



Lady Robinsons Foreshore Management Plan

Final Report

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Document Control

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Acknowledgement of Country

Council would like to acknowledge the traditional custodians: the Gadigal and Bidjigal people of the Eora nation and pay respects to Elders past, present and emerging. The people of the Eora nation, their spirits and ancestors will always remain with our waterways and the land, our Mother Earth.



3 Youth Winner, Amelia Bates, The Hand Saving the Lost Generation

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1. Introduction

Highlights

Lady Robinsons Beach represents an incredible asset for Bayside. Situated on the western shores of Botany Bay (Kamay), Lady Robinsons Beach stretches over 7 km from the Cooks River entrance at Kyeemagh to the Georges River entrance at Sandringham.

The shorelines of Lady Robinsons Beach are shifting in response to historic man-made developments in the Bay and will continue to do so and be exacerbated with future climate change impacts.

In some areas the sandy shoreline is stable and accreting. However other areas of the shoreline are prone to persistent erosion, resulting in coastal hazards and minimal beach area.

Effective management of the foreshore will require sustainably adapting to the impacts of ongoing shoreline change, underpinned by a knowledge of beach processes. Targeted management solutions will be developed prioritizing eroded areas of the foreshore with the key objectives of:

- Improved and sustainable coastal hazard protection;
- Enhanced foreshore amenity integrated with existing public spaces and amenities;
- Maintaining existing swimming enclosures with opportunities for improvements;
- More resilient sandy beach area where practicable and feasible; and
- Supporting healthy foreshore ecology and intertidal environments.



Image Source:

Top: Paula Morgan; Sydney Expert

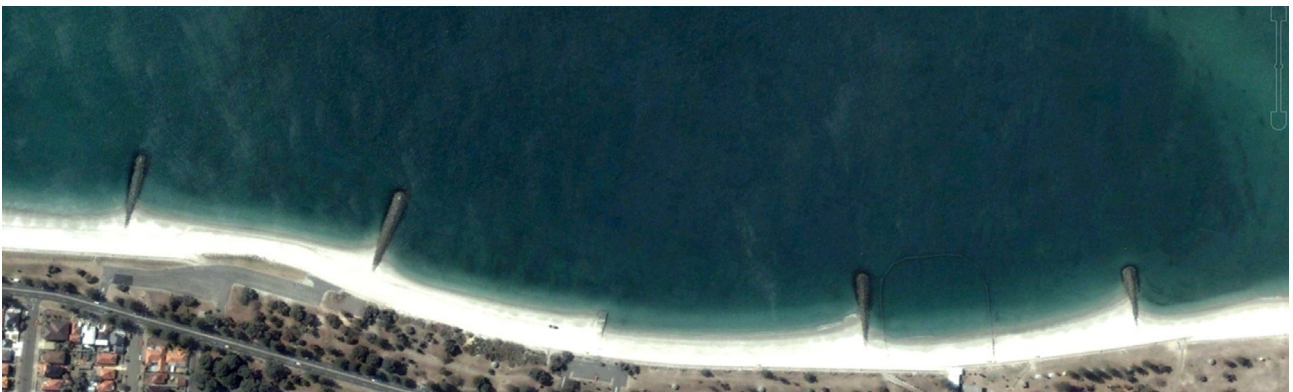
Bottom: Paula Morgan; Sydney Expert



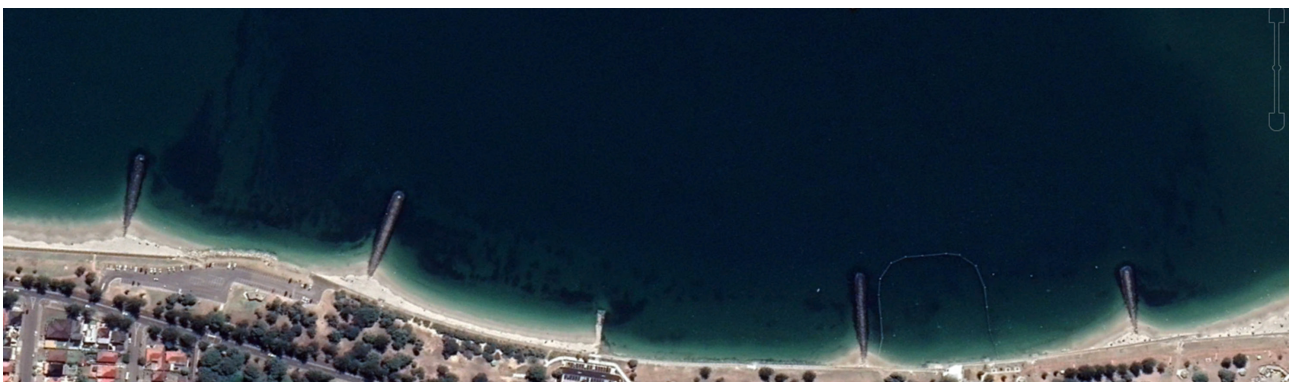
Dolls Point Beach - September 2005



Dolls Point Beach - January 2019



Ramsgate Beach - September 2005



Ramsgate Beach - January 2019

Image Source: Nearmap

1. Introduction

Background

Living With A Shifting Shoreline

Over the last century, the shorelines of Botany Bay (Kamay) have undergone significant modification due to human activities, including the development of Port Botany and Sydney Airport. Studies have found that these changes have disrupted sand transport and wave patterns, leading to areas of persistent erosion along Lady Robinsons Beach.¹

Initiatives to stabilise the beach and protect the shore date back to the 1930s, yet the shoreline continues to remain unstable in various sections of the beach. In response to this challenge, 1997 and 2004/5 saw the launch of restoration works on Lady Robinsons Beach, including the construction of 13 groynes and the addition of 450,000m³ of sand.

