




Proudly funded by the NSW Government in association with Local Government NSW.

Coastal and Estuary COMMUNICATIONS SUPPORT PACKAGE



For more information or to access the downloadable files for the communications package please contact:

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Coastal and Estuary COMMUNICATIONS SUPPORT PACKAGE

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Background and Purpose

Climate change is affecting the Hunter region. Projections show temperatures are expected to keep rising, sea levels will rise, rainfall patterns will change, and extreme rainfall and heat events will increase.

The Coastal and Estuary Communications Support Package was developed as part of the 'Act Now on Adaptation: Coastal Wise Communities' project for the Hunter and Central Coast Councils by the Hunter Joint Organisation (Hunter JO) and has been reviewed by the Department of Planning and Environment (DPE). This package delivers a proactive evidence-based coastal adaptation communication and engagement resource for the region.

The objectives of the Coastal and Estuary Communications Support Package are to:

- Provide guidance for Councils of the Hunter and Central Coast developing communications materials to educate and raise community awareness of coastal hazards and their impacts which are increasing due to climate change.
- Increase understanding of how the community can get informed and involved in the management of their coast in response to climate change.



The communication materials are intended to be used by Councils as they require with the ability to incorporate the local knowledge of Councils and their stakeholders. In the development of any communication materials Councils are encouraged to collaborate with Aboriginal communities, organisations, and Knowledge holders through culturally safe engagement approaches to ensure cultural perspectives and values influence decision making in the coastal zone. A guidance document on creating culturally safe opportunities when engaging First Nations people during the development of Coastal Management Programs (CMPs) has been developed by DPE.

Using the Support Package

We recognise some Councils may utilise the full suite of materials whereas other Councils may only use certain items, for example, the key messages and image library. Included within the Package are guidance materials, an image library, and key messaging to assist Councils when developing communications materials and engaging with their community. We have purposefully provided word templates for the materials alongside example materials which are graphically designed and are ready to use. We recognise that some of the materials may not be fit for all purposes, and you may like to alter these to include local imagery and examples. You are free to use individual elements of the materials if this is more appropriate for your intended audience.

The Package provides consistent and current messaging and a regional-scale focus on coastal hazards and impacts in the Hunter and Central Coast Region; however, the materials can be interchangeable and localised by individual Councils where necessary. This How-to Guide provides guidance for Council officers when utilising the communication materials, messaging, and image library developed.

The final package materials are available throughout this guide and can also be downloaded from [SharePoint here](#).

The Package includes:

- Design and Branding
- Key Messages
- Frequently Asked Questions
- Factsheets
- Image Library
- Newsletter, Banners, and Social Media
- Posters

Although this Support Package is finalised for circulation to Councils, we welcome Councils feedback and have prepared a shared resource as a [Key Messages excel spreadsheet](#) to encourage Councils to continue to collaborate and share relevant literature, key messages, and facts and statistics. The Hunter JO will also review any general feedback received and plans to update this Support Package when required.



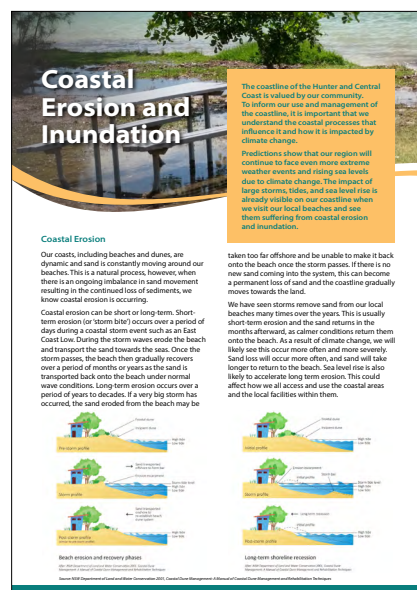
How-to



Design and Branding

We are aware that Councils will have their own branding guidelines and preferences. As part of the Coastal and Estuary Support Package we have provided examples of the materials for general use, and we recommend adapting them based on your own Council needs and branding. Included within the How-To Guide and appendices are advisory notes with suggested instructions to assist Councils when developing their own materials. We have also included suggested options where you can add locally relevant content (e.g., text, weblinks, maps, and imagery). Councils can use elements of, or all the provided content and imagery as they deem appropriate.

We have also included some ready-to-go versions of the factsheets, FAQs, social media tiles and posters with Hunter JO branding which can be used for occasions when you are unable to prepare your own versions or for design inspiration.



Designed



Plain Text

How-to



Key Messages

The key messages are intended to assist councils when developing communication and media materials and content to educate and raise awareness of the impact of climate change and associated coastal and estuarine changes in the region.

The key messages form the basis for most of the content of the Coastal and Estuary Support Package and are provided as a guide but can also be adapted as required by individual Councils when developing website content, factsheets, or other collateral. The messages are grouped into themes and the purpose of each message is included to explain the rationale. Feedback received, suggested resources, and regional facts and statistics provided by Councils have been considered in the development of the messaging and resources listed.

Key messaging has been provided under the following themes:

- Change is happening now
- Coastal erosion
- Coastal inundation
- Saltwater intrusion
- Financial impacts
- Estuaries (Intermittently Closed and Open Lakes and Lagoons)
- Coastal Management Programs
- Community involvement in coastal management
- Response and solutions to coastal threats
- Estuary and waterway health
- The role of agencies and the partnerships required between all levels of government to deliver successful coastal zone management.

The key messages are summarised on the next page, and, in the appendix, you'll find an extended version of the key messaging including each messages' purpose and relevant references. The key messages are also provided in detail in a separate [Key Messages excel spreadsheet](#) which is intended as a working document. We encourage you to utilise the spreadsheet to share any updated messaging and resources as a collaborative tool between the Hunter and Central Coast Councils.

Theme	Messaging
<p>Change is happening now</p>	<p>Our beaches, coastlines, lakes, and waterways are constantly changing due to natural processes, and climate change is affecting our communities more and more as we are exposed to coastal hazards.</p>
	<p>Predictions show that our region will continue to face even more extreme weather events and rising sea levels due to climate change. The impact of large storms, tides, and sea level rise is already visible on our coastline when we visit our local beaches and see them suffering from coastal erosion and inundation.</p>
	<p>The way we are used to enjoying our coastal environment will change. Changing coastal processes will impact popular fishing, camping and boating locations, while erosion and rising sea levels will impact our beaches and estuaries.</p>
	<p>Our homes and businesses are at risk of inundation and erosion from severe ocean storms and rising sea levels.</p>
<p>Coastal Erosion</p>	<p>Coastal erosion is a natural process which refers to the permanent or temporary loss of beach, dunes, and estuary foreshore areas. Coastal erosion is generally caused by inundation as a result of coastal processes such as tides, storms, and sea level rise.</p>
	<p>We have seen storms remove sand from our local beaches many times over the years. This is usually short-term erosion and the sand returns in the months afterward, as calmer conditions return them onto the beach. As a result of climate change, we will likely see this occur more often and more severely. Sand loss will occur more often, and sand will take longer to return to the beach. Sea level rise is also likely to accelerate long term erosion. This could affect how we all access and use the coastal areas and the local facilities within them.</p>
	<p>Coastal erosion can impact our natural environment, and increase the risk of physical damage to property, businesses, and infrastructure.</p>
	<p>In some locations our shorelines are moving towards land slowly over time. This is called shoreline recession and can be the result of a number of processes, such as rips removing sand too far offshore during a storm event or structures interrupting the natural movement of sand. The movement of sand is often unique to each coastal or estuary location. Sea level rise is likely to exacerbate existing shoreline recession and create new issues along our open coast, beaches, and estuaries.</p>
	<p>Coastal rivers, lakes and estuaries can be impacted by erosion from tides, storms, and waves. This results in the loss of foreshore land and changes to the waterways which impacts the local natural habitat and how you use and enjoy these areas.</p>
	<p>Soil erosion is the washing away of soil from hills, gullies, lakes, creeks, and riverbeds. Coastal hazards such as inundation and extreme weather can accelerate soil erosion along estuaries and waterways. Eroded soils washed into waterways can pollute the environment and reduce water quality, impacting delicate estuarine ecosystems.</p>

Coastal Inundation

Coastal inundation is when ocean levels rise high enough that it causes the temporary flooding of a portion of land within the coastal zone.

Coastal inundation can be infrequent and short-term, as a result of a coastal storm or extreme tide. Inundation from more regular high tides can be daily, weekly, or several times a year (e.g., king tides). Sea level rise impacts all types of coastal inundation. In addition, as sea and lake levels rise, some low-lying areas along the coast and around the lake foreshore may be permanently inundated.

Coastal inundation of estuarine foreshores and inland areas is often impacted by a range of coastal and catchment processes, with groundwater also playing an important role in how these areas respond to and are impacted by inundation events.

When we refer to flooding, we are generally describing flooding as a result of heavy rainfall rather than coastal inundation as a result of raised ocean levels. This type of flooding is also referred to as catchment flooding and is caused by heavy rainfall on the catchments causing lakes, creeks, and rivers to burst their banks and flood the surrounding area. Heavy rainfall is increasing as a result of climate change in the Hunter and Central Coast Region and, when coupled with coastal inundation, low-lying areas are increasingly at risk of flooding.

Climate change is affecting the occurrence of extreme weather events such as storms, droughts, heatwaves, and floods in the Hunter region through increasing temperatures and extreme rainfall events. Homes, businesses, and infrastructure are at risk of damage as a result of these events. The Hunter region experienced flooding in July 2022 as a result of extreme weather events.

