

ATTACHMENT BOOKLET 5

ORDINARY COUNCIL MEETING

TUESDAY 27 AUGUST 2019

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Manly West Esplanade Heritage Activation Plan Draft August 2019



Manly West Esplanade Heritage Activation Plan - Draft August 2019

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Manly West Esplanade Heritage Activation Plan - Draft August 2019

1.0 Introduction

In 2018 Northern Beaches Council received a Heritage Near Me Activation Grant from the NSW Government Office of Environment and Heritage to help develop this Manly West Esplanade Heritage Activation Plan.

Manly West Esplanade has a rich history spanning thousands of years. This Heritage Activation Plan explores this history and makes recommendations to Council regarding how to showcase this to the public. The Plan also provides guidance on how to activate the area in general to improve its amenity, safety and accessibility.

A draft vision to guide the Manly West Esplanade Heritage Activation Plan has been developed;
West Esplanade - A place for residents and visitors to enjoy, that is family friendly, protects its extraordinary environment and cares for its heritage.

Draft design principles have also been created:

- Maintain and celebrate the heritage of the area
- Ensure the area is a safe, family friendly place to be
- Maintain public waterfront access
- Protect the natural environment
- Highlight the Manly Art Gallery and Museum
- Embrace the community need for soft social environments

Within this Heritage Activation Plan is a site analysis, heritage analysis, safety recommendations, recommendations around the former aquarium site, exploration of the concept of reinstating the 1931 boardwalk, an activation plan and an implementation plan.

The plan has been developed based on community feedback and internal and external expertise in heritage, engineering and the environment.

To support the Manly West Esplanade Heritage Activation Plan:

- A Community Engagement Report has been prepared to outline the community engagement process undertaken and the results of that engagement (Attachment 1)
- A Heritage Report has been produced to document the history of West Esplanade (Attachment 2)
- A Boardwalk Feasibility Report has been developed to explore the concept of reinstating the 1931 boardwalk that was destroyed in a storm in 1974 (Attachment 3)
- A Safety Strategy Report has been created to examine opportunities for improvement to the public safety of West Esplanade (Attachment 4)



Image: Aerial view of West Esplanade 2018

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2.0 Background

2.1 Heritage Activation Plan Aims

The Manly West Esplanade Heritage Activation Plan aims to:

- Identify and celebrate the unique history of the West Esplanade area pre and post European settlement
- Define ways the community can use and appreciate the heritage of the area
- Explore the nostalgia of West Esplanade including the art gallery facade and boardwalk
- Enhance the amenity of the area

2.2 Heritage Activation Plan Process



2.3 Heritage Activation Plan Constraints

There are a number of constraints in West Esplanade that have an impact on any proposals made in the Heritage Activation Plan, they are:

- A sensitive environment that needs to be protected and includes endangered flora and fauna
- Multiple land owners on the site and therefore Council does not have control over the whole site
- Heritage listed items on the site which have restrictions around their modification
- Highly exposed environment which create challenges for maintenance
- Current use is set for the Pavilion property as it is under a long term lease
- Permissible uses of the site are limited by planning zoning

3.0 West Esplanade Site Analysis

The following is an analysis of the current site for the Manly West Esplanade Heritage Activation Plan. This analysis provides the site's current context and identifies potential constraints to making changes within the site.

3.1 The Site

West Esplanade is located within the western section of Manly Cove; stretching from Manly Wharf, west to the heritage listed Pavilion next to Federation Point. Adjacent to the site is Manly Wharf, a major transport hub for commuters and visitors.

West Esplanade is often the first look that visitor's get of Manly and with its shady picnic tables and calm tidal pool is an attraction for families. Other attractions include the Surf n Slide waterslide complex and the foreshore walk and vista.

The Manly Art Gallery and Museum is also located within the site and provides a cultural attraction for both locals and visitors. While within the Pavilion is a restaurant and formal events space, which hosts weddings for example.



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3.2 Property Ownership

There are three property owners across West Esplanade; Council, Crown Lands and Roads and Maritime Services (RMS). The RMS property, the Pavilion, is under a long term lease meaning its current use is set. Multiple land owners presents a challenge when coordinating urban design treatments and uses across the site. Council can only make recommendations to the land owner for land that it does not own or have care and control over.



3.3 Land Zoning

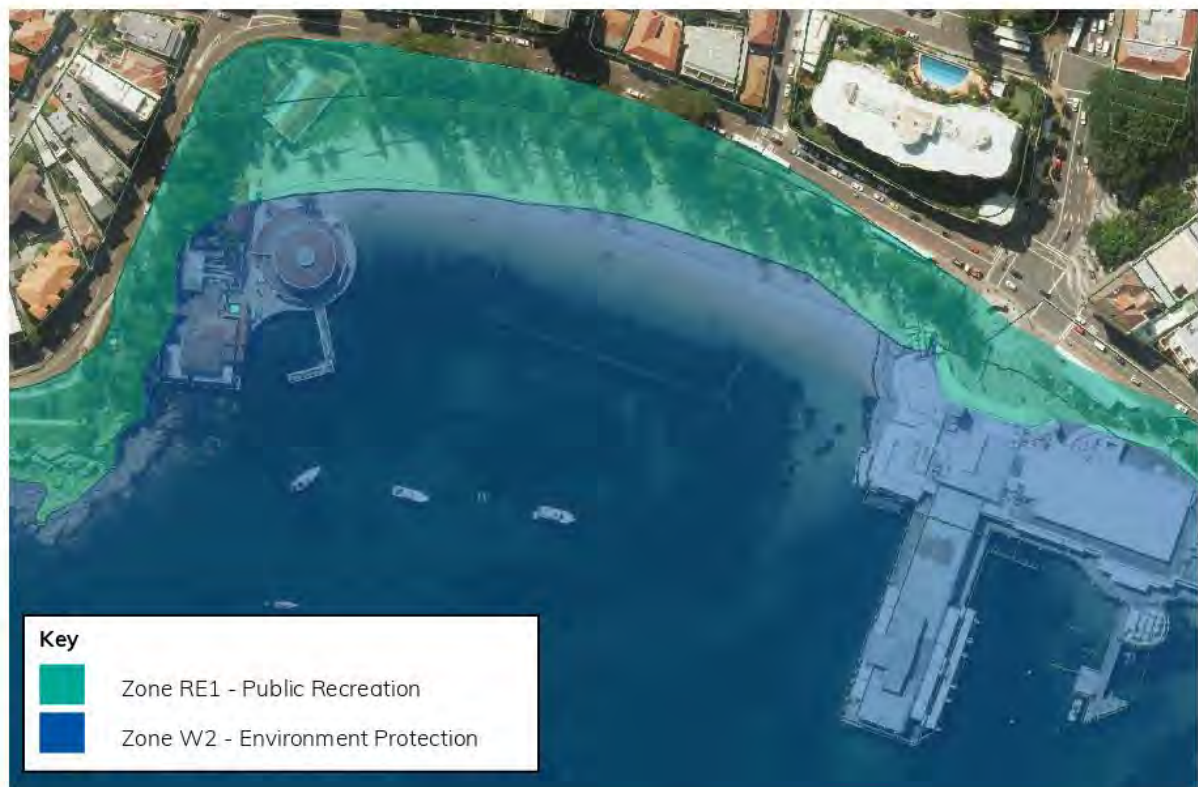
West Esplanade contains two zones under planning legislation for the site; RE1 - Public Recreation and W2 - Environment Protection. Both these zones are limiting in terms of permissible uses and this in particular constrains commercial use on the site. The objectives for the zones reflects the value placed in nature, public open space and culture.

Zone RE1 - Public Recreation objectives:

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.
- To protect, manage and restore areas visually exposed to the waters of Middle Harbour, North Harbour, Burnt Bridge Creek and the Pacific Ocean.
- To ensure that the height and bulk of any proposed buildings or structures have regard to existing vegetation, topography and surrounding land uses.

Zone W2 - Environment Protection objectives:

- To protect the natural and cultural values of waters in this zone,
- To prevent damage or the possibility of longer term detrimental impacts to the natural and cultural values of waters in this zone and adjoining foreshores,
- To give preference to enhancing and rehabilitating the natural and cultural values of waters in this zone and adjoining foreshores,
- To provide for the long-term management of the natural and cultural values of waters in this zone and adjoining foreshores.