Despite these major restoration efforts, the shoreline has continued to evolve in response to historic anthropogenic bay modifications. Following completion of these major works in 2005, the shoreline between Solander Street and President Avenue has retreated by more than 50 meters, resulting in coastal erosion hazards for The Grand Parade, damage to stormwater infrastructure and amenity disruptions to foreshore users.

Similarly, Ramsgate Baths has struggled to hold its shoreline, with continued loss of beach despite recent efforts to replenish the sand in 2019. In contrast other areas of beach have experienced long-term accretion with excessive beach width burying once popular swimming and sailing locations (e.g., Kyeemagh and south of Dolls Point near the Georges River Sailing Club).

Studies undertaken in 2014 and 2017 reviewed the existing Lady Robinsons Beach Management Plan and found it was inadequate to stabilise the foreshore from ongoing patterns of erosion and accretion.²

As the shoreline continues to shift due to historic man-made disruptions to sand transport and wave propagation (including natural variability within these

shifts), options for more sustainable long-term coastal management have recently been investigated by Manly Hydraulics Laboratory³. Of the management pathways assessed, a targeted foreshore management approach was demonstrated to be most effective and adopted by Council in June 2023.

Underpinning the adopted approach is knowledge of the coastal processes causing shoreline change. Management of the foreshore recognises that beach areas prone to erosion are, in some cases, not as cost-effective and feasible to restore and maintain compared with more stable or accreting areas of sandy beaches.

The adopted management approach will provide strategies to manage shoreline change over the next 50-year period including sea level rise impacts. Targeted strategies will be developed in different foreshore zones based on how the shoreline is changing, each classified as one of the following:



Zone A - RESILIENT: Resilient areas of sandy beach where the shoreline supports ongoing beach recreation. This accounts for approx. 4 km (54%) of shoreline.



Zone B - RESTORE: Unstable shorelines that are prone to erosion and require intervention to restore and maintain sandy beach. This accounts for approx. 1 km (14%) of shoreline.



Zone C - PROTECT: Unstable and eroded shorelines requiring improved protection through environmentally friendly seawall design and amenity enhancement. This accounts for approximately 2.4 km (32%) of shoreline.

This document provides some examples of what types of solutions could be developed for each zone to sustainably manage the foreshore of Lady Robinsons Beach into the future. Further work will involve developing foreshore treatment designs for priority areas of the beach.

¹ Sydney Ports Corporation, 1993, 1998; Dames & Moore, 1995; Willoughby et al., 1997; Connell Wagner, 1999; MHL2812, 2022.

² WorleyParsons, 2014; Advisian, 2017; MHL2720, 2020;

³ MHL2813, 2022;



Foreshore management plan



2. Zones

Zone A | Resilient

Zone A represents resilient areas of sandy beach that tend to build up with sand overtime. These locations are generally characterised by wider beach areas that best support beach recreation, provide a natural buffer to help protect coastal assets from erosion, and provide important sandy beach environments.

Zone A accounts for approximately 4 km (54%) of the shoreline and include beach areas:

- Kyeemagh to Brighton-Le-Sands
- Solander St to Scarborough St (Monterey)
- Russell Ave to Primrose Ave (Dolls Point)
- Riverside Dr (San Souci)

Management of Zone A areas may include initiatives such as maintaining healthy foredunes where these exist (e.g., Kyeemagh, Riverside Dr. San Souci), beach access and netted swimming areas. Some areas of Zone A include areas of sandy beach backed by existing promenade seawalls providing popular beach-side amenity (e.g., Brighton-Le-Sands) with opportunities for protection upgrades and equitable access. Excess sand build up in these areas will be monitored, may be used to help manage eroded beach areas of the shoreline under Zone B.



Maintaining healthy foredunes
Lucy Lawther



Resilient sandy beaches



Maintaining swimming baths
Cathy Miers

*Example images are indicative for illustration purposes only.



LEGEND

- Zone A - Resilient
- Zone B - Restore
- Zone C - Protect
- T Train Station
- Railway Line
- Groynes
- Existing Seawalls
- Rock Revetments
- Major Stormwater Outlet
- Fenced Swimming
- Water
- Beach
- Local/small Park
- District Park
- Private Open Space

0 0.5 1KM N

Zone A



2. Zones

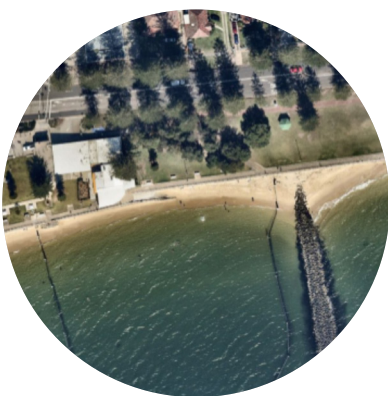
Zone B | Restore

Zone B represents unstable shorelines that are prone to erosion and require intervention to restore and maintain sandy beach. These locations are popular for beach users however often have limited sand area to support recreation activities.

Zone B accounts for approximately 1 km (14%) of the shoreline and include areas of:

- Scarborough St to Culver St (Monterey)
- Ramsgate Baths to Pine Park (Ramsgate)

Management of Zone B may include initiatives such as periodic sand nourishment, staged upgrades of existing rock groynes to improve sand retention, improved access to Ramsgate Baths and beach monitoring to inform when nourishment is needed. Initiatives may also include upgrading the existing promenade seawall at the back of the beach to provide improved protection, user amenity and beach access.



Restoring & maintaining sandy beach, Ramsgate Baths

Nearmap



Enhancing promenade amenity and beach access

Paula Morgan; Sydney Expert



Improved access to baths

Altona Beach, VIC

*Example images are indicative for illustration purposes only.



Zone B



2. Zones

Zone C | Protect

Zone C represents unstable and eroded shorelines with limited beach area to support sandy beach recreation. These areas are generally characterised by narrow rocky foreshores or steep foredune scarps where ongoing shoreline retreat has resulted in a number of hazards to beach users. This also includes areas where coastal erosion is presently a significant threat to public infrastructure and The Grand Parade road corridor (e.g., eroded beach near President Avenue).