A storm surge is a rise in sea level as a result of a coastal storm or low-pressure system (cyclone or East Coast Lows). Changes in wind and pressure can cause water to rise above normal levels, inundating homes, businesses, and infrastructure on the waterfront and inland. Storm surge and associated inundation of low-lying coastal lands within the coastal zone are expected to increase due to climate change (CSIRO, 2007).

Saltwater Intrusion

As sea levels rise, saltwater will move further inland along waterways and through the groundwater. This can:

- impact the plant and animal species living within our waterways and foreshore areas
- degrade groundwater used for irrigation, and result in crop yield declines,
- impact surface water used for irrigation, which may be saltier
- impact assets like our road network

<p>Financial impacts</p>	<p>Many insurance companies operating in Australia do not cover storm surge or erosion in their residential property insurance, and none cover gradual sea-level rise.</p> <p>Council's Coastal Management Programs are being developed to understand the current and future costs of coastal erosion and inundation which has had a significant cost to our local communities through damage to local assets and private properties. Council seeks to understand the current and future costs of coastal hazards to inform decisions on coastal protection works and planning.</p> <p>The NSW Government's Coastal and Estuary Grants Program provides technical and financial support to local government to help manage the coastal zone. Grant offers are subject to statewide priorities and the availability of funds each financial year. Councils will also contribute additional funding to manage the coastal zone.</p> <p>Coastal management actions in an adopted Coastal Management Program can be funded through a range of grants, state agencies and councils. Private landowners may be required to contribute to the actions where the works benefit private property.</p>
<p>Estuaries Intermittently Closed and Open Lake or Lagoon (ICOLLs)</p>	<p>An Intermittently Closed and Open Lake or Lagoon (ICOLL) is a coastal lake that naturally alternates between being open and closed to the ocean. Seventy per cent of coastal lakes and lagoons in NSW are ICOLLs, including Tuggerah Lake in the Central Coast. ICOLLs are separated from the ocean by a dynamic sand barrier, also known as a berm, which is influenced by the movement and redistribution of sand and sediments.</p>
<p>Coastal Management Programs</p>	<p>The purpose of the Coastal Management Act 2016 is to manage the use and development of the coastal environment in an ecologically sustainable way, for the social, cultural, and economic well-being of the people of New South Wales.</p> <p>Coastal Management Programs set the long-term strategy for the coordinated management of a beach, estuary, or larger section of the coast with a focus on achieving the objectives of the Coastal Management Act 2016.</p> <p>A Coastal Management Program includes management actions that consider:</p> <ul style="list-style-type: none"> • The benefits of economic growth, development, and public access to the coastal zone, • The need for protecting and enhancing coastal environments, and • Managing the risk of coastal hazards to human life and property, whilst considering the effects of climate change.

Community involvement in coastal management

The Coastal Management Act 2016 requires councils to consult with the community and stakeholders before adopting a Coastal Management Program (CMP).

Council is committed to working with our communities to protect and enhance our coastal environments.

Community experiences, observations and feedback have been critical in preparing coastal management strategies in the past. Council will continue to seek community input as it adapts its management approaches in a changing environment.

Communities will need to adapt to the risks that are impacting our coastline and prepare for the effects of climate change.

The intrinsic relationship and knowledge First Nations people hold about our coast, provide insights on how to manage and adapt to the dynamic environment of our coastline.

Council will collaborate with Aboriginal communities, organisations, and Knowledge holders through culturally safe engagement approaches to ensure cultural perspectives and values influence decision making in the coastal zone.

Responses and solutions to coastal threats

Coastal adaptation solutions are used to manage the impacts of coastal risks such as erosion and inundation. The specific solutions adopted will vary depending on the specific location and situation but could include:

- Sand nourishment and rehabilitation of beaches and waterways
- Infrastructure such as seawalls or revetments to protect assets from coastal erosion and in some cases inundation. Land use planning to ensure future development is constructed to minimise the risk from coastal hazards (e.g., structural stability, raised floor levels)
- Planned relocation of existing assets and homes from the most vulnerable areas to areas of reduced or no risk
- [Local LGA to add in relevant mitigations]

Coastal adaptation solutions are used to manage the impacts of coastal risks such as erosion and inundation. Council has undertaken detailed assessments in their Coastal Management Program to identify the most suitable adaptation solutions for each location. These include:

- [Local LGA to add in relevant mitigations]

Managed retreat or planned relocation involves moving homes, infrastructure and sometimes communities, from high-risk areas where the risk to life and property is too great. Managed retreat is one option that may be considered from a range of approaches to manage coastal risks, such as erosion and inundation, on homes, infrastructure, and people's safety.

Local councils have an important role to play in managing coastal changes in their local areas. This might include the development of:

- Coastal hazard studies and plans
- Community awareness and education
- Mitigation activities, and
- Support for emergency services

	<p>A Coastal Management Program considers management actions that:</p> <ul style="list-style-type: none"> • Benefit economic growth, development, and public access to the coastal zone, • Protect and enhance coastal environments, and • Manage the risk of coastal hazards to human life and property, whilst considering the effects of climate change.
<p>Estuary and waterway health</p>	<p>The Coastal Management Act 2016 seeks to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes, and coastal lagoons. Therefore, in the design and delivery of a Coastal Management Program the objective is to also enhance the natural character, scenic value, and biological diversity to maintain and improve water quality and estuary health.</p> <p>Estuaries are any part of a river, lake lagoon or coastal creek which is impacted by coastal tides. An estuary will transition from freshwater environments on the land to the marine sea water environments and can have varying levels of salinity. Estuaries are unique ecosystems, home to many species of plants and animals. When estuaries are disturbed, their ecosystems can be harmed.</p>
<p>The role of agencies and the partnerships required between all levels of government to deliver successful coastal zone management</p>	<p>Coastal Management Programs are developed collaboratively between Council and the NSW State Government in consultation with our communities and public authorities.</p>

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Frequently Asked Questions

The Frequently Asked Questions (FAQs) provide additional information not covered in the key messages, including definitions of specific coastal hazards and key terms. The FAQs can be used to accompany other coastal hazard content and can be displayed as a standalone document or as individual FAQs when and where needed. They can also be used to assist when responding and engaging with the community in the media or online.



Frequently Asked Questions

Why does the coastal environment change?

The coast is a changing environment, it evolves in response to extreme weather events and the movement of sediment and water. Climate change is affecting the frequency and intensity of:

- rainfall and storm events,
- flooding contributing to sea level rise and;
- coastal erosion and inundation.

What is coastal erosion?



Coastal erosion is a natural process which refers to the permanent or temporary loss of beach, dunes, and estuary foreshore areas. Coastal erosion has numerous causes such as tides, storms, and sea level rise. Erosion can impact our natural environment, and increase the risk of physical damage to property, businesses, and infrastructure.

Coastal erosion can impact open coast foreshores and beaches and impact coastal rivers, lakes, and estuaries.

What is soil erosion?



Soil erosion is the washing away of soil from hills, gullies, lakes, creeks, and riverbeds. Coastal hazards such as inundation and extreme weather can accelerate soil erosion along estuaries and waterways. Eroded soils washed into waterways can pollute the environment and reduce water quality, impacting delicate estuarine ecosystems.

What happens if sea levels rise?

Rising sea levels can accelerate erosion along the coastline and lead to increased flooding in low-lying areas. Sea level rise will also impact inland waterways and estuaries through saltwater intrusion. Waterfront and low-lying areas of the Hunter and Central Coast Region are at risk of damage from rising sea levels as a result of climate change.

What is coastal inundation?

Coastal inundation is when ocean levels rise high enough that it causes the temporary flooding of a portion of land within the coastal zone. Coastal inundation can be infrequent and short-term, as a result of a coastal storm or extreme tide. Inundation from more regular high tides can be daily, weekly, or several times a year (e.g. king tides). Sea level rise will increase the regularity of all types of coastal inundation. In addition, as sea and lake levels rise, some low-lying areas along the coast and around the lake foreshore may be permanently inundated.

How will changes to the coast impact me?

We are already seeing the impacts of climate change on our coast now. The way we are used to enjoying our coastal environment will change. Changing coastal processes will impact popular fishing, camping, and boating locations, while erosion and rising sea levels will impact our beaches and estuaries. Your homes, businesses, local community facilities, services, and infrastructure will also be at risk from the changes affecting your coast.

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Factsheets

The factsheets include messaging on key topics that will help educate the community on the increasing impact of coastal hazards, provide guidance for Councils when developing key messages, and suggest imagery for inclusion in their communication materials. These topics have been identified by the Hunter and Central Coast Councils and their communities:

- Coastal Management Program (CMP) Process and Responsibilities Factsheet
- Coastal Erosion and Inundation Factsheet
- Coastal Hazards and Adaptation and Mitigation Strategies Factsheet
- Coastal Hazards for Property Owners Factsheet

The factsheets have been developed for general use and we recommend adapting them based on your own Council needs and branding. Included within the factsheets are boxes with suggested instructions to assist Councils when developing their own factsheets, and we have included suggested options where you can add locally relevant content e.g., text, weblinks, maps, and imagery. Councils can use elements of or all the factsheet content and imagery as they deem appropriate.

We have also included some ready-to-go versions of the factsheets with Hunter JO branding which can be used for occasions when you are unable to prepare your own versions.

Factsheets are a useful communication method for educating the community on more complex topics and can be easily accessible to the public via Council's website or through distribution at your local community and visitor centres and libraries.