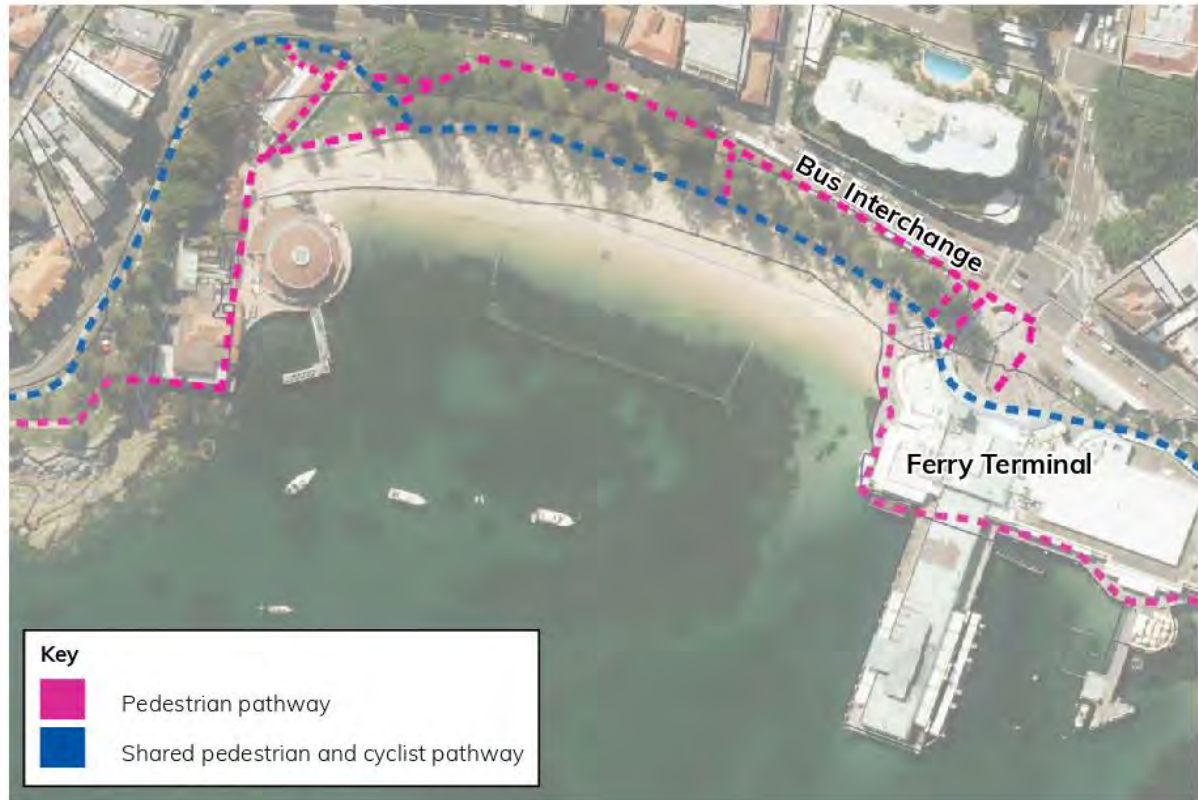
3.4 Land Use

West Esplanade has four key land uses; transport, commercial, recreational and cultural. The large amount of land dedicated to recreational use reflects the long term use of West Esplanade as public open space and the value placed in the natural environment.



3.5 Transport and Access

West Esplanade is well serviced in terms of walking, cycling and public transport access. This makes the site easy for locals and visitors to get to without the use of a car. Adjacent to the site is the Manly Wharf, a major transport hub that also has a nearby bus interchange, on average more 370,000 trips are taken on the Manly Ferry each month and more than 10,000 people move through the area outside the Wharf every day. The site is part of the popular Spit to Manly Walk and is the end of the future Bondi to Manly Walk.



4.0 Community Engagement Summary

The main objective of the community engagement for this project was to raise awareness of the heritage of the West Esplanade area and gain an understanding of the community's view of the West Esplanade area.

To ensure we reached the relevant and directly affected members of the community, Council applied a wide range of engagement techniques and methods to understand their thoughts and to hear their views on West Esplanade. These included:

- An online survey
- Face to face visitor survey
- Information sessions
- Onsite drop in
- Mail out to local residents and businesses
- Internal staff workshop and consultation

Throughout the engagement process 2773 people were informed, with 812 written submissions received, making a total of 3585 people engaged. A positive response was received around maintaining and highlighting West Esplanade's heritage along with a number of improvements suggested for the area including to maintenance, landscaping, street furniture, amenities and water based activities. This feedback has been incorporated into the recommendations for the Heritage Activation Plan.

See Attachment 1 Community Engagement Report for further details.



Images above: Onsite drop in 6 April 2019



Sign outside Manly Wharf advertising project and onsite drop in, 2019

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5.0 Draft Heritage Activation Plan Vision and Design Principles

The following are the draft vision and design principles for the Manly West Esplanade Heritage Activation Plan. These are based on community feedback and provide guidance for the recommendations made in this plan.

Draft Vision

West Esplanade - A place for residents and visitors to enjoy, that is family friendly, protects its extraordinary environment and cares for its heritage.

Draft Design Principles

- Maintain and celebrate the heritage of the area
- Ensure the area is a safe, family friendly place to be
- Maintain public waterfront access
- Protect the natural environment
- Highlight the Manly Art Gallery and Museum
- Embrace the community need for soft social environments



Image: Photo of West Esplanade looking towards Manly Wharf, 2019

6.0 West Esplanade Heritage Analysis

An analysis of the heritage of West Esplanade is a vital discovery component for this Heritage Activation Plan. West Esplanade has a rich history spanning thousands of years and as part of the development of this plan Council has engaged a qualified Heritage consultant, Northpoint Heritage Pty Ltd to complete a Heritage report for the site which documents this history. To view the full report see Attachment 2 Heritage Report.

6.1 Summary of Heritage Items

West Esplanade contains a number of State and Local listed heritage items. These reflect the heritage significance of West Esplanade and are a key inspiration for the development of this Heritage Activation Plan. It was identified through community engagement, that these heritage items should be acknowledged in wayfinding in the area to inform more people of their existence. Interpretive signage should also be included to educate people on their significance.

The Heritage Report (Attachment 2) makes a number of recommendations in regards to West Esplanade's Heritage Items, this is summarised in the table below.

Table - Heritage Report Recommendations for Key West Esplanade Heritage Items.

| Heritage Item | Recommendations |
|--------------------------|--|
| The Pavilion | Maintain in accordance with Management Plan, retain use as a restaurant and activate area at ground level. Historic views of the building could be reinstated by demolition of the Aquarium building. |
| Amenities Block | Retain in current form and use. |
| Governor Philip Monument | Is a significant obstruction in flow of pedestrian and cyclist traffic on the promenade. Re-location of the monument to a site of appropriate prominence would be subject to cautious and considered design as part of a wider program of landscaping works. |
| Park | Activation of the area as a precinct is required. Areas of soft landscaping should be retained and increased where possible. Furniture can be upgraded. |



6.2 Timeline of Key Events in West Esplanade's History

The following is a summary of key events within West Esplanade's history. See Attachment 2 Heritage Report for more details. These events highlight the significant indigenous heritage of the area and the changes to the area over time since European settlement.

**Pre
1788**

Area populated by Clan of Kai'yamay (Manly Cove) Pre 1788

The name of the Aboriginal clan of Kai'yamay is not known for certain. It may have been Kai'yamaygal, or Gayamaygal, for in the Sydney language, the suffix 'gal' was usually added to the place name to indicate the people of that place.

The Kai'yamaygal were saltwater people, reliant on the sea and harbour for a diet of fish and shellfish, as well as seabirds. They were at home on the waters as well as on land. Women were skilled canoeists and fisherwomen, paddling and fishing from bark nowie (nawi) with their children and babies, and a small fire on a clay pad to cook the catch.

The sandstone country of the Manly region provided rock platforms and walls for art works and is still richly endowed with rock carvings depicting people, implements, birds, animals and fish, as well as grinding grooves for making and sharpening axes and other tools.



Image: Aboriginal people fishing, c1790s
Source: Mitchell Library, State Library of NSW



Image: Bora Rock : Aboriginal markings near Manly Water-works Gully, 1891 Source: Mitchell Library, State Library of NSW

1788

European Arrival at Kai'yamay (Manly Cove) 1788

In January 1788, disappointed and concerned by the lack of fresh water and exposure to the winds at Botany Bay, Governor Phillip took a longboat to explore Port Jackson.

When they approached Kai'yamay, they saw a group of 20 strong men wading out towards their boat. These men took the gifts offered and were curious about the boat, inspecting them closely. Phillip and the officers were impressed. Phillip later wrote that he named the place 'Manly' for their admirable manly qualities.

First Meeting with Aboriginal Women 1788

Kai'yamay was also the site of the first meeting with Aboriginal women. On January 29 1788, the British negotiated with an elder, and finally some of the younger women came forward.

They stood by the boats trembling and laughing as the white men reached over to drape them with strings of buttons and beads. The English officers described them as 'naked beauties', who were 'perhaps, inseparable from the female character in its rudest state'. So they renamed Manly Cove which became Eve's Cove for a time.

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1788
Cont.

Kidnapping of Arabanoo 1788

In December 1788 Governor Philip ordered the kidnapping of an Aboriginal man in the hope of forcing open a means of communication with the Eora. The kidnapping from the beach at Manly Cove was violent and distressing. The captive man remained silent, so they called him Manly, only later discovering his name was Arabanoo.

"[his friends attacked the boats as they pulled out, hurling] spears, stones, firebrands, and whatever else presented itself ... nor did they retreat ... until many muskets were fired over them."
Watkin Tench, Marine officer

"The terror this poor wretch suffered, can better be conceived than expressed; he believed he was to be immediately murdered."

Captain John Hunter

Arabanoo was a dignified and gentle man who refused to play the role of cross-cultural envoy. He was kept a prisoner in Sydney, and after the outbreak of the terrible smallpox epidemic among the Eora, he nursed his stricken countrymen in Sydney's hospital. He contracted the disease himself and died on 18 May 1789.

1789

Kidnapping of Colebee and Bennelong 1789

In November 1789 Governor Phillip once more sent the boats out to kidnap Aboriginal men. Again they rowed down the harbour to the beach at Manly Cove, violently abducting two men Colebee and Bennelong.

Colebee soon escaped from Sydney, but Bennelong remained, and proved receptive to learning all about the British, their language, resources and intentions. He and Phillip became friends and often walked out together, but after seven months, Bennelong escaped too.



Image Left: Colebee, a Gadigal man from the south shore of Sydney Harbour, c1792-97
Source: Natural History Museum, UK

Image Right: Woollarawarre Bennelong, a Wangal man from the south shore of Parramatta River, c1790s
Source: Natural History Museum, UK

Smallpox Epidemic 1789

In April 1789 a smallpox epidemic broke out in Sydney. Europeans, including the colonists who arrived in Sydney in 1788, had developed some resistance through earlier exposure to the disease. However the local Aboriginal people had not and it decimated the population.

