Wamberal Beach Terminal Protection and Sand Nourishment – Investigation and Concept Design: Phase 1

CONSULTATION REPORT

March 2021

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Executive Summary

Wamberal Beach between Terrigal and Wamberal Lagoon is a developed open coastal beach that has been subject to natural coastal erosion for many years. Wamberal is the highest risk beach on the Central Coast, and one of the highest risk coastal locations in NSW.

Council has been progressing its approach to coastal management through the preparation and implementation of the Gosford Beaches Coastal Zone Management Plan (CZMP). Council initiated a Wamberal coastal engineering study to progress with seawall investigations, as per several CZMP actions.

In July 2020, a major storm impacted the beach resulting in the undermining of beachfront properties, damage to public spaces and facilities, and loss of land. Many residents had to be evacuated. This initiated a major emergency response including extensive remedial works to stabilise the toe of the escarpment. The emergency situation generated significant local, state and national - worldwide media coverage.

In response to this emergency, the NSW Government has established the Wamberal Seawall Advisory Taskforce to provide advice and support to Council regarding a long-term solution to coastal erosion at Wamberal Beach. The Taskforce includes representatives from the NSW Government, Dept. Planning, Industry & Environment and Council.

Between 9 November and 7 December 2020, Council commenced its phase one community consultation for the Wamberal Beach Terminal Protection Structure and Sand Nourishment – investigation and concept design which involved:

- a comprehensive information package being displayed on yourvoiceourcoast.com
- an online *Wamberal Beach values and uses survey*
- an online tool for the community to *submit a question*
- 4 drop-in information sessions (both face to face and virtual opportunities were available)

Community participation included:

- **514** stakeholders completed the online survey with a total of **435** separate comments.
- **829** people viewed the information presented ahead of the online survey
- Over **100** community members attended drop-in information sessions both in person and virtually.
- **15** people submitted **29** questions via the online *submit a question* tool.

Results of the survey:

- **83.5%** of respondents said Wamberal Beach is **very important** to them

- **82.9%** of respondents said that Wamberal Beach is their **most visited beach** and **90.9%** said that they encourage friends/family from **outside of the area to visit Wamberal Beach**
- **50.6%** of participants visit the section of Wamberal Beach that is a sandy coastline backed by beachside houses most
- **63%** of participants said that their general experience at Wamberal Beach before the July-August erosion emergency was very good vs **5.5%** stating their experience has been very good after the July-August erosion emergency
- Scenic view / natural outlook **69.3%**, cleanliness of beach sand **80%** and cleanliness of ocean **84.8%** are very important in participants decision to use Wamberal-Terrigal Beach
- When considering long term solutions to erosion at Wamberal Beach participants indicated that maintaining the functional uses of the beach such as swimming, surfing, recreation on sand (**81.8%**), maintaining a sandy beach (**80.9%**) and Protecting the natural processes of the beach (**79%**) were very important
- **53.2%** of survey participants live in Wamberal

The key themes that were raised in survey comments covered:

- Potential loss of beach
- Management options for retreat
- Liability concerns (who pays? what is fair? who is responsible?)
- Environmental concerns and sea level rise

These comments have been grouped into themes and responses are provided to the key issues raised in this report.

Due to the large volume and variety of content contained within the submissions, not every comment was able to be included and responded to in this report however they will all be considered in the next steps for this project and the options being considered.

The key points discussed at the drop-in information sessions covered:

- The beach
    - Perceived impacts: beach (loss of sand), access/usability, surf amenity and visual amenity
- The lagoons
    - End effect concerns: ecological health, dunes, flooding and heritage
- Engagement
    - Concern: perceived lack of engagement in CZMP and current study
- The plan
    - CZMP process and status, Marsden Jacobs study
    - Perception that retreat is the only option, suggestions to build a reef (protection and surf) and encouragement for the construction of a seawall
- Seawall and Sand Nourishment

    - Some for/against/undecided
    - Nourishment sources and sustainability
- Financial matters
    - Who pays? How much?
    - Maintenance (seawall and sand nourishment)
    - Liability
    - Loss of property values

It's important to note that while we do our best to develop projects to meet the needs and requests of the community and stakeholders, technical constraints, costs, and the overarching project objectives must also be considered to deliver a project that is safe, functional and best balances the competing needs of all those affected including the environment.

Next steps

Comments received during the community consultation process for Phase One of the Wamberal Beach Terminal Protection and Sand Nourishment – investigation and concept design will be used to guide and inform the concept options recommended to proceed to the Phase Two consultation which will involve workshopping concept options with both directly impacted residents and the broader Central Coast Community.

The community will be kept up to date as the project progresses.

Contents

Wamberal Beach Terminal Protection and Sand Nourishment – Investigation and Concept Design: Phase 1 .....

Executive Summary 3

Introduction 5

Consultation Approach 7

Objectives of consultation 7

Our engagement framework 7

How we consulted 7

What we heard 9

Who we heard from 9

Wamberal Beach survey results for *uses* 12

Wamberal Beach survey results for *values* 17

Consultation outcomes and next steps 56

Appendices 57

Appendix A 57

Appendix B 59

Introduction

Wamberal Beach Terminal Protection and Sand Nourishment – Investigation and Concept Design: Phase One consultation

Wamberal Beach (Terrigal Lagoon to Wamberal Lagoon) is a developed open coastal beach that has been subject to natural coastal erosion for many years. East Coast Low storms (1974, 1997, 2007, 2016 and 2020) have caused extensive erosion to the beach and dune, as well as damage to structures in this location. Wamberal is the highest risk beach on the Central Coast, and one of the highest risk coastal locations in NSW.

Council has been progressing its approach to coastal management through the preparation and implementation of the Gosford Beaches Coastal Zone Management Plan (CZMP).

Council initiated a Wamberal coastal engineering study to progress with seawall investigations, as per several CZMP actions. Council had also established a Wamberal Beach Working Group with residents and stakeholders.

In July 2020, a major storm impacted the beach resulting in the undermining of beachfront properties, damage to public spaces and facilities, and loss of land. Many residents had to be evacuated. This initiated a major emergency response including extensive remedial works to stabilise the toe of the escarpment. The emergency situation generated significant local, state and national - worldwide media coverage.

In response to this emergency, the NSW Government has established the Wamberal Seawall Advisory Taskforce to provide advice and support to Council regarding a long-term solution to coastal erosion at Wamberal Beach. The Taskforce includes representatives from the NSW Government, Dept. Planning, Industry & Environment and Council.

In consideration of the broader community interest in a seawall on Wamberal Beach, Council have developed a multi phased approach to engaging with the community, phase one consultation is the subject of this consultation report.

Between 9 November and 7 December 2020 Central Coast Council began the first phase of community engagement for the Wamberal Beach Terminal Protection and Sand Nourishment Investigation and Concept Design project. Key community touchpoints in the first phase of engagement included:

- A dedicated project webpage
- Wamberal StoryBoard and community survey
- Community drop-in information sessions

Through these engagement activities, the community were provided with information regarding the complex and longstanding erosion issue at Wamberal Beach and invited to complete a values and uses survey for Wamberal Beach. The questions asked were designed to assist Council to understand what the community love about Wamberal and Terrigal beach, how they use the coastal environment and the broader sentiment toward a long-term solution to the erosion issues. This information will be used to guide the concept designs and future steps for the project. Drop-in information sessions provided an opportunity for the community to speak with Council project staff, coastal engineering consultants and representatives from the NSW Government Advisory Taskforce about the project.

Consultation Approach

Objectives of consultation

The purpose of the phase one consultation for the Wamberal Beach Terminal Protection and Sand Nourishment Investigation and Concept Design project was to:

- Inform the community of the status of a permanent solution for Wamberal Beach and the Manly Hydraulics Laboratory investigation and concept design project.
- Encourage the community and stakeholders to complete the values and uses survey to understand what the community love about Wamberal and Terrigal Beach, how they use the areas and broader sentiment toward a long-term solution to the erosion issue.
- Provide the community an opportunity to speak directly with project staff and Coastal Management subject matter experts.
- Hear from stakeholders and the community to identify issues
- Report back to the community on the outcomes of community consultation and the next steps.

Our engagement framework

Consultation has been designed in accordance with Central Coast Council's Engagement Framework. This framework is available to view at https://cdn.centralcoast.nsw.gov.au/sites/default/files/documents/policies-register/community-engagement/engagement-framework/engagementframework.pdf.

How we consulted

We carried out extensive promotion of the consultation period to ensure the community and affected stakeholders were aware of the opportunity to get involved and given enough notice to provide feedback.

Media release	• Issued on Wednesday 11 November 2020 A copy of the media release can be found in Appendix A
Drop-in Information sessions (face to face)	Drop-in information sessions were held on: • Wednesday 25 November 9am to 4pm hosted at the Erina Centre (Attended by 28 people) • Thursday 26 November 9am to 4pm hosted at Wamberal Beach Surf Life Saving Club (Attended by 66 people)

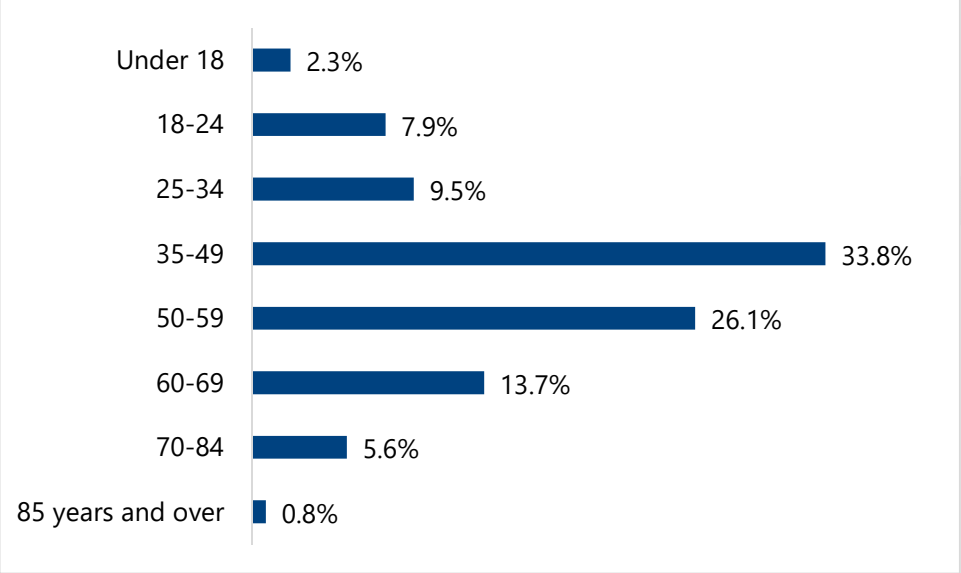
Drop-in information sessions (virtual)	Drop-in information sessions were held on: • Tuesday 1 December from 2.30pm to 6pm (Attended by 5 people) • Thursday 3 December from 12pm to 3pm (Attended by 2 people)
Your Voice – Our Coast website	• Project page launched on 9 November 2020 under *Wamberal Beach Terminal Protection and Sand Nourishment - Investigation and Concept Design* • https://www.yourvoiceourcoast.com/wamberalerosion 1,844 visits during consultation period
Social media	• Facebook posts on 11 November, 13 November and 28 November 2020 Total reach of 17,568 • Twitter tweets on 11 November, 13 November, 24 November and 28 November 2020 • Instagram post on 13 November 2020 • LinkedIn post on 13 November 2020 Copies of the posts can be found in Appendix B