Coastal Hazards Adaptation and Mitigation

Our beaches, coastlines, lakes, and waterways are constantly changing due to natural processes, and climate change means our communities are exposed to coastal hazards more and more.

Local councils have an important role to play in managing coastal changes in their local areas. This might include the development of:

- Coastal hazard studies and plans
- Community awareness and education
- Mitigation activities
- Support for emergency services

Coastal hazards impacting our coastline include:

- ✓ Coastal erosion
- ✓ Coastal and tidal inundation (flooding)
- ✓ Saltwater intrusion
- ✓ Dune transgression (movement of sand dunes)

What are some solutions to managing coastal hazards?

In general, there are three categories of response to coastal hazards:

- **Protection** – assets at risk remain in place with mitigation measures to protect them e.g. seawalls or revetments (a type of coastal protection works which protects assets from coastal processes by armouring the shore with erosion-resistant material e.g. rocks/boulders)
- **Adaptation** – modify existing or future assets to reduce the risk of coastal hazards e.g. raising floor levels to protect from inundation
- **Planned relocation** – moving existing assets away from the area at risk and prohibiting future assets to be developed in the risk area.

The specific solutions adopted will vary depending on the location and situation but could include:

- Sand nourishment of beaches to allow ongoing use and to reduce erosion risk adjacent to beaches
- Infrastructure such as seawalls or revetments to protect assets from coastal erosion and in some cases inundation
- Land use planning to ensure future development is constructed to minimise risk from coastal hazards (e.g. structural stability, raised floor levels)
- Planned relocation of existing assets and homes from the most vulnerable areas to areas of reduced or no risk

Coastal Erosion and Inundation

The coastline of the Hunter and Central Coast is valued by our community. To inform our use and management of the coastline, it is important that we understand the coastal processes that influence it and how it is impacted by climate change.

Predictions show that our region will continue to face even more extreme weather events and rising sea levels due to climate change. The impact of large storms, tides, and sea level rise is already visible on our coastline when we visit our local beaches and see them suffering from coastal erosion and inundation.

Coastal Erosion

Our coasts, including beaches and dunes, are dynamic and sand is constantly moving around our beaches. This is a natural process, however, when there is an ongoing imbalance in sand movement resulting in the continued loss of sediments, we know coastal erosion is occurring.

Coastal erosion can be short or long-term. Short-term erosion (or 'storm bite') occurs over a period of days during a coastal storm event such as an East Coast Low. During the storm waves erode the beach and transport the sand towards the sea. Once the storm passes, the beach then gradually recovers over a period of months or years as the sand is transported back onto the beach under normal wave conditions. Long-term erosion occurs over a period of years to decades. If a very big storm has occurred, the sand eroded from the beach may be taken too far offshore and be unable to make it back onto the beach once the storm passes. If there is no new sand coming into the system, this can become a permanent loss of sand and the coastline gradually moves towards the land.

We have seen storms remove sand from our local beaches many times over the years. This is usually short-term erosion and the sand returns in the months afterward, as climate conditions return them onto the beach. As a result of climate change, we will likely see this occur more often and more severely. Sand loss will occur more often, and sand will take longer to return to the beach. Sea level rise is also likely to accelerate long term erosion. This could affect how we all access and use the coastal areas and the local facilities within them.

Beach erosion and recovery phases

Long-term shoreline recession

Source: NSW Department of Land and Water Conservation 2011, Coastal Zone Management: A Manual of Coastal Zone Management and Rehabilitation Techniques

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Image Library

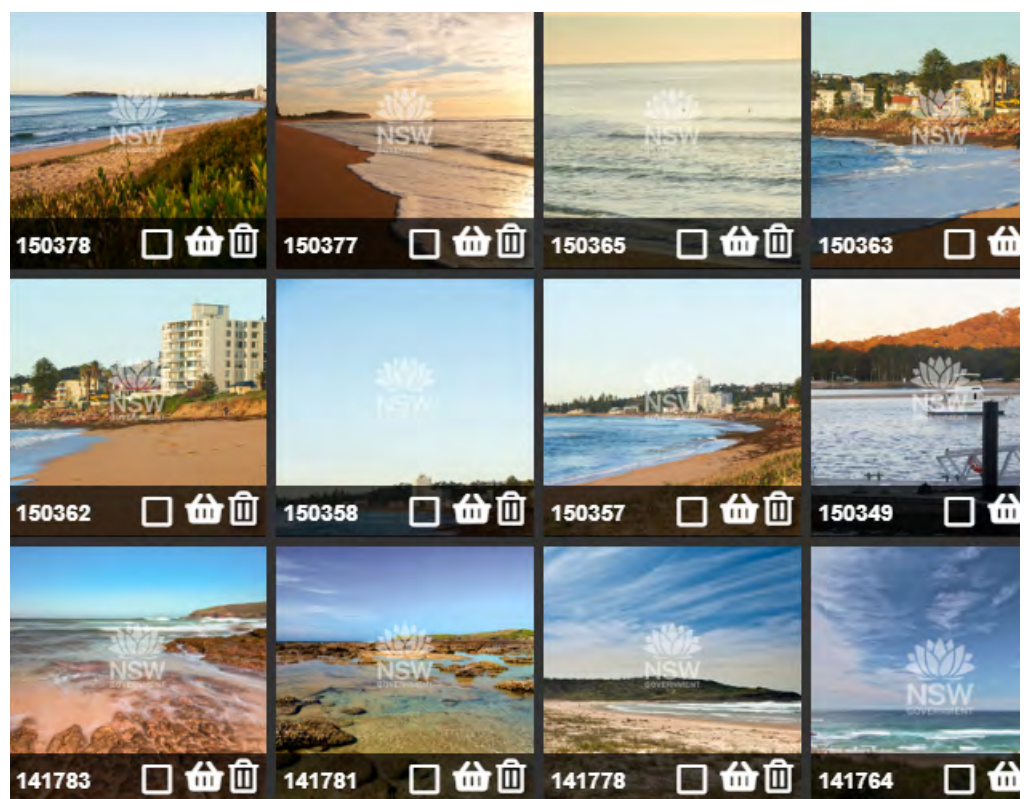
The Hunter JO Coastal image library has been developed as a resource for Councils to utilise when needed and can be used as a supplement to your own Council image libraries.

The Hunter JO Coastal Image Library has been collated from the image library of the DPE Environment and Heritage <https://images.environment.nsw.gov.au/>.

The Hunter JO Coastal Image Library Teambox includes local imagery examples from within the Hunter and Central Coast Council areas which you can use for your coastal communications. The Teambox can be accessed here - <https://images.environment.nsw.gov.au/lightbox/list.me?share=8151cb200e9983673fad50da1a7cede8>

To gain access to the Image Library and Teambox, you will need to register for a free account. When downloading images, you will be prompted to provide details on how you intend to use the images before you are granted approval.

If you can log in but having trouble accessing the Teambox, please email the Hunter Joint Organisation at rppd@hunterjo.com.au.



How-to



Newsletter, Banners and Social Media

The newsletter banners provided can be used as banners on local council newsletters and link to further information on council websites.

The social media content provides example content for use across Council social media channels, such as Facebook, Instagram, and LinkedIn. The suggested text or taglines below can be accompanied by a branded image or link to council websites. We have provided some examples of what this could look like, however we would recommend your Communications team recreate them using your Council's style guide and based on what platform you are using.

A selection of local images would be ideal in making the social media content locally relevant. This might include images of coastal hazards (erosion after a storm event, or inundation during an east coast low or extreme tide), coastal environments, or existing coastal protection works. The Hunter JO Coastal Image Library is also a good source of images which could be used for social media if needed.

Suggested taglines for use on social media and other relevant collateral:

- Our coastal beaches and waterways are always changing
- Climate change is happening now
- Coastal risks are impacting how we live today and into the future
- Coastal hazards impact how you enjoy and use our beaches, lakes and waterways
- Prepare and adapt to coastal changes
- Protect and enhance our coastal waterways
- Coastal erosion impacts our beaches, public assets, and private properties
- Flooding from the ocean and estuaries impacts our low lying communities
- Climate change predictions show that our region will continue to face even more extreme weather events and rising sea levels
- Sea levels are expected to rise along our coast by up to 1 metre by 2100
- The Hunter has some of the highest rates of erosion in NSW

How-to



Posters

The posters contain high-level messaging to encourage communities to seek further information about issues in their area. They can be printed in A4 and can be distributed in the community. The posters developed are general in nature, with options to adapt for local relevance.

Coastal and Estuary

APPENDIX

Plain text and designed examples

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The Appendix contains template plain text versions of the Coastal and Estuary Support Package materials as well as ready-to-go designed examples. Included within the templates are advisory notes with suggested instructions to assist Councils when developing their own materials. We have also included suggested options where you can add locally relevant content (e.g., text, weblinks, maps, and imagery). Councils can use elements of, or all the provided content and imagery as they deem appropriate.

Frequently Asked Questions

Why does the coastal environment change?

The coast is a changing environment, it evolves in response to extreme weather events and the movement of sediment and water. Climate change is affecting the frequency and intensity of:

- rainfall and storm events,
- flooding contributing to sea level rise and
- coastal erosion and inundation.

How will changes to the coast impact me?

We are already seeing the impacts of climate change on our coast now. The way we are used to enjoying our coastal environment will change. Changing coastal processes will impact popular fishing, camping, and boating locations, while erosion and rising sea levels will impact our beaches and estuaries. Your homes, businesses, local community facilities, services, and infrastructure will also be at risk from the changes affecting your coast.

What happens if sea levels rise?

