibited, without Council approval.

Reason: Public safety and environmental protection.

34. **Protection of Council's Public Assets**

Any damage to Council's public assets shall be made good by the owners and/or the contractor, to the satisfaction of Council.

Council's public assets include, but is not limited to, the following: road, kerb and gutters, crossovers, crossings, paths, grass verge, open space and associated elements such as furniture, recreational facilities and the like, within the meaning of the Local Government Act 1993.

Reason: To protect and/or restore any damaged public asset.

35. **Implementation of Construction Traffic Management Plan**

All works and construction activities are to be undertaken in accordance with the approved Construction Traffic Management Plan (CTMP). All controls in the CTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate RMS accreditation. Should the implementation or effectiveness of the CTMP be impacted by surrounding major development not encompassed in the approved CTMP, the CTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved CTMP is to be kept onsite at all times and made available to Council on request.

Reason: To ensure compliance of the developer/builder in adhering to the Construction Traffic

Management procedures agreed and are held liable to the conditions of consent.

36. **Waste Management During Development**

The reuse, recycling or disposal of waste during works must be done generally in accordance with the Waste Management Plan for this development.

Details demonstrating compliance must be submitted to the Principal Certifying Authority.

Reason: To ensure demolition and construction waste is recycled or reused and to limit landfill.

37. **Requirement to notify about new Acid Sulfate Soils evidence**

Any new information revealed during excavation works that has the potential to alter previous conclusions about Acid Sulfate Soils shall be immediately notified to the Council and the Principal Certifying Authority prior to further commencement.

Reason: protection of the environment.

38. **Noise Mitigation and Complaints Register**

All practicable, feasible and reasonable measures are to be done to mitigate the amenity impacts of noise on residents. A Complaint Register must be maintained, recording details of complaints received, and the action taken to remediate issues.

Reason: Protection of amenity, complaint management of noise.

39. **Sand**

No sand excavated from the beach seaward of the subject properties to construct the works is to be placed landward of the protection works before, during or after construction. All such sand shall be placed seaward of the works. The sand shall be screened to remove unsuitable material as required.

Reason: To avoid damage to the beach.

40. **Removal of unsuitable material**

The following material shall be removed by the owners, following construction of the works, unless agreed with Council:

- any material, except beach sand, encountered or imported during excavation and construction and not utilised in the construction of the works. This includes any material disturbed on any land, including adjacent public and private land and any material imported or reworked to form the temporary bund. This may include rocks, rubble, plastic, steel, concrete, geofabric or contaminated sediment.
- all existing rock, rubble or other material (except beach sand) forming historic protection works encountered during excavation and construction, that is not used as backfill.

Confirmation of this requirement is to be provided to Council by the engineer supervising the works.

Reason: To ensure that all unsuitable material is removed from the beach for public safety, improved beach amenity and to ensure no pollution of the environment.

41. **Temporary bund maintenance and safety**

A maintenance plan shall be prepared for any temporary bund by a suitably qualified coastal

engineer and submitted to council for approval. The maintenance requirements are to be included in the construction contract. It is the responsibility of the applicant to procure that the contractor undertaking the construction works ensures that any temporary bund constructed on the beach is maintained at all times, and to undertake any required repairs and maintenance of the bund after storms, to ensure public safety. This includes after hours, weekends, public holidays, holiday periods and if the contractor is notified by Council of an issue with the temporary bund.

The bund is to be monitored for any voids that form. If voids are identified, access is to be restricted until voids are repaired.

Where wave conditions allow it, the contractor is to use signage and flagging or similar to delineate the bund as a construction site to restrict public access. The bund area adjoining the public beach and the area inside the bund is to have additional safety warnings if required after hours, with the understanding that the public may enter. All sharp objects are to be removed or capped, ponded water drained, and loose objects removed, from inside the bund after hours.

The bund shall be completely removed at the completion of the works. If directed by Council, the bund materials shall be screened during removal of the bund to remove unsuitable material that could have entered the bund.

Reason: To prevent pollution of the beach and ensure public safety.

42. **Temporary bund construction**

Any temporary bund constructed on the beach to provide protection from coastal processes may only be constructed from sand or suitable existing rocks in accordance with the temporary bund design or rocks imported to site as part of the final coastal protection works. No other construction materials or imported material is to be used in construction of the bund.

Reason: To prevent pollution of the beach.

43. **Safety requirements under storm conditions**

Works are not to be placed during storm conditions unless the owner/s obtains a written opinion from a suitably qualified coastal engineer that the placement of the works under these conditions does not present a significant safety risk to any person and will not result in damage to the beach. This opinion is to be kept by the landowner until the works are completed. If adverse weather conditions are forecast, the works site is to be made safe (where practical) to avoid the dispersal of equipment and debris onto the beach and into the surf zone. It shall be a requirement of the contract with the contractor that the

- contractor monitor and make themselves aware of coastal conditions, and take all actions required to secure the site and prevent any pollution of the environment due to tidal or wave activity; and
- in the event of any pollution emanating from the subject site due to tidal or wave activity then the contractor must remediate the environment to Council's satisfaction.