What we heard

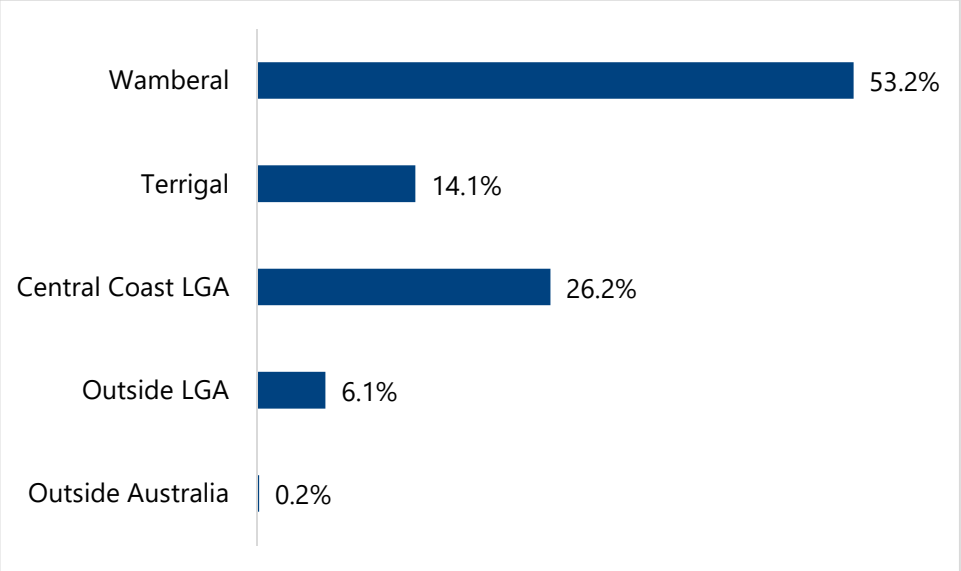
514 surveys were completed during this time. These were provided as online surveys through yourvoiceourcoast.com and hand written survey forms provided at information sessions.

Who we heard from

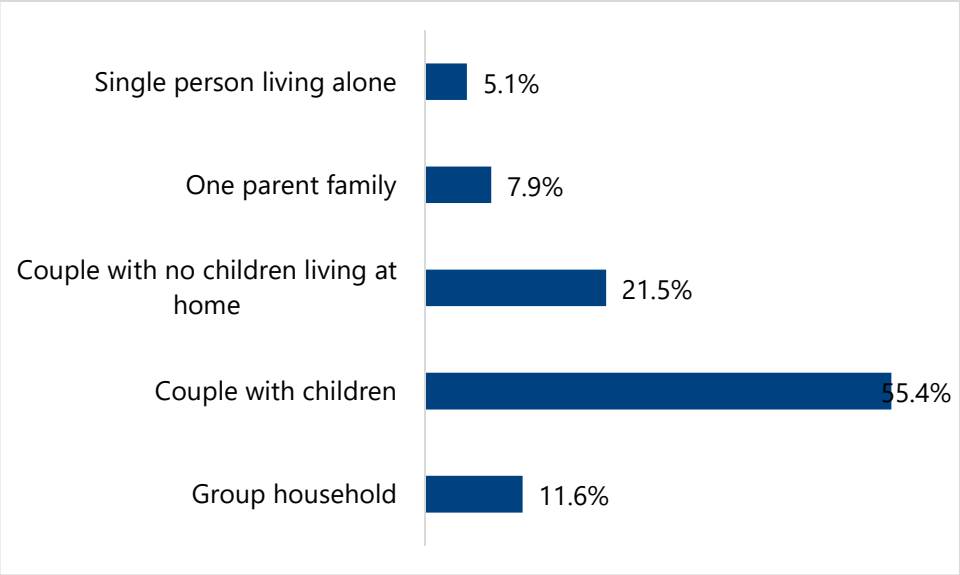
Age of respondents:



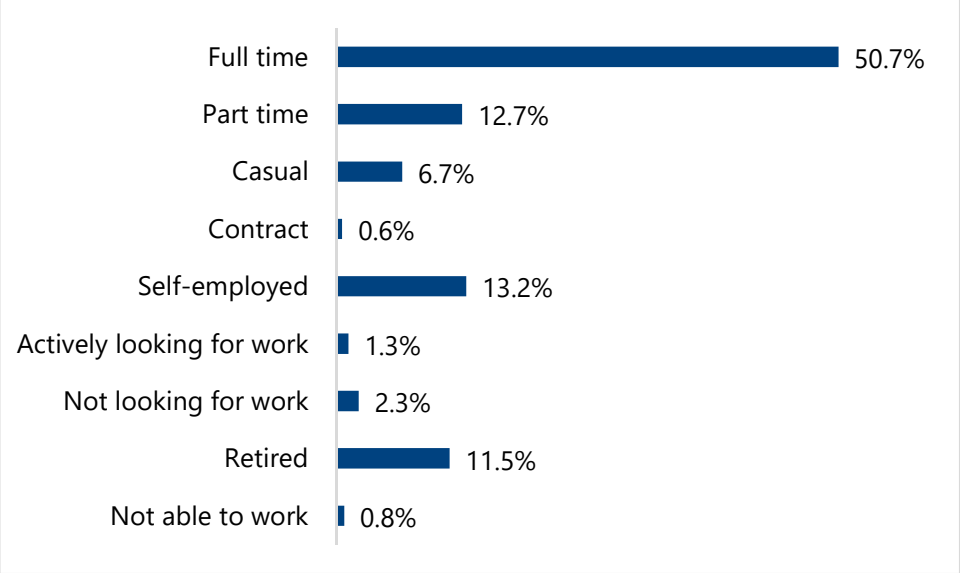
Suburb (suburb has been rolled into categories):



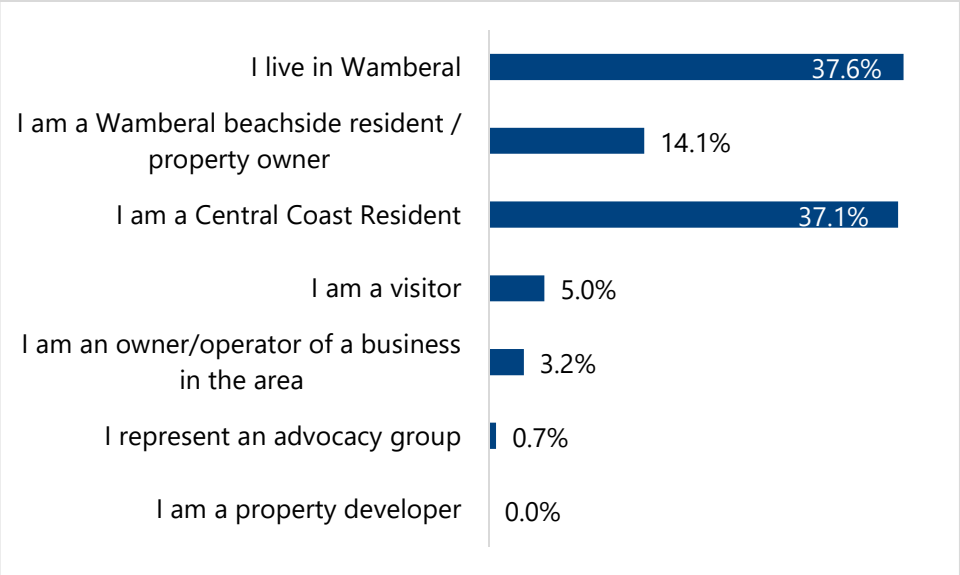
Family type:



Employment type:

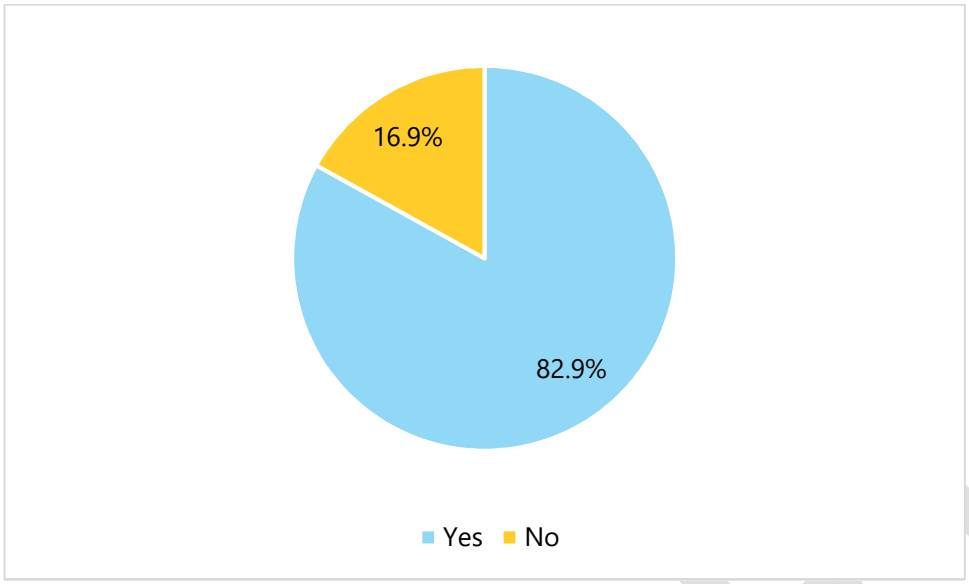


Interest in Wamberal Beach (multiple options could be selected):