Rising sea levels can accelerate erosion along the coastline and lead to increased flooding in low-lying areas. Sea level rise will also impact inland waterways and estuaries through saltwater intrusion. Waterfront and low-lying areas of the Hunter and Central Coast Region are at risk of damage from rising sea levels as a result of climate change.

What is coastal erosion?

Coastal erosion is a natural process which refers to the permanent or temporary loss of beach, dunes, and estuary foreshore areas. Coastal erosion has numerous causes such as tides, storms, and sea level rise. Erosion can impact our natural environment, and increase the risk of physical damage to property, businesses, and infrastructure.

Coastal erosion can impact open coast foreshores and beaches, and impact coastal rivers, lakes, and estuaries.

COUNCIL INSTRUCTION

This is where you may like to include an example of coastal erosion within your LGA.

What is soil erosion?

Soil erosion is the washing away of soil from hills, gullies, lakes, creeks, and riverbeds. Coastal hazards such as inundation and extreme weather can accelerate soil erosion along estuaries and waterways. Eroded soils washed into waterways can pollute the environment and reduce water quality, impacting delicate estuarine ecosystems.

What is coastal inundation?

Coastal inundation is when ocean levels rise high enough that it causes the temporary flooding of a portion of land within the coastal zone. Coastal inundation can be infrequent and short-term, as a result of a coastal storm or extreme tide. Inundation from more regular high tides can be daily, weekly, or several times a year (e.g., king tides). Sea level rise will increase the regularity of all types of coastal inundation. In addition, as sea and lake levels rise, some low-lying areas along the coast and around the lake foreshore may be permanently inundated.

How is coastal inundation different from flooding?

When we refer to flooding, we are generally describing flooding as a result of heavy rainfall rather than coastal inundation as a result of raised ocean levels. This type of flooding is also referred to as catchment flooding and is caused by heavy rainfall on the catchments causing lakes, creeks, and rivers to burst their banks and flood the surrounding area. Heavy rainfall is increasing as a result of climate change in the Hunter and Central Coast Region and, when coupled with coastal inundation, low-lying areas are increasingly at risk of flooding.

What is saltwater intrusion?

As sea levels rise, saltwater will move further inland along waterways and through the groundwater. This can:

- impact the plant and animal species living within our waterways and foreshore areas
- degrade groundwater used for irrigation, and result in crop yield declines
- impact surface water used for irrigation may be saltier
- impact assets like our road network

What is an extreme weather event?

An extreme weather event is any weather event such as storms, droughts, heatwaves, or floods, that exceeds historical measurements for the area. Climate change is affecting the Hunter region, particularly through increasing temperatures and extreme rainfall events. Homes, businesses, and infrastructure are at risk of damage as a result of these events. The Hunter region experienced flooding in July 2022 as a result of extreme weather events.

What are storm surges?

A storm surge is a rise in sea level as a result of severe weather such as a coastal storm or low-pressure system (cyclone or East Coast Lows). Changes in wind and pressure can cause water to rise above normal levels, inundating homes, businesses, and infrastructure on the waterfront and inland. Storm surge and associated inundation of low-lying coastal lands are expected to increase due to climate change (CSIRO, 2007).

What is an estuary?

Estuaries are any part of a river, lake lagoon or coastal creek which is impacted by coastal tides. An estuary will transition from freshwater environments on the land to the marine sea water environments and can have varying levels of salinity. Estuaries are unique ecosystems, home to many species of plants and animals. When estuaries are disturbed, their ecosystems can be harmed.

COUNCIL INSTRUCTION

This is where you may like to include an example of an estuary within your LGA.

What is an Intermittently Closed and Open Lake or Lagoon (ICOLL)?

An Intermittent Closed and Open Lake or Lagoon (ICOLL) is a coastal lake that naturally alternates between being open and closed to the ocean. Seventy per cent of coastal lakes and lagoons in NSW are ICOLLs, including Tuggerah Lake in the Central Coast. ICOLLs are separated from the ocean by a dynamic sand barrier, also known as a berm, which is influenced by the movement and redistribution of sand and sediments.

COUNCIL INSTRUCTION

You may like to replace “Tuggerah Lake in the Central Coast” with an example of an ICOLL within your LGA.

What is coastal adaptation?

Coastal adaptation refers to solutions which minimise the impacts of coastal changes. This could include beach nourishment activities, infrastructure such as seawalls, or relocation of homes in the most vulnerable areas.

What are seawalls and revetments?

A revetment is a coastal protection structure used to protect land or assets of high value to the community from coastal erosion by using erosion-resistant materials such as rocks, boulders, or concrete.

A seawall is also a coastal protection structure. A seawall can be used to protect land or assets from coastal erosion, as well as inundation, depending on the design.

What is managed retreat?

Managed retreat or planned relocation involves moving homes, infrastructure and sometimes communities, from high-risk areas where the risk to life and property is too great. Managed retreat is one option that may be considered from a range of approaches to manage coastal risks, such as erosion and inundation, on homes, infrastructure, and people’s safety.

Is environmental change the same as climate change?

Environmental changes occur naturally, such as erosion as a result of ocean tides. Climate change can worsen naturally occurring environmental changes, for example, by increasing the frequency and severity of weather events and other environmental phenomena such as storms, floods, and erosion.

How do I know if my property is at risk?

Council has undertaken an assessment of coastal erosion and inundation risk for [locations]. These maps can be viewed [webpage or suitable reference].

If your property has been identified as being subject to planning controls due to coastal hazards, then the Planning Certificate for your property will identify the type of coastal hazards impacting your property and whether those hazards are current or future hazards.

COUNCIL INSTRUCTION

- Include the specific locations where coastal hazards have been assessed and mapped. Or refer to the entire coastal zone, if appropriate.
- If Planning Certificate notations have not been undertaken, remove the second dot point.

Will coastal hazards affect my insurance?

The cost of insurance generally reflects the level of risk of a particular property. If your property is at risk from coastal hazards, it is possible that your premiums will reflect this. However, many insurance companies operating in Australia do not cover storm surge or erosion in their residential property insurance, and none cover gradual sea-level rise.

What is Council doing about coastal changes?

Local Councils have an important role to play in managing coastal changes in their local areas. In [LGA] we [choose one or more of the following, adapting, as required]

- have completed stages 1 to 4 of our Coastal Management Program for [location] and will be implementing the coastal management actions over the next 10 years
- are currently undertaking Stage # of our Coastal Management Program for [location] and we are looking to complete Stage 4 in [date] and implement coastal management actions over the following 10 years
- have undertaken [coastal protection works] at [location] in [date]
- plan to undertake [coastal protection works] at [location] in [date]

COUNCIL INSTRUCTION

- Select one or more of the actions listed above and insert relevant details.
- Providing references to webpages with more details is recommended
- Council may also like to include reference to any relevant policies supporting coastal management e.g. sea level rise or climate change policies.

What is the government doing about coastal changes?

The State Government has been working to support local councils and communities in building resilience to changing environments. Coastal Management Programs are developed collaboratively between Council and the NSW State Government in consultation with our communities and public authorities. The Coastal Management Manual, Toolkit and Guidelines for Stakeholder Engagement helps councils and communities work together to manage change - <https://www.environment.nsw.gov.au/topics/water/coasts/coastal-management/toolkit>

How can I get involved in responding to coastal changes in my local area?

Council is always seeking community involvement in coastal management decision making and activities.

COUNCIL INSTRUCTION

You may like to include links to your website and / or list opportunities for community members to participate and provide feedback on the CMP process (preparation of the CMP and implementation of actions).

You can also get involved at a personal and community level. You might want to:

- Join a local community group, such as [Landcare](#), and get involved in dune and streambank rehabilitation activities.
- Download the [CoastSnap app](#) and become a citizen scientist by sharing photos of your local beach to help monitor coastal changes and develop actions to manage our beaches. CoastSnap locations in the Hunter and Central Coast can be found [here](#) and are listed below:
 - Old Bar
 - Sugarloaf
 - Seal Rocks
 - Birubi Beach
 - Stockton North
 - Stockton Pembroke Street
 - Stockton Surf Life Saving Club (SLSC)
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 - Avoca Beach
- Research your local Aboriginal culture, join in cultural awareness raising activities, and find out which Aboriginal land you are on.
- Get informed about coastal changes in your area and spread awareness amongst your local community.

COUNCIL INSTRUCTION

You may like to include links to your website and / or list opportunities for community members to participate and provide feedback on the CMP process (preparation of the CMP and implementation of actions).

To find out more information, contact [\[insert local council website details\]](#)



Frequently Asked Questions

Why does the coastal environment change?

The coast is a changing environment, it evolves in response to extreme weather events and the movement of sediment and water. Climate change is affecting the frequency and intensity of:

- rainfall and storm events,
- flooding contributing to sea level rise and;
- coastal erosion and inundation.

What is soil erosion?



Soil erosion is the washing away of soil from hills, gullies, lakes, creeks, and riverbeds. Coastal hazards such as inundation and extreme weather can accelerate soil erosion along estuaries and waterways. Eroded soils washed into waterways can pollute the environment and reduce water quality, impacting delicate estuarine ecosystems.

What happens if sea levels rise?

Rising sea levels can accelerate erosion along the coastline and lead to increased flooding in low-lying areas. Sea level rise will also impact inland waterways and estuaries through saltwater intrusion. Waterfront and low-lying areas of the Hunter and Central Coast Region are at risk of damage from rising sea levels as a result of climate change.

What is coastal erosion?