Reason: To ensure the safety of workers and the public during construction.

44. **Restoration of adjoining lands**

The works approved as part of this consent are to be retained entirely within the property boundaries of properties of 1 Clarke Street Narrabeen (Lot 1 Sec 18 DP 7417) and 1192 (Lot CP SP 2808), 1194 (Lot C DP 312655), 1196 (Lot B DP 312655), 1204 (Lot CP SP 971)

Pittwater Road, Narrabeen.

Prior to the issue of the Occupation Certificate, a suitably qualified engineer is to certify that:

- any rocks temporarily moved on the adjoining properties have been reinstated so that they provide the same or a better level of coastal protection when compared to the pre-works condition.
- Sand has been washed into any restored historic rock to ensure sink holes will not form on these lands following completion of the works.

Reason: To ensure exposure of adjoining properties to coastal storms and public safety is not increased due to the works.

45. Historic Artefacts and Aboriginal relics

If any World War Two era tank traps or any Aboriginal objects (or other historic artefacts) are uncovered during the works, Council is to be notified immediately. In the event of any Aboriginal object being uncovered, all requirements (including the duty to notify) under the National Parks and Wildlife Act 1974 must be met.

Reason: To protect historic heritage and ensure any artifacts and Aboriginal objects are safely removed/dealt with.

46. Site Supervision

A suitably qualified engineer is to be employed to review and check the work of the construction contractor for the duration of the approved works.

Reason: To ensure appropriate construction of the coastal protection works.

47. Completion of Construction Works

All construction works must be completed within 24 months of the on-site commencement of the construction works, or a longer period as agreed to by Council in writing.

Reason: To ensure the works are completed in a timely manner.

BEFORE ISSUE OF THE OCCUPATION CERTIFICATE

48. Required Tree Planting

a) If the existing *Araucaria heterophylla* at 1204 Pittwater Road is removed, a replacement tree shall be planted in accordance with the following:

- i) 1 x *Araucaria heterophylla*; to be located at 1204 Pittwater Road, between the eastern boundary and the building; minimum pot size 75 litre

b) Tree planting shall be located wholly within the site and be located a minimum of 3 metres from existing buildings.

c) Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of any Occupation Certificate.

Reason: To maintain environmental amenity.

49. Landscape Completion

a) Following completion of construction works, revegetation of disturbed areas within the sites is to be undertaken in accordance with the recommendations of Section 4.3 - Revegetation in

the Statement of Environmental Effects Issue 2 dated 13 July 2021 prepared by Horton Coastal Engineering.

b) Prior to the issue of any Occupation Certificate details (from a qualified horticulturalist, landscape architect or landscape designer) shall be submitted to the Principal Certifying Authority certifying that the landscape works have been completed in accordance with this and any other conditions of consent for landscape works.

Reason: Environmental amenity.

50. **New Vegetation Planting**

Landscaping is to be undertaken in accordance with section 4.3 Revegetation of the Statement of Environmental Effects (Horton Coastal Engineering 2021)

Details demonstrating compliance are to be provided to the Principal Certifying Authority prior to issue of the Occupation Certificate.

Reason: To ensure compliance with the requirement to retain and protect native planting on the site.

51. **No Weeds Imported On To The Site**

No Priority or environmental weeds (as specified in the Northern Beaches Local Weed Management Plan 2019 – 2023) are to be imported on to the site prior to or during construction works.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to issue of any Occupation Certificate.

Reason: To reduce the risk of site works contributing to spread of Priority and environmental weeds.

52. **Post-Construction Road Reserve Dilapidation Report**

The owners/contractor must bear the cost of all restoration works to Council's road, footpath and drainage assets damaged during the course of this development. Any damage is to be restored to the satisfaction of Council.

A Post Construction Dilapidation Report after the completion of all building works is to demonstrate that there is no damage to Council infrastructure prior to the refund of any security deposits.

Reason: To ensure rectification of damage to Council infrastructure.

53. **Removal of All Temporary Structures/Materials and Construction Rubbish**

Once construction has been completed all silt and sediment fences, silt, rubbish, building debris, straw bales and temporary fences/bunds are to be removed from the site.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any Occupation Certificate.

Reason: To protect reserve amenity and public safety.

54. **Survey Certificate**

A survey certificate prepared by a Registered Surveyor is to be provided demonstrating the

works, in relation to their location on private land, are in accordance with the approved plans.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any Occupation Certificate.