Management of Zone C may include initiatives such as improved coastal protection through environmentally friendly seawall design, promenade amenity enhancements, removal of shoreline hazards, improved access to Vanston Baths and upgrades of public space between the road and the foreshore.

Zone C accounts for approximately 2.4 km (32%) of the shoreline and include areas of:

- Teralba Rd (Brighton-Le-Sands) to Solander St (Monterey)
- Culver St (Monterey) to Florence St (Ramsgate)
- Pine Park to Russell Ave (Dolls Point)
- Primrose Ave to Riverside Dr (San Souci)



Improved access to baths
Terrigal Boardwalk, NSW Arup



Eco-friendly seawall adaptation
Intertidal saltmarsh seawall
Claydon Reserve, NSW



Integrating amenity & the environment into coastal protection
Parramatta River Estuary, NSW OEH
2009



Repairing damaged infrastructure

*Example images are indicative for illustration purposes only.



Zone C

Appendices

Attachment A | Foreshore Management Plan - Precincts

Foreshore Management Precincts

- 1 Precinct 1 | Kyeemagh to Brighton-Le-Sands
- 2 Precinct 2 | Teralba Rd (Brighton-Le-Sands) to Solander St (Monterey)
- 3 Precinct 3 | Solander St to Scarborough St (Monterey)
- 4 Precinct 4 | Scarborough St to Culver St (Monterey)
- 5 Precinct 5 | Culver St (Monterey) to Florence St (Ramsgate)
- 6 Precinct 6 | Ramsgate Baths to Pine Park (Ramsgate)
- 7 Precinct 7 | Pine Park to Russell Ave (Dolls Point)
- 8 Precinct 8 | Dolls Point
- 9 Precinct 9 | Sandringham
- 10 Precinct 10 | San Souci



Foreshore management plan

1 Precinct 1 | Kyeemagh to Brighton-Le-Sands

Zone A | Resilient

Management approach:

Minimal intervention required to maintain sandy beach.

- Sandy beach retained in present condition by natural processes
- Present-day sand buffer and foredunes provides adequate coastal protection to beachside assets
- Upgrade and maintain serviceability of Brighton-Le-Sands seawall
- Periodic beach and foredune monitoring
- Maintenance of foreshore access & swimming area at Kyeemagh & Brighton-Le-Sands Baths
- Foredune vegetation to be maintained for ecological purposes
- Potential intertidal and sub-tidal sand source for nourishment of Zones 1 and 3, 4

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Increased equitable access to beach
- Swimming amenity upgrades at Kyeemagh Baths and Brighton-Le-Sands Baths.
- Promenade amenity upgrades at Brighton-Le-Sands

Existing amenity and character:



Kyeemagh dog beach
Paula Morgan; Sydney Expert



Kyeemagh beach baths
Paula Morgan; Sydney Expert



Coastline view from Kyeemagh
Paula Morgan; Sydney Expert



Brighton-Le-Sands baths
Nearmap



Brighton-Le-Sands beach and seawall promenade
Tripadvisor

Potential future opportunities to be explored*:



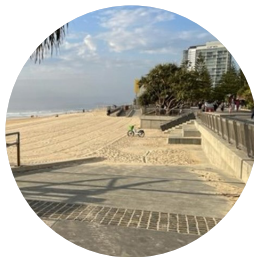
Upgraded promenades
Rockingham Foreshore, WA
Place Laboratory



Maintaining healthy foredunes



Seawall maintenance and upgrades
Dee Why, NSW
Weekend Notes



Equitable beach access
Surfers Paradise, QLD
Accessible Beaches



Maintaining swimming baths at Kyeemagh & Brighton-Le-Sands
Cathy Miers

*Example images are indicative for illustration purposes only.



Precinct 1 | Kyeemagh to Brighton-Le-Sands

2 Precinct 2 | Teralba Rd (Brighton-Le-Sands) to Solander St (Monterey)

Zone C | Protect

Management approach:

Sandy beach not cost-effective & feasible to restore and maintain.

- Interim sand nourishment, geotextile & re-vegetation to temporarily protect The Grand Parade from coastal hazards
- Adaption of eroded foreshore with a new environmentally-friendly engineered seawall with promenade
- Improved long-term coastal hazard protection for The Grand Parade

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- New waterfront promenade and intertidal ecological corridor connecting Monterey with Brighton-Le-Sands beach areas
- Improved ocean views along foreshore, viewing platforms and landscaping
- Enhanced intertidal and shallow water ecology through environmentally-friendly seawall design
- Relocation, adaptive reuse and/or burial of presently exposed ad-hoc materials from the intertidal zone
- Upgrade of public space and pathways between road and foreshore
- Upgraded and new picnic areas

Existing amenity and character:



Heavily eroded foreshore



Damaged infrastructure

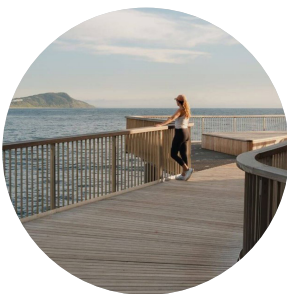


Ad-hoc rock and dune hazards



Minimal beach area

Potential future opportunities to be explored*:



Waterfront viewing
Terrigal Boardwalk, Arup



Eco-friendly seawalls
Intertidal saltmarsh seawall, Claydon Reserve, NSW OEH 2009



Integrating amenity & the environment into coastal protection
Parramatta River Estuary, NSW OEH 2009



Picnic areas
Carrum Foreshore, VIC, Rush Wright Architects

*Example images are indicative for illustration purposes only.



Precinct 2 | Teralba Rd (Brighton-Le-Sands) to Solander St (Monterey)

3 Precinct 3 | Solander St to Scarborough St (Monterey)

Zone A | Resilient

Management approach:

Minimal intervention required to maintain sandy beach.