Coastal erosion is a natural process which refers to the permanent or temporary loss of beach, dunes, and estuary foreshore areas. Coastal erosion has numerous causes such as tides, storms, and sea level rise. Erosion can impact our natural environment, and increase the risk of physical damage to property, businesses, and infrastructure.

Coastal erosion can impact open coast foreshores and beaches and impact coastal rivers, lakes, and estuaries.

How will changes to the coast impact me?

We are already seeing the impacts of climate change on our coast now. The way we are used to enjoying our coastal environment will change. Changing coastal processes will impact popular fishing, camping, and boating locations, while erosion and rising sea levels will impact our beaches and estuaries. Your homes, businesses, local community facilities, services, and infrastructure will also be at risk from the changes affecting your coast.

What is coastal inundation?

Coastal inundation is when ocean levels rise high enough that it causes the temporary flooding of a portion of land within the coastal zone. Coastal inundation can be infrequent and short-term, as a result of a coastal storm or extreme tide. Inundation from more regular high tides can be daily, weekly, or several times a year (e.g. king tides). Sea level rise will increase the regularity of all types of coastal inundation. In addition, as sea and lake levels rise, some low-lying areas along the coast and around the lake foreshore may be permanently inundated.

Sample Designed Version



How is coastal inundation different from flooding?

When we refer to flooding we are generally describing flooding as a result of heavy rainfall rather than coastal inundation as a result of raised ocean levels. This type of flooding is also referred to as catchment flooding and is caused by heavy rainfall on the catchments causing lakes, creeks, and rivers to burst their banks and flood the surrounding area. Heavy rainfall is increasing as a result of climate change in the Hunter and Central Coast Region and, when coupled with coastal inundation, low-lying areas are increasingly at risk of flooding.



How do I know if my property is at risk?

If your property has been identified as being subject to planning controls due to coastal hazards, then the Planning Certificate for your property will identify the type of coastal hazards impacting your property and whether those hazards are current or future hazards.

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What is saltwater intrusion?



As sea levels rise, saltwater will move further inland along waterways and through the groundwater. This can:

- impact the plant and animal species living within our waterways and foreshore areas
- degrade groundwater used for irrigation, and result in crop yield declines
- impact surface water used for irrigation may be saltier
- impact assets like our road network

Will coastal hazards affect my insurance?



The cost of insurance generally reflects the level of risk of a particular property. If your property is at risk from coastal hazards, it is possible that your premiums will reflect this. However, many insurance companies operating in Australia do not cover storm surge or erosion in their residential property insurance, and none cover gradual sea-level rise.

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Sample Designed Version



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You can also get involved at a personal and community level.

You might want to:

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- Get informed about coastal changes in your area and spread awareness amongst your local community.

To find out more information, visit your local Council website.



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Factsheets

Coastal Management Plans

What is a Coastal Management Program?

We know there are concerns in our community about the changing coastal environment. Some changes we are already seeing and feeling — for others we need to look further into the future for what is likely to happen.

A Coastal Management Program (CMP) sets the long-term strategy for managing our coast. It identifies risks to our coast and how to manage these now and into the future, so we can all continue to enjoy the benefits of the coast for years to come.

Coastal Management Programs (CMPs) set the long-term 10 year strategy (for the coast with a focus on achieving the objectives of the Coastal Management Act 2016). CMPs identify coastal management issues and the actions required to address these issues.

Why are Coastal Management Programs required?

CMPs are required in accordance with the [Coastal Management Act \(2016\)](#) for our estuaries and coastline.

The purpose of the Coastal Management Act 2016 is to manage the use and development of the coastal environment in an ecologically sustainable way, for the social, cultural, and economic well-being of the people of New South Wales (NSW).

Where are Coastal Management Programs being prepared?

A CMP may include all or part of the coastal zone of one Local Government Area (LGA) or neighbouring LGAs. The coastal zone is defined within the Coastal Management Act 2016 as being made up of four distinct coastal management areas, and for each of these areas there are specific management objectives.

What needs to be included in a Coastal Management Program?

CMPs are developed and guided by the NSW State Government's [Coastal Management Manual](#). When preparing and implementing a CMP, councils will follow the five-stage process set out in the Manual.

A CMP includes management actions that consider:

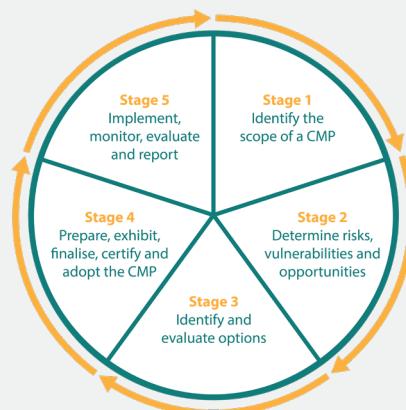
- The benefits of economic growth, development, and public access to the coastal zone
- The need for protecting and enhancing coastal environments
- Managing the risk of coastal hazards to human life and property, whilst considering the effects of climate change

Coastal adaptation solutions will vary depending on the specific location and situation, but could include:

- Nourishment and rehabilitation of beaches and waterways
- Infrastructure such as seawalls or breakwaters
- Managed retreat from the most vulnerable areas
- [Local LGA to add in relevant mitigations]

COUNCIL INSTRUCTION

This is where you may like to list examples or include mitigations relevant to your local area.



Who is involved in preparing a Coastal Management Program and what are their roles?

CMPs are developed collaboratively between Council and the NSW State Government in consultation with our communities and public authorities.

Council has an important role to play in managing coastal changes in our local areas.

This might include the development of:

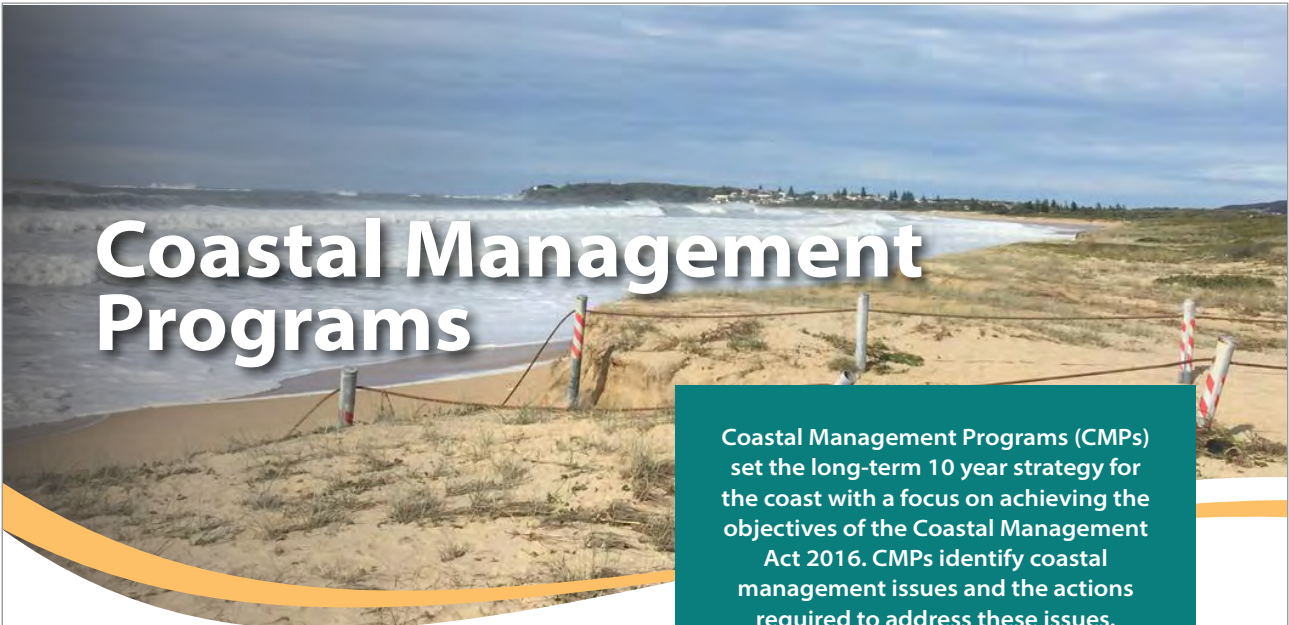
- Coastal hazard studies and plans
- Assessing development proposals in the coastal zone
- Community awareness and education programs
- Mitigation activities
- Support for emergency services
- [Local LGA to edit or add in any additional inclusions]

COUNCIL INSTRUCTION

This is where you may like to include examples relevant to your local area.

We are committed to working with our communities to protect and enhance our coastal environments. Community experiences, observations, and feedback have been critical in preparing coastal management strategies in the past. We will continue to seek community input as it allows us to adapt our management approach in a changing environment. Also, communities will need to adapt to the risks that are impacting our coastline and prepare for the effects of climate change.

The intrinsic relationship and knowledge First Nations people hold about our coast, provide insights on how to manage and adapt to the dynamic environment of our coastline. Traditional owners have significant interests in the marine region, as part of their cultural connection to Country. We are always looking for opportunities for Aboriginal communities, organisations, and Knowledge holders to share their perspectives and influence how cultural values are understood and maintained.



Coastal Management Programs

Coastal Management Programs (CMPs) set the long-term 10 year strategy for the coast with a focus on achieving the objectives of the Coastal Management Act 2016. CMPs identify coastal management issues and the actions required to address these issues.

What is the Coastal Management Program?

We know there are concerns in our community about the changing coastal environment. Some changes we are already seeing and feeling — for others we need to look further into the future for what is likely to happen.

A Coastal Management Program (CMP) sets the long-term strategy for managing our coast. It identifies risks to our coast and how to manage these now and into the future, so we can all continue to enjoy the benefits of the coast for years to come.