"At that time a native was living with us; and on taking him down to the harbour to look for his former companions, those who witnessed his expression and agony can never forget either. He looked anxiously around him in the different coves we visited; not a vestige on the sand was to be found of human foot; ... not a living person was anywhere to be met with. It seemed as if, flying from the contagion, they had left the dead to bury the dead. He lifted up his hands and eyes in silent agony for some time; at last he exclaimed, 'All dead! All dead!' and then hung his head in mournful silence." David Collins, Judge-Advocate of the colony, April 1789

1790

Spearing of Governor Phillip 1790

In September 1790, a whale washed up on the beach at Manly Cove and a large number of Eora gathered for a great whale feast. Bennelong summoned Phillip to attend. It was a happy reunion there on the sand of the cove, with gift giving and conversation.

At some point Bennelong disappeared and a circle of warriors began to close in on Phillip. A stranger, a man named Willemering, seemed agitated and when Phillip began to approach him in his customary way, slowly, hands outspread, Willemering picked up a barbed wooden spear and hurled it at him with such force that it passed through his shoulder. The wound was non lethal.

Historians suggest that what Phillip experienced was a payback ritual. Perhaps Phillip sensed something of this: much to his officers' confusion and frustration, he refused to retaliate.



Detail from Image: Mr. Waterhouse endeavouring to break the spear after Govr Phillip was wounded by Wil-le-me-ring where the Whale was cast on shore in Manly Cove, c1790
Source: Natural History Museum, UK

1810

First Crown Land Grants 1810

The first Crown Grants of Land at Manly are issued to Richard Cheers (100 acres) and Gilbert Baker (300 acres)

1855

Ferry Wharf Built 1855

The first wharf was an open-decked pier built in 1855 so Manly's founder, Henry Gilbert Smith, could excursion ferries from the city to bring people to his new seaside resort at Manly.



Image: Approach to Manly Beach near Sydney, Samuel Thomas Gill, 1856 Source: National Library of Australia

1857

First Baths Built 1857

Henry Gilbert Smith has the first baths at Manly Cove Constructed.



Image: Federation Point, west end of West Esplanade, Gilbert Smiths Baths and Roslyn Hall visible in background, c1875
Source: Private Collection, shared on facebook.com

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1878

Council Builds New Ladies Baths 1878

New Ladies baths constructed by Manly Council, replacing Gilbert Smith Baths.



Image: Council's first baths, Ladies' Baths, replacing Gilbert Smiths Baths, the "Spey" building visible in the background, c1878
Source: Private Collection, shared on facebook.com



Image: Manly West Esplanade, Ladies' Baths and Roslyn Hall visible in background, c1880
Source: Manly Library Local Studies

1883-
1916

Ferry Wharf Improvements 1883-1916

Significant improvements were made to the wharf in 1883. The Wharf was then demolished in 1900 due to plague concerns and then rebuilt. Improvements continued to be made over the following years with the clocktower introduced in 1916.



Image: Paddle Steamer docks at Manly Wharf, c1890
Source: Manly Library Local Studies



Image: Postcard with a colourised photograph of Manly Wharf, Ladies' Baths can be seen in the foreground, c1908
Source: National Museum of Australia

1922

Concert Pavilion Built 1922

Manly Concert Pavilion opens and the Poster King performs.



Image: West Esplanade Concert Pavilion, 1924
Source: Pittwater Library Local Studies

1930

Manly Art Gallery Open 1930

Manly Concert Pavilion converted to Manly Art Gallery.



Image: The conversion of the Manly Concert Pavilion to the Manly Art Gallery before opening in 1930
Source: Manly Library Local Studies

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1931

Harbour Pool Built 1931

Manly Cove harbour swimming pool opens. The pool was built as an attraction by the Port Jackson Steam Company to increase patronage on their ferries between the City and Manly. Water amusements were added in 1932, including pontoons with slides, water wheels, spring boards and tethered logs designed to buck and roll at the slightest touch. Mounted on the boardwalk were several diving boards at different heights and a water slide more than 15m above water level. Floodlights were also installed- 50 floodlights on the promenade, 22 on the beach and four underwater.



Image: Looking west towards Federation Point, the Harbour Pool with boardwalk was completed in 1931, c1931-32

Source: Manly Library Local Studies



Image: Harbour Pool water amusements, c1960

Source: Manly Library Local Studies

1933

Pavilion Built 1933

The Port Jackson Steam Company added to the harbour pool attraction at Manly, dressing pavilion and refreshment rooms. Above the dressing rooms was a tea room serving everything from snacks to substantial meals, while an open air kiosk called the West End was situated on the beach. Within two years, a quarter of a million people were using the pavilion annually, even though a small charge was made for the use of lockers, showers, toilets and hair-dryers, but admission to the pool remained free.

The pool had its own lifesaving club, the Harbour Pool Life Saving Club, which appears to have been formed in 1935 and was quartered in the dressing pavilion.



Image: Manly Pavilion and Harbour Pool, c1933

Source: NSW State Archives and Records



Image: View of West Esplanade from the Air, c1933-38

Source: NSW State Archives and Records



Image: Flyer for Manly Pavilion and Harbour Pool, c1930s

Source: Manly Library Local Studies



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1939

Improvements to Manly Art Gallery 1939

An additional wing is added to the Manly Art Gallery.



Image: New wing Manly Art Gallery, c1939
Source: Manly Library Local Studies

1963

Aquarium Built 1963

Marineland, as the aquarium was called, opened in 1963, at which time it was the largest in the southern hemisphere and the third largest in the world.



Image: Marineland Aquarium with Manly Pavilion in the background, c1960s
Source: Manly Library Local Studies



Image: Roof pool of the Marineland Aquarium, c1960s
Source: Manly Library Local Studies

1974

Sydney Storm 1974

On May 24 1974 Sydney Storm destroyed the harbour pool boardwalk.



Image left and above: Destroyed Harbour Pool after Sydney Storm, 1974
Source: Daily Telegraph

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1981

Manly Art Gallery Improvements and Waterworks Built 1981

Manly Art Gallery is extended and becomes the Manly Art Gallery and Museum. The Waterworks at Manly attraction is opened and marketed as an alternative to keeping kids cool in the summer months when the beach is closed.



Image: Manly Art Gallery and Museum, 2018
Source: Northern Beaches Council



Image: The Waterworks at Manly, 1983
Source: Manly Library Local Studies

1988

Aquarium Renovated 1988

In 1988 the 1963 Marineland building was mostly demolished and the new Underwater World, later called Manly Sea Life Sanctuary, was built. When it opened it was home to the biggest underwater tunnel in the world at the time.



Image: Underwater World c1980s
Source: Marinescape

2018

Aquarium Closes 2018

On January 28 2018 Manly Sea Life Sanctuary closed its doors to the public. The animals were moved to other aquariums and the building has since remained vacant.



Image: Manly Sea Life Sanctuary staff assemble for moving aerial photo on last day in 2018
Source: Sydney Morning Herald

6.3 Heritage Activation Opportunities

Based on the Heritage Report and feedback from the community the following Heritage Activation opportunities have been identified for the West Esplanade area:

- West Esplanade's high exposure to visitors presents an opportunity to educate them on the indigenous heritage of Manly Cove. This could be via interpretive signage, landscaping treatments and/or artwork.
- The lookout on Commonwealth Parade could have interpretive signage installed with historical images showing change over time. This would need to be done in conjunction with pruning of vegetation blocking the view from the lookout to invoke the historic vista.
- Manly Art Gallery and Museum in its existing form has the opportunity to reflect its heritage via a sympathetic facade treatment that reflects the building's heritage.
- Interpretative signage containing historic images showing the change of the Manly Art Gallery and Museum over time could be placed near the entrance of the building.
- With the wealth of information and imagery available showing the changes of the West Esplanade area over time, along with listed heritage items, there is an opportunity to create a digital heritage experience of the area. This could include a self-guided tour and virtual reality experiences of the past.
- A discover West Esplanade's heritage wayfinding sign should be placed at the wharf end of West Esplanade. This sign could include historic imagery a brief timeline and how to access more information, such as a digital tour. Another one of these signs could be placed near the top of the stairs at Federation Point to capture people doing the Spit to Manly walk. Note: Before any new signage is installed a review and consolidation of signage around the Wharf will be undertaken.

These opportunities will be incorporated into the wholistic activation planning for the West Esplanade area.

7.0 West Esplanade Safety Strategy Recommendations

Safety is an important aspect to any public space and as such safety in West Esplanade has been examined as part of the development of this Heritage Activation Plan. Council has engaged with the University of Technology, Sydney, School of Built Environment, Masters of Project Management students to develop a Safety Strategy Report for West Esplanade (See Attachment 4). The following are a summary of recommendations from this report:

- Provide consistent levels of lighting with minimal glare throughout the site. In particular add additional lighting to the area at ground level near the Pavilion and Surf and Slide to improve nighttime safety and casual surveillance.
- Consider the inclusion of interactive public art installations that are integrated with the environment and can light up at night to illuminate and encourage usage of dimly-lit areas and walkways, and minimise the occurrence of graffiti and vandalism.
- Prune vegetation between 600mm - 2500mm from ground level to enhance night time visibility and casual surveillance.
- Upgrade park furniture and existing spaces with attractive, secure, well designed, and interactive design elements to encourage community participation and reactivation of isolated areas.
- Relocate Governor Philip Monument out of the flow of traffic on the shared footpath to a more suitable location within West Esplanade.
- Consider providing an emergency response beacon on the beach for swimmers.
- Fence off the area between the Manly Art Gallery and Museum and the amenities block to prevent unauthorised access.

These recommendations will be incorporated into the wholistic activation planning for the West Esplanade area.

8.0 Former Aquarium Site Recommendations

An attraction for families to West Esplanade was the Aquarium which closed in January 2018. The building has since remained vacant and is owned by the Roads and Maritime Services. Given that the building is a significant element of the existing site and is next to the Pavilion, a State listed heritage item, the future of this site has been explored as part of this Heritage Activation Plan.