- Periodic beach monitoring
- Maintenance of access ways & Monterey swimming area
- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability
- Potential sand source for nourishment of Zone 4

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Upgrades to share user path including rest areas, water fountains, lookouts
- Enhancement of beachfront promenade
- Upgraded and new picnic areas
- Improved amenity to support appropriate water sports activities

Existing amenity and character:



Rock groynes



Sandy beach and water recreation
Google Street View



Sandy beach and water recreation along Monterey Baths
Melissa Cubbon



Promenade seawall along beach

Potential future opportunities to be explored*:



Cycle path upgrades
Tongva Park, USA
Field Operations



Picnic areas
Carrum Foreshore, VIC
Rush Wright Architects



Supporting water sports and beach recreation



Seawall maintenance and upgrades
Dee Why, NSW; Weekend Notes

*Example images are indicative for illustration purposes only.



Precinct 3 | Solander St to Scarborough St (Monterey)

4

Precinct 4 | Scarborough St to Culver St (Monterey)



Zone B | Restore

Management approach:

Restore and maintain sandy beach.

- Periodic beach monitoring and minor sand nourishment
- Maintenance of access ways
- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Upgrades to share user path including rest areas, water fountains, lookouts
- Enhancement of beach front promenade
- Small-scale, seasonal cafés
- Upgraded and new picnic areas
- Improved amenity to support appropriate water sports activities

Existing amenity and character:



Rock groynes



Sandy beach and water recreation
Roger Dilerna



Sandy beach and water recreation



Promenade seawall along beach

Potential future opportunities to be explored*:



Cycle path upgrades
Tongva Park, USA; Field Operations



Picnic areas
Carrum Foreshore, VIC;
Rush Wright Architects



Supporting water sports and beach recreation



Seawall maintenance and upgrades
Dee Why, NSW; Weekend Notes

*Example images are indicative for illustration purposes only.



Precinct 4 | Scarborough St to Culver St (Monterey)

5 Precinct 5 | Culver St (Monterey) to Florence St (Ramsgate)

Zone C | Protect

Management approach:

Not cost-effective to restore & maintain sandy beach.

- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability
- Ecological adaptation of existing seawall and nearshore waters

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Enhancement and upgrade of waterfront promenade
- Enhanced intertidal and shallow water ecology through environmentally-friendly seawall design adaptation
- Upgraded and picnic areas
- Upgrades to improve safety and amenity for walkers and cyclists
- Opportunity to prioritise pedestrian access to the foreshore and relocate the existing parking areas to the west

Existing amenity and character:



Hard seawall shoreline



Minimal sandy beach



Rock protection at Emmaline St



Florence St Stormwater Drain

Potential future opportunities to be explored*:



Cycle path upgrades
Tongva Park, USA
Field Operations



Eco-friendly seawall adaptation
Intertidal saltmarsh seawall
Claydon Reserve, NSW



Integrating amenity & the environment into coastal protection
Parramatta River Estuary, NSW OEH
2009



Supporting a thriving environment
Carlos Diaz

*Example images are indicative for illustration purposes only.



Precinct 5 | Culver St (Monterey) to Florence St (Ramsgate)

6 Precinct 6 | Ramsgate Baths to Pine Park (Ramsgate)

Zone B | Restore

Management approach:

Restore and maintain sandy beach.

- Periodic beach monitoring
- Sand nourishment and staged groyne adaption to improve sand retention
- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Upgrade of Ramsgate baths and amenities
- Adaptation of groynes to offer enhanced recreational amenity such as crest pathways, lookouts and deep-water swimming entry into Ramsgate Baths
- Upgrade and increased equitable access to beach and baths
- Renewal seawall promenade to include wider pathway for public space for users

Existing amenity and character:



Ramsgate Baths
Nearmap



Sandy beach and promenade amenity
Paula Morgan; Sydney Expert



Open space recreation
Google Street View



Tree Canopy
Google Street View

Potential future opportunities to be explored*:



Equitable beach access & seawall upgrades
Surfers Paradise, QLD; Accessible Beaches



Groyne upgrades
North Haven Breakwater, Port Macquarie Hastings Council



Improved access to baths
Altona Beach, VIC



Restored and resilient sandy beach
Simon Smith

*Example images are indicative for illustration purposes only.



Precinct 6 | Ramsgate Baths to Pine Park (Ramsgate)

7 Precinct 7 | Pine Park to Russell Ave (Dolls Point)

Zone C | Protect

Management approach:

Not cost-effective to restore & maintain sandy beach

- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability
- Ecological adaptation of existing seawall and near shore waters

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Enhancement and upgrade of waterfront promenade
- Enhanced intertidal and shallow water ecology through environmentally-friendly seawall design adaptation

Existing amenity and character:



Hard seawall shoreline



Pedestrian and cycle path

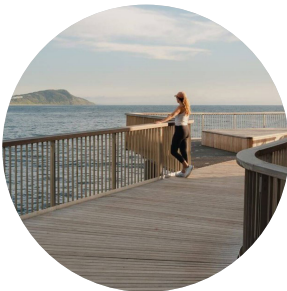


Viewing platform



Promenade amenity

Potential future opportunities to be explored*:



Waterfront viewing
Terrigal Boardwalk, Arup



Biodiversity seawall adaptation
Carss Bush Park, NSW; Total Earth Care



Integrating amenity & the environment into coastal protection
Parramatta River Estuary, NSW OEH
2009



Seawall maintenance and upgrades
Newcastle Beach, NSW

*Example images are indicative for illustration purposes only.



Precinct 7 | Pine Park to Russell Ave (Dolls Point)

8 Precinct 8 | Russell Ave to Primrose Ave (Dolls Point)

Zone A | Resilient

Management approach:

Minimal intervention required to maintain sandy beach.

