

NORTH BYRON

— Beach Resort —

Proposed extension to
existing coastal protection works

Community Engagement Report

26th October 2023




Statutory Declaration

I, Caroline Desmond, do solemnly and sincerely declare that I have prepared this community engagement report and undertaken the community consultation activities in accordance with the Byron Shire Council Development Control Plan 2014 Part A, Clause A13.4. I make this solemn declaration consciously believing the same to be true and by virtue of the provisions of the *Oaths Act 1990*.

Declared at Ballina NSW

on 26 October 2023


[signature of declarant]

in the presence of an authorised witness, who states:

I, Irene Tory

[name of authorised witness]

a Justice of the Peace,

[qualification of authorised witness]

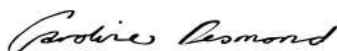
certify the following matters concerning the making of this statutory declaration by the person who made it:

1. I saw the face of the person; and
2. I have confirmed the person's identity using an identification document and the document I relied on was a Driver's Licence. NUMBER 11367109


[signature of authorised witness]

26-10-2023

[date]



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1.0 EXECUTIVE SUMMARY

Between predominantly late August and mid September 2023 a community engagement program was held regarding a proposed 40 lineal metre extension to existing geobag (large sandbag) protection works on the beach outside the Elements of Byron Resort at Sunrise Beach in Byron Bay.

The proposed extension would be temporary, while the Coastal Management Program (CMP) for the Byron Shire Northern Coastline is completed. All works would be on private land owned by North Byron Beach Resort and the public beach access, which is 160m north of the northernmost tip of the proposed works, would not be impeded.

The erosion on this section of land (which includes North Byron Beach Resort land, Crown land and land owned by Byron Shire Council) is caused by a chain of events which, while they involve natural processes, are also affected by human intervention. Specifically, activity at Belongil and the mechanical opening and closing of Belongil Creek. Without these proposed works the degradation of the shoreline will continue.

The engagement program encompassed a comprehensive community information website (www.nbbrcoastalworks.com.au), a press ad in the Byron Shire Echo, a site notice, personal contact with key stakeholders and two days of onsite engagement.

Overall there was little feedback received. Reasons for this may include:

- Detailed project website

It is considered that the dedicated project website was able to provide sufficient information for most people.

- Direct experience

Any local that has used that beach over a period of time will have witnessed the changes and will be aware of the impact of the creek on the original old dune frontage. They will be aware that the proposed protection works represent private investment in public recreation space and natural assets, that the proposed works will beautify their beach, making it safer and more accessible.

Having said this, it is of course possible that those who may be opposed to the proposed protection works may be biding their time until Byron Shire Council seeks direct feedback.

With the exception of Byron Bird Buddies, who asked about the timing of removal of the geobags and whether the cabins closest to the beachfront could be removed, there was no negative feedback received from members of the public regarding the proposed extension to the existing protection works.

2.0 BACKGROUND

In 2015 North Byron Beach Resort constructed a 210 lineal metre geobag (large sandbag) wall on their private land to protect the old dune frontage. 20 to 30m north of the end of these works there has been a loss of approximately 10 metres of land, with a resulting loss of the original old dune profile, over the period December 2018 to November 2022. This has impacted on the beach. It has also impacted on public safety, on beach amenity, on the Elements of Byron resort and on access to the beach from within the Elements of Byron resort.

It is now proposed that the existing predominantly buried structure be extended to the north by 40 lineal metres, using the same profile and design. All the proposed new works would be within land owned by North Byron Beach Resort. The public beach access, which is 160m north of the northern limit of the proposed works, would not be impeded.

The extension would be a temporary structure with a proposed lifespan of five years, while the Coastal Management Program (CMP) for the Byron Shire Northern Coastline is completed.

The erosion on this section of land (which includes Elements of Byron resort land, Crown land and land owned by Byron Shire Council) is caused by a chain of events which, while they involve natural processes, are also affected by human intervention.

The entrance to the Creek is being pushed further and further north. While there is some degree of natural migration of sand northward, in this instance the sand migration is exacerbated due to hard revetment (buildings and rock walls) located at Belongil. Another factor is the mechanical opening and closing of Belongil Creek, which is undertaken by Byron Shire Council two or three times a year. This has become necessary to mitigate the risk of the Byron Town Centre flooding. Following the opening the entrance typically migrates to the north which influences shoreline erosion of Elements of Byron land.

The project website states “Unfortunately, the degradation of the shoreline will continue unless we can do these soft works over 40 lineal metres to maintain the beach”.

3.0 ENGAGEMENT PROCESS

Key actions	Date
Personal contact with neighbours and key stakeholders	Since 19 th July
Project website live	29 th August
Site notice erected	29 th August
Byron Shire Echo ad published	29 th August (online), 30 th August (print)
Onsite community engagement	8 th and 9 th September

It was made clear in all communication that a development application had not yet been lodged with Byron Shire Council.

3.1 Community information websites

The Byron community and particularly the Sunrise Beach and Byron Arts Estate communities have been familiar with the primary community engagement website for North Byron Beach Resort – www.northbyronbeachresort.com.au - since we built it in 2013. Given the age of the website and the amount of information we like to share across the various projects, we felt that it would be worthwhile to build a dedicated website for this project that is linked back to the primary website.

And so we updated the primary website (refer Appendix 1), from which we linked a secondary website – www.nbbrcoastalworks.com.au - (refer Appendix 2). The updates to the primary website were made by 29th August and the new website went live on 29th August 2023.

The dedicated website covers the existing protection works, the reasons behind the proposed extension, some historical imagery, detail regarding the proposed works, 11 x FAQs and opportunities to engage including contact details and detail regarding the onsite community engagement.

