

Newcastle Coastal Management Program Scoping Study Summary



City of
Newcastle

Introduction

Local Governments across NSW are preparing Coastal Management Programs in line with State Government legislation to outline the long-term strategy for managing the coastal zone.

The Coastal Management Plan (CMP) is a requirement of the NSW *Coastal Management Act 2016* and is prepared in five stages consistent with guidance for preparing and implementing a coastal management program issued by the NSW Department of Planning, Industry and Environment.

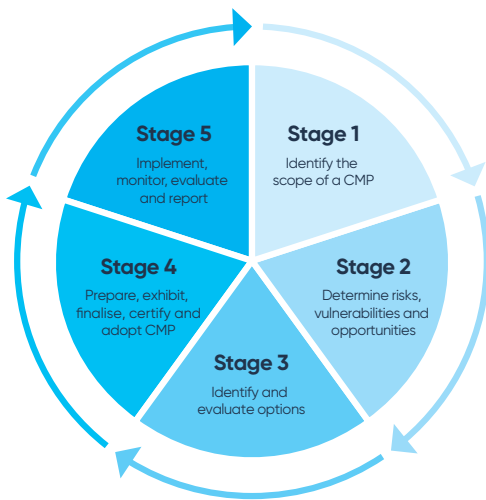


Figure 1: Stages for preparation of a Coastal Management Program

Newcastle's CMP ranges from Glenrock State Conservation Area in the south to the northern boundary of the Newcastle Local Government Area (LGA) on Stockton Beach. Newcastle's CMP also contains the lower part of the Hunter River estuary, including parts of Throsby Creek catchment.

The scoping study is the first stage of the CMP process and informs the future planning and management of Newcastle's coastal zone.

The purpose of the scoping study is to:

provide an overview of the existing knowledge of coastal processes, coastal hazards and the use of the coastal zone within the Newcastle LGA;

provide the strategic context for management of Newcastle's coastal zone;

review the existing management of the coastal area; and identify knowledge gaps within existing studies or management plans and identify the focus of the CMP.

Why does City of Newcastle need a Coastal Management Program?

The purpose of the Newcastle CMP is to provide an integrated long-term strategy for the sustainable use, management and conservation of Newcastle's coastal zone. The Newcastle CMP will aim to protect and enhance the coastal zone while balancing the diverse needs of the community.

The Newcastle coastal zone is subject to impacts from coastal hazards such as beach erosion, shoreline recession, coastal and tidal inundation and coastal cliff or slope instability. These coastal hazards pose a threat to community and private assets, now and into the future.

Coastal hazards also pose a risk to the ongoing use of coastal areas and facilities by the community.

These impacts are particularly highlighted in the coastal suburb of Stockton where beach erosion and shoreline recession pose a high risk to community assets and the amenity and community use of Stockton Beach. Beach erosion is also an identified issue at other beaches such as Newcastle and Merewether where previous erosion has exposed underlying bedrock during and after storm events.

Other management issues include inundation of low-lying coastal areas, wave overtopping during storm events and on-going pressures on the coastal environment from urban development and sea level rise.

While the *Coastal Management Act 2016* guides the CMP process it also repeals all previous coastal planning documents by 31 December 2021 meaning the Newcastle Coastal Zone Management Plan 2018 will cease and will be replaced by the Newcastle CMP.