From the community feedback received there is a desire for the Aquarium site to have a public use as opposed to a commercial or private use. Based on community feedback the following is recommended:

- It is recommended that the existing Aquarium building be demolished to the podium. Demolition will unblock the view of the State Heritage listed Pavilion building. It will also improve the safety of the area at night by allowing informal surveillance of the area which is currently dark and unwelcoming at night.
- It is recommended that the site become public open space. The urban design for the space should create a place for families and the community to congregate and share. Lighting design should make the area feel safe at night, this could incorporate interactive light artwork. The space should also acknowledge the previous use of the site as an aquarium and highlight the marine life found in Manly Cove.

The space should allow for the holding of events, such as community markets, local performances and film viewings. While allowing for this the space should not be empty at other times, an adaptable design for street furniture and planting should be investigated.

- Vehicles are currently able to drive into the area, including for deliveries. For safety it is recommended that with a change in use of this space, this access be examined with the possibility of limiting vehicle access to certain times.
- It is also recommended that a new jetty be built to replace the existing dilapidated jetty and be used as a public drop off point.

These recommendations will be incorporated into the wholistic activation planning for the West Esplanade area.

9.0 Boardwalk Reinstatement Concept

Fond memories of the 1931 boardwalk exist within the community today. The boardwalk connected Manly Wharf with the Pavilion and provided a large harbour pool space for water recreation activities. It was built by the Port Jackson company as an attraction for visitors to take the ferry to Manly and enjoy the free family friendly pool. The boardwalk was destroyed in a storm in 1974.

Given that the boardwalk forms a significant part of the recent history of West Esplanade it was determined that as part of this Heritage Activation Plan, the concept of reinstating the boardwalk should be examined.

9.1 Boardwalk Proof of Concept for Feasibility Report

To explore the boardwalk reinstatement concept, Council engaged Royal Haskoning DHV Pty Ltd to undertake a Proof of Concept for Feasibility Report. This report has identified the studies required to do a comprehensive feasibility assessment and developed a cost estimate for reinstatement of the boardwalk including whole of life cost estimate.

The following provides a summary of these, for more detail see Attachment 3 Boardwalk Feasibility Report.

9.1.1 Advice on Studies Required for Reinstatement Feasibility

13 studies were recommended in order to assess the feasibility of reinstatement of the boardwalk and harbour pool at Manly West Esplanade in a complete and robust approach. These studies are listed below. For more detail around each of these studies see Attachment 3 Boardwalk Feasibility Report

- Hydrographic and land survey;
- Geotechnical investigation;
- Condition assessment of existing structures;
- Coastal processes;
- Aquatic ecology;
- Landscape character and visual impact assessment;
- Heritage study;
- Ecological engineering opportunities;
- Navigation impact assessment;
- Safety in design;
- Concept design;
- Capital cost estimate and whole of life assessment; and
- Planning strategy/approvals pathway

9.1.2 Cost Estimate for Reinstatement

The cost estimate was developed based on a high level concept design that was similar in aesthetic and size to the 1931 boardwalk. Robust materials were chosen to minimise maintenance and protect the boardwalk from destruction, such as concrete piers and plastic/wood composite deck planks.

The order of cost estimate for construction has been calculated by Royal Haskoning DHV as \$12.4million. Taking into account escalation over time and design additions such as water amusements, Council estimates that the construction cost would increase to \$14million.

Based on a 50 year time period and discount rate of 7% the net present value of operating costs and maintenance costs are estimated to be \$15.8M and \$0.7M respectively.

For further details see Attachment 3 Boardwalk Feasibility Report.

9.1.3 Concluding Remarks from Royal Haskoning

It would be technically feasible to reinstate the boardwalk and harbour pool at Manly West Esplanade. A range of individual studies would need to be undertaken for purposes of a complete and robust feasibility study to reinstate the boardwalk and harbour pool.

Should the view be taken that reinstatement of the boardwalk and harbour pool is not preferred, there may be opportunity to activate additional waterway access and waterfront uses at the western end of the study area, in the area of the former Manly Aquarium and Manly Pavilion where maritime infrastructure has been in place for decades as part of the built environment.

9.2 Boardwalk Reinstatement Concept Environmental Factors

9.2.1 Council Employee Workshop

Given the significance and complexity of reinstating the boardwalk expert staff were consulted from across Council as part of internal engagement for this Heritage Activation Plan, this included expertise in engineering, tidal pool maintenance, environment, water safety, landscaping and planning. 17 staff attended a workshop at which risks and opportunities for the boardwalk were identified.

A significant topic of discussion was around the environmental factors that could impact the boardwalk reinstatement concept and the following findings were made:

1. There are a number of sensitive environmental elements in the West Esplanade area and the protection of these will need to be taken into consideration when planning any construction and maintenance works and when assessing the impact of new permanent elements over and in the water.
 - Endangered colony of little penguins (Note: There is a restriction on the time of year construction works can occur in the area in order to prevent negative impact on the little penguins)
 - Endangered seahorses which are able to be found on the existing tidal pool net
 - Endangered seagrass that is a key feeding ground for little penguins
 - Pockets of remnant bushland at Federation Point
 - Endangered long-nosed bandicoots
 - Threatened grey-headed flying foxes
 - Soft and hard corals
2. West Esplanade is in a highly exposed area. The design of the boardwalk structure will need to take into account sea level rise, storm surges and the impact of any debris. Choice of materials should also take into account the exposed salt water environment to minimise maintenance requirements over the life of the structure.
3. In the harbour pool, coastal processes, could potentially create shallow areas, this will need to be monitored in areas where people could jump into the water to ensure safety.
4. An increase in boats anchoring off the boardwalk may have a negative impact on endangered seagrasses and as such should be taken into account when assessing additional boat moorings being placed in the area.

9.2.2 Manly Cove Tidal Pool Review of Environmental Factors 2019 (Draft)

Council has engaged Cardno to prepare a Review of Environmental Factors for minor and/or major works at the Manly Cove Tidal Pool. An aquatic ecology assessment has been undertaken as part of the review. It highlights a number of environmental factors for consideration as part of the boardwalk concept.

The aquatic ecology assessment found that the netting and pilings around the pool provide a complex habitat and refuge for cryptic species such as seahorses, sea dragons, pipefish, pipehorses, ghostpipefish and seamoths (collectively known as 'Syngnathiformes') all of which are protected under the NSW Fisheries Management Act, 1994 (FM Act) and the Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act).

Seagrass and macroalgae are extensive throughout Manly Cove. All types of seagrass and marine vegetation (including macroalgae, mangroves and saltmarsh) are protected under the FM Act. Populations of the seagrass *Posidonia australis* that occur within Sydney Harbour are also listed as endangered under the FM Act and declared a nationally significant ecological community under the EPBC Act. An endangered population of little penguins (*Eudyptula minor*) also inhabits Manly Cove and has been known to occur around Manly Bathing Pavilion. Several other threatened and protected species including cetaceans, pinnipeds, fish and seabirds also occur in Sydney Harbour and could occur around the tidal pools on occasion.

9.2.3 Manly Cove Coastal Zone Management Plan 2011

The Coastal Zone Management Plan for Manly Cove provides a strategic plan with a visionary long-term time frame of 15-20 years to 2031. The plan sets out a number of goals to be met:

- Restore and maintain a healthy and diverse mix of aquatic and intertidal habitats that will maintain and improve biodiversity and ecological functions of Manly Cove.
- To achieve the highest level of environmental protection and safety for maritime operations within Manly Cove.
- Public facilities, infrastructure and signage are upgraded and maintained to facilitate improved social amenity.
- To ensure water quality meets the community's expectations and falls within acceptable standards suitable for fishing and swimming
- To conserve and enhance the integrity and diversity of native terrestrial flora and fauna, and their ecosystems
- Assess, monitor and mitigate risks from coastline hazards and climate change
- Promote and facilitate sustainable waste management in Manly Cove
- To provide an environment at Manly Cove that is accessible to all people
- Conserve the significant geodiversity elements of the area's coastline
- Ensure that all Aboriginal and European (cultural and natural) heritage areas in the study area are preserved and protected.

Any works proposed in the Cove will need to address this Coastal Zone Management Plan.

9.2.4 North Harbour Aquatic Reserve

Manly Cove, including the area at West Esplanade is being considered by the NSW State Government to be made into an Aquatic Reserve as part of an extension of the North Harbour Aquatic Reserve under the NSW Marine Estate Reforms. An item went to Council on 25 September 2018 and Council resolved:

A. Council notes the aim of the NSW Marine Estate Reforms is to protect the significant environmental value of sites within the Hawkesbury Shelf marine bioregion by reducing risks at a local scale from some site-based threats, helping to conserve marine biodiversity, whilst allowing for a wide range of recreational and commercial activities to still occur.

B. Council supports the proposed NSW Marine Estate Reforms for the five sites included in the proposed Marine Park for the Hawkesbury Shelf marine bioregion for the Northern Beaches, and will prepare a submission to the State Government in support of the reforms as recommended by the Marine Estate Management Authority.

The current objectives of the North Harbour Aquatic Reserve are to:

- conserve the biodiversity of fish and marine vegetation
- protect fish habitat
- facilitate educational activities
- facilitate scientific research.

Due to the potential for the area at West Esplanade to become part of the North Harbour Aquatic Reserve it is recommended that this is taken into consideration when assessing the impact of any new over water infrastructure, such as a boardwalk.

9.3 Boardwalk Reinstatement Concept Recommendations

There a number of economic and environmental factors that impact the feasibility of rebuilding the boardwalk. The next step in the process would be to undertake further detailed studies to determine the full feasibility of reinstating the boardwalk.

It is recommended that Council wait for determination from Roads and Maritime Services of what will happen with the vacant Aquarium site and adjacent jetty before moving forward with the boardwalk concept.

It is also recommended that the other improvement measures for West Esplanade suggested in the Heritage Activation Plan be implemented and their impact tested before moving forward with the boardwalk concept.

These recommendations will be incorporated into the wholistic activation planning for the West Esplanade area.