3.2 Byron Shire Echo press ad

A press ad was published in the Byron Shire Echo 30th August (online 29th August).

Rather than talk about the coastal protection works only, we chose to take the opportunity to update our local community on all of the projects that are currently underway that have or could be seen to have an impact on our neighbours. We did this with the press ad, site notice and of course the primary website.

We felt that if we did not do this we would potentially be seen to be hiding information/not practicing full transparency.

Community engagement at Elements

There's a fair bit in the pipeline at North Byron Beach Resort, the home of Elements of Byron.

Temporary coastal protection works

There is a section of land from where Belongil Creek meets the sand to 160m south of the public beach access which is subject to erosion. This has impacted on the beach. It has also impacted on public safety, on beach amenity and on the Elements of Byron resort. We are therefore proposing a 40 lineal metre extension of the existing soft (buried sandbags) coastal protection works and will be engaging and listening to feedback on this matter until 11th September. All proposed works would be undertaken on land owned by North Byron Beach Resort only and would be paid for by North Byron Beach Resort.

Solar works

We have lodged a DA for new solar works for Elements of Byron resort and the Byron Solar Train. We believe that the solar works proposed for Elements of Byron represent the largest solar project in the Northern Rivers and the largest for any hotel or resort in Australia.

C4 Environmental Living land

As many of you are aware the old golf course land was rezoned to C4 Environmental Living in May 2022. A further application is required to subdivide the existing four lots across 11.882 hectares into nine. The minimum 1.2 hectare lots

would provide ample space for dwellings to be located in cleared grassed areas only. The C4 zone permits single houses but not secondary dwellings or dual occupancy, so there could never be more than one house on each of the nine lots.

We will be holding engagement sessions where anybody is welcome to come along and chat about any of these matters.

3:00 – 5:00pm Friday 8th September
10:00am – midday Saturday 9th September

Further to this, those interested may book to attend site walks to view and discuss their specific areas of interest. These sessions are accessible via a booking only, whereas the engagement sessions are drop in with no bookings required.

For any session please meet at the tent set up near the Elements of Byron kiosk which is along the public beach access at the end of Bayshore Drive.

Further information regarding all these matters can be found at: northbyronbeachresort.com.au or contact us: enquiries@northbyronbeachresort.com.au or 0283794044. Thank you.

northbyronbeachresort.com.au

3.3 Site notice

An A2 sized (42 x 59.4cm) site notice was erected along the public beach access walk on 29th August 2023. It remains in place.



Community engagement at Elements

There's a fair bit in the pipeline at North Byron Beach Resort, the home of Elements of Byron Resort. So we have set some time aside to chat to our community about what's going on. There are three projects you might be interested to know about, if you don't already:

Temporary coastal protection works

There is a section of land from the where the Belongil Creek meets the sand to around 160m south of the public beach access which is subject to erosion. Over a distance of 20 to 30m north of the end of the existing protection works there has been a loss of approximately 10 metres of land, with a resulting loss of the dune profile, over the period December 2018 to November 2022. This has impacted on the beach. It has also impacted on public safety, on beach amenity and on the Elements of Byron resort. We are therefore proposing a 40 lineal metre extension of the existing soft (buried sandbags) coastal protection works and will be engaging and listening to feedback on this matter until 11th September. The proposed works would be undertaken on North Byron Beach Resort land only.

Solar works

We have lodged a DA with Council for new solar works for both Elements of Byron Resort and the Byron Solar Train. We believe that the works proposed for Elements of Byron represent the largest solar project in the Northern Rivers and the largest for any hotel or resort in Australia.

C4 Environmental Living Land

As many of you are aware the old golf course land was rezoned to C4 Environmental Living in May 2022. A further application is required to subdivide the existing four lots across 11.882 hectares into nine. The large – minimum 1.2 hectare – allotments would provide ample space for dwellings to be located in cleared grassed areas only. The C4 zone permits single houses but not secondary dwellings or dual occupancy, so there could never be more than one house on each of the nine allotments.

Further information regarding all of the above can be found at www.northbyronbeachresort.com.au

We will be holding engagement sessions where anybody is welcome to come along and have a chat:

3:00 – 5:00pm Friday 8th September
10:00am – midday Saturday 9th September

Further to this, those interested may book in to attend site walks to view and discuss their specific areas of interest. These sessions are accessible via a booking only, whereas the engagement sessions are drop in with no bookings required. For site walk bookings please visit our website or contact us by phone or email.

For any session please meet at the tent set up near the Elements of Byron kiosk which is along the public beach access at the end of Bayshore Drive. Thank you.

www.northbyronbeachresort.com.au

0283794044 | enquiries@northbyronbeachresort.com.au

3.4 Personal contact

While we engaged with some neighbours from 19th July, most of the conversations were held between 29th August and 1st September, once the project website was live. Sixteen people close by in Sunrise/the Arts Estate were contacted via email and phone. They were sent the link to the project website and the various opportunities for engagement including private meetings/site walks. These people were contacted due to their previous engagement with us and/or their proximity to the site.

A further ten local stakeholders were contacted during this time to advise them of the project website and the various opportunities for engagement.

Byron Shire Councillors were also updated and advised of the opportunities for engagement.

While historically we have delivered letterbox drop flyers to the local area when we engage, on this occasion the subject site did not meet that criteria in that there are no neighbours within 500m of the subject land. And so we made sure to inform neighbours, paying particular attention to informing those who would in turn inform others. And we made a greater effort to ensure our onsite presence was strong, with varied opportunities for interaction (private meetings, site walks and drop in sessions) across two days, one of these being a week day and one a weekend day.