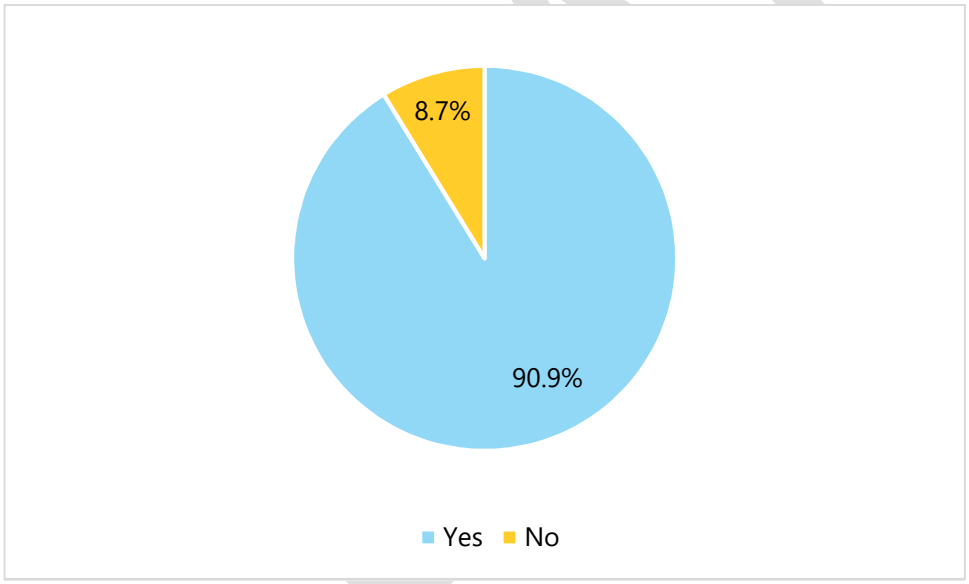


Wamberal Beach survey results for *uses*

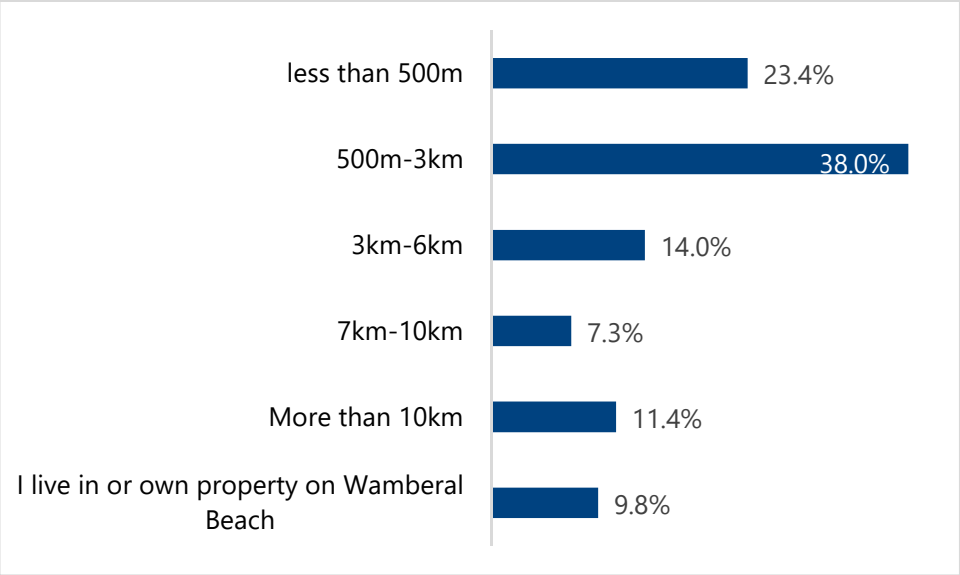
Is Wamberal Beach your most visited beach:



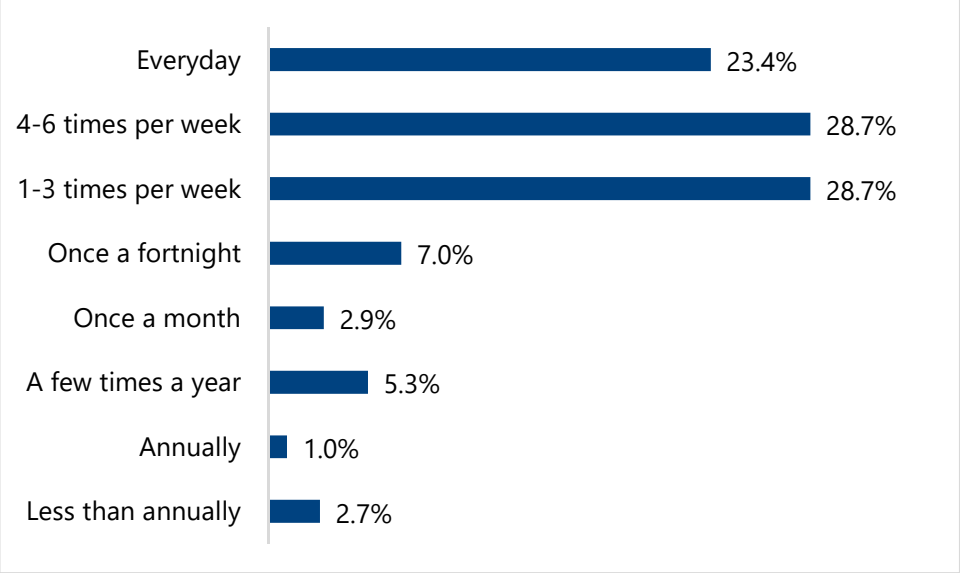
Do you encourage friends/family from outside the area to visit Wamberal Beach:



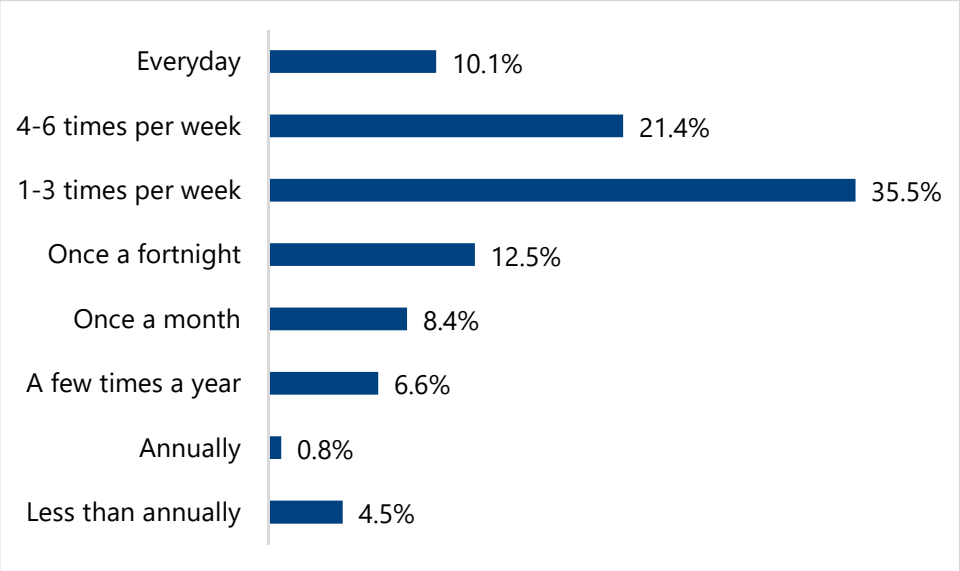
How far from Wamberal Beach do you live:



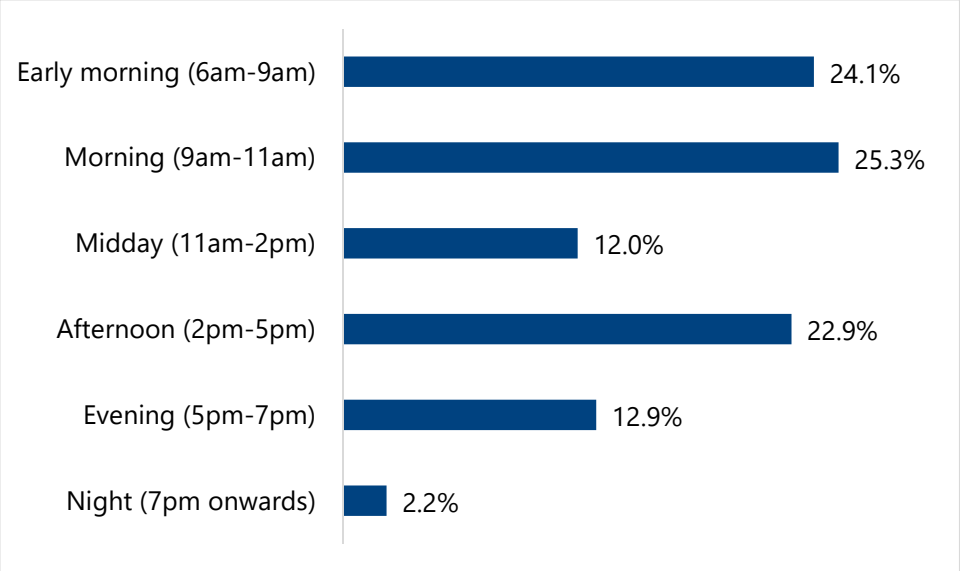
How many times do you visit Wamberal Beach in Summer:



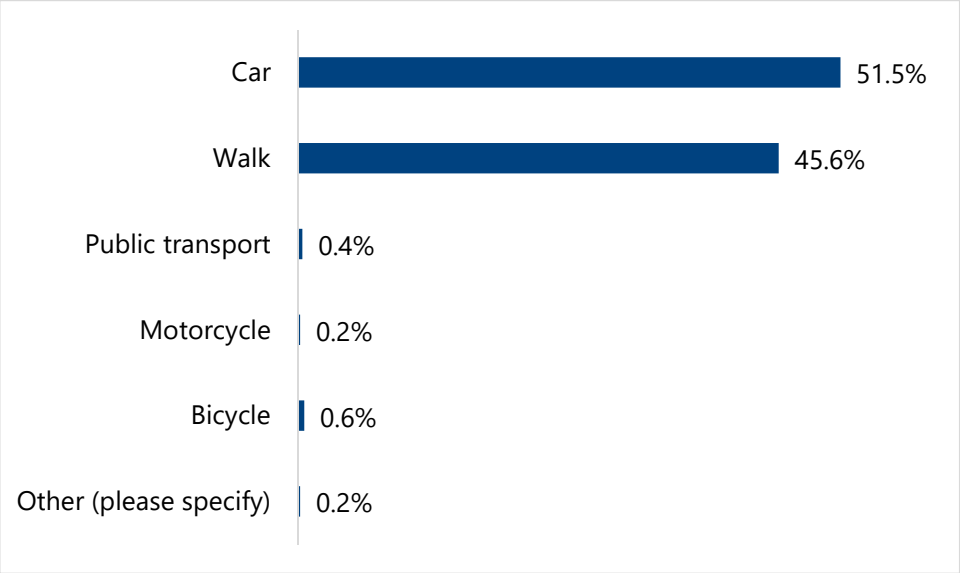
How many times do you visit Wamberal Beach in Winter:



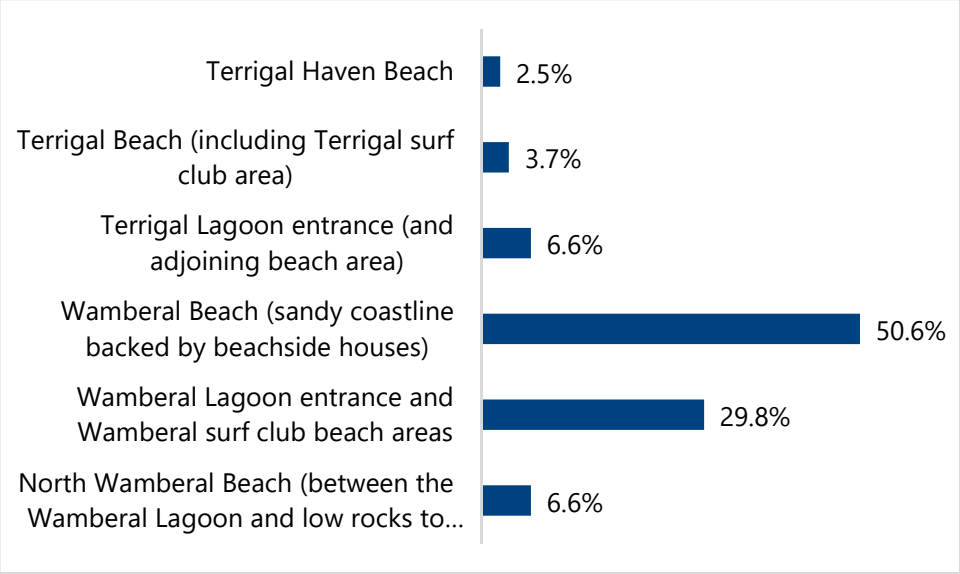
What time of day do you mostly visit Wamberal Beach:



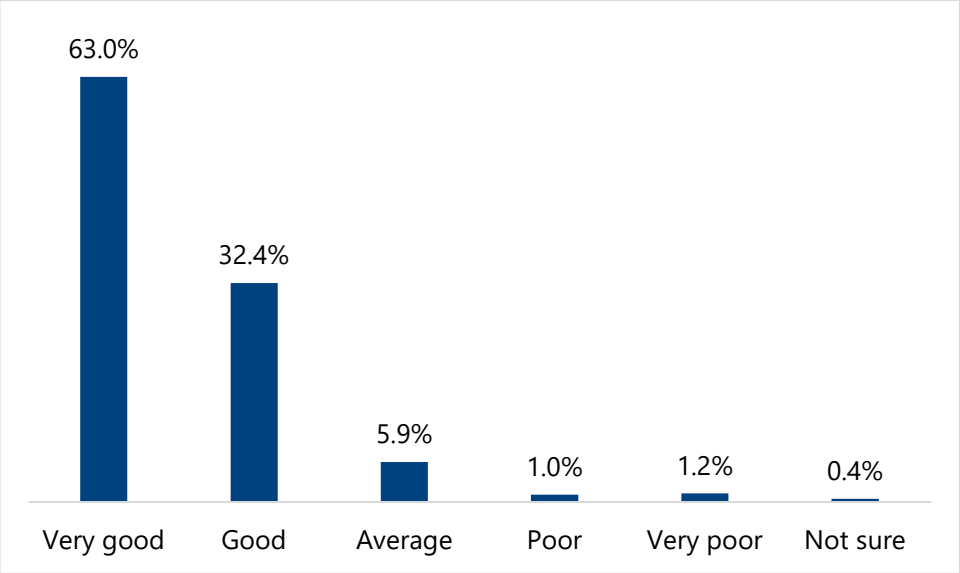
How did you get to Wamberal Beach the last time you visited:



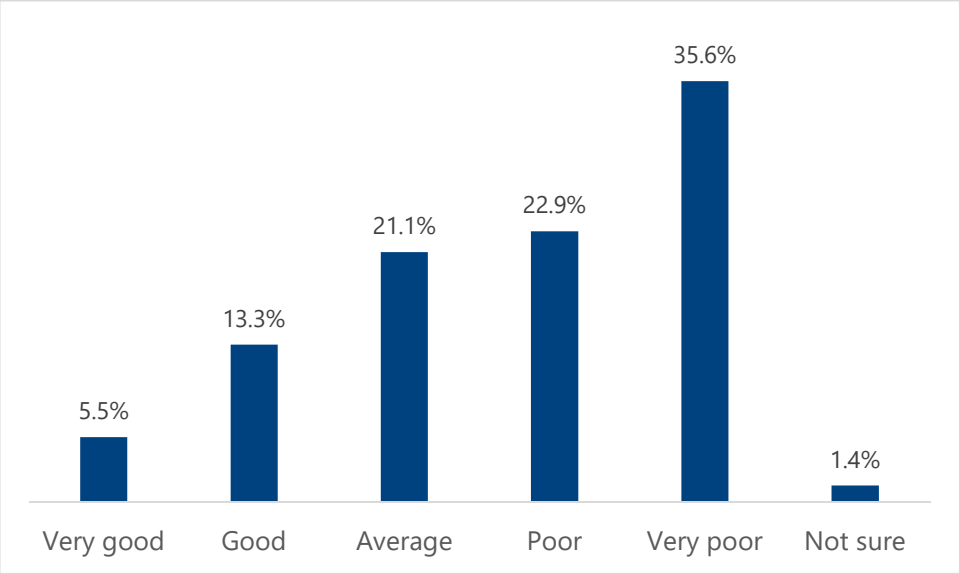
The Wamberal-Terrigal Beach embayment is a long sandy coastline. Which area do you visit most:



What has been your general experience when visiting Wamberal-Terrigal Beach **before** the July-August 2020 erosion event?

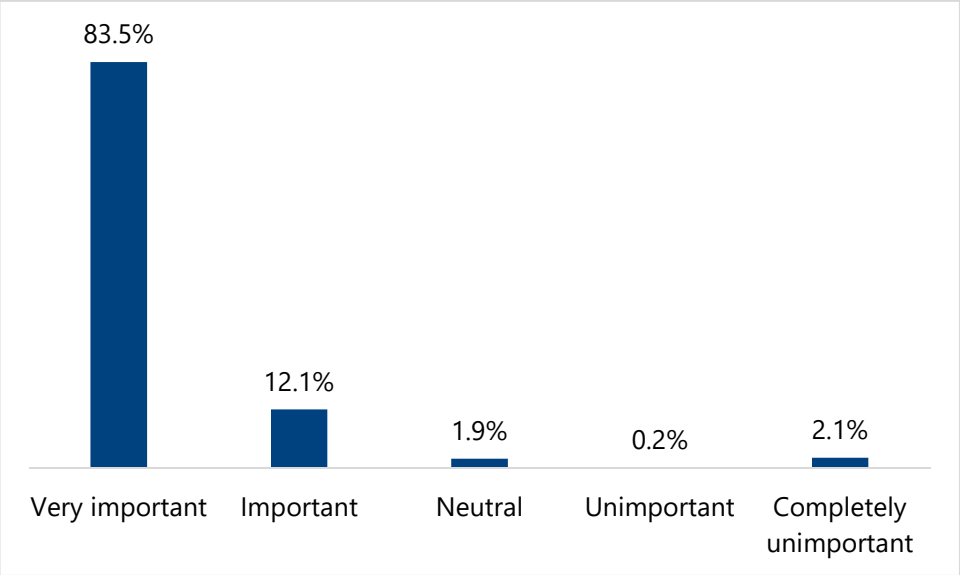


What has been your general experience when visiting Wamberal-Terrigal Beach, **during and/or immediately after** the July-August 2020 erosion event?