10.0 Manly West Esplanade Site Activation

This section provides a culmination of the previous sections of this Heritage Activation Plan. It provides the key guidance for Council on implementing the activation of West Esplanade.

The site has been split into four areas; Manly Art Gallery and Museum, the Pavilion and Aquarium, Promenade and Park, Beach and Cove. Recommendations have been made in regards to:

- Activating heritage
- Improving safety and accessibility
- Improving landscaping, furniture and fixtures
- Improving the user experience of the area
- The former aquarium site
- The boardwalk reinstatement concept
- Water activities
- Bicycle infrastructure

These recommendations are based on community feedback, Council officer recommendations, the Heritage Report, the Safety Strategy Report and the Boardwalk Feasibility Report. Recommendations and an implementation plan have been summarised in a table, see 10.5 Table of Recommendations and Implementation Plan.

Manly West Esplanade Heritage Activation Plan - Draft August 2019

10.1 Manly Art Gallery and Museum Area Site Activation

Manly Art Gallery and Museum in its existing form has the opportunity to reflect its heritage via a sympathetic facade treatment that reflects the building's heritage.

The lookout on Commonwealth Parade could have interpretive signage installed with historical images showing change over time. This would need to be done in conjunction with pruning of vegetation blocking the view from the lookout to invoke the historic vista.

To improve safety and prevent unauthorised access, the area between amenities block and gallery should be fenced off.

Investigate options to improve the user experience of the showers, change rooms and toilets in the amenities block.

Also investigate adding adult hoist and change table to existing disabled toilet. If there is insufficient space consider building new disabled toilet, possible location could be between amenities block and art gallery.

Note: any works would need to take into account heritage restrictions as the amenities block is a locally listed item.

Improve lighting next to Surf n Slide for nighttime safety and casual surveillance. Also consider updating urban design of this area.

Explore options for improving line of sight along shared path, this could be through pruning of existing vegetation or replacement with less dense native vegetation. Also explore changes to path to allow cyclists to not have to dismount providing a better user experience.

Explore options for placement of bicycle parking near Gallery



Interpretative signage containing historic images showing the change of the Manly Art Gallery and Museum over time could be placed near the entrance of the building.

Recommend creation of an integrated play area to provide activation and bring attention to the Gallery. It should include artistic and interactive elements that could light up at night to improve night time activation.

Manly West Esplanade Heritage Activation Plan - Draft August 2019

10.2 Pavilion and Aquarium Area Site Activation

Recommended that a family friendly café be opened in the current vacant space at the end of the Roads and Maritime Services owned Pavilion building next to the Manly Surf n Slide. This will help bring vital activation of the area around the Pavilion at ground level.

Pruning of vegetation along Commonwealth Parade to improve casual surveillance of the area. It is recommended that foliage be pruned back between 600mm - 2500mm from ground level.

Recommend providing additional lighting along the boardwalk in front of the pavilion, could be incorporated into the balustrade.



It is recommend that the existing Aquarium building be demolished to the podium. Demolition will unblock the view of the State Heritage listed Pavilion building. It will also improve the safety of the area at night by allowing informal surveillance of the area which is currently dark and unwelcoming at night.

It is recommended that the site become public open space. The urban design for the space should create a place for families and the community to congregate and share. Lighting design should make the area feel safe at night, this could incorporate interactive light artwork. The space should also acknowledge the previous use of the site as an aquarium and highlight the marine life found in Manly Cove.

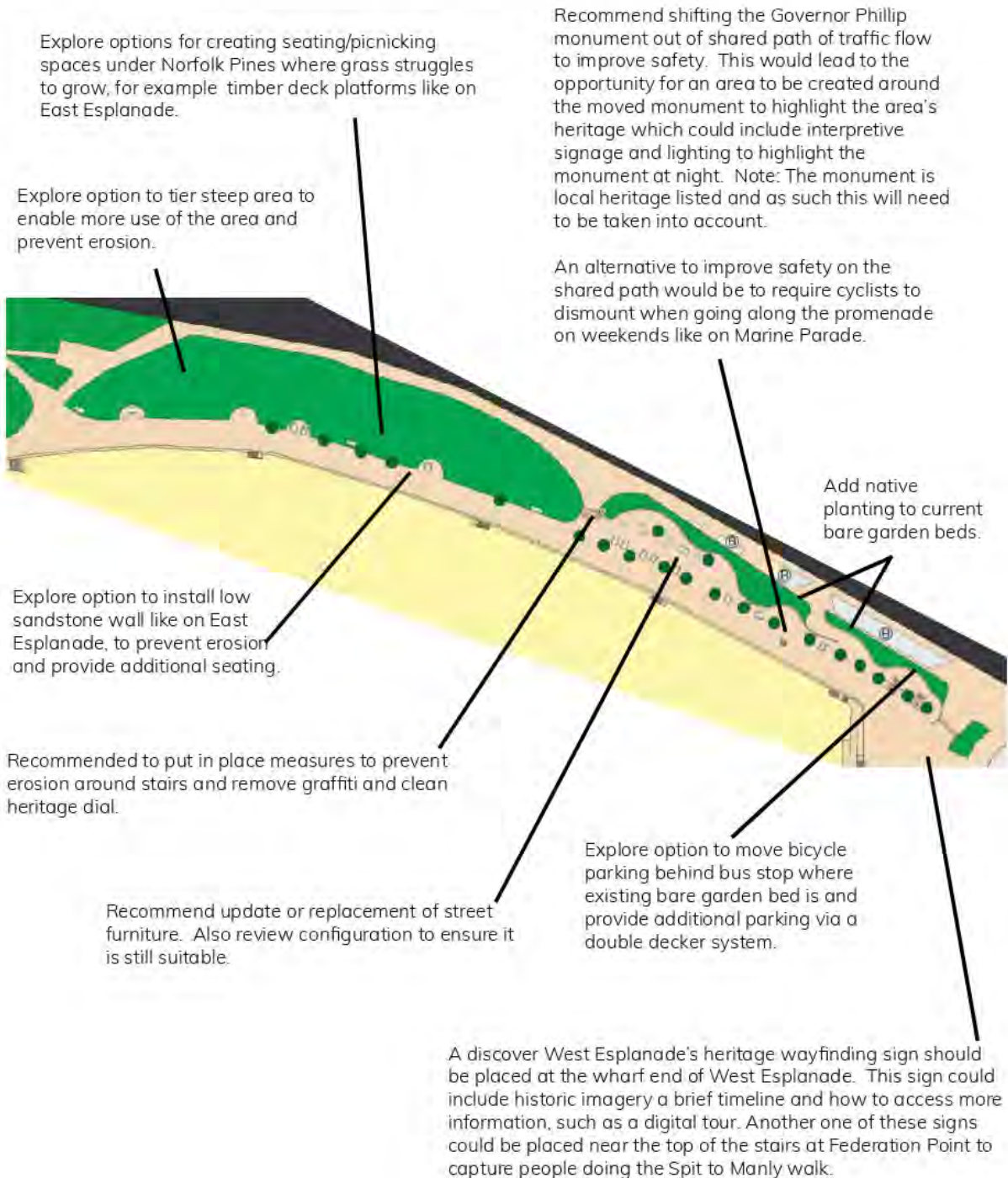
The space should allow for the holding of events, such as community markets, local performances and film viewings. While allowing for this the space should not be empty at other times, an adaptable design for street furniture and planting should be investigated.

Vehicles are currently able to drive into the area, including for deliveries. For safety it is recommended that with a change in use of this space, this access be examined with the possibility of limiting vehicle access to certain times.

It is also recommended that a new jetty be built to replace the existing dilapidated jetty and be used as a public drop off point.

10.3 Promenade and Park Area Activation Plan

West Esplanade's high exposure to visitors presents an opportunity to educate them on the indigenous heritage of Manly Cove. This could be via interpretive signage, landscaping treatments and/or artwork. Selection of appropriate placement of these elements should be done in conjunction with changes to urban design recommended.



Note: Before any new signage is installed a review and consolidation of signage around the Wharf will be undertaken.

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10.4 Beach and Cove Area Activation Plan

Recommend creation of an accessible ramp to the beach at the west end of the beach. This will provide easier access to the disabled toilet, near to the disabled parking and mean that disabled access is not closed in the evenings for penguins.

Consider providing an emergency response beacon on the beach

Recommended that additional measures be put in place to ensure boats do not enter the area between Manly Wharf and the tidal pool to prevent disturbance of the penguins. This could include things such as signage, a line of floating buoys. This would be done in consultation with relevant maritime authorities.



Recommend new jetty be built to replace the existing dilapidated jetty and be used as a public drop off point.

Keep existing tidal pool in current state and explore increasing frequency of cleaning of rubbish off net. Also look at safety, constructibility and environmental feasibility of adding some small platforms connected to the piles at the deep end of the netted area.

Wait for determination on Aquarium site and review impact of improvements made to the area prior to deciding if detailed feasibility work for the boardwalk reinstatement concept should commence.

The addition of pontoons outside the tidal pool could also be explored however safety and environmental considerations such as protection of endangered seagrass beds, would need to be taken into account.