3.5 Onsite community engagement

Two full days of onsite engagement were planned for Friday September 8th and Saturday September 9th. We wanted to make sure that people would feel comfortable coming along, so we offered public site walks, bookable online via Eventbrite or by phone or email, as well as two hour “drop in chat sessions” on both days where no booking was required. There were also numerous times set aside across both days for private meetings/site walks.

A tent was set up with a table and chairs next to Elements of Byron Resort, outside the kiosk along the public beach access. And a six seater golf buggy was on hand for those who wanted to access the land but preferred not to walk.



Onsite engagement Friday afternoon 8th September

	Friday 8 th September	Saturday 9 th September
	<i>Present from North Byron Beach Resort was Owner Peggy Flannery, Development Director Jeremy Holmes, Development Manager Kasi Chong and myself, Caroline Desmond (although I was not present for the meeting with Byron Shire Council staff).</i>	<i>Present from North Byron Beach Resort was Development Director Jeremy Holmes, Development Manager Kasi Chong and myself (although I was not present for the Byron Bird Buddies meeting). Present also across the entire day was Greg Britton, coastal engineer from Royal HaskoningDHV.</i>
9:00am		Byron Bird Buddies
10:00am - midday		Drop in chat session. Only one person (a long term Sunrise resident) came along to this session.
11:00am	Byron Shire Council staff	
12:30pm	Byron Shire Councillor	
12:30pm	<i>Initially a site walk was promoted at this time however due to no bookings this was removed from Eventbrite at 12:15pm on September 7th.</i>	Site walk. Whilst there were no bookings received, we remained onsite until 12:45pm in case anybody showed up. They did not.
1:45pm	Site walk. Only one person – a Sunrise resident who had booked to attend via email - came along to this session. The session was held in the tent for ease of discussion.	<i>Initially a site walk was promoted at this time however due to no bookings this was removed from Eventbrite at 12:15pm on September 7th.</i>
2:00pm	Byron Shire Councillor	
3:00 – 5:00pm	Drop in chat session. Two long term Byron Shire residents – one from Ewingsdale who had come to an onsite engagement session of ours a decade ago and one from Upper Main Arm - showed up for this session. We had not made contact with either of these people.	

4.0 FEEDBACK

Whilst we engaged with (and continue to engage with) Byron Shire Council staff, Councillors and state government bodies, those discussions are not the subject of this report. Which leaves six locals, including two from Byron Bird Buddies, who came along to the onsite engagement. And a further five locals who responded via email and phone call. Much of the feedback received was in relation to the C4 Environmental Living land and the resort in general. For transparency, that feedback has been included separately at 4.2.

A new paragraph represents comments from a different person. Comments are all direct quotes unless italicised.

4.1 Feedback relevant to this DA

Topic	Email	Phone	Onsite engagement	Comments	Developer response
Positive feedback	3		2	<p>As usual it looks like you've been very busy and proactive regarding the precious environment and climate.</p> <p><i>(via email)</i> Greetings, North Byron Beach Resort team. My sincere thanks for all that you do for the community, region and society. <i>(And in person to Peggy)</i>: I want to compliment you on your care of the land".</p> <p><i>(To Peggy)</i>: What I think you've done is fantastic. It's a great credit to you what you have done.</p> <p>I am very grateful that North Byron Beach Resort is engaged in protection works where the Belongil Creek continues to erode the dunes to the north west of the creek exit. Left as it is, these original dunes will continue to be eaten away over time, threatening Sunrise and West Byron residential developments which sit in behind the resort and the dunes. The loss and degradation of the protective dunes east of the creek, due to inappropriate use and development on the dunes themselves, has pushed incoming sands north (west), extending the sand spit</p>	Thank you.

Caroline Desmond

Topic	Email	Phone	Onsite engagement	Comments	Developer response
				that runs parallel to the creek as it nears the sea. Consequently the creek is being forced further north and into the littoral rain forest and northern dune face. Any work to save both forest and dunes for future protection of the swampland habitat has to be applauded. We cannot continue to wait for a CMP to be approved. We are losing too much. The Coastal Management Act asks that dunes and beaches be protected where possible. We have a chance here, where the built environment has remained behind the dune profile, to draw a line in the sand - aka the exit of the creek - and restore and protect what remains of our embayment. Of course where the Elements land and protection works end, the dunes will still be at risk. I understand at that point Marine Parks has management of the dunes. Let's hope they can come to the rescue and continue the exemplary restoration work of the North Byron Beach resort.	
Retain beach access		1	2	<p>People will be upset if you take away their beach access.</p> <p>Will you always retain the beach access?</p>	The current beach access is preserved and protected via a right of way easement five metres wide connecting Bayshore Drive to the beach across North Byron Beach Resort land. As part of a proposed future subdivision this will be expanded to be between ten and 20 metres wide, and formalised with a pathway and landscaping.
General feedback	3			<p>Thanks for the update.</p> <p>Thanks for sending this through.</p>	

Caroline Desmond

Topic	Email	Phone	Onsite engagement	Comments	Developer response
				Good luck and thanks again for sharing ahead of time. I really appreciate it.	
Damage to dune from beachgoers			1	Have you seen what's happening to the major dune here. I was shocked. I've been away for three months. Kids are just sliding down it all the time. Whether Council is managing it I don't know. I was thinking somebody needs to put some sort of signage there and fence it on the beach side like they did at Clarkes. It would be awful to see that eaten away there. Who's going to do that. It wasn't as bad before. Now that Elements are doing this work on their land people will think that it's the result of Elements' work. But it's not. I don't think they need sandbags.	We have written to Crown Lands, as the landowner, to bring this to their attention and suggest some possible solutions.
West Byron		1		The creek will be affected by West Byron.	The proposed works will provide some protection for the old dune frontage from Belongil Creek.
Byron Bird Buddies onsite feedback					
Timing of removal of geobags					The proposed works are temporary in nature. They have a five year approval period in line with the anticipated Coastal Management Program (CMP) for the Byron Shire Northern Coastline.
Can you move the cabins closest to the beachfront if you had to?					Technically yes these cabins could be relocated if they were under real threat.