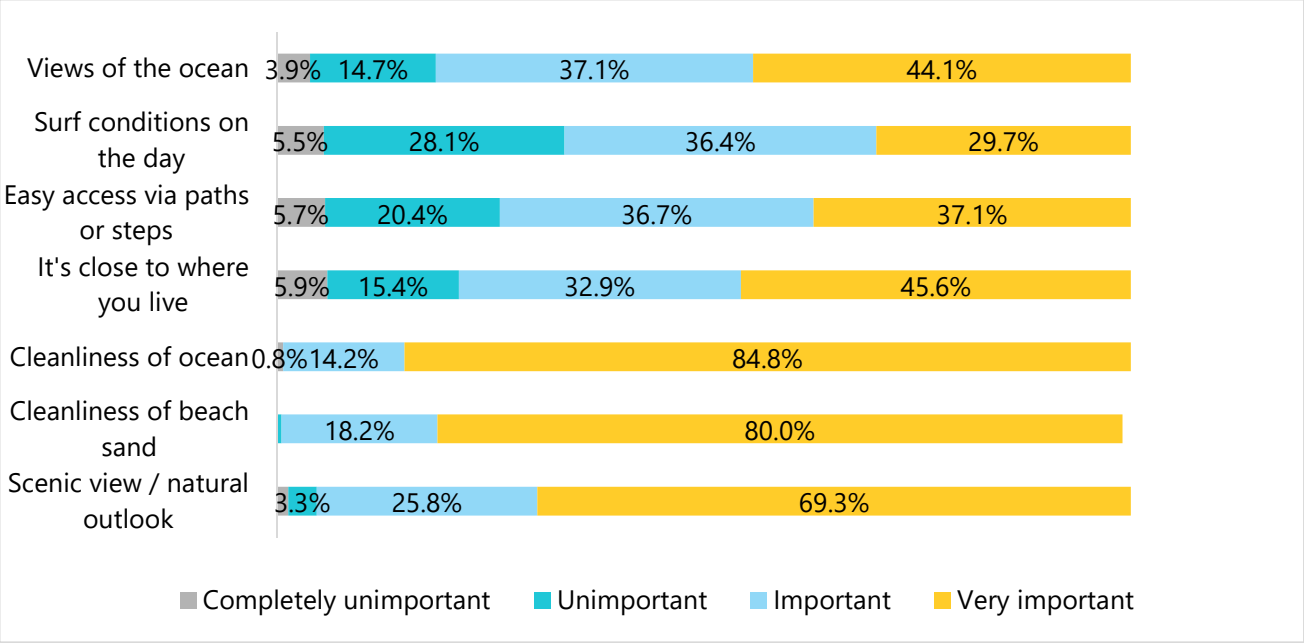


Wamberal Beach survey results for *values*

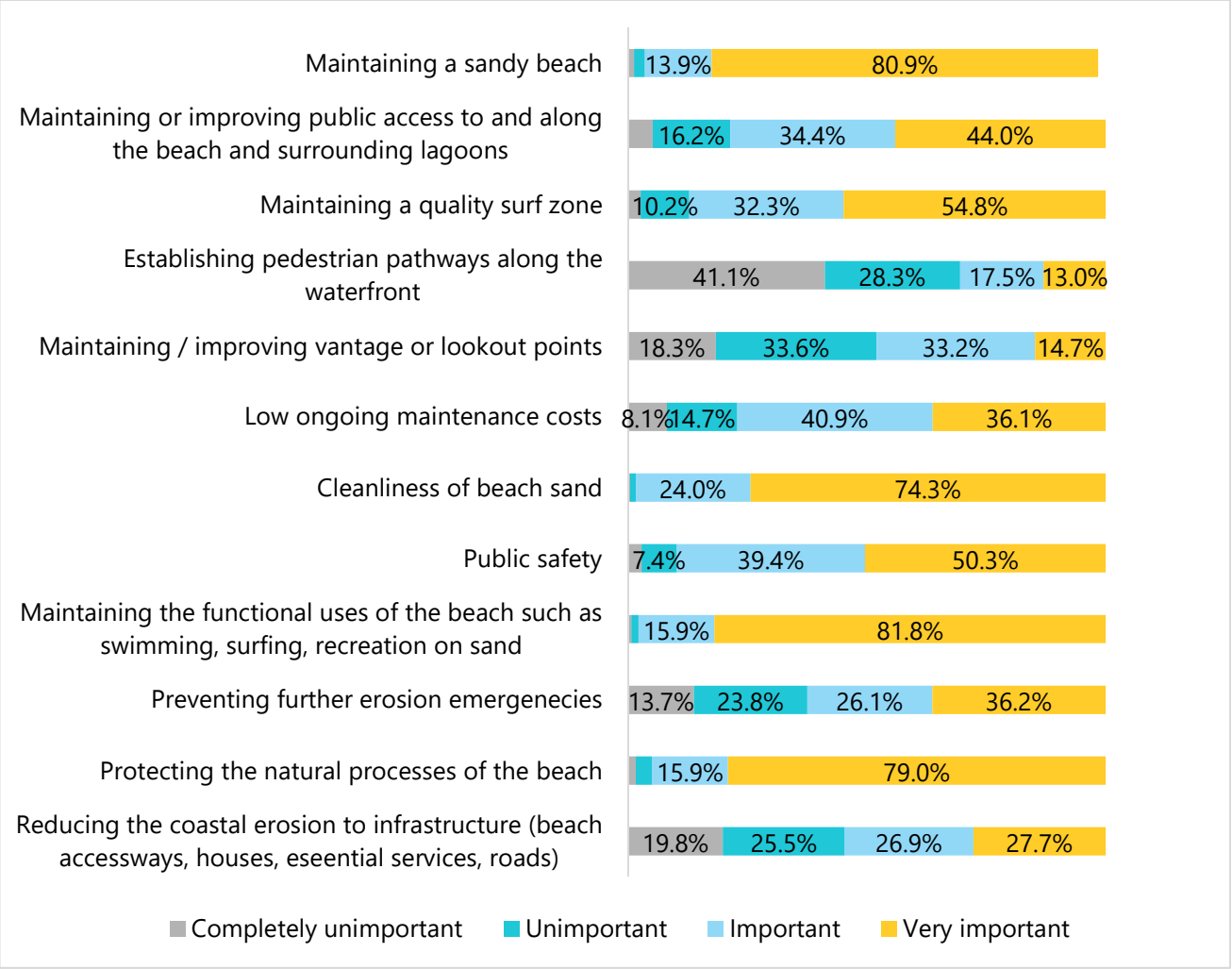
How important is Wamberal Beach to you:



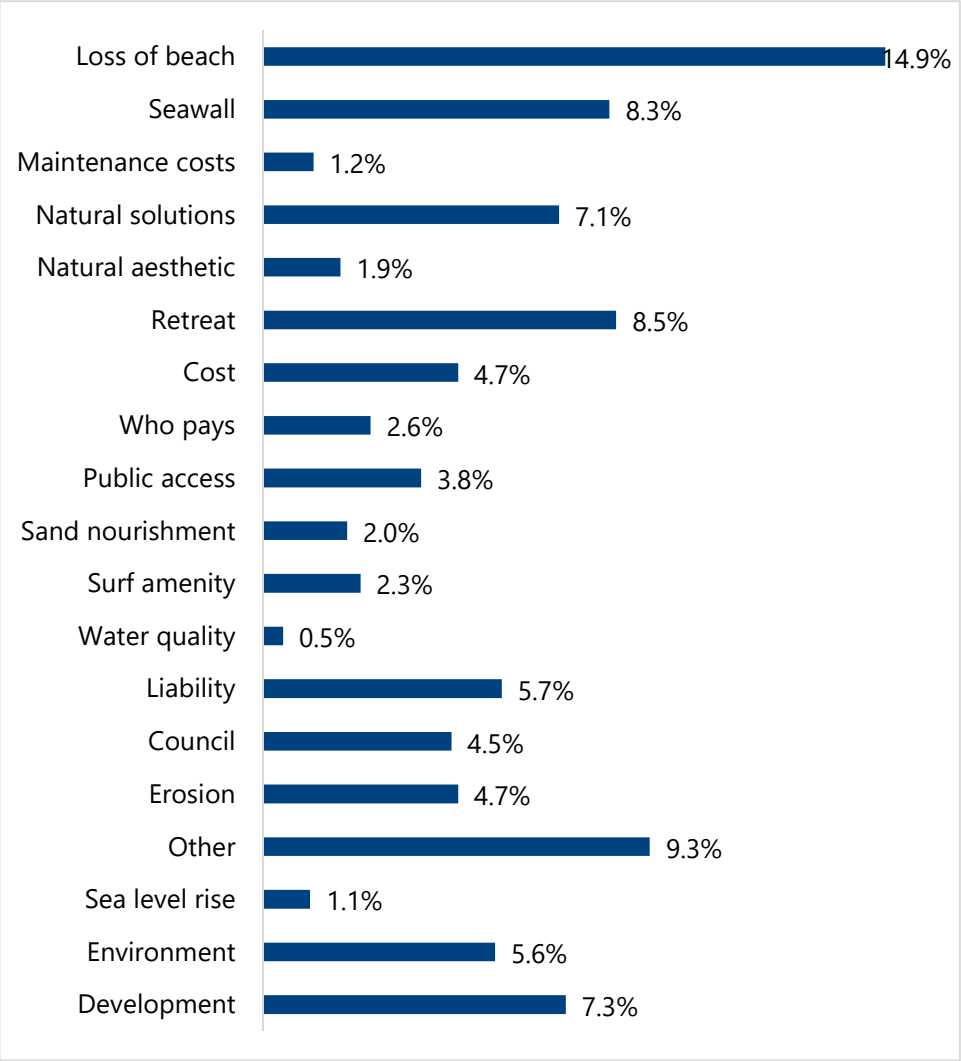
How important are each of the following in your decision to use Wamberal-Terrigal Beach:



How important are the following when considering any long-term solutions to erosion at Wamberal Beach:



From the **514** online submissions, a total of **435** separate comments were made. These comments have been grouped into themes and responses have been provided to key issues raised during the phase one community consultation process this report.



It's important to note that while we do our best to develop projects to meet the needs and requests of the community and stakeholders, technical constraints, costs, and the overarching project objectives must also be considered to deliver a project that is safe, functional and best balances the competing needs of all those affected including the environment.

Issue Category	Key issues raised	Response
Loss of beach	• Concerns that if a seawall is constructed the sandy beach will be lost.	• While seawalls are a form of structural defense to control shoreline erosion, they have also been known to exacerbate the problem by causing either active or passive erosion of the beach. Poorly designed structures positioned within the active beach profile are a major cause of this occurrence. Correctly designed structures that incorporate local shoreline and wave data (such as LIDAR), evaluate seawall location, alignment and geological footprint and position the seawall as far landward from the active beach profile are seen to have fewer interactions with waves, reducing the likelihood of beach erosion. Applying sand nourishment to the works program to replenish the beach and improve beach amenity reduces interaction of waves with the potential seawall, by moving the natural beach profile towards the ocean and burying the structure. The coastal engineering study currently underway is looking at behavior at Wamberal Beach and assessing coastal and environmental impacts from various seawall designs, including the impact on public access and beach amenity both now and into the future. Climate change impacts are also being considered.
Seawall	• Concerns that a seawall will cause further erosion issues. • Concerns that there will be erosion issues at the lagoon	• Seawalls can alter hydrodynamic conditions through interaction with waves. These interactions can influence beach sediment transport that leads to changes in morphology. A correctly positioned seawall (i.e. one that is positioned landward of the tidal zone) will generally only interact with waves during big storm events, limiting erosion potential. Positioning and alignment are being thoroughly considered in the MHL study and includes the use of wave monitoring data at Wamberal Beach. • Beach response is generally divided into two categories being frontal effects and end effects. Frontal effects are being assessed for each of the proposed seawall options. Wave diffraction at the end effects

Issue Category	Key issues raised	Response
	entrances causing flooding to homes surrounding the lagoon. Support for a *lagoon to lagoon* solution to enable fresh water circulating the lagoons.	is being generally considered as part of the MHL study. Where the project moves from the concept design to a detailed design phase (i.e. pursuing a specific seawall option), a detailed review of the terminal end effects (including beach modelling) will occur at this stage. This would also be examined as part of an Environmental Impact Assessment (EIA).
	• Concerns around issues arising for the construction of a seawall (Stockton Beach and Terrigal Beach used as a common examples).	• Every coastal system is unique and characterized by a range of influences such as: the rate of erosion, wave energy, tides, weather patterns, exposure to the ocean, net sediment transport and anthropogenic (human) influences. As a result, beaches are dynamic and constantly changing. Change can also be observed throughout the seasons where beaches tend to be wider and have a gentle slope in the summer and become narrower and steeper in the winter.
	• Concerns around the impacts of a seawall on wave energy and associated impacts.	• While it is easy to compare coastal environments (even at a local level), the reality is each beach is influenced by its own set of driving factors. For example, Stockton Beach has an erosion rate of 1-2 meters/per year. In comparison Wamberal Beach recedes at a rate of 20 cm/per year. Stockton Beach also has strong anthropogenic influences being the shipping port. Here sand is transferred from the beach and infills the shipping channel which allows ships to enter the port. Terrigal Beach differs from Wamberal Beach as it is mostly comprised of a rocky headland. Whereas Wamberal is fully exposed to the ocean and comprised of unconsolidated sediments (mostly sand).
	• Concerns that a seawall will impact the tourism opportunities for Wamberal Beach.	• Currently there is a multitude of ad hock coastal protection structures (placed both illegally and legally) which spans from lagoon to lagoon. This consists of concrete, rock, septic filled tanks and bricks which is both unsightly and hazardous. The addition of a seawall would provide an opportunity to remove these