This document summarises the scoping study. The complete scoping study can be viewed on the City of Newcastle website:

 newcastle.nsw.gov.au/coastalplanning

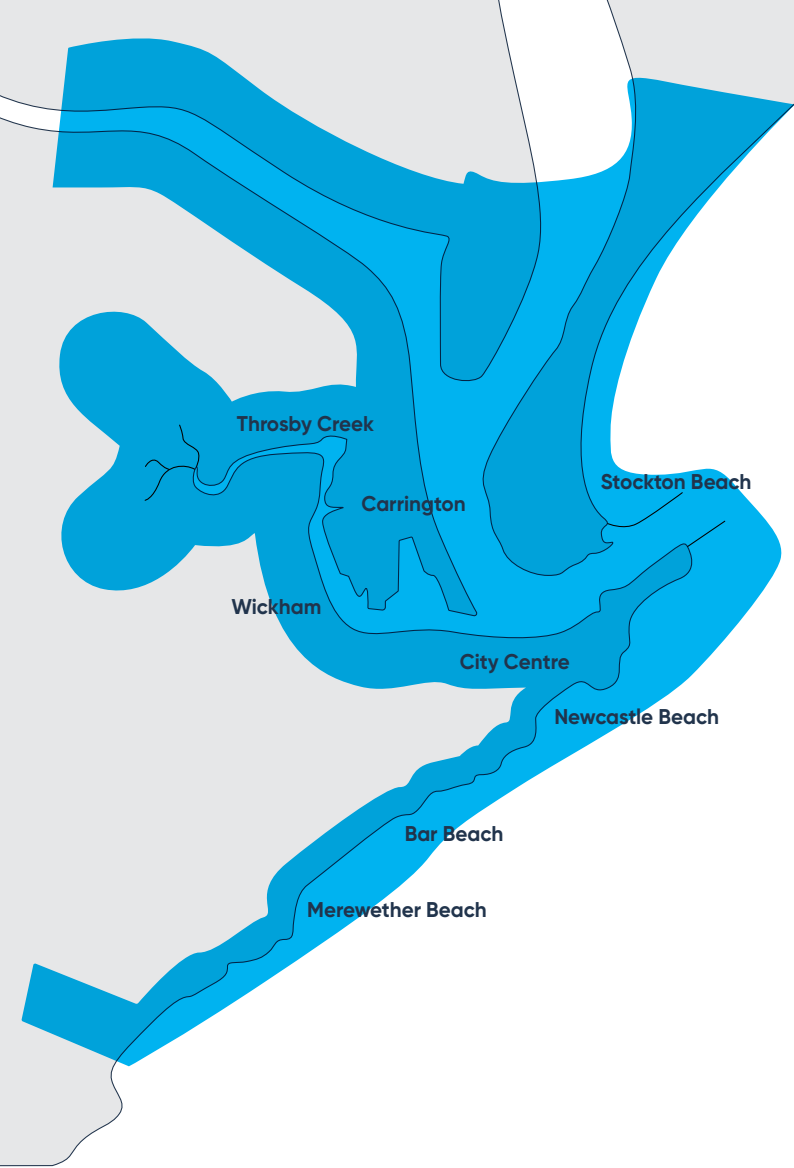


Figure 2: Newcastle CMP study area

What is the Newcastle CMP coastal zone?

The CMP scoping study defines the Newcastle CMP Coastal Zone. It includes the entire coastline in the Newcastle LGA and the lower part of the Hunter River estuary, including the Throsby Creek catchment within the coastal zone. See **Figure 2**.

The coastal zone can be divided into four broad areas:

1. Stockton Beach.

2. Coastline south of the Hunter River (including parts of Newcastle City Centre, the Hill, Bar Beach, Merewether and Glenrock State Conservation Area).

3. Hunter River lower estuary – east of Hannell Street bridge (including parts of Maryville, Carrington, Wickham, Newcastle City Centre, the Port of Newcastle and the western side of Stockton).

4. Throsby Creek catchment – west of Hannell Street bridge (including parts of Maryville, Tighes Hill, Islington, Mayfield East, Mayfield, Hamilton North and Broadmeadow).

The Port of Newcastle including the lease area is excluded from the CMP. However, because of its pivotal role and function in the coastal zone the Port of Newcastle will be consulted throughout the CMP process.

About the Newcastle CMP coastal zone

The coastal zone provides environmental, economic, social and cultural benefits that contribute to the wellbeing of the Newcastle community and LGA. The CMP scoping study has identified the following key facts which will inform planning for the coastal zone.