- Periodic beach monitoring
- Maintenance of access ways to foreshore
- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability
- Sand source for nourishment of Zone 6
- Foredune in Sandringham Bay to be maintained for ecological purposes

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Upgrades to support sandy beach and water craft recreation.
- Potential removal, adaptive reuse or reinstatement of relic swimming pier
- Improved public amenities

Existing amenity and character:



Sandy beach and promenade



Georges River Sailing Club



Relic Timber Pier



Depena Reserve, Dolls Point
Google Street View

Potential future opportunities to be explored*:



Picnic areas
Carrum Foreshore, VIC
Rush Wright Architects



Maintaining healthy foredunes
Google Street View



Seawall and groyne upgrades



Enhanced sandy beach and water craft recreation
Georges River Sailing Club

*Example images are indicative for illustration purposes only.



Precinct 8 | Russell Ave to Primrose Ave (Dolls Point)

9

Precinct 9 | Primrose Ave to Riverside Dr (San Souci)



Zone C | Protect

Management approach:

Not cost-effective to restore & maintain sandy beach

- Upgrade and maintain existing seawall & groyne structures for ongoing serviceability
- Ecological adaptation of existing seawall and near shore waters

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Enhancement and upgrade of waterfront promenade
- Upgrade and enhance swimming recreation and water access at Vanston Baths
- Enhanced intertidal and shallow water ecology through environmentally-friendly seawall design adaptation

Existing amenity and character:



Aerial of Dolls Point and Sandringham



Vanston Baths



Hard sea-wall shoreline



Lena Street Rock Revetment

Potential future opportunities to be explored:



Improved access to baths
Terrigal Boardwalk, NSW Arup



Improved access to baths
Dee Why, Rock Pool



Eco-friendly seawall adaption
Intertidal saltmarsh seawall, Claydon Reserve, NSW OEH 2009



Seawall maintenance and upgrades
Newcastle Beach, NSW

*Example images are indicative for illustration purposes only.



Precinct 9 | Primrose Ave to Riverside Dr (San Souci)

Precinct 10 | Riverside Dr (San Souci)



Zone A | Resilient

Management approach:

Minimal intervention required to maintain sandy beach.

- Periodic beach monitoring
- Foredunes to be maintained for ecological purposes

Future Foreshore Management:

The items listed are for potential consideration and will be developed through ongoing community consultation.

- Bird watching facilities
- Integration with Riverside pedestrian connectivity

Existing amenity and character:



San Souci Point to Captain Cook Bridge



Sandy flats at waters edge



Sandy foredunes
Google Street View



Pedestrian and cycle pathways
Google Street View

Potential future opportunities to be explored*:



Bird watching pavilions
East Point Park, Canada
Branchlant Architecture



Maintaining healthy foredunes
Maria Franklin



Supporting a thriving environment
Mikaela Dieben

*Example images are indicative for illustration purposes only.



Appendices

Attachment B | Management Priorities

Lady Robinsons Foreshore Management Plan

Summary of key management actions

Recommendation actions	Priority	Precinct	Recommended completion timeframe	Reason for priority	Relative cost guide
Design and construction of new engineered coastal protection works between Solander St to southern termination of Brighton-Le-Sands seawall with amenity enhancement and nature-based design integration.	High	2	2-3 years	High erosion risk to public area and The Grand Pde	High
Interim sand nourishment to improve sand buffer fronting The Grand Pde in the vicinity of President Ave.	High	2	1 year (one-off)	High erosion risk to public area and The Grand Pde.	Moderate
Periodic sand nourishment to restore and maintain sandy beach.	High	6	1 year with periodic nourishment every 3-5 years.	Minimal sandy beach area and high beach user demand particularly during summer months	Moderate
	Moderate	4	3-5 years		Moderate
Upgrade access to Vanston Baths.	High	9	2-3 years	Public safety	Moderate
Maintenance (topping up) of existing groyne structures with 2t rock armour.	High	2 Groyne 2 and 3	1 year	Structural integrity - Noted rock armour breaches and SLR upgrades (MHL2720, 2020)	Moderate
	Moderate	2, 3 Groynes 4 and 5	3-5 years	Structural integrity - Depleted primary rock armour and SLR upgrades	Moderate
		6 Groynes D1 and D2			
		7 Groyne D5			
Low	5 Groyne 1	5-10 years	Structural integrity - SLR upgrades	Moderate	
	6 Groynes D3 and D4				
	7 Groynes D6				

Recommendation actions	Priority	Precinct	Recommended completion timeframe	Reason for priority	Relative cost guide
Improved equitable beach access	High	1 Brighton-Le-Sands	2-3 years	Public amenity	Low/Moderate
		6			
	Moderate	3	3-5 years	Public amenity	Low/Moderate
		4			
Improvements to netted swimming enclosures	High	6 Ramsgate Baths	2-3 years	High public amenity	Low
	Moderate	1 Brighton-Le-Sands Baths	3-5 years	Public amenity	Low
		3 Monterey Baths			
		9 Vanston Baths			
Low	1 Kyeemagh Baths	4-5 years			
Crest upgrades to existing seawall to improve serviceability with SLR	Moderate	5	3-5 years	Structural integrity - Ageing seawall with frequent exposure to wave energy and overtopping during large tides.	Moderate
		7			
		9			
		6			
	Low	1 Brighton-Le-Sands	5-10 years	Structural integrity - Ageing seawall fronted by sandy beach less frequently exposed to wave energy.	Moderate
		3			
		4			
		8			