Issue Category	Key issues raised	Response
	Support for the cleaning of asbestos and other debris currently located on the beach.	structures, install an appropriate engineered structure designed to protect against coastal erosion while enhancing amenity. Furthermore, a promenade style structure is one recommendation proposed in the MHL study which aims to enhance tourism and inclusivity, allowing beach goers to walk/ride along the top of the structure.
	• Concerns around the longevity of a seawall. • Support for a long term protection structure at Wamberal Beach. Concerns that a seawall will only protect private residence and will not offer community benefit.	• Generally, seawall designs are engineered to withstand a 50-year life span which takes into account sea level rise projections. MHL's proposed designs will incorporate future modifications to prolong the life of the structure after the 50year period. • A Cost Benefit Analysis (CBA) and Distributional Analysis (DA) is being undertaken by expert economists; Balmoral Group as part of the MHL study. The CBA & DA will inform the assessment of different management options and guide the development of possible funding models by articulating how costs and benefits are distributed. It aims to identify who will benefit most from the seawall. Benefits for the wider community could include: o Opportunity to remove unsightly ad hock structures making it safer for beach goers o Remove/contain contamination present in the dune system o Install an appropriate engineered design that protects against coastal erosion, minimising risk to public infrastructure (roads, water and sewer, NBN, electricity) o Improve beach access points o Reduce the need for expensive emergency protection works that are not designed to withstand major storm events. Noting the last emergency works (2020) cost $2.1M

Issue Category	Key issues raised	Response
		○ If a promenade is adopted; enhance tourism and provide inclusive access to all residents
Maintenance costs	• Concerns around the cost to maintain a terminal protection structure. • Concerns around the cost to maintain sand nourishment.	• Maintenance costs will be dependent on design type. For example, a rock revetment may incur higher maintenance costs due to being semi ridged and comprising a larger footprint that's exposed to the sea. Contrary to this, a vertical seawall design would likely have less ongoing maintenance costs due to being a rigid design with a smaller footprint; having less interactions with the sea. Where a preferred seawall is adopted, these costs will be identified during a detailed design phase. Ongoing maintenance costs will be included in the proposed funding model (i.e. who pays). • Sand nourishment is being investigated as part of the MHL study. This includes available sources, viability, nourishment intervals, method of delivery (vehicle/dredging/offshore deposit) and associated costs. Ongoing sand nourishment costs will be included in the proposed funding model (i.e. who pays)
Natural solutions	• Concern that man-made solutions will have a detrimental effect to Wamberal Beach.	• A terminal protection structure (seawall) and sand nourishment have been recommended in various coastal management plans as a preferred erosion strategy at Wamberal Beach for several decades. Recommendations were included in the following: – Coastal Processes Study (PWD, 1994) – Coastline Management Plan (WBM, 1995) – In the late 1990's a range of coastal protection options were proposed by WRL (1998) for Council. A 'Seabee' seawall, spanning lagoon to lagoon, was designed and modelled in detail. – An Environmental Impact Statement (EIS) for the coastal protection solution was finalised in 2003 by MHL, which found that a seawall with periodic small-scale sand nourishment was acceptable. – Coastal Hazard Definition Study (CHDS, 2015), a Coastal Zone Management Study (CZMS, 2017) and the preparation of a Coastal Zone Management Plan (CZMP, 2017). The Gosford

Issue Category	Key issues raised	Response
		Beaches CZMP outlines actions to address the erosion risks at Wamberal Beach. Sand nourishment and a terminal protection structure (seawall) was again determined to be the best solution to the long standing issue
	• Encouragement to allow the beach to manage itself naturally.	• Currently ad-hock protection structures exist from lagoon to lagoon forming an unofficial seawall at Wamberal Beach. Continuing to be reactive in response to coastal emergencies will see continued materials being added and contamination making its way onto the beach. The dune system is highly disturbed, comprising of coastal development. This makes it difficult to allow the beach to manage itself naturally and return to a natural state.
Natural aesthetic	• Suggestions to keep any solution as natural looking as possible Suggestions to keep as much of the natural environment as possible.	• The MHL study is investigating five different seawall designs, with differing footprint size, construction materials and sand nourishment requirements. Natural materials such as sandstone and basalt have been identified for revetment style structures. For vertical concrete options, these can be buried minimising the visual impact of the structure. Periodic sand nourishment will aim to enhance amenity and compliment the design. The community will be provided an opportunity to have their say on the designs proposed during the next phase of consultation.
Retreat	• Suggestions for Council to purchase properties for the purpose of planned retreat.	• Council has no planned retreat policy nor is there a legal mechanism to force people out of their homes and reclaim their land. The resolution of Council is to proceed with the MHL coastal engineering and economics assessment, consistent with the Gosford Beaches Coastal Zone Management Plan: – 38/19 - That Council request the Chief Executive Officer to commence the Wamberal Terminal Protection and Sand Nourishment preliminary investigations and concept design. – Council is looking into the costs of potential erosion solutions and potential funding models.

Issue Category	Key issues raised	Response
	• Suggestions for the State or Federal Governments to purchase the properties for the purpose of planned retreat. • Suggestions to plan for the gradual retreating of properties along Wamberal Beach (priority matrix with most at risk retreated first).	– Any long-term solution must be technically feasible, legally permissible, environmentally and socially acceptable and financially viable. • The coastal engineering and economics assessment currently underway will update the Wamberal Beach cost benefit assessment (CBA) completed by Marsden Jacobs for the State Government in 2017. This earlier study assessed the economic merits of the generic coastal management scenarios for Wamberal Beach. Unlike the MHL assessment, detailed costings were not available for the preliminary CBA completed in 2017, as the options considered in that study were not progressed to a fully developed concept design stage. • Gradual buy back of properties is an expensive option that Council simply can not afford.
Cost	• Concerns about the cost of a permanent solution (seawall). • Concerns about the ongoing cost of maintaining the beach. • Concerns about the cost of sand nourishment	• A Cost Benefit Analysis (CBA) and Distributional Analysis (DA) is being undertaken by expert economists; Balmoral Group as part of the MHL study. The CBA & DA will inform the assessment of different management options and guide the development of possible funding models by articulating how costs and benefits are distributed. It aims to identify who will benefit most from the seawall. • Council is awaiting the findings in the current MHL engineering and economics study before making any decisions regarding the funding or delivery of a seawall and sand nourishment at Wamberal Beach. • The cost of sand nourishment is currently being assessed in the MHL study. A variety of viable sources are being determined including material dredged as part of Council operations. The costs will be presented in the Stage 4 report and provided for public consultation.

Issue Category	Key issues raised	Response
	• Concerns about the repetitive cost when the structure reaches the end of its life. • Concerns about the cost of retreat	• MHL are proposing an adaptable design to extend the life of the structure past the 50year life expectancy. Note many seawalls continue to be effective long after this period. There will undoubtedly be repetitive future costs however, these can be compared to the current costs of reactive emergency works which are temporary and vastly more expensive. • Gradual buy back of properties is an expensive option that Council simply can not afford.
Who pays	• Concerns over who pays for the construction of a seawall. Suggestion that the cost of a permanent solution should not be paid for by Council. Suggestion that directly impacted residents should pay for the entire permanent solution. Concerns that the broader community will be contributing (via rates) to the construction of a seawall that has vested interests.	• A Cost Benefit Analysis (CBA) and Distributional Analysis (DA) is being undertaken by expert economists; Balmoral Group as part of the MHL study. The CBA & DA will inform the assessment of different management options and guide the development of possible funding models by articulating how costs and benefits are distributed. It aims to identify who will benefit most from the seawall. In a similar example to Wamberal, the CBA for the Collaroy-Narrabeen Beach seawall identified private residents as the main beneficiary resulting in an 80:10:10 funding model developed. Here, residents paid 80% of the total costs with council and state government both contributing 10%. Council is awaiting the findings in the current MHL engineering and economics study before making any decisions regarding the funding or delivery of a seawall and sand nourishment at Wamberal Beach.
Public access	• Concerns that public access to Wamberal Beach will be impacted.	• The coastal engineering study currently underway is looking at behavior at Wamberal Beach and assessing coastal and environmental impacts from various sea wall designs, including the impact on public access and beach amenity both now and into the future. Climate change impacts are also being considered.

Issue Category	Key issues raised	Response
	• Suggestions to ensure that public access to Wamberal Beach is improved. • Concerns that Wamberal Beach will be reserved for beachside residents only.	• Terminal protection structures can be easily equipped with stairs and access ramps. Promenade style revetments can improve access by making it more accessible and inclusive for the whole community (allowing wheelchair/bike access). • Council are using feedback from the community consultation phases to assist with development and design. Residents will continue to have an opportunity to provide comment during each phase of the project.
Sand nourishment	• Concerns about Councils ability to fund ongoing sand nourishment Concerns about the sourcing of sand for nourishment purposes Concerns about cost of ongoing sand nourishment • Suggestions to only use sand nourishment as a management option for Wamberal Beach.	• The preferred long-term solution for Wamberal Beach includes a sand nourishment program to ensure long-term outcomes for Wamberal Beach. Sand nourishment requirements, resources and cost estimates are being looked at through the MHL study. There are emerging opportunities for sourcing sand for nourishment purposes at Wamberal Beach, which were not available previously. The cost of sand nourishment will form part of a potential funding model that needs to be established. • Sand nourishment as a standalone solution to address erosion is not feasible for Wamberal Beach given the vast quantities needed to ensure full protection.
Surf amenity	• Concerns that any engineered solution will impact the surf amenity of Wamberal Beach.	• There are many different factors that determine if a seawall structure will interact with waves and the beach. ○ Seawall location and alignment: The location of a seawall relative to the beach profile that moves back and forth over time is important. Did you know that seawalls located behind the active beach do not interact with waves under most circumstances? There are many seawalls that co-exist with healthy, high quality beaches. Manly, Bondi and Newcastle (main beach, not Stockton) are good examples of this situation.