Why are Coastal Management Programs required?

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Where are Coastal Management Programs being prepared?

A CMP may include all or part of the coastal zone of one Local Government Area (LGA) or neighbouring LGAs. The coastal zone is defined within the CM Act 2016 as being made up of four distinct coastal management areas, and for each of these areas there are specific management objectives.



Sample Designed Version

What needs to be included in a Coastal Management Program?

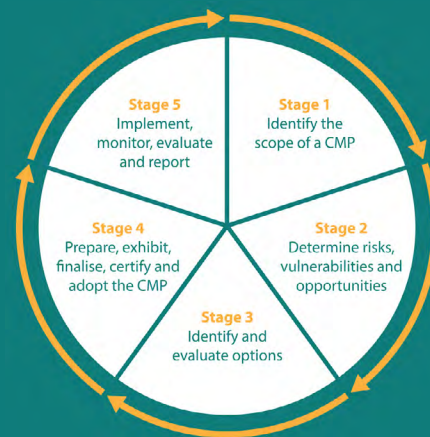
CMPs are developed and guided by the NSW State Government's [Coastal Management Manual](#). When preparing and implementing a CMP, councils will follow the five-stage process set out in the Manual.

A CMP includes management actions that consider:

- The benefits of economic growth, development, and public access to the coastal zone
- The need for protecting and enhancing coastal environments, and
- Managing the risk of coastal hazards to human life and property, whilst considering the effects of climate change.

Coastal adaptation solutions will vary depending on the specific location and situation, but could include:

- Nourishment and rehabilitation of beaches and waterways
- Infrastructure such as seawalls or breakwaters
- Managed retreat from the most vulnerable areas.



Who is involved in preparing a Coastal Management Program and what are their roles?

CMPs are developed collaboratively between Council and the NSW State Government in consultation with our communities and public authorities.

We are committed to working with our communities to protect and enhance our coastal environments. Community experiences, observations, and feedback have been critical in preparing coastal management strategies in the past. We will continue to seek community input as it allows us to adapt our management approach in a changing environment.

Also, communities will need to adapt to the risks that are impacting our coastline and prepare for the effects of climate change.

The intrinsic relationship and knowledge First Nations people hold about our coast, provide insights on how to manage and adapt to the dynamic environment of our coastline.

Traditional owners have significant interests in the marine region, as part of their cultural connection to Country. We are always looking for opportunities for Aboriginal communities, organisations, and Knowledge holders to share their perspectives and influence how cultural values are understood and maintained.



Coastal Erosion and Inundation

The [insert local area reference] coastline is valued by our community. To inform our use and management of the coastline, it is important that we understand the coastal processes that influence it and how it is impacted by climate change.

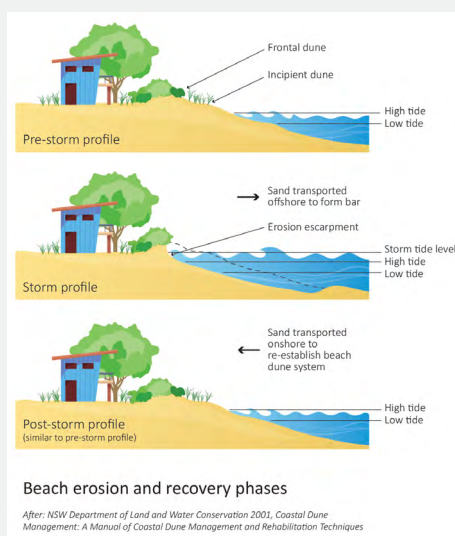
Predictions show that our region will continue to face even more extreme weather events and rising sea levels due to climate change. The impact of large storms, tides, and sea level rise is already visible on our coastline when we visit our local beaches and see them suffering from coastal erosion and inundation.

Coastal Erosion

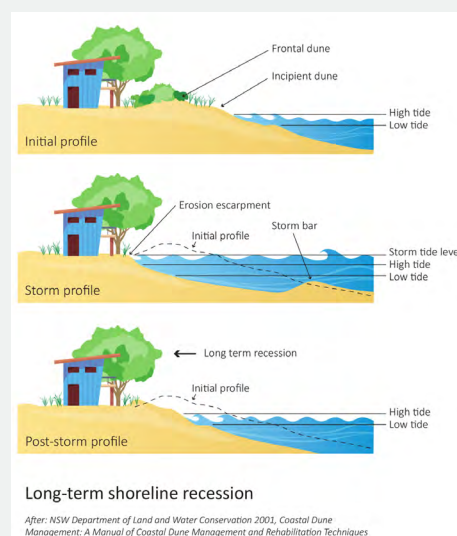
Our coasts, including beaches and dunes, are dynamic and sand is constantly moving around our beaches. This is a natural process, however, when there is an ongoing imbalance in sand movement resulting in the continued loss of sediments, we know coastal erosion is occurring.

Coastal erosion can be short or long-term. Short-term erosion (or 'storm bite') occurs over a period of days during a coastal storm event such as an East Coast Low. During the storm waves erode the beach and transport the sand towards the sea. Once the storm passes, the beach then gradually recovers over a period of months or years as the sand is transported back onto the beach under normal wave conditions. Long-term erosion occurs over a period of years to decades. If a very big storm has occurred, the sand eroded from the beach may be taken too far offshore and be unable to make it back onto the beach once the storm passes. If there is no new sand coming into the system, this can become a permanent loss of sand and the coastline gradually moves towards the land.

We have seen storms remove sand from our local beaches many times over the years. This is usually short-term erosion and the sand returns in the months afterward, as calmer conditions return them onto the beach. As a result of climate change, we will likely see this occur more often and more severely. Sand loss will occur more often, and sand will take longer to return to the beach. Sea level rise is also likely to accelerate long term erosion. This could affect how we all access and use the coastal areas and the local facilities within them.



Source: Coastal Dune Management Manual, 2001.



Source: NSW Office of Environment and Heritage, 2016, Sea Level Rise Science and Synthesis for NSW.

COUNCIL INSTRUCTION

This is where you might like to insert an example of erosion in the local area with an image demonstrating the erosion impact. Any local response mitigation measures could also be included.

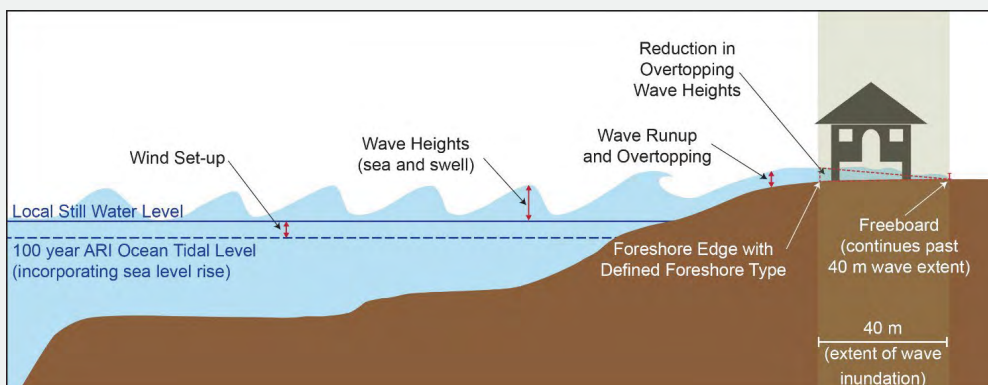
There is a lot of detail in this section to effectively explain the concept of coastal erosion. Please refine this section to make it shorter if required.

Coastal Inundation

Coastal inundation occurs when a combination of marine and atmospheric processes raise ocean water levels above normal elevations and floods low-lying areas or rises over dunes, structures, and barriers. It is often associated with storms resulting in storm surge and waves.

The duration of inundation may be several hours and will vary depending on the timing of the storm (e.g., if storm surge peaks on the high tide) and how long the storm goes for. In some events, the water may initially recede somewhat before coming back or increasing in depth on the next high tide. Once the coastal storm passes, the water recedes and ocean water levels return to their normal tidal levels.

Over time sea level rise will increase the risk of coastal inundation. If storm intensity increases under climate change conditions, storm surge levels may also be higher, increasing coastal inundation.



Source: Rhelm, 2019, Coastal Processes Affecting Estuarine Planning Levels (created for the Middle Harbour Estuarine Study).

COUNCIL INSTRUCTION

This is where you might like to insert an example of coastal inundation in the local area with an image demonstrating the inundation impact. Any local response mitigation measures could also be included or how these impacts will be addressed through your CMP.

Another example you could include is below:

- An inundation map for your local area – see <https://coastalrisk.com.au/viewer>

Tidal Inundation

Tidal inundation is the flooding of normally dry land due to the rise and fall of the ocean as a result of the tides. Tidal inundation is, as the name implies, caused by regular tides, and is not associated with a coastal storm or catchment flood event. We often experience particularly high tides around December and July. These are referred to as King Tides.

Over time, sea level rise will increase the risk of tidal inundation. Some of our low-lying areas may become more regularly, or even permanently, inundated by the sea and others may have increased difficulty draining following a rainfall event.