Key facts



32.7% population increase

The population in the Newcastle coastal zone is projected to increase 32.7% from 2018–2041 with the highest increases in Newcastle City Centre and Maryville–Wickham.



Top tourism attractions

Top tourism attractions in Newcastle include Nobbys Beach, Fort Scratchley, Nobbys Lighthouse and Newcastle Beach.



41.02% increase in dwellings

The number of dwellings in the Newcastle coastal zone is projected to increase 41.02%.



Littoral rainforest

While highly urbanised, the coastal zone includes littoral rainforest within Glenrock State Conservation Area and Merewether, and pockets of endangered Themeda grassland communities, including at King Edward Park.



35.1% rented dwellings

The Newcastle coastal zone has a higher percentage of rented dwellings (35.1% of dwellings) than the LGA average (31.2%).



Bitou Bush

The invasive species Bitou Bush continues to be widespread in the coastal zone.



Major employment sectors

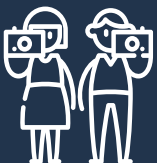
The top five employment sectors within Newcastle LGA are:

- health care and social assistance
- education and training
- retail trade
- accommodation and food service
- construction



Mangrove forests

Mangrove forests and coastal wetlands exist in Throsby Creek at Carrington, and along the Hunter River at Kooragang and Stockton.



Tourism value: \$867m

Tourism visitation contributed \$867 million to the local economy in 2017.



Rock platforms

Rock platforms along the coast provide important habitat for shorebirds including the Sooty Oystercatcher.



5,031 jobs

5,031 jobs are supported by tourism in the Newcastle LGA.

Management issues and risks

The CMP Scoping Study identifies management issues and their potential environmental, economic, social and cultural impacts on the community benefit of the coastal zone. The following table identifies the significant management issues and impacts to the community.

TABLE 1: Impacts to the community identified in the CMP Scoping Study

Environmental	Economic	Social and cultural
Beach erosion and shoreline recession Beach erosion is the offshore movement of sand from the beach during a storm event. Shoreline recession is the landward movement of the shoreline over time due to a net loss of sediment		
<ul style="list-style-type: none"> • Loss of habitat • Loss of species from local area 	<ul style="list-style-type: none"> • Impact on tourism • Impact on coast dependant industries and businesses • Impact on buildings eg. structural damage etc, and cost of replacement/repair • Impact on property or land values 	<ul style="list-style-type: none"> • Loss of assets, infrastructure, private property • Impact on foreshore amenity such as parklands • Loss or disruption of services • Impact on recreational opportunities • Impact on access to waterway or coast • Loss or disturbance of Aboriginal heritage items/sites • Impact on heritage listed items
Tidal inundation The inundation of land by tidal action under average meteorological conditions		
<ul style="list-style-type: none"> • Loss or damage to habitat • Change to habitat and floristic composition 	<ul style="list-style-type: none"> • Impact on tourism • Impact on coast dependant industries and businesses • Impact on buildings eg. structural damage etc, and cost of replacement/repair • Impact on property or land values • Impact on infrastructure 	<ul style="list-style-type: none"> • Loss of assets, infrastructure, private property • Impact on foreshore amenity such as parklands • Loss or disruption of services • Impact on recreational opportunities • Impact on access to waterway or coast • Loss or disturbance of Aboriginal heritage items/sites • Impact on heritage listed items
Coastal inundation Storm-related flooding of coastal lands (storm surge) and wave run-up		
<ul style="list-style-type: none"> • Loss of habitat • Change to habitat and floristic composition 	<ul style="list-style-type: none"> • Impact on tourism • Impact on coast dependant industries and businesses eg. surf schools • Impact on buildings eg. structural damage etc, and cost of replacement/repair 	<ul style="list-style-type: none"> • Loss of assets, infrastructure, private property • Impact on foreshore amenity such as parklands • Loss or disruption of services • Impact on recreational opportunities • Impact on access to waterway • Loss or disturbance of Aboriginal heritage items/sites • Impact on heritage listed items