Issue Category	Key issues raised	Response
		○ Type of seawall and its geographical footprint: In locations like Wamberal Beach sloping rock revetments typically interact with waves and beach more than vertical seawalls, which can be placed further landward on the beach. This is because the sloping structures take up more space on the beach. A range of seawall types are being investigated for Wamberal. ○ Applying sand nourishment to the works program to replenish the beach and improve beach amenity. Adding sand to Wamberal Beach would reduce the interaction of waves with the potential seawall, by moving the natural beach profile towards the ocean and burying the structure. The coastal engineering study currently underway is looking at behavior at Wamberal Beach and assessing coastal and environmental impacts from various sea wall designs, including the impact on public access and beach amenity both now and into the future. Climate change impacts are also being considered. Did you know that ad-hoc protection works have been placed at Wamberal Beach for many decades? From Terrigal Lagoon to the Wamberal Surf Life Saving Club, the beach is backed by rocks, building rubble and other works. These materials have been placed in front of the erosion scarp by various entities since the 1970's. When Wamberal is in an eroded state, the ad hoc protection materials interact with the waves. When the beach system naturally recovers (builds out) over time, the rock and rubble become

Issue Category	Key issues raised	Response
		buried. A properly designed and constructed seawall would interact with the beach in a similar way, but in a more effective and less hazardous manner. Replacing the ad hoc coastal protection works, with a properly designed and constructed seawall that improves beach access and amenity is one of several broader community benefits being looked at.
Water quality	• Concerns that foreign materials used in the construction of a seawall will impact water quality	• Central Coast Council manages over 80km of coastline within the local government area and conducts numerous coastal projects each year. Council is equipped with a team of environmental and coastal scientists who manage these projects, minimising environmental harm by enforcing appropriate controls (such as installation of silt curtains, bunds, dust suppressants and water quality monitoring of receiving waters). An Environmental Impact Assessment (EIA) would be required as part of the development assessment process to identify and address all associated environmental impacts and provide a course of action to mitigate harm.
Liability	• Comments around who is responsible for development being approved for Wamberal Beach. Suggestions that Council should not be liable for works required to be completed (both in emergency and more broadly) Comments around personal responsibly for private property owners.	• Central Coast Council is the consent authority for private development and Council managed land at Wamberal Beach. The coastal engineering assessment is looking at proposed terminal protection structure (seawall) alignments for various concept options. We do not yet know what the planned footprint of each concept option is and what the land implications will be. The seawall footprint from the previously approved Wamberal terminal protection structure was located across a mix of private and public land.

Issue Category	Key issues raised	Response
		Developing a methodology that can support the coordinated delivery of an embayment-wide solution across a mix of private and public land is one of the key challenges that needs to be worked through. Council has a responsibility to address key management actions outlined in the certified Gosford Beaches CZMP. The CZMP outlines the need to investigate the preferred protection option however, does not provide for the construction of a seawall. Private owners are able to submit a Development Application (DA) for coastal protection works at any given time. DA's submitted will be considered on its merits under the relevant planning controls and in accordance with the certified CZMP. As previously mentioned, the CBA/DA will identify the beneficiaries of the seawall and a funding model will be formed based on these findings. Meaning, if private owners are the ones most benefiting, they will be likely be the highest cost contributors.
Council	• Concerns around Councils management of Wamberal Beach.	• The NSW Government has laws in place that guide how the NSW coastline is managed. Coastal Zone Management Plans (CZMPs) identify coastal management issues and the actions required to address these issues. The Gosford Beaches CZMP was prepared in line the state government legislation, the Coastal Management Manual, and in consultation with the Central Coast community. The plan was certified by the Minister for the Environment in May 2017 and identifies several key management actions for Wamberal Beach, including: – TW11: Terminal protection- Council to action review, design and funding of terminal protection structure for Wamberal

Issue Category	Key issues raised	Response
		– TW14: Investigation of sources of sand and determination of the feasibility of beach nourishment for Wamberal Beach – TW15: Beach nourishment coupled with a terminal revetment to increase the buffer against storm erosion. Council is fulfilling its obligation to address the key management actions outlined in the CZMP in accordance with relevant coastal and planning legislation.
	• Concerns around Council's ability to finance a project like this given the financial crisis.	• Council is awaiting the findings in the current MHL engineering and economics study before making any decisions regarding the funding or delivery of a seawall and sand nourishment at Wamberal Beach.
Erosion	• Comments around erosion being inevitable Concerns that any terminal protection structure will result in further erosion issues at each end	• The Gosford Beaches Coastal Processes and Hazard Definition Study concluded that Wamberal Beach has been eroding at an average rate of 20cm/per year. In comparison to beaches like Stockton Beach which erodes between 1 and 2meters/per year, Wamberal Beach is considered stable. Increased erosion at Wamberal is witnessed during East Coast Low (ECL) storm events which incur the most damage. Erosion is inevitable and Council must act to protect public assets now and into the future.
Sea level rise	• Concerns around any protection structures ability to cope with sea level rise Suggestion that any terminal protection structure would be temporary due to impending sea level rise	• The design life for a seawall is generally 50years which includes future projected sea level rise. MHL are using projected sea level rise levels into each of the proposed designs as well as including design modifications to extend the life span of the structure past the design life expectancy.

Issue Category	Key issues raised	Response
Environment	• Concerns around the environmental impacts that a terminal protection structure would cause • Suggestion to retreat the private properties and re-vegetate the dune system as a natural solution to the erosion issue at Wamberal Beach	• The current study by Manly Hydraulics Laboratory includes a 'Coastal Protection Assessment' report to investigate the potential impacts of various sea wall concept designs on coastal processes including the beach width at Wamberal. As part of a detailed design phase an Environmental Impact Assessment (EIA) report would be required as part of the development approval process. The EIA report would be required to assess the associated environmental impacts and identify mitigation measures. • Council has no planned retreat policy nor have a legal mechanism to force people out of their homes and reclaim their land, hence this is not an option being investigated.
Development	• Comments around the approval process for development application process for Wamberal Beach • Suggestions for Council to no longer approve any Development Applications for impacted properties • Concerns around the historical development application approval process	• No protection works can be carried out without prior development consent. The State Government in 2018 introduced legislation which requires development consent for 'coastal protection works'. The appropriate course of action is to lodge a development application with Council which will be considered on its merits. More information on coastal protection works can be found in this factsheet provided by the State Government. • In 2018 the State Environmental Planning Policy (Coastal Management) 2018 commenced giving effect to the objectives of the Coastal Management Act 2016. The SEPP specifies how development proposals are to be assessed if they fall within the coastal zone. Councils and other consent authorities must comply with the new assessment criteria when assessing proposals. • New coastal planning legislation and assessment criteria is changing the way our coast lines are being developed. This is a result of "lessons learnt" through legacy issues and our knowledge of coastal processes and climate change. The Coastal Management Act focus is on ecologically sustainable development that:

Issue Category	Key issues raised	Response
		– protects and enhances sensitive coastal environments, habitats and natural processes – strategically manages risks from coastal hazards – maintains and enhances public access to scenic areas, beaches and foreshores – supports the objectives for our marine environments under the Marine Estate Management Act 2014 – protects and enhances the unique character, cultural and built heritage of our coastal areas, including Aboriginal cultural heritage.
Other	• Concerns that the engagement for the development of the Gosford Beaches CZMP (which outlines a TPS as the preferred management solution) was not sufficient	• The community were consulted as part of the Gosford Beaches Coastal Zone Management Plan (CZMP; 2017), and preceding Coastal Zone Management Study (CZMS; 2015). A CZMP Community Engagement Strategy was developed and endorsed by Council in November 2013, this document guided consultation throughout the CZMS – CZMP processes. Community consultation included: – public exhibition of draft documents (CZMS, CZMP) – CZMS - targeted community presentations to discuss potential management options for each study area, including Terrigal/Wamberal (2015) – community drop-in sessions (include at Terrigal SLSC; 2015) – public notices – promotion via local newspaper. – In addition, workshops were held with the Council's Catchments and Coast (advisory) coastal sub-committee established at that time. • The consultation that Council is undertaking to inform the Wamberal Beach Terminal Protection and Sand Nourishment – investigation and concept design includes best practice community engagement principals and has been designed in accordance with Central Coast Council's Engagement Framework.

Issue Category	Key issues raised	Response
	• Concerns that the current engagement is not sufficient	Further opportunities for community engagement will be delivered in the Phase 2 consultation.

Consultation outcomes and next steps

Thank you to everyone who provided feedback during the phase one consultation for the Wamberal Beach Terminal Protection and Sand Nourishment- Investigation and Concept Design Walk and attended the drop-in information sessions.

Comments received during the community consultation process for Phase One of the Wamberal Beach Terminal Protection and Sand Nourishment – investigation and concept design will be used to guide and inform the concept options recommended to proceed to the Phase Two consultation which will involve workshopping concept options with both directly impacted residents and the broader Central Coast Community.

The next steps for Wamberal Beach are as follows:

- continue with the coastal engineering and economics study looking at concept option and feasibility for implementing the Gosford Beaches CZMP actions
- continue to participate in the NSW Government Wamberal Seawall Advisory Taskforce
- develop a methodology for implementing a long-term solution, that is legally permissible, environmentally and socially acceptable and financially viable.

The community will be kept up to date as the project progresses.

Appendices

Appendix A

Media release

Council ensures community voice is heard

Wednesday, 11 November 2020

Central Coast Council is committed to community consultation and engagement with a number of projects opening for discussion this week.

Council's Director Connected Communities, Julie Vaughan said consultation with the community is continuing to ensure projects keep moving to meet grant funding milestones or to ensure they are ready for funding applications or implementation in the new year.

"In the last financial year more than 6,000 pieces of feedback from our community helped shape 50 projects, plans and strategies," Ms Vaughan said.

"Our 'Your Voice – Our Coast' online portal demonstrates Council's ongoing commitment to engage effectively with all members of community, offering a seamless user experience and enabling the community to easily search for projects by category or by location.

"While Council is currently focused on delivering essential services, we also have a number of projects we need to seek our community's input on to ensure they meet our funding milestones or are ready for implementation or funding bids in the new year.

"I would encourage our community to jump online to have their say on the projects that interest them."