4.2 Feedback that is not related to this DA

Topic	Email	Phone	Onsite engagement	Comments	Developer response
C4 Environmental Living land					
Interested in purchasing land			2		<p>Two locals who attended the onsite engagement enquired about purchasing future lots associated with the C4 land. They both enquired about pricing and were advised that there is a significant planning process to undertake prior to any thought being given to pricing. We explained the process underway and yet to come. One of these people enquired as to whether we would be open to using two of the lots to house indigenous elders on a rotating basis. We advised that subject to the planning process unfolding, all the lots would be sold. And so whilst it was up to the future owners what they chose to do with their lots, they would need to work within the strict guidelines of the C4 zoning as well as additional restrictions that will be imposed upon the sites via the amended DCP and conditions of the subdivision approval which include a vegetation management plan for the land.</p> <p>Both these residents asked to be kept informed regarding future sale of the lots.</p>

Caroline Desmond

Topic	Email	Phone	Onsite engagement	Comments	Developer response
Floodplain management			1		<p>This resident, a member of Byron Shire Council's Floodplain Management Committee, engaged in strong technical and informed discussion regarding the hydrology of the site and catchment, flood planning levels, the impact of sea level rise and climate change and some of the challenges with evacuation.</p> <p>There was extensive conversation around the recent flooding events and the land. Around the existing floor levels of the resort and of Bayshore Drive (the road itself).</p> <p>The discussion was mutually beneficial. There did not seem to be concrete feedback however it would certainly be useful to continue this discussions as the planning process unfolds.</p>
Resort feedback			1	You've done a great job and people have a great time when they stay here.	
Lifeguards			1	The other thing I wanted to compliment you on was the lifeguards. Putting them on.	
Apartment at Elements			1	I am interested in a permanent little apartment at Elements. I have stayed here.	

Topic	Email	Phone	Onsite engagement	Comments	Developer response
Byron Bird Buddies onsite feedback					
Latham Snipe in those ponds and this bird doesn't like a vegetated edge					All of the experts recommend a heavily vegetated edge for cane toad exclusion amongst other things.
What about flooding and how will it be dealt with					We have done a lot of modelling and work on this land and we understand the hydrological conditions very well. We are putting appropriate responses and measures in place to manage this through the design. These measures can be viewed in our Planning Proposal and in the forthcoming subdivision application. There is also an FAQ about Flooding on our www.nbbrproposal.com.au website, which is also linked from our primary community information website www.northbyronbeachresort.com.au
Don't want anything to happen on this land.					
Object to cats and dogs					Pets will be considered as part of the DCP. Whatever eventuates will be a

Caroline Desmond

Topic	Email	Phone	Onsite engagement	Comments	Developer response
					better outcome for wildlife than the “free for all” that has been the result of not fencing the land since we purchased it in 2010. That was, however, a conscious decision which was about providing amenity for locals whilst we considered the land’s longer term use.

Caroline Desmond

5.0 OUTCOMES

Overall there was little specific feedback received regarding the proposed extension of the existing coastal protection works. Reasons for this may include:

- Detailed project website

It is considered that the dedicated project website was able to provide sufficient information for most people. And that without it there would have been more direct engagement.

- Direct experience

Any local that has used that beach over a period of time will have witnessed the changes and will be aware of the impact the creek has and is having on the original old dune frontage. They will be aware that the proposed protection works represent private investment in public recreation space and natural assets, that the proposed works will beautify their beach, making it safer and more accessible.


Having said this, it is possible that those who may be opposed to the proposed protection works for whatever reason or reasons may be biding their time until Byron Shire Council seeks direct feedback.

With the exception of Byron Bird Buddies, who asked about the timing of removal of the geobags and whether the cabins closest to the beachfront could be removed, there was no negative feedback received from members of the public regarding the proposed extension to the existing protection works.

6.0 APPENDICES

Appendix 1 – Relevant sections of the North Byron Beach Resort website

<https://northbyronbeachresort.com.au>



North Byron Beach Resort

- Welcome
- Old golf course land
- Solar works
- Protection works
- History
- Sustainability
- Byron Solar Train
- Contact

Welcome

We established this website in 2013 to keep the Byron Shire community abreast of our intentions with the North Byron Beach Resort site.

The overall property is 88.2 hectares with almost 2km of beach frontage. The portion of this land we developed as Elements of Byron comprises 20.2 hectares and has a final building footprint of only 3.8%.

Our goal is that Elements of Byron and the broader North Byron Beach Resort site are assets that are valued by the local community.

Our commitment to the community is long term. We own the land and value the opportunities we have to create quality employment and be an important contributor to the Byron economy.

Please help us by informing us if you feel you are being impacted or compromised. Your ongoing feedback is invaluable in improving our operations.

Thank you.

Copyright 2013 North Byron Beach Resort.



North Byron Beach Resort

- Welcome
- Old golf course land
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- Contact

Temporary coastal protection works

There is a section of land from the where the Belongil Creek meets the sand to around 160m south of the public beach access which is subject to erosion.

Over a distance of 20 to 30m north of the end of the existing protection works there has been a loss of approximately 10 metres of land, with a resulting loss of the dune profile, over the period December 2018 to November 2022.