Environmental**Economic****Social and cultural**

Urban Development

Increased demand for residential and employment land will place additional pressure on the coastal zone

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| <ul style="list-style-type: none">• Water pollution from urban stormwater• Impact on terrestrial habitat including from foreshore development | <ul style="list-style-type: none">• Increased money spent in local economy for construction• Increased employment opportunities | <ul style="list-style-type: none">• Change in coastal communities eg higher density urban environment• Disturbance to Aboriginal heritage items• Increased use of European heritage items eg Newcastle Ocean Baths• Redevelopment of loss of European heritage items |
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Climate Change

Changes in conditions resulting in sea level rise and storm surges, extreme rainfall, flooding and storms, changes to average and extreme temperatures

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| <ul style="list-style-type: none">• Loss or damage to habitat• Change to habitat and floristic composition• Loss of species | <ul style="list-style-type: none">• Impact on infrastructure, industries• Impact on private properties | <ul style="list-style-type: none">• Impact on beach amenity• Impacts on use of the coastal zone• Loss of Aboriginal heritage items/sites• Impact on heritage listed items |
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Increased community use

Increased population visitation leading to higher recreational and leisure use

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| <ul style="list-style-type: none">• Damage to habitat | <ul style="list-style-type: none">• Increased money spent in local economy• Increased employment opportunities• Increased tourism | <ul style="list-style-type: none">• Overcrowding of beach areas• Congestion on road network/parking facilities• Increased use of facilities eg ocean baths and amenities• Disturbance to Aboriginal heritage items• Increased use of European heritage items eg Newcastle Ocean Baths |
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Invasive species

Spread of introduced species such as Bitou Bush

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| <ul style="list-style-type: none">• Loss of habitat• Change to habitat and floristic composition• Loss of native species | <ul style="list-style-type: none">• Increased costs for maintenance of environment areas including bush regeneration activities | <ul style="list-style-type: none">• Disturbance of Aboriginal heritage items |
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Risk assessment

The scoping study completed an initial risk assessment for 160 locations across the Newcastle coastal zone. Threats are classified from minimal to high at three time periods; immediate, 2050 and 2100. The following table describes the coastal management issues with higher risk identified in the scoping study.

TABLE 2: Risk profile overview


Location	Coastal management issues	Comments
Stockton Beach – Northern end	Beach erosion and shoreline recession	Coastal erosion represents an immediate high risk for properties such as the Barrie Crescent Reserve and the former Hunter Water sewerage treatment plant. Ongoing erosion will increase potential properties at risk into the future
	Invasive species	Species such as Bitou Bush are rated as a moderate risk
Stockton Beach – Central section	Beach erosion	An increasing risk of beach erosion is identified at the terminal ends of the Mitchell Street seawall in particular the dune system between Mitchell Street seawall and Memorial Reserve and Dalby Oval
Stockton beach – southern end	Beach erosion	High environmental and economic risks to the dune system seaward of the Stockton Beach Holiday Park. The risk profile is minimal or low for properties landward of the recently constructed seawall at the Stockton Surf Life Saving Club
Nobbys Beach	Beach erosion	Beach erosion at Nobbys Beach is reasonably well understood and is unlikely to have significant amenity and social impacts in the next twenty years.
	Coastal inundation	Coastal inundation at Shortland Esplanade is reasonably understood with emergency actions detailed in the coastal erosion emergency action subplan contained with the Newcastle Coastal Zone Management Plan 2018.
Newcastle Beach	Beach erosion	Beach erosion contributes to potential risks for assets to the rear of the beach, such as the Newcastle Surf Life Saving Club and maintenance of the existing seawall structure will be required in the future.
	Coastal inundation	The economic risk for Newcastle Ocean Baths is associated with ongoing maintenance of the heritage listed item and management of coastal inundation impacts
Strzelecki headland	No coastal management issues were rated as high for the Strzelecki headland area	