Manly West Esplanade Heritage Activation Plan - Draft August 2019

10.5 Table of Recommendations and Implementation Plan

| Stage | Theme | Recommendations |
|---|-------------------------------------|---|
| Stage 1 FY19/20 Initial Works | Landscaping, furniture and fixtures | <ul style="list-style-type: none"> Update or replacement of street furniture Add native planting to current bare garden beds. Prune of vegetation along Commonwealth Parade |
| | Safety | <ul style="list-style-type: none"> Add additional lightning to the area at ground level near the Pavilion and Surf n Slide Prune vegetation to enhance night time visibility and casual surveillance Upgrade park furniture and existing spaces with attractive, secure, well designed, and interactive design elements Consider providing an emergency response beacon on the beach Fence off area between amenities block and Gallery |
| | Amenities | <ul style="list-style-type: none"> Investigate options to improve the user experience of the showers, change rooms and toilets in the amenities block. Investigate adding adult hoist and change table to existing disabled toilet. |
| | Water based activities | <ul style="list-style-type: none"> Work with appropriate authorities to put in place additional measures to ensure boats do not enter the area between Manly Wharf and the tidal pool to prevent disturbance of the penguins |
| | Aquarium site | Recommendations to Roads and Maritime Services <ul style="list-style-type: none"> Demolition of the existing building to podium and creation of public open space Build new public drop off jetty to replace existing dilapidated jetty |
| | Cafe | Recommendation to Pavilion Leasee and Sub-Leasee <ul style="list-style-type: none"> Opening of a family friendly café in the current vacant space at the end of the Pavilion building next to the Manly Surf n Slide |
| Stage 2 FY20/21 & FY21/22 Main Works | Heritage activation | <ul style="list-style-type: none"> Highlight indigenous heritage via interpretive signage, landscaping treatments and artwork Add discover West Esplanade's heritage wayfinding signage at Wharf and Federation Point Prune vegetation and add interpretive signage to lookout on Commonwealth Parade Add interpretive signage and investigate adding a sympathetic heritage facade treatment to Manly Art Gallery and Museum Create a digital heritage experience |
| | Safety | <ul style="list-style-type: none"> Add illuminated interactive public art installations that are integrated with the environment Move Governor Philip Monument out of the flow of traffic on the shared footpath |
| | Accessibility | <ul style="list-style-type: none"> Creation of an accessible ramp at the west end of the beach Implement conclusion of investigation into adding adult hoist and change table to existing disabled toilet. |
| | Amenities | <ul style="list-style-type: none"> Implement conclusion of investigation into options to improve the user experience of the showers, change rooms and toilets in the amenities block. Implement conclusion of investigation into adding adult hoist and change table to existing disabled toilet. |
| | Landscaping, furniture and fixtures | <ul style="list-style-type: none"> Creation of an integrated play area next to Gallery Create additional seating/picnicking spaces under Norfolk Pines and implement conclusion of exploring option to tier steep area Implement conclusion of exploring option to install low sandstone wall like on East Esplanade |

Manly West Esplanade Heritage Activation Plan - Draft August 2019

| Stage | Theme | Recommendations |
|-------------------------------------|---------------------------------|---|
| | Bicycle infrastructure | <ul style="list-style-type: none"> • Improve line of sight along shared path behind Gallery and explore changes to path to allow cyclists to not have to dismount • Shift the Governor Philip monument out of shared footpath • Provide additional bicycle parking behind bus stop near Wharf and near Gallery |
| | Water based activities | <ul style="list-style-type: none"> • Keep existing tidal pool in current state and explore increased net cleaning and addition of small platforms connected to existing piles • Explore adding pontoons outside the current tidal pool |
| Stage 3 FY 22/23 Future Works | Boardwalk reinstatement concept | <ul style="list-style-type: none"> • Wait for determination on Aquarium site and review impact of improvements made to the area in Stage 1 and 2 prior to deciding if detailed feasibility work for the boardwalk reinstatement concept should commence. |

11.0 References

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Community Engagement Report – August 2019

Manly West Esplanade Heritage Activation Plan

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2. Background
3. Engagement Objectives
4. Engagement Approach and Key Findings
5. Number of People Engaged
6. Evaluation and next Steps
7. Appendices

1. Executive Summary

Council has received a heritage grant from the NSW Office of Environment and Heritage to develop a Heritage Activation Plan for Manly West Esplanade which will:

- Highlight the history of the area pre and post European settlement
- Identify ways to help the community appreciate, interact with and enjoy the heritage of the area
- Explore the nostalgia of West Esplanade including the art gallery facade and boardwalk.

The main objective of the community engagement for this project was to raise awareness of the heritage of the West Esplanade area and gain an understanding of the community's view of the West Esplanade area.

To ensure we reached the relevant and directly affected members of the community, we applied a wide range of engagement techniques and methods to understand their thoughts and to hear their views on West Esplanade.

Throughout the engagement process 2773 people were informed, with 812 written submissions received, making a total of 3585 people engaged. Submissions were received through various methods including online survey, visitor survey, internal staff workshop and consultation, information sessions and an onsite drop in. A positive response was received around maintaining and highlighting West Esplanade's heritage along with a number of improvements suggested for the area including maintenance, landscaping, street furniture, amenities and water based activities.

Council is currently reviewing the community feedback and will prepare a report and Draft Heritage Activation Plan for Council's consideration at the August 2019 Council meeting for approval to go to Public Exhibition.

2. Background

West Esplanade is located within the western section of Manly Cove; stretching from Manly Wharf, west to the Manly Pavilion and includes land managed by Northern Beaches Council, Crown Lands (managed by Northern Beaches Council) and Roads and Maritime Services (The Manly Pavilion, Aquarium and Ferry Wharf).

3. Engagement Objectives

The key community objective for this project was to gain an understanding of the community's view on the Manly West Esplanade Area in order to inform a Heritage Activation Plan for West Esplanade. The engagement also raised awareness within the community of the history of the West Esplanade area and gauged existing awareness.

4. Summary of the number of People Engaged

| Informed | No. |
|--|-------------|
| Your Say Page Unique Visits | 736 |
| Letters sent to local residents and businesses | 2025 |
| Community groups notified | 12 |
| Total | 2773 |

| Submissions Received | No. |
|---|------------|
| Online Survey | 397 |
| Visitor face to face survey | 190 |
| Onsite Information session - Residents and Businesses | 35 |
| Onsite Information session - Community Groups | 3 |
| Onsite drop in | 150 |
| Written submissions via Your Say and Email | 8 |
| Internal workshop | 29 |
| Total | 812 |

| | |
|----------------------|-------------|
| Total Engaged | 3585 |
|----------------------|-------------|

5. Engagement Approach and Key Findings

A number of engagement activities were undertaken to reach a broad range of our community. Engagement methods included online project interface (Your Say), online survey, intercept survey, print promotion, direct mail, email communication to key stakeholders, local resident groups and businesses, information sessions for key stakeholders and an onsite drop in activation.

→ Project opened for public comment Saturday 16 March – Sunday 14 April, 2019 (29 days).

- An online project interface (Your Say) was set up for the project. 736 people visited the page during the public comment period 16 March – 14 April, 2019.
- An online survey was open Saturday 16 March – Sunday 14 April, 2019. Council received 397 survey responses. 62% of respondents visit West Esplanade at least once a week with the most popular activities being walking (93%), visiting the Manly Art Gallery and Museum (49%), sitting/picnicking (43%) and swimming (41%). 63% of respondents are aware of the Indigenous significance of Manly Cove and 73% are aware of the European history of the Cove.
- A face-to-face visitor survey was conducted over 4-21 January, 2019 at Manly Wharf and on Manly West Esplanade. 190 visitors were surveyed. 70% were interested in finding out more about the local marine life and 59% were interested in finding out more about the Aboriginal heritage of the area. In regards to what would add value to the area 40% said shade, 28% said seating, 22% said an outdoor theatre and 10% said an amphitheater. 32% were aware of the Visitor Centre and 26% were aware of the Manly Art Gallery and Museum.
- A formal notification letter was sent to residents and businesses in Manly within two blocks of the site (see Appendix III for map of notified properties). The notification advised the project was open for comment, invited them to attend an information session for local Residents and Business, the drop-in date and provided information on how to Have Your Say.
- Key Community Group stakeholders were formally notified by email. The notification advised the project was open for comment, invited them to attend an information session for Community Groups, the drop-in date and provided information on how to Have Your Say.
- Key State Government stakeholders were formally notified by email. The notification advised the project was open for comment, provided Council officer contact details to receive further information on the project and provided information on how to make a submission.
- Advertising and promotion of the project was done via public notices published in the Manly Daily on Saturdays: 16 March and 30 March 2018. (See Appendix II)
- Two onsite invite only information sessions were held:
 - Local Residents and Businesses - Wednesday 27 March 2019, 6-7.30pm (35 people attended)
 - Community Groups - Tuesday 2 April 2019, 6-7.30pm (3 people attended)
- An onsite drop in was held on Saturday 6 April 2019, 12-3pm. A total of 150 people attended

- Written submissions submitted to Council via emails or the comments section on the Your Say page totaled 8.
- 29 staff were consulted from across Council as part of internal engagement for the project this included expertise in engineering, tidal pool maintenance, coastal, environment, water safety, Indigenous heritage, local studies, landscaping and planning. 17 staff attended a Risk and Opportunity workshop on 21 November 2018.

This workshop identified the strengths, weaknesses, opportunities and threats for West Esplanade. It also examined the risks and opportunities for the area with and without construction of a boardwalk.

A total of 812 submissions were received throughout the engagement process. Through this engagement a number of key themes were identified:

- Heritage – Better highlight and maintain heritage items and celebrate the history of the area.
- Landscaping and street furniture – Improve landscaping maintenance, replace/upgrade street furniture and explore options to make areas more useable.
- Existing tidal pool and water based activities – Improve cleaning of tidal pool, investigate option for adding water based amusements
- Beach accessibility – Review access to the beach
- Public toilets, change rooms and showers – Improve use experience of public toilets, change rooms and showers and provide more accessible toilets.
- Former aquarium building – Site should be for public use and if demolished should become open space.
- Café at west end of West Esplanade – Would like to see a family friendly café reopened to help activate the area.
- Signage – Provide better wayfinding signage
- Manly Art Gallery and Museum – Promote more and make it more obvious that it is an Art Gallery.
- Shared pedestrian and bicycle path – Improve user experience and safety on the path.
- Bicycle storage near wharf – Provide more bicycle storage.
- Paddleboard and kayak launching and storage – Would like to have easier access from the road to the water.
- Boat mooring and access - Provide a private vessel drop off point and work with appropriate authorities to prevent impact of boats on marine life.
- Boardwalk reinstatement – Fond memories of the former boardwalk exist and it is associated with the community wanting safe, fun, free, family friendly activities available.