This has impacted on the beach. It has also impacted on public safety, on beach amenity, on the Elements of Byron resort and on access to the beach from within the Elements of Byron resort.

Due to these factors and having regard to the 2016 Coastal Management Act 2016, there is a need for the extension of the existing coastal protection works which were constructed in 2015 under the "code of practice".

The existing works are in the form of a geobag (large sandbag) wall which extends for 210 lineal metres. It is proposed that this buried structure be extended to the north by an additional 40 lineal metres, using the same profile and design. All the proposed new works would be within land owned by North Byron Beach Resort. The public beach access, which is 160m north of the northern limit of the proposed works, would not be impeded.

The proposed extension would be a temporary structure with a proposed lifespan of five years, while the Coastal Management Program (CMP) for the Byron Shire Northern Coastline is completed. Stage 1 of the Coastal Management Program Northern Coastline was adopted by Council on 25 June 2020 and Stage 2 is in progress. There is presently no CMP applicable to the subject land.

For more detailed information please visit our dedicated website [here](#).

Copyright 2013 North Byron Beach Resort

HOME WHY DETAIL FAQ ENGAGE

Temporary coastal protection works

There is a section of land from where the Belongil Creek meets the sand to around 160m south of the public beach access which is subject to erosion.

Over a distance of 20 to 30m north of the end of the existing coastal protection works there has been a loss of approximately 10 metres of land, with a resulting loss of the original old dune profile, over the period December 2018 to November 2022. This has impacted on the beach. It has also impacted on public safety, on beach amenity, on the Elements of Byron resort and on access to the beach from within the Elements of Byron resort.

Due to these factors and having regard to the 2016 Coastal Management Act 2016, there is a need for the extension of the existing coastal protection works which were constructed in 2015 under the "Code of Practice".



2015 aerial photo showing longitudinal extent of the existing geobag coastal protection works and land ownership

The existing works are in the form of a geobag (large sandbag) wall which extends for 210 lineal metres. It is proposed that this buried structure be extended to the north by an additional 40 lineal metres, using the same profile and design. All the proposed new works would be within land owned by North Byron Beach Resort. The public beach access, which is 160m north of the northern limit of the proposed works, would not be impeded.

The extension would be a temporary structure with a proposed lifespan of five years, while the Coastal Management Program (CMP) for the Byron Shire Northern Coastline is completed. Stage 1 of the Coastal Management Program Northern Coastline was adopted by Council on 25 June 2020 and Stage 2 is in progress. There is presently no CMP applicable to the subject land.

ADDITIONS TO EXISTING COASTAL PROTECTION WORKS



Legend

- Proposed extension to Geobag Coastal Protection works
- Existing Geobag Coastal Protection works



LOCATION PLAN
1:1000

Why?

The erosion on this section of land (which includes Elements of Byron resort land, Crown land and land owned by Byron Shire Council) is caused by a chain of events which, while they involve natural processes, are also affected by human intervention. Having said that, it is not our intention to apportion blame as circumstances unfold with people doing the best that they can with the information they possess at any time. And a great deal more is understood today regarding coastal processes and protection than in past years.

From the public beach access north to Tyagarah (in fact from considerably south of the public beach access) there is still natural coastal habitat. However the same cannot be said, unfortunately, for the area that is the subject of this proposal and the existing coastal protection works.

The images and text below show how the entrance to the Creek is being pushed further and further north. While there is some degree of natural migration of sand northward, in this instance the sand migration is exacerbated due to hard revetment (buildings and rock walls) located at Belongil.

Another factor is the opening and closing of Belongil Creek. The creek is opened mechanically by Byron Shire Council periodically – around two or three times a year. The mechanical opening of Belongil Creek has become necessary to mitigate the risk of the Byron Town Centre flooding. Following the opening the entrance typically migrates to the north which influences shoreline erosion of Elements of Byron land.

- the northward transport of sand and erosion of the spit elongates and pushes the entrance channel further north. This behaviour is illustrated in Figure 5-2 which shows the 2018 creek shoreline/vegetation line in the entrance area (in blue) superimposed on earlier aerial photography including a 1986 and a 1965 vertical aerial photograph;

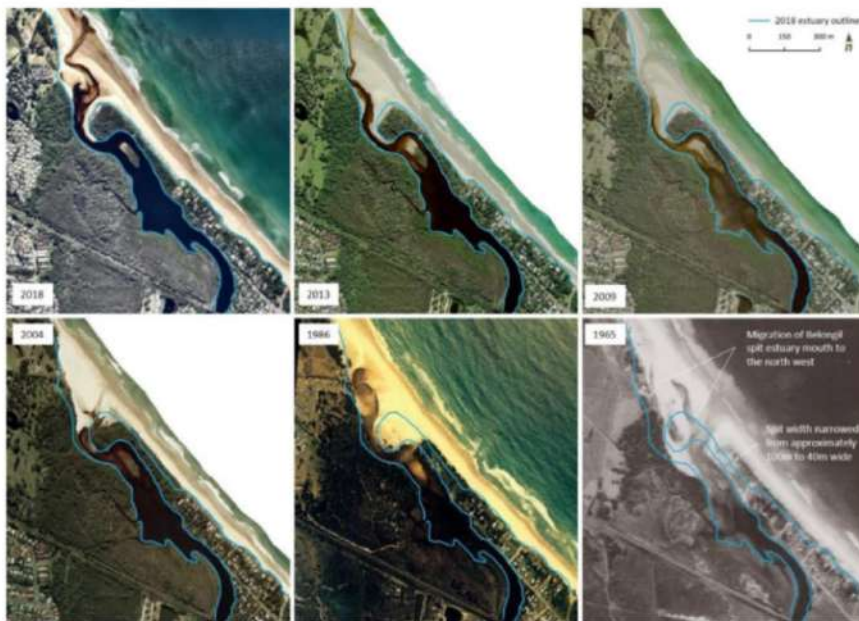


Figure 5-2 Historical aerial imagery comparison in the entrance area of the Belongil Estuary, with 2018 creek and vegetation outline shown in blue (source: Entrance Opening Strategy – Revision 1.0, December 2021 – part Figure 12)