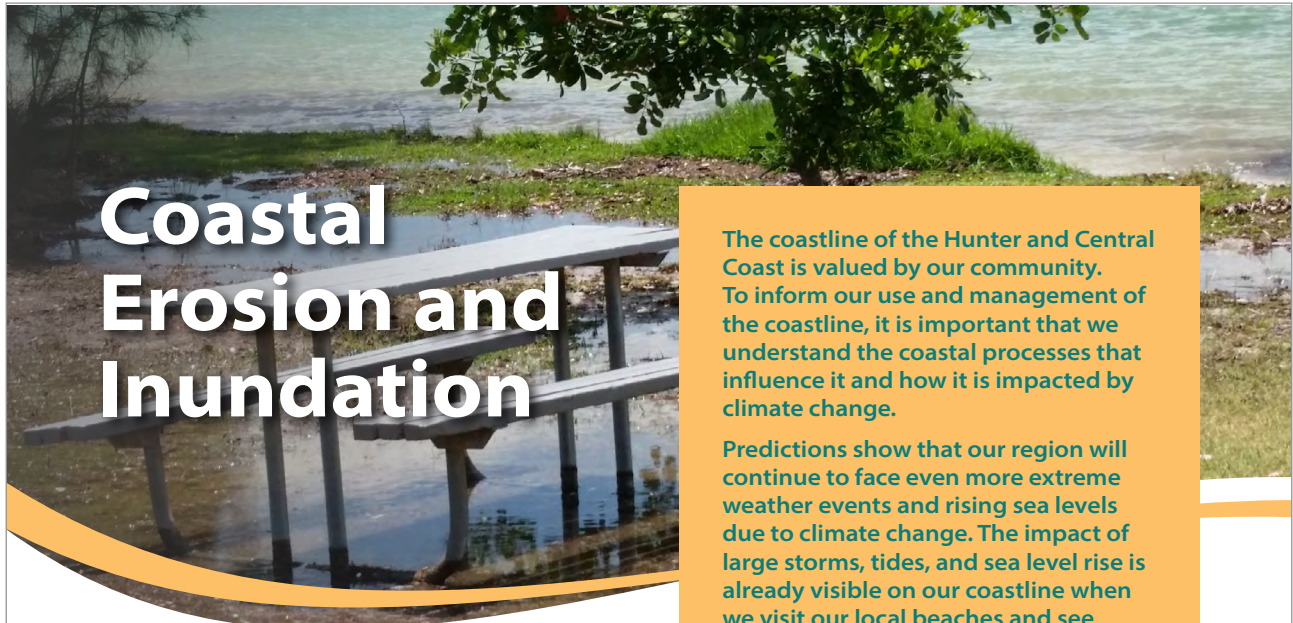
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COUNCIL INSTRUCTION

You might like to include your response to coastal erosion and inundation, for example, by including any mitigation works that have been undertaken. You may also like to include your Council's contact details and where further information can be found on your website.

Also, you could source king tide imagery for inclusion from this website- [Witness King Tides](#).



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Predictions show that our region will continue to face even more extreme weather events and rising sea levels due to climate change. The impact of large storms, tides, and sea level rise is already visible on our coastline when we visit our local beaches and see them suffering from coastal erosion and inundation.

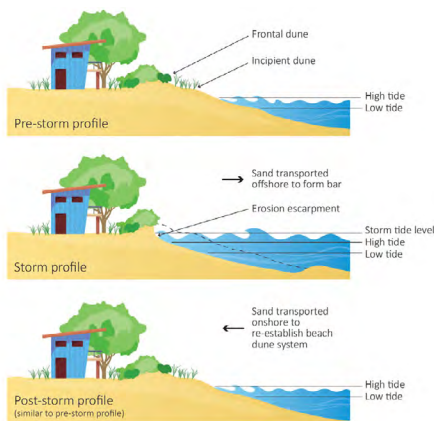
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Our coasts, including beaches and dunes, are dynamic and sand is constantly moving around our beaches. This is a natural process, however, when there is an ongoing imbalance in sand movement resulting in the continued loss of sediments, we know coastal erosion is occurring.

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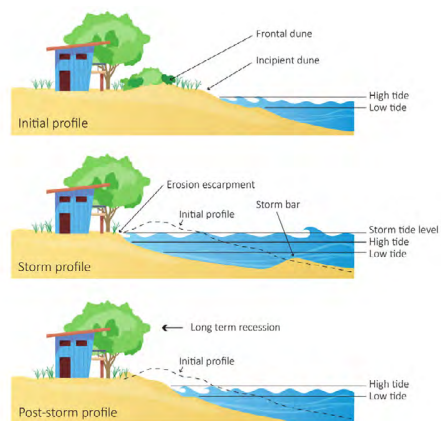
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Beach erosion and recovery phases

After: NSW Department of Land and Water Conservation 2001, Coastal Dune Management: A Manual of Coastal Dune Management and Rehabilitation Techniques

Source: NSW Department of Land and Water Conservation 2001, Coastal Dune Management: A Manual of Coastal Dune Management and Rehabilitation Techniques



Long-term shoreline recession

After: NSW Department of Land and Water Conservation 2001, Coastal Dune Management: A Manual of Coastal Dune Management and Rehabilitation Techniques

Sample Designed Version

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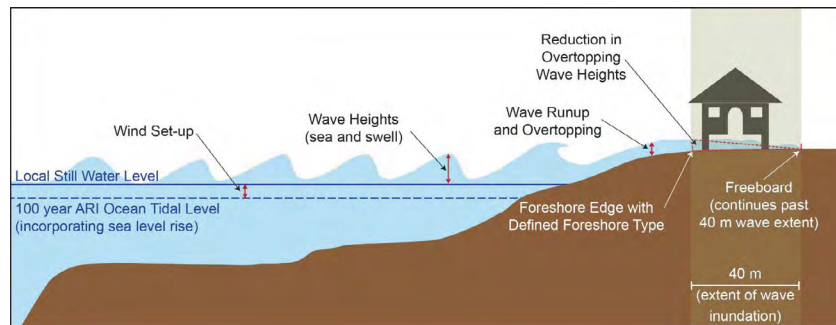
The duration of inundation may be several hours and will vary depending on the timing of the storm (e.g. if storm surge peaks on the high tide) and how long the storm goes for. In some events, the water may initially recede somewhat before coming back or increasing in depth on the next high tide. Once the coastal storm passes, the water recedes and ocean water levels return to their normal tidal levels.

Over time sea level rise will increase the risk of coastal inundation. If storm intensity increases under climate change conditions, storm surge levels may also be higher, increasing coastal inundation.

Tidal Inundation

Tidal inundation is the flooding of normally dry land due to the rise and fall of the ocean as a result of the tides. Tidal inundation is, as the name implies, caused by regular tides, and is not associated with a coastal storm or catchment flood event. We often experience particularly high tides around December and July. These are referred to as King Tides.

Over time, sea level rise will increase the risk of tidal inundation. Some of our low-lying areas may become more regularly, or even permanently, inundated by the sea and others may have increased difficulty draining following a rainfall event.



Coastal Inundation

Source: Rhelm, 2019, Coastal Processes Affecting Estuarine Planning Levels (created for the Middle Harbour Estuarine Study).



Coastal Hazards Adaptation and Mitigation

Our beaches, coastlines, lakes, and waterways are constantly changing due to natural processes, and climate change is affecting our communities more and more as we are exposed to coastal hazards.

Coastal hazards impacting our coastline include:

- Coastal erosion
- Coastal and tidal inundation (flooding)
- Saltwater intrusion
- Dune transgression (movement of sand dunes)

Local councils have an important role to play in managing coastal changes in their local areas.

This might include the development of:

- Coastal hazard studies and plans
- Community awareness and education
- Mitigation activities
- Support for emergency services

What are some solutions to managing coastal hazards?

In general, there are three categories of response to coastal hazards:

- **Protection** – assets at risk remain in place with mitigation measures to protect them, e.g., seawalls or revetments (a type of coastal protection works which protects assets from coastal hazards by armouring the shore with erosion-resistant material e.g., rocks/ boulders)
- **Adaptation** – modify existing or future assets to reduce the risk of coastal hazards e.g., raising floor levels to protect from inundation
- **Planned relocation** – moving existing assets away from the area at risk and prohibiting future assets to be developed in the risk area

The specific solutions adopted will vary depending on the location and situation but could include:

- Sand nourishment of beaches to allow ongoing use and to reduce erosion risk adjacent to beaches

Infrastructure such as seawalls or revetments to protect assets from coastal erosion and in some cases inundation

- Land use planning to ensure future development is constructed to minimise risk from coastal hazards (e.g. structural stability, raised floor levels)
- Planned relocation of existing assets and homes from the most vulnerable areas to areas of reduced or no risk
- [Local LGA to add in relevant mitigations]

COUNCIL INSTRUCTION

This is where you might like to add in relevant mitigations for your local area or edit the ones we have suggested.

How does a Coastal Management Program assist Council in preparing adaptation plans and mitigations?

A Coastal Management Program (CMP) prepared by Council identifies the most suitable adaptation solutions for each of our coastal locations. This assessment is informed by the information we have gathered from our community on the frequency, severity, and impact of these hazards. Each solution is assessed on its advantages and disadvantages.

COUNCIL INSTRUCTION

You can adapt the messaging above from plural to singular if there is only one coastal location rather than numerous coastal locations being referenced. Also, Council can choose to edit or refine this paragraph if not relevant to their CMP development engagement process.

Councils will prepare a strategy, whilst developing their CMP, to assess the impact of hazards now and into the future. For example, Councils will prepare maps including the impacts of these hazards from now until 2100. This strategy will also consider the potential risks to Council, community, and private assets and propose actions to mitigate these risks. It will consider what infrastructure may need to be relocated and the areas impacted by future sea level rise, coastal inundation, and erosion.