Appendix I provides a more detailed summary of the submissions received by theme and Council's response in the Draft Heritage Activation Plan.

6. Evaluation and next steps

Council will review the comments received during the community engagement period and prepare a report and Draft Heritage Activation Plan for consideration by Council to go on 28 days formal public exhibition at the August 2019 meeting.

The Council report and Draft Heritage Activation Plan will be available via the Have Your Say project page for the Manly West Esplanade Heritage Activation Plan on the Thursday prior to the Council meeting.

The Council recommendation in regards to formal public exhibition of the Draft Heritage Activation Plan will be published as part of the Council minutes and also available via the Have Your Say project page.

7. Appendices

Appendix I

Summary of Community Comments

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|----------|---|---|
| Heritage | <p>Sample of comments received</p> <ul style="list-style-type: none"> • Tell the indigenous stories • More recognition of indigenous heritage • More history information • Small nostalgia walk through ages <p>Insights</p> <ul style="list-style-type: none"> • Community would like to see Indigenous heritage highlighted. • Community would like to see heritage buildings/structures well maintained and general history of the area highlighted. | <p>The Plan recommends a number of options to activate the heritage of the area:</p> <ul style="list-style-type: none"> • West Esplanade's high exposure to visitors presents an opportunity to educate them on the indigenous heritage of Manly Cove. This could be via interpretive signage, landscaping treatments and/or artwork. • The lookout on Commonwealth Parade could have interpretive signage installed with historical images showing change over time. This would need to be done in conjunction with pruning of vegetation blocking the view from the lookout to invoke the historic vista. • Manly Art Gallery and Museum in its existing form has the opportunity to reflect its heritage via a sympathetic façade treatment that reflects the building's heritage. • Interpretative signage containing historic images showing the change of the Manly Art Gallery and Museum over time could be placed near the entrance of the building. • With the wealth of information and imagery available |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|--|--|---|
| | | <p>showing the changes of the West Esplanade area over time, along with listed heritage items, there is an opportunity to create a digital heritage experience of the area. This could include a self-guided tour and virtual reality experiences of the past.</p> <ul style="list-style-type: none"> • A discover West Esplanade's heritage wayfinding sign should be placed at the wharf end of West Esplanade. This sign could include historic imagery a brief timeline and how to access more information, such as a digital tour. Another one of these signs could be placed near the top of the stairs at Federation Point to capture people doing the Spit to Manly walk. Note: Before any new signage is installed a review and consolidation of signage around the Wharf will be undertaken. |
| Landscaping and Street Furniture Improvements | <p>Sample of comments received</p> <ul style="list-style-type: none"> • The grass is not in good condition and needs improvement. Flower boxes would make the area much more colourful and appealing. • Possibly more seating and some flowering shrubs such as callistemons and grevilleas • Picnic Tables and seating upgrade • Tidying up the green space and improving seating • Some covered tables | <ul style="list-style-type: none"> • Recommend update or replacement of street furniture. Also review configuration to ensure it is still suitable. • Recommend creation of an integrated play area to provide activation and bring attention to the Gallery. It should include artistic and interactive elements that could light up at night to improve night time activation. • Explore options for creating seating/picnicking spaces under Norfolk Pines where grass struggles to grow, for example timber deck platforms like on East |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|--------------------------------|---|---|
| | <ul style="list-style-type: none"> Edging like East Esplanade. Grass under trees is patchy and uncomfortable to sit on. Deck areas and improved seating such as recently installed at East Esplanade would be great. Landscaping rethink on the garden beds behind the Bus Stops, they're a disgrace The furniture is out-dated, rusty, uncomfortable, layer-upon-layer of blue paint. Would love to see something really cool here Better landscaping to stop soil runoff after rain Kids play area (including covered from rain) <p>Insights</p> <ul style="list-style-type: none"> The community finds the landscaping and street furniture improvements on East Esplanade appealing and would like to see something similar done in West Esplanade, in particular the sandstone edging wall. The street furniture is worn out and needs renewal or replacement Garden beds near bus stops are bare and landscaping across West Esplanade needs to be better maintained. Improvements to landscaping could be made to reduce runoff of soil and foliage onto beach. A play area could be incorporated into landscaping improvements. | <p>Esplanade.</p> <ul style="list-style-type: none"> Explore option to tier steep area to enable more use of the area and prevent erosion. Explore option to install low sandstone wall like on East Esplanade, to prevent erosion and provide additional seating. Add native planting to current bare garden beds. Pruning of vegetation along Commonwealth Parade to improve casual surveillance of the area. It is recommended that foliage be pruned back between 600mm - 2500mm from ground level. |
| Existing Tidal Pool and | Sample of comments received | <ul style="list-style-type: none"> Keep existing tidal pool in current state and explore |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|-------------------------------|---|---|
| Water Based Activities | <ul style="list-style-type: none"> I love the harbour pool as it is. Keep as is. Beautiful tidal pool, quiet beach, safe swimming for small kids Swimming enclosure is quite unattractive Better control and cleanup of rubbish in swimming enclosure Make swimming area more interesting Fun water activities for children and teenagers Pontoons and slides for kids on water Maybe put an area around the aquarium site towards the Pavilion with floaties etc for teenagers to enjoy <p>Insights</p> <ul style="list-style-type: none"> There is a love of the existing tidal pool in the community. Suggestions have been made to make the pool more aesthetically pleasing, increase the size of the pool area and ensure better management of rubbish. Desire within the community for safe, fun, free, family friendly activities on the water such as slides and pontoons. Would like to have things that appeal to teenagers for them to have safe fun on the water. | <p>increasing frequency of cleaning of rubbish off net. Also look at safety, constructability and environmental feasibility of adding some small platforms connected to the piles at the deep end of the netted area.</p> <ul style="list-style-type: none"> The addition of pontoons outside the tidal pool could also be explored however safety and environmental considerations such as protection of endangered seagrass beds, would need to be taken into account. |
| Beach accessibility | Sample of comments received | <ul style="list-style-type: none"> Creation of an accessible ramp to the beach at the west end of the beach is recommended. This will |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|---|--|--|
| | <ul style="list-style-type: none"> Rethink beach disability ramp access. Perhaps move Wharf end ramp access to protect habitat. <p>Insights</p> <ul style="list-style-type: none"> Review accessibility of beach and improve as needed. Look at having another accessible access way onto the beach that is not in the area closed in the evenings for protection of the Penguins | <p>provide easier access to the disabled toilet, near to the disabled parking and mean that disabled access is not closed in the evenings for penguins.</p> |
| Public toilets, change rooms and showers | <p>Sample of comments received</p> <ul style="list-style-type: none"> Disability toilet with change table and hoist Toilets at the south end are horrendous. The facilities at the other end are a little better but also need improving. The excellent new facilities on the walk to Shelly beach are an example of what level of toilet facilities are required Change rooms and toilets need to be improved to suit the crowds in summer <p>Insights</p> <ul style="list-style-type: none"> Improve public toilets, change rooms and showers at West end. Need toilets/change rooms at East end of West Esplanade. Wharf amenities not suitable. Need more accessible toilets in area including adult change table and hoist. | <ul style="list-style-type: none"> Investigate options to improve the user experience of the showers, change rooms and toilets in the amenities block. <p>Also investigate adding adult hoist and change table to existing disabled toilet. If there is insufficient space consider building new disabled toilet, possible location could be between amenities block and art gallery.</p> <p>Note: any works would need to take into account heritage restrictions as the amenities block is a locally listed item.</p> |
| Former Aquarium | <p>Sample of comments received</p> | <ul style="list-style-type: none"> It is recommend that the existing Aquarium building be demolished to the podium. Demolition will |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|---------------------------------|--|---|
| Building | <ul style="list-style-type: none"> Demolish the Aquarium and install a large grass area for public use. Have the promenade walk continue around the waterfront where the aquarium was. Demolish aquarium and create more public space Children and family facilities, also accommodated local, weekend and seasonal visitors - a flexible space so people can enjoy the area at any time An area for all to enjoy, families, tourists, residents Marine and Eco Education Centre with outdoor cinema screen for ocean and community films Keep aquarium for public use Use aquarium as museum heritage space <p>Insights</p> <ul style="list-style-type: none"> The community would like to see the space used for the public whether the building stays or is demolished. Demolition will allow the heritage Pavilion building to be visible like it was historically. The open space created by demolition should be multiuse for the community and family friendly. Highlighting the heritage of the area and the natural environment were suggested for a use of the area whether the building stayed or went. | <p>unblock the view of the State Heritage listed Pavilion building. It will also improve the safety of the area at night by allowing informal surveillance of the area which is currently dark and unwelcoming at night.</p> <ul style="list-style-type: none"> It is recommended that the site become public open space. The urban design for the space should create a place for families and the community to congregate and share. Lighting design should make the area feel safe at night, this could incorporate interactive light artwork. The space should also acknowledge the previous use of the site as an aquarium and highlight the marine life found in Manly Cove. <p>The space should allow for the holding of events, such as community markets, local performances and film viewings. While allowing for this the space should not be empty at other times, an adaptable design for street furniture and planting should be investigated.</p> |
| Café at west end of West | Sample of comments received | <ul style="list-style-type: none"> Recommended that a family friendly café be opened |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|-------------------------------------|--|---|
| Esplanade | <ul style="list-style-type: none"> Re-instate cafe adjacent to surf & slide A café near where Aquarium was -> Good coffee and nice food, family friendly <p>Insights</p> <ul style="list-style-type: none"> Re-opening of the café near the Manly Surf and Slide suggested. Community would like to see a family friendly café opened. | <p>in the current vacant space at the end of the Pavilion building next to the Manly Surf and Slide. This will help bring vital activation of the area around the Pavilion at ground level.</p> |
| Signage | <p>Sample of comments received</p> <ul style="list-style-type: none"> Improved signage Better signage to show people the walkway to the iconic Manly to Spit walk Better signage from the wharf Signposting and wayfinding is random and inconsistent <p>Insights</p> <ul style="list-style-type: none"> Provide improved wayfinding signage and note for example the Manly Art Gallery and Museum, Spit to Manly Walk. | <ul style="list-style-type: none"> New wayfinding signage recommended to be put near Manly Wharf and near the top of the steps at Federation Point. Note: Before any new signage is installed a review and consolidation of signage around the Wharf will be undertaken. |
| Manly Art Gallery and Museum | <p>Sample of comments received</p> <ul style="list-style-type: none"> The art gallery sadly looks like a toilet block Make the Art Gallery more prominent Improved access to, and visibility of, the art gallery. It is somewhat hidden. | <ul style="list-style-type: none"> Manly Art Gallery and Museum in its existing form has the opportunity to reflect its heritage via a sympathetic façade treatment that reflects the building's heritage. Recommend creation of an integrated play area to |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|---|---|--|
| | <ul style="list-style-type: none"> Promote Art Gallery more <p>Insights</p> <ul style="list-style-type: none"> Would like to see the façade of the Art Gallery and Museum improved and to make it more obvious that it is an Art Gallery in the landscape. Would like to see more promotion of the Art Gallery and Museum. | <p>provide activation and bring attention to the Gallery. It should include artistic and interactive elements that could light up at night to improve night time activation.</p> |
| Shared pedestrian and bicycle path | <p>Sample of comments received</p> <ul style="list-style-type: none"> Bike riding along West Esplanade is often a very terrifying experience with bikes travelling very quickly trying to squeeze between those enjoying walking along West Esplanade. Need to allow cycling connection behind art gallery. Separate bike lane linking bike path behind art gallery to rest of Manly would mean no dismount area + safer access Make separate bicycle way, near the road or towards the road, not shared with pedestrians <p>Insights</p> <ul style="list-style-type: none"> Concerns were raised about how busy the path gets and the risk bicycles pose to people. Would ideally like to see separation of pedestrian path and cycleway. Need improved bicycle path access around the Manly Art Gallery and Museum | <ul style="list-style-type: none"> Explore options for improving line of sight along shared path behind Gallery, this could be through pruning of existing vegetation or replacement with less dense native vegetation. Also explore changes to path to allow cyclists to not have to dismount Recommend shifting the Governor Phillip monument out of shared path of traffic flow to improve safety. This would lead to the opportunity for an area to be created around the moved monument to highlight the area's heritage which could include interpretive signage and lighting to highlight the monument at night. Note: The monument is local heritage listed and as such this will need to be taken into account. An alternative to improve safety on the shared path would be to require cyclists to dismount when going along the promenade on weekends like on Marine Parade. |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|--|--|---|
| Bicycle storage near Wharf | <p>Sample of comments received</p> <ul style="list-style-type: none"> Reorganise the bike racks to facilitate more commuter bike storage. More better bike racks at Wharf area Remove bikes not in designated bike areas <p>Insights</p> <ul style="list-style-type: none"> Not enough bicycle storage available Impact on amenity of area by bicycles being left everywhere near the Manly Wharf | <ul style="list-style-type: none"> Explore option to move bicycle parking behind bus stop where existing bare garden bed is and provide additional parking via a double decker system. Explore options for placement of bicycle parking near Gallery Work with Council Rangers to more efficiently remove bicycles not parked in designated bike parking areas |
| Paddleboard and kayak launching and storage | <p>Sample of comments received</p> <ul style="list-style-type: none"> Beach access for kayakers and water activities from the street Maintain kayaking facilities <p>Insights</p> <ul style="list-style-type: none"> Would like easier access from the road to place for launching kayaks and paddle boards. | <ul style="list-style-type: none"> The storage and access of kayaks and paddleboards in the area will be considered as part of any urban design changes that are made to the area, in particular at the western end and in the water. |
| Boat mooring and access | <p>Sample of comments received</p> <ul style="list-style-type: none"> Stop boat mooring and wreaking seagrass Boat drop off/pick up by Pavilion | <ul style="list-style-type: none"> Recommended that a new jetty be built to replace the existing jetty and be used as a public drop off point. Recommended that additional measures be put in |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|--------------------------------|---|--|
| | <ul style="list-style-type: none"> I would love a public floating wharf somewhere around Manly Wharf so that boaties like me could easily pick up passengers from Manly. As long as we have penguins nesting we should ban the dinghies to land and be able to protect the area in a more efficient way <p>Insights</p> <ul style="list-style-type: none"> Concern about the number of boats mooring in seagrass area and having a negative impact. Would like to have a spot for private boats to drop people off as this is no longer available at Manly Wharf due to changes in ferry operations. Concern about motorised boats entering the area between the tidal pool and the wharf, thus potentially disturbing the penguins | <p>place to ensure boats do not enter the area between Manly Wharf and the tidal pool to prevent disturbance of the penguins. This could include things such as signage, a line of floating buoys. This would be done in consultation with relevant maritime authorities.</p> <ul style="list-style-type: none"> In regards to boats mooring and having an impact on endangered seagrass beds, Council will also work on this issue with the relevant maritime authorities. |
| Boardwalk reinstatement | <p>Sample of comments received</p> <ul style="list-style-type: none"> The idea of reinstating the board walk does not appeal. It is nostalgia at its worst. With climate change the storms are getting bigger and wilder, so it would have to be a sturdy construction which would undo the natural unobstructed beauty we have now from the shore and when catching the ferry into Manly. I am not at all interested in the idea of rebuilding the Boardwalk. West Esplanade should not become heavily touristed like the rest of Manly I'm aware there may be plans being prepared to resurrect the former suspended walkway across from the ferry wharf across to the sea life sanctuary - I am opposed to any such proposal given the impact it would have on the | <p>There a number of economic and environmental factors that impact the feasibility of rebuilding the boardwalk. The next step in the process would be to undertake further detailed studies to determine the full feasibility of reinstating the boardwalk.</p> <ul style="list-style-type: none"> It is recommended that Council wait for determination from Roads and Maritime Services of what will happen with the vacant Aquarium site and adjacent jetty before moving forward with the boardwalk concept. |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|-------|--|--|
| | <p>existing sealife in the area. The spot is beautiful enough as it is, leave it alone</p> <ul style="list-style-type: none"> Dislike boardwalk - expensive, attracts problems, spoils scenic outlook etc. Keep it as it is, it's nice and casual, no boardwalk We'd love to see the water facilities return to something like they were decades ago - good clean outdoor fun for young people eg a floating platform and slides/jumps. I would love to see the West Esplanade returned to how it was in the 50's with the water park like features. However I would also like the penguin habitats protected first and foremost. Would love to see a structure like the original harbour pool with promenade, slides, diving boards, etc. that I enjoyed in my youth. I would love to see the boardwalk and pool reinstated. For my brother and I to have fun. Max 9 years old. I never saw the boardwalk that was there, it was destroyed before I moved to the area. But I love seeing the old photos of it, and think something like that could be a great addition to the area. Love the boardwalk an iconic destination for 30+ years <p>Insights</p> <ul style="list-style-type: none"> Fond memories exist within the community of the former Boardwalk. The boardwalk reinstatement is seen as an opportunity to help activate the west end of West Esplanade. | <ul style="list-style-type: none"> It is also recommended that the other improvement measures for West Esplanade suggested in the Heritage Activation Plan be implemented and their impact tested before moving forward with the boardwalk concept. |