Reason: To demonstrate the proposal complies with the approved plans.

55. **Access**

Any legal requirements necessary to allow access for the private property owners over the shared sets of stairs are to be registered on the relevant titles.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an occupation certificate.

Reason: To ensure legal rights of access.

56. **Surveys During Works and Post completion survey**

A declaration by a registered surveyor is required as evidence that all construction has been completed in accordance with the Development Consent, approved plans and specifications in the Consent.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an occupation certificate. Survey plans and a declaration are to be provided to Council on issue of the Occupation Certificate.

Reason: To ensure accurate location of coastal protection works.

57. **Certification of works**

The constructed coastal protection works are to be certified by a suitably qualified coastal engineer and by a suitably qualified structural engineer as being constructed in accordance with the approved design and performance criteria.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an occupation certificate. This certification is to be provided to Council on issue of the Occupation Certificate.

Reason: To ensure appropriate design and construction of coastal protection works.

58. **Restoration of sand**

Sand, shaped to a natural profile, is to be restored seaward of the works, once construction is completed. Sand from the public beach may be used for this purpose.

Details are to be provided to the Principal Certifying Authority prior to the issue of the Occupation Certificate. These details are to be provided to Council on issue of the Occupation Certificate.

Reason: To limit the impact of the works on the visual quality of the beach.

59. **Safety Management Plan**

The applicant must prepare a Safety Management Plan for the operational phase of the works to commence when the works are constructed. The Plan is to be activated by the occupier/s of the subject site in advance of and during a storm event that could result in coastal inundation

impacting the private properties landward of the wall. The Safety Management Plan must include, but not be limited to:

- A procedure for monitoring forecasts and triggers defining when the Safety Management Plan will be activated.
- Details of the potential inundation impacts from a coastal storm
- The actions required to ensure the safety of the inhabitants of the properties landward of the works
- A nominated time period for review and updating the Safety Management Plan, as required.

The final Safety Management Plan is to be to the satisfaction of the consent authority prior to issue of the Occupation Certificate. The final Safety Management Plan is to be maintained on Site at all times and a copy provided to any tenants or licensees of the Site.

Reason: To ensure public safety during a storm event.

60. **Maintenance Management Plan for Coastal Protection Works**

A Maintenance Management Plan (MMP) is to be prepared for the maintenance of the coastal protection works for their intended design life. The MMP is to be prepared by a suitably qualified coastal engineer and is to be approved by Council in writing prior to issue of the occupation certificate. The MMP must be complied with for the design life of the works.

The MMP may be modified from time to time by the agreement of all landowners at the time and with the approval of Council. These modifications to the MMP must also be made (if necessary) each time the design life is extended in accordance with condition 73. This is to ensure the MMP continues to be suitable in perpetuity.

Reason: To ensure a plan is in place for the on-going maintenance of the works at the end of construction and at each extension of the design life.

61. **Maintenance Obligations and Public Safety**

The owners of 1 Clarke Street Narrabeen (Lot 1 Sec 18 DP 7417) and 1192 (Lot CP SP 2808), 1194 (Lot C DP 312655), 1196 (Lot B DP 312655), 1204 (Lot CP SP 971) Pittwater Road, Narrabeen must provide an irrevocable bank guarantee (or other suitable legally binding obligation) to Council prior to the issue of any occupation certificate in the amount of \$1000 per lineal metre of work (based on the length of the seaward property boundary) to undertake the restoration of the beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by the presence of the works or maintenance of the works.

The funding obligations referred to above are to be borne entirely by the landowners of the properties listed in this condition. The percentage share of each landowner, of the total funding, is to be determined by the landowners.

In this condition "maintenance" means the restoration of the works to a standard in accordance with the approved plans and specifications following any damage caused by a coastal storm.

The bank guarantee (or other suitable legally binding obligation) is to be replenished if drawn upon and increased to allow for Consumer Price Index (CPI) every 10 years from the date of establishment.

Reason: To satisfy the requirements of Section 27 of the Coastal Management Act 2016 and to

ensure the coastal protection works will not pose any threat to public safety.

62. **Easements for construction, support and maintenance**

An easement must be registered over so much of 1 Clarke Street Narrabeen (Lot 1 Sec 18 DP 7417) and 1192 (Lot CP SP 2808), 1194 (Lot C DP 312655), 1196 (Lot B DP 312655), 1204 (Lot CP SP 971) Pittwater Road, Narrabeen as the Council considers necessary for construction, support and maintenance in favour of each of the owners to allow each owner to carry out its obligations under this consent and otherwise burdening the owners of the properties and their successors in title to maintain the coastal protection works to the standard approved by the Development Consent, approved plans and specifications in the consent. The easement may provide that it shall be released if the coastal protection works are permanently removed.