Location	Coastal management issues	Comments
Bar Beach	Beach erosion	Beach erosion is a potential risk to facilities at the northern end of the beach while the southern end has a higher risk profile. Risk is likely to increase in the future leading to reduced community use of the beach
	Coastal inundation	Coastal inundation of facilities at the northern end of Bar Beach is an existing risk and risk will increase with sea level rise
Dixon Park Beach	Beach erosion	Facilities landward of the beach are currently protected by an existing seawall, but the economic risk from maintenance of the seawall requires consideration in future planning
Merewether Beach	Beach erosion	Facilities landward of the beach are currently protected by a variety of different types of seawall, but the economic and social risk from maintenance of the seawalls requires consideration in future planning
	Coastal inundation	Coastal inundation of the Merewether Baths facility has been a management issue for a significant period of time and risks are reasonably understood. The economic risk for Merewether Baths is associated with ongoing maintenance of the heritage listed item and management of coastal inundation impacts
Newcastle City Centre	Coastal inundation	Properties and assets along Hunter River, including Queens Wharf, are at highest risk of overtopping. The economic risk for maintenance of river wall protection structures is considered high, but the responsibility and ownership of these structures is varied.
Wickham/Maryville/ Carrington	Coastal and tidal inundation	Coastal and tidal inundation are reasonably well understood and the strategic position is to manage low lying areas with protection works. The banks of the Hunter River lower estuary have been modified by the construction of river walls. The economic risk for maintenance of these structures is considered high, but the responsibility and ownership of these structures is varied
	Water pollution	Water pollution within Throsby Creek is considered a moderate environment and social risk
Hunter River	Water pollution	The Hunter River is at high risk of water pollution due to urban development within the catchment. Further study is required to assess water quality over time.

What happens next

City of Newcastle has commenced Stage 2 of the preparation of the Newcastle CMP.

TABLE 3: Process for preparation of Newcastle CMP

Stage 1	Scoping Study	Complete	
Stage 2	Determine risks, vulnerabilities and opportunities	Currently underway	
<p>We will be undertaking further studies and collating information and data on areas where there is limited existing information or knowledge gaps in available studies.</p> <p>This includes:</p> <ul style="list-style-type: none"> • Study of sediment transport patterns within Stockton Bight including bathymetric survey to determine change to subaqueous profile • Study to determine potential sand sourcing for sand replenishment within Stockton Bight sediment compartment • Changes to coastal hazard lines in Stockton in response to coastal protection works constructed since previous modelling undertaken in Newcastle Coastal Zone Hazards Study 2014 • Socioeconomic study into value of coastal area use • Investigation of additional areas in the Newcastle LGA that might be considered littoral rainforest • Analysis of water quality data in lower Hunter estuary (historical trends analysis) to inform ongoing water quality monitoring program • Review of current asset management and climate change adaptation of seawalls/riverwalls within the Hunter River lower estuary. 			
Stage 3	Identify and evaluate options	Complete by October* 2020	
<p>Undertake consultation with the community and stakeholders regarding management options and potential actions for inclusion in CMP.</p>			
Stage 4	Prepare, exhibit, finalise, certify and adopt CMP	Complete by December* 2020	
<p>Undertake consultation with the community stakeholders to review draft CMP.</p>			
Stage 5	Implement, monitor, evaluate and report	Ongoing post December* 2020	

* Indicative timeframes updated on 11 February 2020.

City of Newcastle is the lead organisation for the development of the CMP and will coordinate with other stakeholders and public authorities for management of preparation of the CMP.

For more information on the preparation of the Newcastle CMP visit

newcastle.nsw.gov.au/coastalplanning