This sand migration has exacerbated erosion due to several factors:

- The estuary 'hugs' and undercuts the left hand bank for a longer distance before entering the sea.
- The alongshore migratory behaviour creates a wider entrance zone, comprising a low lying sandy berm, which can be overtopped by waves during ocean storms.
- The migratory entrance channels deplete the beach sand volume available to combat the storm erosion demand.
- The remnant pools at the base of the erosion escarpment allow wave attack at a lower elevation in the dunal profile and also potentially allow some partial wave reformation before reaching the back beach erosion escarpment.

The recurved spit at the northern end of Belongil Spit and its continued vegetative stabilisation and growth in volume has forced the estuary to be diverted westward. Coupled with this behaviour has been the formation of the vegetated island; as a consequence the dominant channel now flows to the east of the island causing the estuary to take a sharp ninety degree bend at the recurved spit to flow westwards directly towards the bank.

Unfortunately, the degradation of the shoreline will continue unless we can do these soft works over 40 lineal metres to maintain the beach.

Proposed works

The proposed works would comprise:

- Approximately 200 x 0.75m³ geobags arranged in a step profile five units high and typically two units wide.
- A slope of approximately 1V:1.5H.
- An overall approximate (buried) height of 2.1 metres.
- An encapsulated self healing toe comprising an additional geobag incorporated in the bottom layer on the seaward side and tied back to the double layer structure.
- A westward return at the northern limit of the extension to mitigate the out-flanking risk.

There are already approximately 300 x 0.75m³ geobags that are filled and stockpiled near the northern limit of the extension (far more than is required for this task). These geobags were filled with sand from the commercial sand extraction operation at Chinderah. No sand was used from the beach or dune system.

The placement of the geobags would be supervised by a suitably experienced Coastal Engineer. Particular care would be taken in the installation of the 'encapsulated self-healing toe' to ensure the geotextile encapsulation of the third geobag in the bottom layer is suitably tied to the double-layer main section of the works.

Where the works are located seaward of the existing erosion escarpment, the area between the crest of the works and the escarpment will be back filled and battered back at a stable slope. The two geobags at the crest will be left exposed to facilitate along shore pedestrian access unless the crest level is below the existing beach berm level at the time of construction. Where the works are located wholly with the dunal system they will be completely back filled.

Excavation of the beach berm and dune would be required to install the geobags to the proposed level and alignment. The estimated total quantity of excavation is 1,200m³. All excavated material would be temporarily stockpiled and reused in the restoration/reshaping of the beach and dune profile. No excavated sand would be removed from the beach and dune system.

The aim of the excavation would be to place the geobags as low as possible in the sand profile while avoiding or minimising the need for excavation below the water table, which would otherwise affect buildability and the quality of construction. In the event it became necessary to remove any groundwater or wave washover from the excavation, this would be pumped to a nearby depression (sump) created in the beach berm to allow natural infiltration. The groundwater would not be pumped directly to the estuary or to the sea.

Approximately 800m³ of sand would be imported from the commercial sand extraction operation at Chinderah to assist in re-establishment of the dune profile. This would address the volume of sand 'locked up' behind the extension to the geobag coastal protection works.

Fencing would be incorporated around the construction works on the landward side to prohibit unauthorised access. Star pickets with bunting/flagging or the like would be utilised on the beach to manage access, coupled with observers employed by the Contractor.

Erosion and sediment controls would be installed in accordance the 'Blue Book' (Landcom, 2006), as required, to manage the potential effects of land disturbance activities on the Belongil Estuary.

At the completion of works, vegetation of the dune areas will be undertaken using suitable species.

FAQ

– What is going on?

There is a section of land from where the Belongil Creek meets the sand to around 160m south of the public beach access which is subject to erosion.

Over a distance of 20 to 30m north of the end of the existing protection works there has been a loss of approximately 10 metres of land, with a resulting loss of the original old dune profile, over the period December 2018 to November 2022.

This has impacted on the beach. It has also impacted on public safety, on beach amenity, on the Elements of Byron resort and on access to the beach from within the Elements of Byron resort.

The erosion on this section of land (which includes Elements of Byron resort land, Crown land and land owned by Byron Shire Council) is caused by a chain of events which, while they involve natural processes, are also affected by human intervention.

We are proposing, having regard to the 2016 Coastal Management Act, a 40 lineal metre extension of the existing soft coastal protection works. The life of the proposed works is five years.

Due the specific nature and design of the soft proposed works any increased erosion as a result of these works is expected to be limited.

However, to meet the requirements of the Coastal Management Act 2016, it is our recommendation that conditions be imposed on any consent for the restoration of the beach, or land adjacent to the beach, if any increased erosion of the beach or land adjacent to the beach is caused by the presence of the works, for the life of these works.

The application will be assessed by Byron Shire Council and determined by the Regional Planning Panel (RPP).

– How long would this work take?

It is anticipated that the work would take no longer than four weeks to complete. Public beach access would not be hindered during this time. The works would be carried out during normal construction working hours Monday to Friday. No work would be undertaken on weekends or public holidays. Approval may be sought to extend working hours during Monday to Friday to take advantage of tide levels and weather conditions to reduce the construction period.