The easement shall also provide that the owners of the lot burdened must not place any improvements or structures that cannot be easily relocated or removed within the easement site or interfere with the coastal protection works or the support they offer.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any occupation certificate.

Reason: To create long term support and maintenance of the coastal protection works for the benefit of all owners (currently and in the future).

63. **Waste Management Confirmation**

Prior to the issue of a Final Occupation Certificate, evidence / documentation must be submitted to the Principal Certifying Authority that all waste material from the development site arising from demolition and/or construction works has been appropriately recycled, reused or disposed of generally in accordance with the approved Waste Management Plan.

Reason: To ensure demolition and construction waste is recycled or reused and to limit landfill.

64. **Vegetation planting**

The native plant 'pig face' (*Carpobrotus glaucescens*), or other suitable species as agreed with Council, is to be planted in the rear yards of the sites. The plants are to be spaced appropriately and placed along the entire eastern edge of the sites, as close as possible (while ensuring that the pig face will become established) to the eastern edge of the works.

The pig face must have sufficient soil volume to become established so that they can grow over and down the eastern face of the wall.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an occupation certificate.

Reason: To ensure the growth of vegetation to minimise the visual impact of the works.

ON-GOING CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

65. **Landscape Maintenance**

a) Trees, shrubs and groundcovers required to be planted under this consent are to be mulched, watered and fertilised as required at the time of planting.

b) If any tree, shrub or groundcover required to be planted under this consent fails, they are to be replaced with similar species to maintain the landscape theme and be generally in

accordance with the approved Landscape Plan and any conditions of consent.

c) All weeds are to be removed and controlled in accordance with the NSW Biosecurity Act 2015.

Reason: To maintain local environmental amenity.

66. **Replacement of Canopy Trees**

Tree replacement plantings required under this consent are to be retained for the life of the development and/or for their safe natural life.

Trees that die or are removed must be replaced with another Norfolk Island Pine.

Reason: To replace locally native trees.

67. **Post storm inspection**

After any storm event that exposes any part of the coastal protection works to damage, that impacts the support or performance of the works, the owners are to procure, at their cost, inspections by a suitably qualified coastal engineer of the coastal protection works. A detailed report is to be provided by this coastal engineer to Council and any recommendations within the report are to be undertaken as soon as reasonably practicable after necessary approvals are obtained, if required, and to the satisfaction of Council.

Reason: To ensure the coastal protection works are maintained after a storm event.

68. **Ongoing maintenance of coastal protection works and beach amenity**

The coastal protection works must be maintained in accordance with the Development Consent, conditions, approved plans and specifications as outlined in this consent. The maintenance must be to a standard that does not compromise the protection or integrity of the adjoining land. Sufficient access for the maintenance of the coastal protection works is to be maintained landward of the coastal protection works in accordance with the easement for construction, support and maintenance identified.

Any debris on the beach resulting from damage or failure of the coastal protection works must be rectified by the owner or owners of the works that are the source of the damage, as part of maintaining the works as per condition 60 of this consent. If required, the financial arrangements established in condition 61 of this consent may be utilised in accordance with any written consent that may be issued by Council.

Reason: To satisfy the requirements of Section 27 of the Coastal Management Act 2016 and to ensure that the coastal protection works will not pose any significant threat to public safety.

69. **Protection of the ground anchors**

The ground anchors buried under the rear yards of the subject sites must not be damaged or removed.

Reason: To ensure the structural integrity of the works.

70. **Maximum seawall height**

The maximum height of the seawall must not exceed 7.0m AHD.

Reason: To minimise the visual impact and ensure the works remain in accordance with the approved plans.

71. Time Limited Consent

The consent operates for 60 calendar years from the date of the issue of the occupation certificate and such other period as may be extended with the written approval of Council in accordance with the following.

A minimum of three (3) years prior to the date of 60 years after the issue of the occupation certificate for the works, the owner/s shall procure, at no cost to Council, a Review Report, by a suitably qualified independent coastal engineer.

The report must review the performance of the works using the evidence and coastal hazard predictions known at that time. The report must consider whether:

- (a) The works are satisfactory in their current state and do not result in a threat to public safety, in which case the report can recommend an extension to the consent, or
- (b) Upgrades to the works are recommended to ensure they will not result in a threat to public safety to extend the consent for a further period of time, or
- (c) Removal and replacement of the structure with an alternative design is recommended to ensure they do not result in a threat to public safety, or
- (d) Demolition and removal of the coastal protection works in the interest of public safety is recommended.

The Review Report shall be submitted to Council for approval not later than twelve (12) months prior to the date of 60 years after the issue of the occupation certificate in the first instance, or 12 months prior to the end of such other period identified in any written approval from Council, in accordance with this condition.