Council is currently seeking input on the following projects and plans including:

- Gwandalan, Tunkuwallin Oval district playspace
- Gwandalan, South Eastern Park local playspace
- Integrated Water Resource Plan
- San Remo, John Pete Howard Reserve district playspace
- Terrigal Haven, ex-HMAS Adelaide II mast monument
- Terrigal Lagoon trail concept design
- Tuggerah Lakes foreshore restoration works
- Wamberal Beach terminal protection and sand nourishment
- Warnervale District Contributions Plan
- Winney Bay Clifftop walk concept designs

Visit our newspage for information on each.

Council's administrator, Dick Persson AM said community participation in planning matters is important in creating a shared sense of purpose, direction and understanding.

"Council has the important responsibility of ensuring decisions we make for and behalf of the community ensure appropriate community input is considered in the process," Mr Persson said.

"While I am focusing on understanding Council's financial situation, it's important that Council continues to engage the community on key operational issues.

"I encourage everyone to be active in their community and sign up to Council's weekly Coast Connect e-newsletter so you can stay informed on opportunities to have your say."

Visit yourvoiceourcoast.com for further information and to have your say.

Last updated : Wed 11 Nov 2020

Appendix B

Tweets (various dates)

CentralCoastCouncil @CCoastCouncil · 11 Nov

It's a bumper November for community engagement on the Central Coast with 11 important projects seeking your feedback
👉 Head to hubs.la/H0zFJm90 for all the details.

CentralCoastCouncil @CCoastCouncil · 13 Nov

We want to know what you value about #Wamberal beach – let us know as part of our community engagement around a long-term solution to coastal erosion.

hubs.la/H0zLLc00

#coastalerosion

CentralCoastCouncil @CCoastCouncil · 24 Nov

Don't forget to register for our drop in sessions as part of our first stage of engagement around the long-term options for coastal erosion at #WamberalBeach. Drop in sessions start tomorrow and registrations are essential 👉hubs.la/H0Bq_Fd0

#wamberal #coastalerosion


CentralCoastCouncil @CCoastCouncil · 28 Nov
New virtual engagement sessions for Wamberal coastal erosion announced! Bookings essential hubs.la/H0BDk1Z0 #wamberal #coastalerosion #wamberalerosion

Facebook posts (various dates)

Central Coast Council
Published by HubSpot · November 11 ·

Community engagement is continuing this month to ensure projects keep moving to meet grant funding milestones, or they are ready for funding applications and implementation in the new year.

Your feedback is used to make decisions to deliver better services, community facilities, and projects for our region. In the last financial year more than 6,000 contributions from our community helped shape 50 projects, plans and strategies.

This November we want your feedback on:
- three new playspaces
- a monument for the ex-HMAS Adelaide II
- a lagoon trail at Terrigal
- saltmarsh rehabilitation works on Tuggerah Lakes
- Winney Bay clifftop walk
- Warnervale District Contributions Plan
- terminal protection and sand nourishment on Wamberal Beach
- the start of our long-term water planning – the Integrated Water Resource Plan.

Most of these projects have NSW or Australian Government funding – head to our Your Voice Our Coast platform for all the details.
https://hubs.la/H0zFJm20

Central Coast Council
Published by HubSpot · November 13 ·

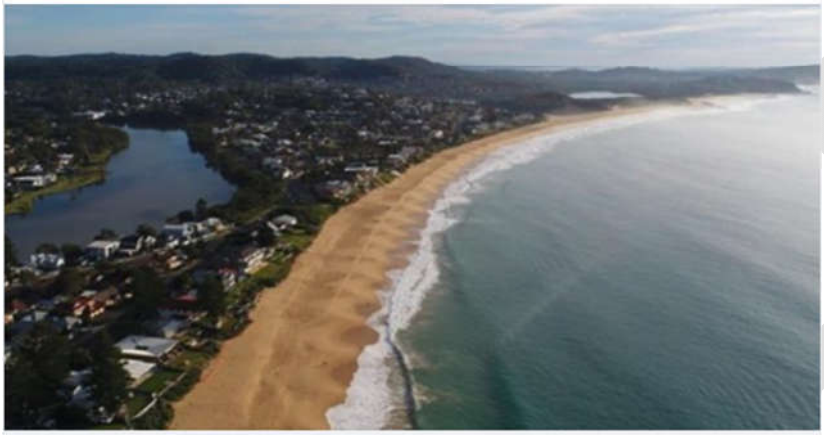
The first phase of the community engagement around a long-term solution for coastal erosion at Wamberal is now open.

This is a complex issue and to ensure we understand how the community feel at every step of the process, we will be giving you many opportunities to have a say. Right now, we need to understand what you value about Wamberal beach and how you use it.

Residents and visitors are invited to complete our survey online, submit a question or register for our drop-in sessions where they can ask questions about the project with our team.

Visit our website to learn more, sign up for updates and to take part in the initial phase of the community engagement. Responses to the survey will be accepted until 8 December 2020 https://hubs.la/H0zLLT-0

*We understand you have a lot of questions at the moment, but please keep comments respectful, clean and on topic.



YOURVOICEOURCOAST.COM
Wamberal Beach Terminal Protection and Sand Nourishment - Investigation and Concept Design | Your Voice Our Coast

Central Coast Council
Published by HubSpot · November 28 at 2:05 PM ·

Missed the opportunity to drop-in and chat with us about coastal erosion issues at Wamberal this week?

We've added two opportunities to virtually drop in next week. These sessions will be held late afternoon and over lunchtime. We're looking forward to hearing your concerns and answering your questions after meeting more than 90 interesting community members this week.

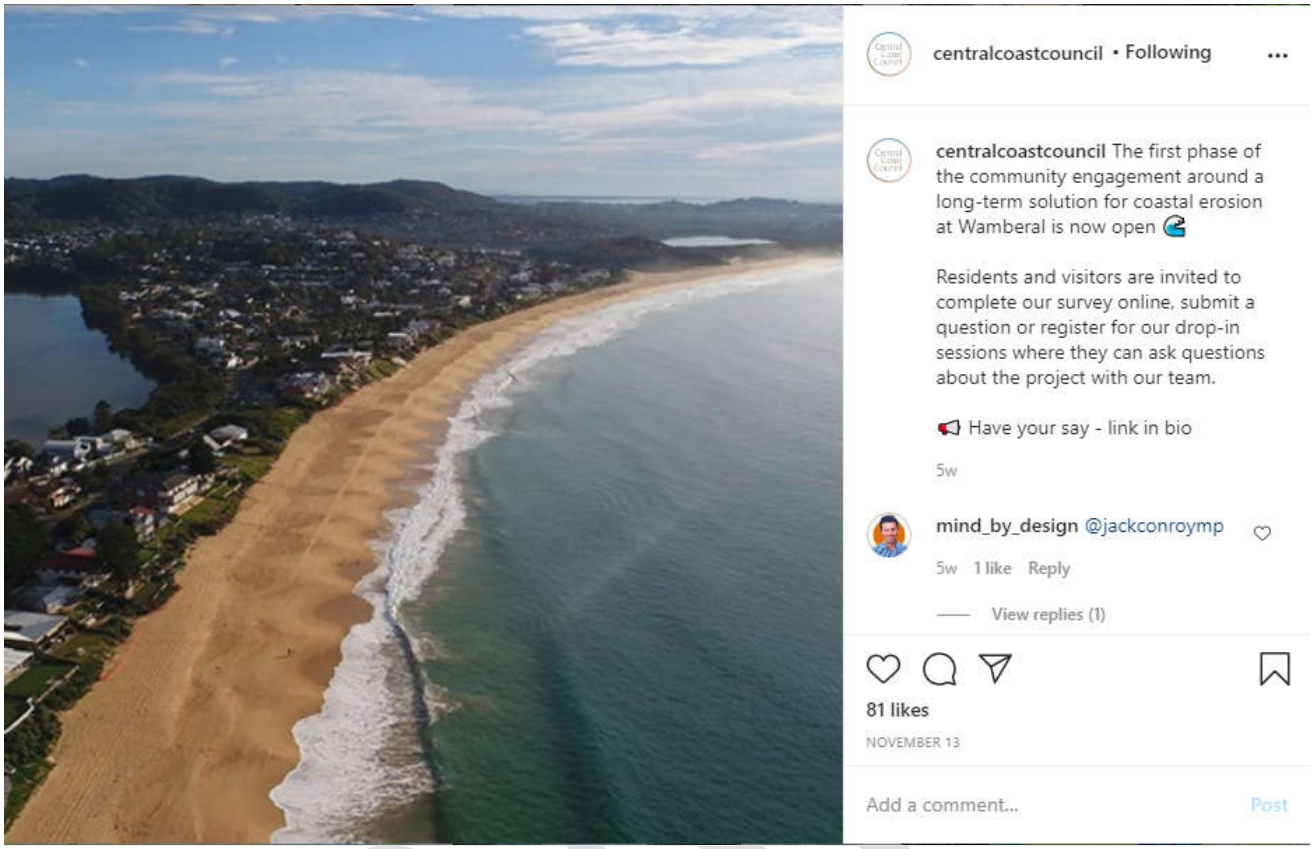
Virtual sessions will be held Tues 1 December and Thurs 3 December. Bookings for the 20-minute virtual sessions are essential.

The Wamberal beach values and uses survey is open until Tuesday 8 December. Bookings, further details and the survey are available at https://hubs.la/H0BD8Hk0

*We understand you have a lot of questions at the moment, but please keep comments respectful, clean and on topic.

YOURVOICEOURCOAST.COM
Wamberal Beach Terminal Protection and Sand Nourishment - Investigation and Concept Design | Your Voice Our Coast

Instagram posts (various dates)



LinkedIn posts (various dates)

Central Coast Council
7,639 followers
1mo •

As we come closer to the end of the year, and our annual engagement blackout period we have 11 important projects open for community engagement this November.

Community feedback is used by Council to make informed decisions to deliver better services, community facilities, and projects for the Central Coast region. In the last financial year more than 6,000 contributions from our community helped shape 50 projects, plans and strategies.

Projects currently with our community for their consideration include:

- three new playspaces
- a monument for the ex-HMAS Adelaide II
- a lagoon trail at Terrigal
- saltmarsh rehabilitation works on Tuggerah Lakes
- Winney Bay clifftop walk
- Warnervale District Contributions Plan
- terminal protection and sand nourishment on Wamberal Beach
- the start of our long-term water planning – the Integrated Water Management Plan
- a roundabout at Blue Bay.

Most of these projects have NSW or Australian Government funding – head to our Your Voice Our Coast platform for all the details https://hubs.li/H0zFX8S0

#playspace #playground #memorial #Terrigal #saltmarsh #TuggerahLakes #Centralcoastwaterways #planning #water #waterplanning #environment #environmentalrestoration #haveyoursay #engagegment #consultation #erosion #coastalerosion