Recommendation actions	Priority	Precinct	Recommended completion timeframe	Reason for priority	Relative cost guide
Staged groyne adaption (e.g., lengthening) to improve sand retention.	Moderate	6 Groyne D2	2-3 years	Improved nourishment longevity	Moderate
	Low	6 Groyne D3 and D4	5-10 years	Improved nourishment longevity	Moderate
Adaption of existing seawall with nature-based scour protection to support structure serviceability and ecological outcomes.	Moderate	5 7	2-5 years	Ageing seawall with frequent wave exposure likely requiring scour protection	Moderate
	Low	9	10 years	Rock scour protection installed in 2023 at Ida St seawall, Sandringham Bay	Moderate
Adaption of existing seawall with rock scour protection of existing seawall to support structure serviceability.	Moderate	6	2-5 years	Ageing seawall with intermittent wave exposure when sandy beach is narrow	Low
	Low	1 Brighton-Le-Sands 3	5-10 years	Ageing seawall with less frequent wave exposure due to fronting sandy beach	Low
		4			
		8			
Beach monitoring for sand nourishment sourcing/placement	Moderate	1	Periodically biyearly and after major storms	Triggers for sand nourishment and sand sourcing	Low
		3			
		4			
		6			
		8			

Recommendation actions	Priority	Precinct	Recommended completion timeframe	Reason for priority	Relative cost guide
Continued programs to support healthy foredune vegetation and maintaining dune accessways	Ongoing	1 Kyeemagh dunes	Ongoing	Ecological, dune stability and storm buffer	Low
		3 Monterey dunes			
		8 Sandringham Bay dunes			
	Ongoing	10 Riverside Drive dunes			

*Additional recommended actions addressing public safety and maintenance of existing structures are provided in MHL2720 (MHL, 2020).

Appendices

Attachment C | Site Analysis

Strategic Setting

Local

The following section provides a high-level description of the key, relevant guidelines from the Bayside Council which have informed, and should continue to inform the updates to the public amenity strategy.



Cook Park Masterplan

Bayside Council, 2020

Enjoying the Park

The creation of a more integrated and better serviced precinct for the enjoyment and recreation of all users.

Getting to and around the Park

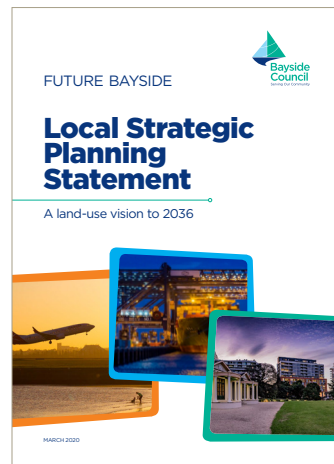
Improvement of access and circulation in the Park with minimum conflict, maximum utility and minimum hard surface footprint.

Conserving the Parks Environment, Heritage & Character

Significant improvement in the representation of the Park's heritage, increased public awareness and restoration of the natural environment and greater integration and improvement of the general aesthetic qualities of the Park.

Looking after the Park and buildings

Rationalisation of buildings and improvement of infrastructure and services to maximise public amenity, safety and satisfaction and facilitate income generation for Park maintenance and improvement.



Local Strategic Planning Statement

Bayside Council, 2020

This document outlines a comprehensive plan to safeguard and enhance Bayside's natural areas, landscapes, and waterways, emphasizing the creation of high-quality open spaces. It includes initiatives to increase the tree canopy and extend green Grid Corridors through a network of open spaces, footpaths, and cycleways, promoting enhanced connectivity to open spaces, centers, employment hubs, and green corridors.

The overarching goal is to develop a sustainable Bayside that wisely utilizes resources and demonstrates resilience in the face of social, environmental, and economic stressors. The document also envisions fostering a vibrant, healthy, and connected community that upholds and respects the existing character and heritage of the region.



Bayside 2032; Community Strategic Plan

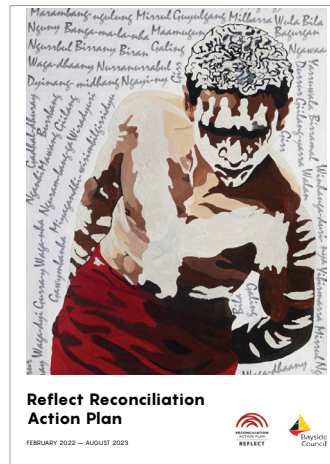
Bayside Council, 2018

Vibrant – Accessible to all, dynamic and connected, people focused, with working transport systems.

Connected – Celebrate and respect diverse communities, utilise and benefit from technology, community feels valued and supported, community is united and proud to live in Bayside.

Green, Resilient & Sustainable – Resilient to economic, social, and environmental impacts, increased use of renewable energy, waterways and green corridors are regenerated and preserved, waste is well managed.

Prosperous Community – Diverse local employment and business opportunities, opportunities for economic development, financially sustainable and well governed.



Reflect Reconciliation Action Plan

Bayside Council, 2022/23

Reconciliation Australia's Reconciliation Action Plan (RAP) program provides a framework for organisations to support the national reconciliation movement, develop respectful relationships and create meaningful opportunities with and for First Nations people.

This plan is designed to reflect a commitment to meaningful and ongoing reconciliation, acknowledging the cultural heritage of the traditional custodians of the land on which the Council operates. Through a range of initiatives and actions, the RAP seeks to promote inclusivity, respect, and understanding, working towards a more united and harmonious community.

Strategic Setting

State

The following section provides a high-level description of the key, relevant guidelines at a state level which have informed, and should continue to inform the updates to the public amenity strategy.

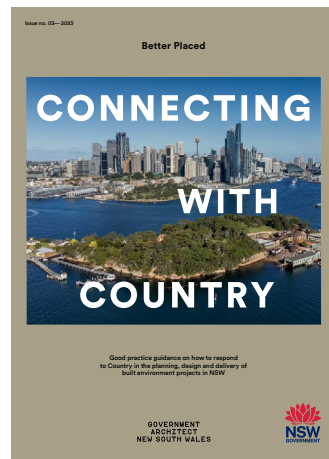


Better Placed

GANSW, 2023

Better Placed has been developed by the Government Architect to deliver the strategic approach needed to ensure that as our cities and towns grow bigger they get even better. It responds to the concerns of communities and those involved in the development of our built environments about the impact of poor design but also defines how we can make the most of the opportunities that will arise as we develop new spaces and places.