If the Review Report concludes that the structure is satisfactory in accordance with (a) above, and Council accepts the findings of the report, Council will, in writing, approve an extension of the term of the development consent for the period recommended in the Review Report, or such lesser time as Council considers appropriate.

If the Review Report recommends any upgrades or alterations to the works in accordance with (b) above, those upgrades must be dealt with under the planning laws at that time.

If the Review Report recommends removal and replacement of the structure with an alternative design in accordance with (c) above, the replacement structure will be the subject of a further development application for consent to Council, if required by the planning laws at that time. For the avoidance of doubt, nothing shall oblige the owners to replace the protection works if they instead choose to remove the works which will be removed at the expense of the owners.

If the Review Report recommends demolition and removal of the coastal protection works in the interest of public safety, such removal will be undertaken by the owners at their own expense and within such reasonable time period required by Council.

Any written approval from the Council extending the period of operation of this consent is to be recorded on the s10.7 Planning Certificate for the land and Council's register of development consents.

A further Review Report will be provided to Council a minimum of twelve (12) months prior to the end of any extended period notified identified in writing by the Council in accordance with this condition, with the above process repeated for such extension.

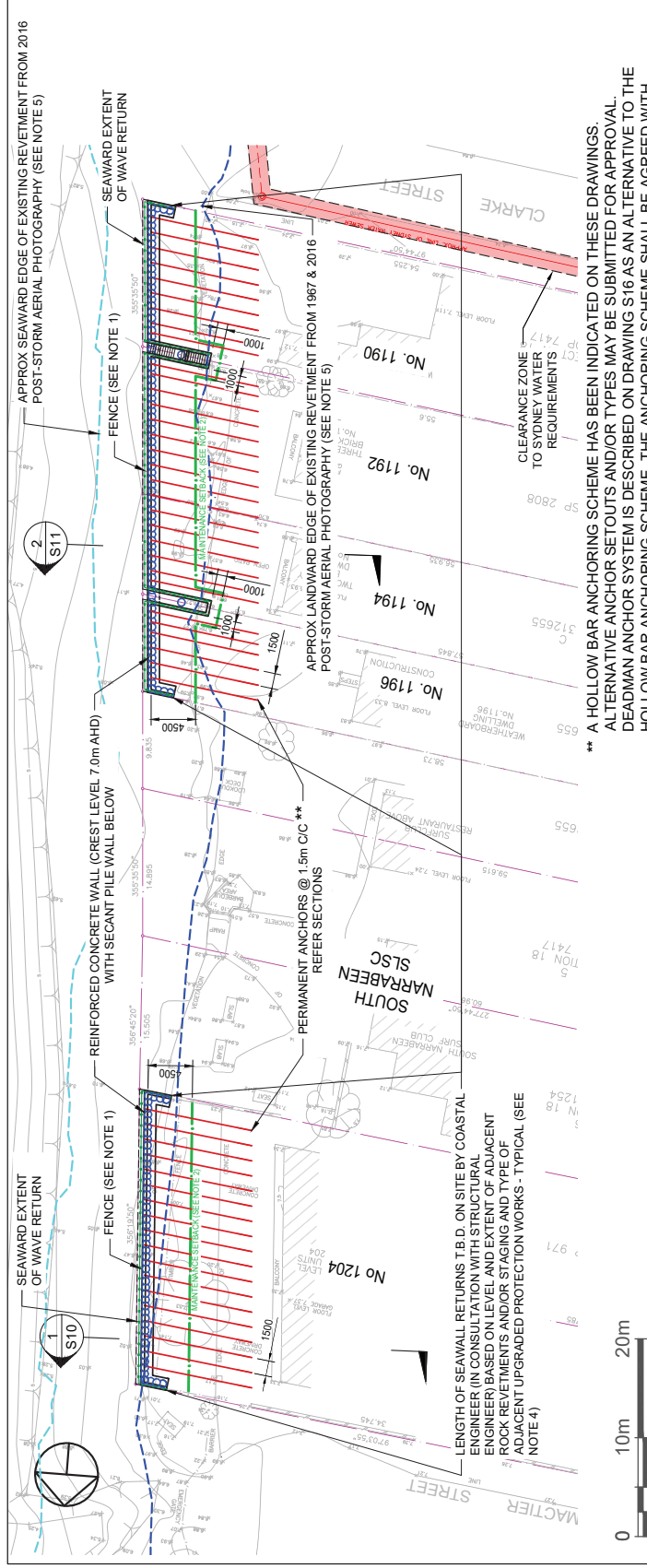
In the event that,

- The Council does not accept the recommendations of the Review Report (including an amended or replacement Report) in writing, or
- The Council fails to provide written notification of its acceptance of the recommendations within the Review Report within 12 months of lodgement of the Review Report, or
- An application for the continued use, upgrade or replacement of the works is made,

this consent will continue to operate until any application to modify this condition, or for the continued use or upgrade or replacement of the works, or any proceedings seeking review of the refusal of Council to accept the recommendations, has been finally determined by Council or the Court. Any application, proceedings or appeal, must be lodged within 6 months of Council's decision to not accept the findings of the Review Report or Council's failure to notify of its acceptance of the Review Report, whichever is the later.