COUNCIL INSTRUCTION

Local Council to add in relevant mitigations for their preferred location/s. Local or relevant imagery can also be included to demonstrate the mitigations used. Council may also like to include a link to their hazard mapping.

A CMP considers management actions that:

- Benefit economic growth, development, and public access to the coastal zone
- Protect and enhance coastal environments
- Manage the risk of coastal hazards to human life and property, whilst considering the effects of climate change

Read more about our CMP development and how you can get involved at [\[insert link to Council's Have Your Say or project page for your CMP and other local initiatives on coastal management\]](#)



Coastal Hazards Adaptation and Mitigation

Our beaches, coastlines, lakes, and waterways are constantly changing due to natural processes, and climate change means our communities are exposed to coastal hazards more and more.

Coastal hazards impacting our coastline include:

- ✓ Coastal erosion
- ✓ Coastal and tidal inundation (flooding)
- ✓ Saltwater intrusion
- ✓ Dune transgression (movement of sand dunes)

Local councils have an important role to play in managing coastal changes in their local areas. This might include the development of:

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- Community awareness and education
- Mitigation activities
- Support for emergency services

What are some solutions to managing coastal hazards?

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The specific solutions adopted will vary depending on the location and situation but could include:

- Sand nourishment of beaches to allow ongoing use and to reduce erosion risk adjacent to beaches
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Sample Designed Version

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A CMP considers management actions that:

- Benefit economic growth, development, and public access to the coastal zone
- Protect and enhance coastal environments
- Manage the risk of coastal hazards to human life and property, whilst considering the effects of climate change.

Read more about your Council's CMP development and how you can get involved on their website.



What Do Coastal Hazards Mean For My Property?

Our beaches, coastlines, lakes, and waterways are constantly changing due to natural processes - this can directly affect how we use and live in the coastal areas. The effects of climate change mean that our communities are being impacted by coastal hazards more and more. Erosion and inundation can impact our natural environment, and increase the risk of physical damage to property, businesses, and infrastructure.

Predictions show that our region will continue to face extreme weather events more regularly, along with rising sea levels. Many low-lying areas will become more vulnerable to localised flooding, erosion, and coastal inundation. We are already seeing the impacts of climate change now.

If you live or own a property in the coastal zone, you may be at risk of coastal hazards such as erosion or inundation. Council and the State government have planning rules to protect you, your property, other properties, and the coastal environment from coastal hazards and to regulate works undertaken in the coastal zone.

These rules may require new development to be constructed in a manner compatible with the coastal hazards present or may limit development in high-risk areas. In addition, there are development controls that govern how coastal protection works can be undertaken so that they do not impact on public access, safety, visual amenity, and the natural environment.

Coastal planning rules have changed over time to reflect improved understanding of coastal processes and our impacts on them. Updates may also occur in the future.

How do I know if my property could be impacted by coastal hazards?

Properties at risk of coastal hazards are identified using a range of technical studies such as erosion and inundation modelling, and geotechnical assessments. These studies are reviewed and updated over time.

If Council has already identified the potential risk of coastal hazards at your property, there will be a notation stating this on the Section 10.7 Planning Certificate for your property. These notations may be updated, and additional properties may be included as being impacted by coastal hazards as additional information becomes available and relevant technical studies are updated.

Further details of the types and extent of coastal hazards (e.g. erosion, inundation, or cliff instability) can be found at [\[insert link to coastal hazards study / CMP / online mapping, as available\]](#).

State Government Planning Rules

Development on your property in the coastal zone may be controlled at a state level through the Coastal Management Act 2016 and the State Environmental Planning Policy (SEPP) Resilience and Hazards 2021.

If you propose to undertake works to protect your property from coastal hazards, The Coastal Management Act 2016 requires that these works must not limit public access to beaches or headlands and must not pose a threat to public safety. In addition, you must demonstrate that the funds required for ongoing maintenance of the protection works are secured.

Chapter 2 of the State Environmental Planning Policy (SEPP) Resilience and Hazards 2021 sets out development controls that ensure coastal development does not adversely impact access to the foreshore, the scenic qualities of the coast, cultural and built heritage, environmental values, and natural coastal processes.

What about Exempt and Complying Development?

Under the NSW planning system, certain low impact or 'routine' development can be classified as Exempt or Complying Development and not require development consent. Generally, Complying Development may not be carried out on lands impacted by coastal hazards or in sensitive coastal environments. Therefore, proposed works within these areas (other than Exempt Development) require development consent, which requires submission of a Development Application to Council. Applicants should confirm with Council staff the requirements applying to the subject land before undertaking any development.

Local Council Planning Rules

COUNCIL INSTRUCTION

This section will need to be completed by each Council based on their development controls, which may be contained in an LEP, DCP, Code or other planning document. The following has been provided as a guide only.

Council's Development Control Plan sets out the type of development that can and can't be undertaken in the coastal zone and how any such development should be undertaken to ensure the protection of property, safety, and the coastal environment. In general, this involves limiting new development in high-risk locations and incorporating design measures such as raised floor levels (above wave and ocean inundation levels) or suitable foundations (to withstand geotechnical or erosion risks).

Construction and maintenance of sea walls to protect existing private assets affected by coastal erosion is considered on a merit basis within the context of the relevant development controls.

Further details of Council's coastal related planning controls can be found [\[insert reference to relevant section of DCP, or other\]](#).

Insurance

If your property was developed prior to the implementation of the coastal related planning rules, a portion (or all) of your property could be adversely affected if a coastal event were to occur. It is important for property owners to understand the limitations of their insurance. Many insurance companies operating in Australia do not cover storm surge or coastal erosion in their residential property insurance, and none cover inundation due to gradual sea-level rise.

Visit our website [\[insert link to Council website\]](#) to find out more about coastal management in your area, how these risks are impacting us today, and how we are responding.



Coastal Hazards for Property Owners

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Further details of the types and extent of coastal hazards (e.g. erosion, inundation, or cliff instability) can be found by contacting your local Council.

State Government Planning Rules

Development on your property in the coastal zone may be controlled at a state level through the *Coastal Management Act 2016 and the State Environmental Planning Policy (SEPP) Resilience and Hazards 2021*.

If you propose to undertake works to protect your property from coastal hazards, *The Coastal Management Act 2016* requires that these works must not limit public access to beaches or headlands and must not pose a threat to public safety. In addition, you must demonstrate that the funds required for ongoing maintenance of the protection works are secured.

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Contact your Council to find out further details of its coastal related planning controls.

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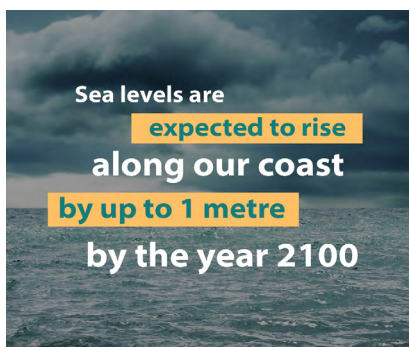
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Newsletter Banners and Social Media

Example Social Media Tiles



Example Website and Newsletter Banners



Posters

Waterways and Coastal

Climate change is happening now!

Get informed and involved at [\[insert Councils website\]](#)

Coastal change is impacting [\[the <insert Council area> coastline or waterway or Hunter and Central Coast Region\]](#).

The way we are used to enjoying our coastal environment is changing. The impact of climate change on coastal processes is affecting popular fishing, camping, and boating locations, while erosion and rising sea levels are impacting our beaches and estuaries.

The [\[Insert Council Area/community\]](#) will have to adapt to the risks that are impacting our coastline and estuaries and prepare for the effects of climate change.

Coastal risks are already impacting how we live today, tomorrow and into the future. Get informed and involved in managing these risks at [\[link to Council's website/ Have Your Say page on Coastal Management Program\]](#).

We can all help make a difference at home and in the community. Get involved by:

- Joining a local community group that cares for our coast such as Landcare
- Download the CoastSnap app and become a citizen scientist by sharing photos of changes at your local beach
- Getting informed about coastal changes in your area and spreading awareness amongst your community

COUNCIL INSTRUCTION

Council could insert a QR code with a direct link to the CoastSnap app or Council's website with their local initiatives listed above.

Coastal

Climate change is happening now!

Get informed and involved at [\[insert Councils website\]](#)

Coastal change is happening in the [\[the <insert Council area> coastline\]](#).

The way we are used to enjoying our coastal environment is at risk. Changing coastal processes will impact popular fishing, camping and boating locations, while erosion and rising sea levels will impact our beaches and coastlines.

The [\[Insert Council Area /community\]](#) will need to adapt to the risks that are impacting our coastline and estuaries and prepare for the effects of climate change.

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COUNCIL INSTRUCTION

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Waterways

Change is happening now!

Get informed and involved at [\[insert Councils website\]](#)

Coastal change is impacting [\[insert place / our\]](#) coastal waterways, estuaries, and lakes.

Coastal hazards don't just impact those who live on the beach. Coastal estuaries and lakes are also experiencing flash flooding, overflowing drains, saltwater intrusion, soil erosion, and impacts on water quality. Predictions show that our region will continue to face even more extreme weather events and rising sea levels.

[\[Insert place/community\]](#) will have to adapt to the risks that are impacting our coastlines and estuaries and prepare for the effects of climate change.

Coastal risks are already impacting how we live today, tomorrow and into the future. Get informed and involved managing these risks at [\[link to Council's website/ Have Your Say page on Coastal Management Program\]](#).

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- Joining a local community group that cares for our coastal waterways such as Landcare
- Getting informed about coastal changes in your area and spreading awareness amongst your community

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