Better Placed is structured to work in a number of ways, with the purpose of achieving better places for the people of NSW. This includes **Advocating** the importance of design for better places, spaces and outcomes **supporting** industry and government to deliver good design for people and **enabling** effective design processes to be established and supported in the planning system.



Connecting with Country

GANSW, 2023

The Connecting with Country Framework is a guide for good practice which seeks to foster collaboration and knowledge sharing between Aboriginal and non-Aboriginal individuals. It provides a guide for government, planners, designers and industry to address the legislative requirements and to promote the sustainable management of built and cultural heritage.

The document shares the stories and experiences of Aboriginal communities, cultural advisers and built environment professionals who have been at the forefront of integrating traditional knowledge with modern technologies and approaches to create innovative solutions to the complex challenges we face.



Public Open Space Strategy for NSW

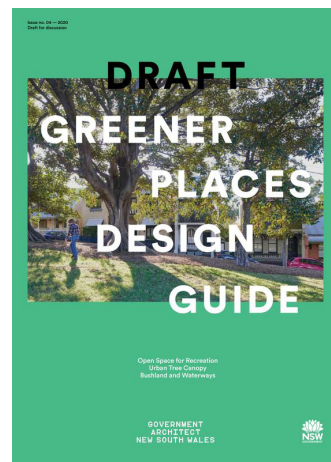
NSW Government, 2022

The Public Open Space Strategy for NSW provides a framework for implementing policies across Government and contributes to a more joined-up approach to public open space planning and delivery.

The strategy shows how the state can coordinate, plan and continue to deliver public open space providing essential guidance for effective, efficient and equitable provision, so that existing and future neighbourhoods are great places to live.

The objectives and visions established include:

- Better recognition for public open space
- Stronger First Nations involvement
- Coordinated planning, governance, policy and funding
- Greater social, environmental and economic value
- Better outcomes for regional NSW



Draft Greener Places

GANSW, 2023

The Draft Greener Places document serves as a visionary blueprint for enhancing the environmental and sustainable aspects of public spaces. This comprehensive plan is a guide to creating healthier, more vibrant communities by integrating green initiatives into urban planning. The document outlines strategies to transform public spaces into ecologically conscious and sustainable areas, emphasizing the importance of biodiversity, green infrastructure, and community engagement.

By prioritizing greenery and sustainable design principles, the Draft Greener Places document aims to shape a more resilient and environmentally friendly built environment for the benefit of current and future generations in New South Wales.

Place Qualities

The foreshore is a vast and unique asset, with a diverse range of characteristics. Equally, the coastline forms the connection between the areas, and as such is a unifier.

The various suburbs along the foreshore create a diverse experience, and it is important that future foreshore upgrade works reinforce this diversity as a unique asset.

There is also a need to prioritise walk-able east-west links to enable and reinforce greater connectivity for locals and visitors to access the shoreline.

Kyeemah

- Aboriginal name for “beautiful dawn”, the north-western shore of Botany Bay (Kamay) provides long uninterrupted stretches of sandy beach backed by vegetated foredunes, . waterfront views and a popular swimming area at Kyeemagh Baths
- Kyeemagh is known for its recreational areas and ample parks, offering residents and visitors spaces for outdoor activities
- Exhibits a mix of residential, single dwelling homes to multi-unit developments and recreational zoning
- Kyeemagh’s closest station is Banskia Station, approximately 2km apart

Brighton-Le-Sands

- Brighton-Le-Sands is located immediately south of Kyeemagh
- A prominent feature is The Grand Parade, a popular coastal road that runs along the beach, lined with cafes, restaurants, and retail shops
- A wide and flat beach attracts activities both in the water and on the sand, backed by a popular promenade seawall that promotes active transport with pedestrian-friendly pathways and cycle lanes
- Swimming has long been a popular activity at the Brighton-Le-Sands Baths
- Features mixed-use developments of residential, commercial, and recreational spaces
- Commercial development and building heights in the suburb may have impacts on the local community and views
- Limited parks and playgrounds

Monterey

- Foreshore to the north near President Avenue heavily eroded foredune and a popular mixed-used path along the crest
- Further south the foreshore is characterized by rock groynes and sandy beach areas with a netted swimming enclosure at Monterey Baths
- Groynes help mitigate coastal erosion and serve recreational amenity such as swimming, fishing and water craft activities
- A popular promenade runs along the back of the beach with some picnic areas and carparks
- The Grand Parade is mostly lined with single dwelling houses with a maximum of two stories
- Public transport options are limited to bus

Ramsgate

- Foreshore characterised by rock groynes with limited sandy beach area subject to erosion
- Bathing and beach going is particularly popular in the vicinity of the netted enclosure of Ramsgate Baths and the Ramsgate Surf Life Saving Club building
- A popular waterfront promenade runs along the back of the beach with interconnected open community spaces, shaded picnic areas, carparks and amenities
- The Grand Parade is mostly lined with single dwelling houses with a maximum of two stories
- Public transport options are limited to bus

Dolls Point to Sandringham

- Abundant parks and green areas encourage play and outdoor activities at Depena Reserve.
- Sandy beach, a relic swimming jetty and promenade adjoining the Georges River Sailing Club
- Popular swimming location at Vanston Baths and riverside promenade walk
- Predominantly residential with a small amount of local retails
- Access to transportation is limited to bus



Site Analysis Plan | Site Qualities

Environment

Bayside is a community that values, protects and conserves its native plants and animals, and the environment in which they live. The biodiversity of the area is enhanced and sustained through a connected network of bushland, wetland and coastal habitats as described in Bayside Biodiversity Strategy (2014). These natural areas contribute to our community's environmental awareness, wellbeing and sense of place.

Bayside is characterised by a diversity of open space, including parks, reserves, rivers, wetlands, bushland and the coastline. A number of Green grid priority corridors are identified in the Bayside Local Strategic Planning Statement (2020), which are progressively being developed and better connected to address historic fragmentation. Significantly, the Rockdale Wetlands Open Space Corridor runs in a north-south orientation, inland but parallel to the foreshore. There is opportunity to better

establish east-west connectivity between this green corridor, and the blue corridor to the east.