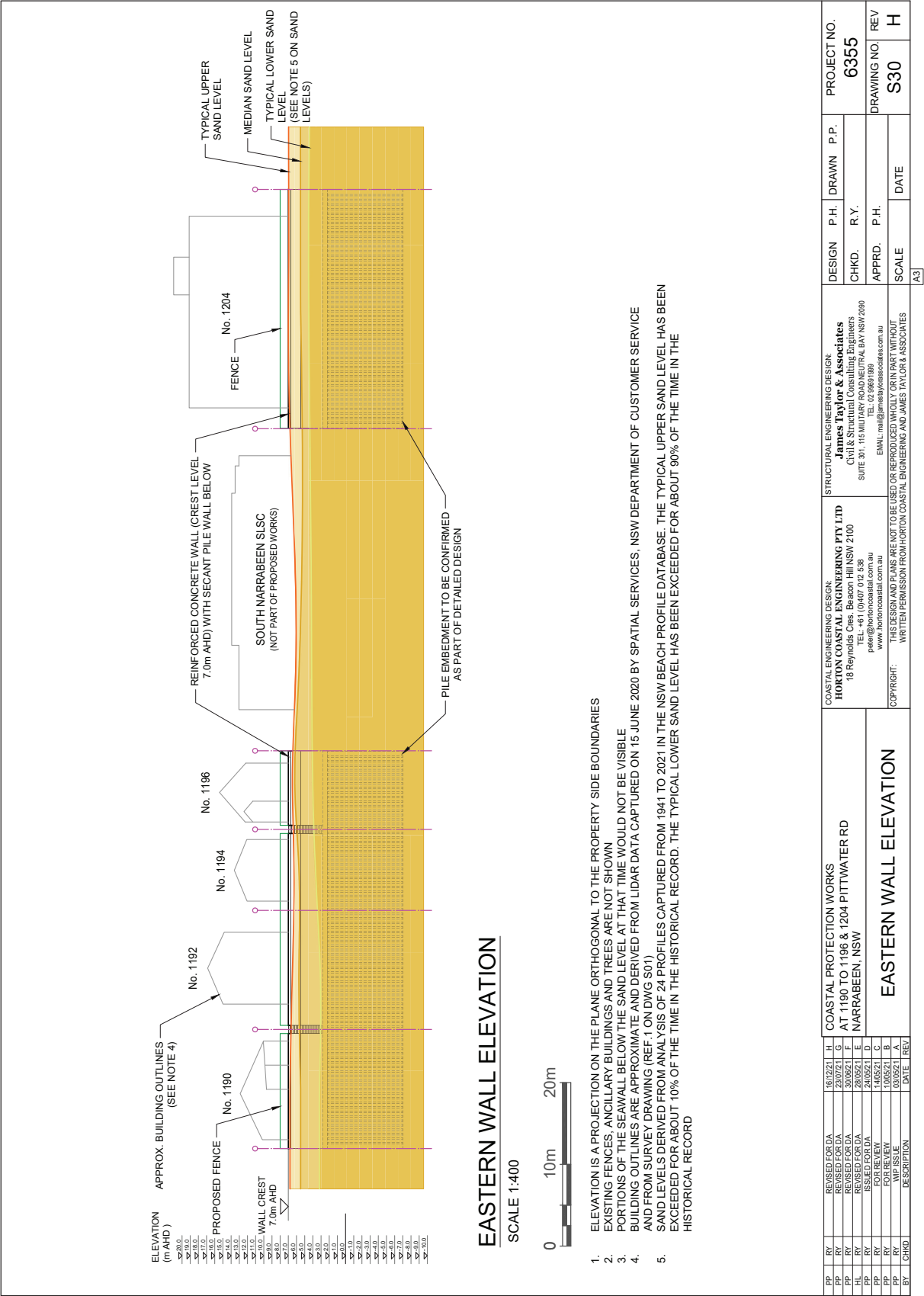
Note: *This continued operation or extension may need to be facilitated by a formal application to modify the consent having regard to the planning laws at the time.*