– Will this affect my beach access?

No. The public beach access is located approximately 160m to the north of the northern limit of the proposed works.

– Whose property would these works occur on?

All the proposed works would be located on private land owned by North Byron Beach Resort. Temporary limited access on the seaward side of the proposed works would be required during construction.

– Who would pay for this work?

North Byron Beach Resort.

– Are you proposing any revegetation?

At the completion of the works, vegetation of the dune areas would be undertaken using suitable species.

– Is this to protect the C4 Environmental Living lots that you want to sell?

No. The proposed works would protect only the area directly behind the works. The C4 land is north of the public beach access and the public beach access is 160 metres north of these proposed works.

– Will this cause damage to neighbouring properties?

The extract below is from the 2023 Coastal Engineering Assessment by Royal HaskoningDHV.

Firstly, it is necessary to consider whether any increased erosion of the beach or adjacent land would be caused by the presence of the works. This can be considered under several topics:

Additional scour/erosion immediately seaward of the works;

End effects on immediately adjacent land; and

Consequences due to 'locking up' of sand behind the coastal protection works.

Additional scour/erosion immediately seaward of the works

Research has shown that concerns that seawalls cause additional scour/erosion immediately seaward and greatly delay post-storm beach recovery are probably false, as there are no known data or physical arguments to support these concerns (US Army Corps of Engineers, Coastal Engineering Manual (CEM), pp V-3-28, V-3-32).

Accordingly, the proposed works would not be expected to cause any increased scour/erosion immediately seaward of the works, noting also that at times of severe storms the erosion escarpment within the dune system can be near-vertical and thus steeper than the geobag works.

Furthermore, the low crest height of the proposed works (approximately 2.1m AHD) would limit any reflective behaviour.

End effects on immediately adjacent land

Increased erosion of immediately adjacent land, particularly to the north of the works, is predicted to occur due to end effects, caused by the presence of the works. An underlying assumption for assessing the extent of the end effect is that the volume of sand 'locked up' behind the coastal protection works and which would otherwise be available to meet the storm erosion demand is offset within the end effects.

As noted earlier, the extent of the end effect due to the proposed works is not expected to reach the public accessway located some 160m north of the northern limit of the works over the life of the works of 5 years, however there is some uncertainty in this prediction.

Since some increased erosion would be caused by the presence of the works, to meet the requirements of the Coastal Management Act 2016, satisfactory arrangements would need to be made (by conditions imposed on the consent) for restoration of the increased erosion for the life of the works.

It is recommended such a condition is imposed.

Consequences due to 'locking up' of sand

There are two potential consequences of 'locking up' sand behind the coastal protection works:

- Additional localised erosion to meet storm erosion demand. This has been considered in the above discussion of end effects.
- Impact on long term shoreline recession.

An assessment of the second point has been made by considering the volume of sand that could be potentially 'locked up' behind the coastal protection works as the shoreline recedes.

Based on RHDHV (2019) it is considered reasonable to adopt a long term average shoreline recession rate due to net sediment loss (underlying recession) of 0.5m/yr and a shoreline recession due to sea level rise over the next 5 years of 1.8m (0.008m/yr x 5 years x 45 [Bruun Factor]). This would give a total shoreline recession over the next 5 years of 4.3m.

If the proposed works, with a crest level of approximately 2.1m AHD, restricted the entire active height of the dune of 7m from recession, the volume of sand 'locked up' over 40m for 5 years would be approximately 1,200m³. If, on the other hand, the proposed works only locked up the sand to a height equivalent to the crest level of the works, on the basis that the dune above the crest level would be able to recede, the volume of sand 'locked up' over 40m for 5 years would be approximately 400m³.

The volume of 1,200m³ is considered an overly conservative estimate. However, in order to introduce some level of conservation it is considered that an average of the above two estimates, or approximately 800m³, could be adopted.

As it happens, in order to re-establish the dune profile on the private land, it is proposed to import approximately 800m³ of sand to site for this purpose. This would account for the adopted estimate of the 'locked-up' volume of sand for 5 years.

There is also the recommendation, as noted above, that a condition of consent be imposed to address Section 27 (1)(b)(ii) of the Coastal Management Act 2016.

Hence it is considered that satisfactory arrangements have been made.

– Will this cause damage to neighbouring properties?

The extract below is from the 2023 Coastal Engineering Assessment by Royal HaskoningDHV.

Firstly, it is necessary to consider whether any increased erosion of the beach or adjacent land would be caused by the presence of the works. This can be considered under several topics:

Additional scour/erosion immediately seaward of the works;

End effects on immediately adjacent land; and

Consequences due to 'locking up' of sand behind the coastal protection works.

Additional scour/erosion immediately seaward of the works

Research has shown that concerns that seawalls cause additional scour/erosion immediately seaward and greatly delay post-storm beach recovery are probably false, as there are no known data or physical arguments to support these concerns (US Army Corps of Engineers, Coastal Engineering Manual (CEM), pp V-3-28, V-3-32).

Accordingly, the proposed works would not be expected to cause any increased scour/erosion immediately seaward of the works, noting also that at times of severe storms the erosion escarpment within the dune system can be near-vertical and thus steeper than the geobag works.

Furthermore, the low crest height of the proposed works (approximately 2.1m AHD) would limit any reflective behaviour.

End effects on immediately adjacent land

Increased erosion of immediately adjacent land, particularly to the north of the works, is predicted to occur due to end effects, caused by the presence of the works. An underlying assumption for assessing the extent of the end effect is that the volume of sand 'locked up' behind the coastal protection works and which would otherwise be available to meet the storm erosion demand is offset within the end effects.