The foreshore is a diverse and stretch of coastline characterised by areas of both sandy and rocky shore backed by foredunes and seawalls. The foreshore is flanked by The Grand Parade, to the east and varying public open space amenity including parks, wooded areas, playgrounds and hard-scaped areas.

The southern and northern extents of the foreshore are bounded by the Georges and Cooks River estuaries providing high priority ecological sites for shorebirds and migratory species. Offshore, shallow bay waters support a range of marine-life and aquatic ecosystems including fish species, seagrasses and sea-horses. Towra Point Nature Reserve is located to the south across the Georges River entrance and is a Ramsar listed site containing approximately half of the remaining mangrove communities in the Sydney region. Design of a sustainable long-term foreshore strategy has opportunity to support the health and resilience of these valuable ecological assets and help deliver Bayside's biodiversity goals and targets.



Bar-tailed godwit (*Limosa lapponica*)
Kamay Botany Bay National Park , NSW
D Andrews, DPE



Site Analysis

Vehicular Transport Linkages

North-South connections:

- The Grand Parade
- Rock Point Road
- M6 corridor

East-West connections:

- Bestic Street
- Bay Street
- President Ave
- Ramsgate Road
- Sandringham street



The Grand Parade
Brighton-Le-Sands Beach, NSW
Australian Property Monitors



Site Analysis Plan | Transport Links - Vehicle

Transport Links - Public

- As foreshore is enhanced, important to consider public transport future development
- Public transport is geared towards commuting, rather than public space access
- Access to the beach is restricted to bus (direct routes and bus stops are limited).
- T4 Eastern Suburbs and Illawarra Line provides access from CBD
- Public transport link from south of Sandringham limited to bus and car



Site Analysis Plan | Transport Links - Public Transport

Transport Links - Active

- Strong active transport network, highly utilised
- Need to better connect north-south connections with east-west link.



Site Analysis Plan | Transport Links - Active Transport

Appendices

Attachment D | Community and Stakeholder Engagement

Lady Robinsons Foreshore Management Plan

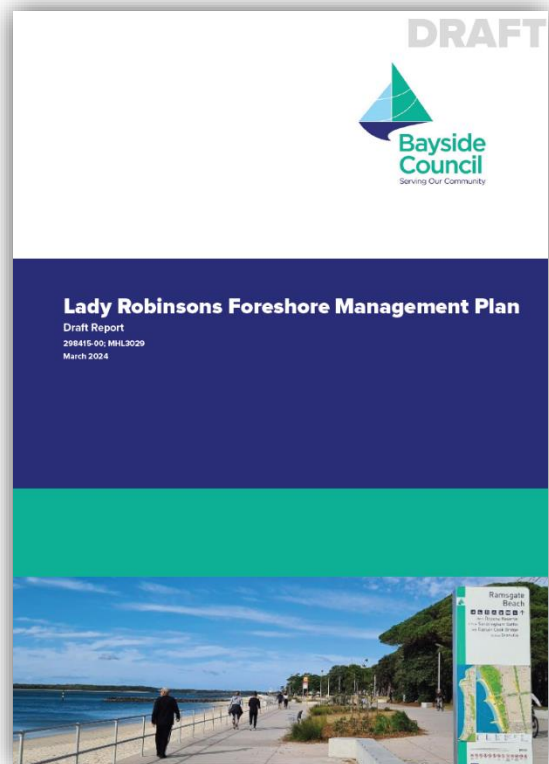
Community and stakeholder engagement

Feedback from the Bayside Community, Stakeholder groups is vital to the successful development and implementation of a long-term Foreshore Management Plan for Lady Robinsons Beach.

The Lady Robinsons Foreshore Management Plan (draft version) was open to public exhibition for a 2-month period between the 21st February to 26th April 2024. During this period, the Foreshore Management Plan was summarised and made available via the Project Have Your Say webpage with an online feedback survey, information signage at each of the 10 Foreshore Precincts and a face-to-face information session hosted at Ramsgate Surf Life Saving Club on the 13th April 2024.

Overall feedback received from the community was supportive of the three-zoned approach to the Lady Robinsons Foreshore Management Plan. Of the 47 Survey responses received, 87% supported the Plan without any changes, 13% supported the Plan with changes and 0% did not support the Plan. Face-to-face public engagement during the information session also noted a general support for the Plan and its approach.

Community feedback highlighted the Lady Robinsons Beach foreshore area as a well-used and highly valued public asset including swimming enclosures, foreshore walk and recreational areas, and bayside environmental setting. Feedback also noted foreshore management opportunities such as improved beach accessibility, improved swimming enclosures, supporting the environment and maintaining popular pedestrian foreshore pathways.



A stakeholder agency workshop was held on the 6th June 2024 at Council's Rockdale Office. Attendance at the meeting included representatives from stakeholder agencies including:

- Bayside Council
- Port Authority of NSW
- Sydney Airport
- Crown Lands
- NSW National Parks and Wildlife Services
- NSW Department of Climate Change, Energy, the Environment and Water - Biodiversity Conservation & Science
- DPI Fisheries
- Cooks River Alliance
- Sydney Coastal Councils Group

All agencies represented at the meeting expressed support of the approach developed by Manly Hydraulics Laboratory in association with Arup for Bayside Council in the Lady Robinsons Foreshore Management Plan. Feedback received was considered in revisions to the draft Plan. The stakeholder workshop also identified a number of opportunities for stakeholder agency collaboration to support strategic outcomes and implementation of the Plan (e.g., environmental and marine ecological design initiatives).

Ongoing community, stakeholder agency and First Nations engagement will be undertaken to seek feedback on more detailed foreshore treatment designs for priority foreshore Precincts as they are developed.



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