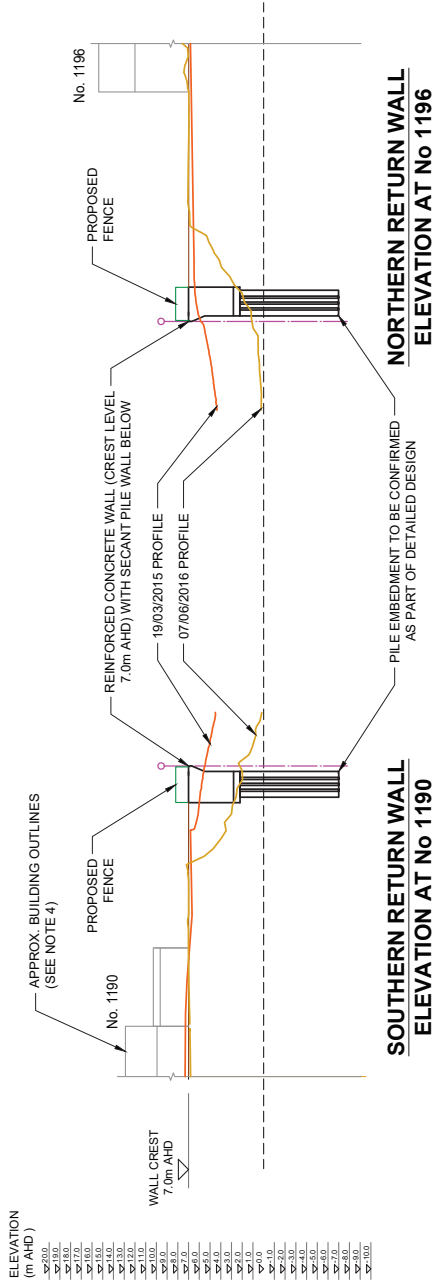
Reason: The development application indicated the Coastal Protection works have a design life of 60 years; to satisfy the requirements of Section 27 of the Coastal Management Act 2016, and to provide a mechanism to review the works and extend the operation of the consent.



1. ALL FENCING SHALL COMPLY WITH STATE ENVIRONMENTAL PLANNING POLICY (EXEMPT AND COMPLYING DEVELOPMENT CODES) 2008 AND BUILDING CODE OF AUSTRALIA (BCA)
2. NO FUTURE STRUCTURES, EXCEPT READILY RELOCATABLE OR REMOVABLE STRUCTURES THAT DO NOT INTERRUPT VIEWS, ARE TO BE CONSTRUCTED SEAWARD OF THIS MAINTENANCE SETBACK LINE. TO ENABLE 4.5m OF CLEAR PASSAGE FOR CONSTRUCTION PLANT AS REQUIRED FOR FUTURE PROTECTION WORKS
3. FUTURE SETBACKS AND DEVELOPMENT TYPES ADOPTED ARE SUBJECT TO MERIT ASSESSMENT AGAINST OTHER PLANNING CONSIDERATIONS (INCLUDING VIEWS AND OVERSHADOWING) AND SPECIFIC ENGINEERING (COASTAL, STRUCTURAL AND GEOTECHNICAL) ADVICE (INCLUDING POTENTIAL IMPACTS ON THE PROTECTION WORKS)
4. TEMPORARILY REMOVE PORTION OF ROCK REVETMENT AND OTHER MATERIALS (SOIL, GRASS AND THE LIKE) AS REQUIRED AT ADJACENT COUNCIL LAND (MACTIER STREET, SOUTH NARRABEEN SLSC AND CLARKE STREET AS APPLICABLE) AS DIRECTED BY COASTAL ENGINEER, TO ALLOW CONSTRUCTION OF PROPOSED WORKS. REINSTATE ROCK REVETMENT AND LAND IN THESE AREAS TO PRE-WORKS CONDITION AS SOON AS POSSIBLE AFTER CONSTRUCTION OF SEAWALL AT NO. 1190-1196 & 1204, AS DIRECTED BY COASTAL ENGINEER (ALSO SEE DWG S03), UNLESS STAGING AND TYPE OF COUNCIL SEAWALL WORKS MAKES THIS UNNECESSARY AND AS AGREED WITH COUNCIL.
5. LANDWARD AND SEAWARD EXTENTS OF EXISTING ROCK TO BE CONFIRMED IN FUTURE GEOTECHNICAL INVESTIGATION, IF REQUIRED. 2020 AERIAL PHOTOGRAPHY WAS ALSO USED TO ESTIMATE SEAWARD EXTENT OF ROCK AT CLARKE STREET.
- ** A HOLLOW BAR ANCHORING SCHEME HAS BEEN INDICATED ON THESE DRAWINGS. ALTERNATIVE ANCHOR SETOUTS AND/OR TYPES MAY BE SUBMITTED FOR APPROVAL. DEADMAN ANCHOR SYSTEM IS DESCRIBED ON DRAWING S16 AS AN ALTERNATIVE TO THE HOLLOW BAR ANCHORING SCHEME. THE ANCHORING SCHEME SHALL BE AGREED WITH CONTRACTOR SUBJECT TO CONFIRMATION OF STRUCTURAL & GEOTECHNICAL ENGINEERS.**