As noted earlier, the extent of the end effect due to the proposed works is not expected to reach the public accessway located some 160m north of the northern limit of the works over the life of the works of 5 years, however there is some uncertainty in this prediction.

Since some increased erosion would be caused by the presence of the works, to meet the requirements of the Coastal Management Act 2016, satisfactory arrangements would need to be made (by conditions imposed on the consent) for restoration of the increased erosion for the life of the works.

It is recommended such a condition is imposed.

Consequences due to 'locking up' of sand

There are two potential consequences of 'locking up' sand behind the coastal protection works:

- Additional localised erosion to meet storm erosion demand. This has been considered in the above discussion of end effects.
- Impact on long term shoreline recession.

An assessment of the second point has been made by considering the volume of sand that could be potentially 'locked up' behind the coastal protection works as the shoreline recedes.

Based on RHDHV (2019) it is considered reasonable to adopt a long term average shoreline recession rate due to net sediment loss (underlying recession) of 0.5m/yr and a shoreline recession due to sea level rise over the next 5 years of 1.8m (0.008m/yr x 5 years x 45 [Bruun Factor]). This would give a total shoreline recession over the next 5 years of 4.3m.

If the proposed works, with a crest level of approximately 2.1m AHD, restricted the entire active height of the dune of 7m from recession, the volume of sand 'locked up' over 40m for 5 years would be approximately 1,200m³. If, on the other hand, the proposed works only locked up the sand to a height equivalent to the crest level of the works, on the basis that the dune above the crest level would be able to recede, the volume of sand 'locked up' over 40m for 5 years would be approximately 400m³.

The volume of 1,200m³ is considered an overly conservative estimate. However, in order to introduce some level of conservation it is considered that an average of the above two estimates, or approximately 800m³, could be adopted.

As it happens, in order to re-establish the dune profile on the private land, it is proposed to import approximately 800m³ of sand to site for this purpose. This would account for the adopted estimate of the 'locked-up' volume of sand for 5 years.

There is also the recommendation, as noted above, that a condition of consent be imposed to address Section 27 (1)(b)(ii) of the Coastal Management Act 2016.

Hence it is considered that satisfactory arrangements have been made.

– Will this impact public safety?

The proposed works would include the regrading of the existing steep erosion escarpments which are potentially unstable and pose some risk to life and public safety:



This action would have a positive impact on risk to life and public safety. The proposed works have been designed in accordance with accepted coastal engineering practice and design guidelines to maximise stability. They would be subject to monitoring and maintenance in the event of any damage.

– Do you have a long term plan?

The works proposed now do not address the loss of the littoral rainforest and are not long term. However, given the uncompleted Coastal Management Plan we believe this is the best option for now.

A longer term strategy has been considered for the entrance area of the Belongil Estuary. The strategy outlined below would be permanent, would not impact on neighbouring properties (in the unlikely event of any impact occurring conditions of approval would include repair at the expense of North Byron Beach Resort) and all works would be funded by North Byron Beach Resort. These works are not, however, the subject of this application.

The extract below is from Section 5.4.2 of the 2023 Coastal Engineering Assessment by Royal HaskoningDHV.

5.4.2 Longer term management options at the entrance to the Belongil Estuary

The current Belongil Creek Entrance Opening Strategy (Final report (Revision 1), December 2021) acknowledged that as the spit elongates more to the north and Littoral Rainforest is further eroded, some management response in the entrance area is warranted, noting that the bank retreat in the area is currently occurring at the rate of 3 to 5 m/yr.

In terms of a management response, it was stated that a tripper wall or some shorter, shore normal buried groynes, beach scraping and protective works, could help protect the Littoral Rainforest community and the Elements of Byron foreshore (Final Report (Revision 1), December 2021, Section 4.4). The Final Report went on to say that the necessary planning and investigations for the above options should begin now (late 2021) under the NSW Coastal Management Framework, ie as part of the development of a CMP covering the Belongil Estuary.

RHDHV had also earlier in 2015 considered management responses in the entrance area of Belongil Estuary to address erosion of the Littoral Rainforest and Elements of Byron foreshore. The preferred management response comprised of a number of main elements:

a southern spur wall, having the primary aim of training the outlet position of the Belongil Estuary (a form of tripper wall);

a northern spur wall, aimed at mitigating the risk of the entrance breakout channel returning (meandering) toward the resort foreshore immediately north of the southern spur wall;

retention of the existing geobag coastal protection works;

periodic beach scraping in response to beach conditions; and

estuary foreshore protection works along the left hand bank (looking downstream) extending upstream from the southern spur wall to prevent further erosion of the Littoral Rainforest and outflanking landward of the southern spur wall.

The southern and northern spur walls were proposed to comprise sand filled containers, either mega containers or 2.5m3 geocontainers.

The RHDHV proposal including a concept design plan and sections was set out in advice to the then North Byron Beach Resort and could be a consideration in the development of a CMP covering Belongil Estuary.

— How can I have my say?

We welcome your questions and feedback and are engaging on this matter until 11th September. Please contact us on enquiries@northbyronbeachresort.com.au or 0283794044.

We are holding onsite community engagement on Friday 8th and Saturday 9th September.

Byron Shire Council will hold their own public exhibition period later and so you will also have further opportunities to provide your input at that time.

Thank you.

Engage

We welcome your questions and feedback and are engaging on this matter until 11th September. Please contact us on enquiries@northbyronbeachresort.com.au or 0283794044.

As a part of this engagement we are holding onsite community engagement on Friday 8th and Saturday 9th September. Please feel very welcome to come along and have a chat.

Byron Shire Council will then hold their own public exhibition period later, and so you will also have further opportunities to provide your input at that time.

Thank you.