COASTAL PROTECTION WORKS				COASTAL PROTECTION WORKS				COASTAL PROTECTION WORKS			
PP	RY	REVISED FOR DA	18/12/21	H	AT 1190 TO 1196 & 1204 PITTWATER RD			STRUCTURAL ENGINEERING DESIGN		DESIGN	P.H.
PP	RY	REVISED FOR DA	23/02/21	G	NARRABEEN, NSW			James Taylor & Associates		DRAWN	P.P.
PP	RY	REVISED FOR DA	30/06/21	F				Civil & Structural Consulting Engineers		CHKD.	R.Y.
HL	RY	ISSUED FOR DA	28/05/21	E				SUITE 301, 115 MILITARY ROAD NEUTRAL BAY NSW 2090		APPRD.	P.H.
PP	RY	ISSUED FOR DA	24/05/21	D				TEL: +61 (0)407 012 538		SCALE	DATE
PP	RY	FOR REVIEW	10/06/21	B				www.hortoncoastal.com.au		REV	
PP	RY	WIP ISSUE	03/05/21	A				EMAIL: jtm@jamesandassociates.com.au		S02	H
BY	CHOD	DESCRIPTION	DATE	REV	THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION FROM HORTON COASTAL ENGINEERING AND JAMES TAYLOR & ASSOCIATES						





RETURN WALLS ELEVATIONS

SCALE 1:400



- ELEVATION IS A PROJECTION ON THE PLANE ORTHOGONAL TO THE PROPERTY SIDE BOUNDARIES
- EXISTING FENCES, ANCILLARY BUILDINGS AND TREES ARE NOT SHOWN
- PORTIONS OF THE SEAWALL BELOW THE SAND LEVEL AT THAT TIME WOULD NOT BE VISIBLE
- BUILDING OUTLINES ARE APPROXIMATE AND DERIVED FROM LIDAR DATA CAPTURED ON 15 JUNE 2020 BY SPATIAL SERVICES, NSW DEPARTMENT OF CUSTOMER SERVICE AND FROM SURVEY DRAWING (REF: 1 ON DWG S01)
- FUTURE GROUND LEVELS AT COUNCIL PROPERTY ADJACENT TO RETURNS WILL DEPEND ON FORM OF COASTAL PROTECTION WORKS CONSTRUCTED BY COUNCIL AT THESE LOCATIONS. THE ELEVATIONS DEPICTED ARE BASED ON HISTORICAL BEACH PROFILES AT THE ADJACENT PROPERTIES. THE 07/06/2016 PROFILE IS THE MOST ERODED IN THE HISTORICAL RECORD OF 25 PROFILES IN THE NSW BEACH PROFILE DATABASE FROM 1941 TO 2021 AT ALL SECTIONS SHOWN. THE 19/03/2015 PROFILE IS A TYPICAL AVERAGE BEACH-FULL PROFILE IN THIS RECORD, HAVING AN ACTIVE PROFILE VOLUME EXCEEDED ABOUT 30% OF THE TIME

REV	BY	CHD	DESCRIPTION	DATE	REV
PP	RY		REVISED FOR DA	18/12/21	H
PP	RY		REVISED FOR DA	23/02/21	G
PP	RY		REVISED FOR DA	30/06/21	F
HL	RY		REVISED FOR DA	28/05/21	E
PP	RY		ISSUED FOR DA	24/05/21	D
PP	RY		FOR REVIEW	10/05/21	C
PP	RY		WIP ISSUE	03/05/21	B
PP	RY		DESCRIPTION		A

COASTAL PROTECTION WORKS AT 1190 TO 1196 & 1204 PITTWATER RD NARRABEEN, NSW	COASTAL ENGINEERING DESIGN: HORTON COASTAL ENGINEERING PTY LTD 18 Reynolds Cres. Beacon Hill NSW 2100 TEL: +61 (0)407 012 538 peter@hortoncoastal.com.au www.hortoncoastal.com.au	STRUCTURAL ENGINEERING DESIGN: James Taylor & Associates Civil & Structural Consulting Engineers SUITE 301, 115 MILITARY ROAD NEUTRAL BAY NSW 2090 TEL: 02 9861 0869 EMAIL: jtm@jamestaylorassociates.com.au	DESIGN CHKD. APPRD. SCALE	P.H. R.Y. P.H. DATE	P.P. DRAWN DATE	PROJECT NO. 6355 DRAWING NO S31 REV H
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