| Theme | Community Comments and Insights | Council Response in Draft Heritage Activation Plan |
|-------|---|--|
| | <ul style="list-style-type: none"> • The boardwalk is associated with a desire within the community for safe, fun, free, family friendly activities being available. • There are a number of concerns around the potential impact a boardwalk would have: <ul style="list-style-type: none"> ○ Impact on visual amenity from West Esplanade by blocking view to Cove. ○ Increased number of people visiting the West Esplanade area impacting on amenity and the natural environment. ○ Impact of construction and continued presence of a large permanent water based structure on the marine environment. ○ Introduction of the boardwalk may encourage negative public behaviours such as drunkenness, unsafe jumping and littering. ○ Concerns were raised about the cost of reinstating the boardwalk. | |

Appendix II

Advertising and Promotion

Manly Daily News: 16 March 2019

Have Your Say

The following projects are open for comment:

Coast Walk - Public Art Strategic Plan and Scoping Study (draft)

Comments close: Sun 31 Mar

Voluntary Planning Agreement at 9, 11, 12 & 13 Fern Creek Rd, Warriewood (draft)

Comments close: Sun 31 Mar

Manly West Esplanade Heritage Activation Plan (draft)

Drop in session: Sat 6 Apr, 12 - 3pm,
West Esplanade, Manly

Comments Close: Sun 14 Apr

Community Grants and Partnerships Policy (draft)

Submissions close: Sun 5 May

Dee Why Town Centre Development Contributions Plan (draft)

Submissions close: Sun 12 May

Northern Beaches Council Development Contributions Plan 2019 (draft)

Submissions close: Sun 12 May

Manly Daily News: 30 March 2019

Have Your Say

The following projects are open for comment:

Proposed Licence - Brookvale Oval

Submissions close: Mon 18 Mar

Planning Proposal - 1294-1300 Pittwater Rd and 2-4 Albert St, Narrabeen

Comments close: Sun 24 Mar

Ingleside, Elanora and Warriewood Overland Flow Flood Study (Draft)

Submissions close: Mon 1 Apr

Newport Flood Study (Draft)

Comments close: Sun 9 Apr

Manly West Esplanade Heritage Activation Plan (Draft)

Online survey closes: Sun 14 Apr

Sign outside Manly Wharf for Onsite Drop-In 3 April – 8 April 2019



Flyer

Manly West Esplanade Heritage Activation Plan

Together we want to explore the heritage of West Esplanade
and how we can revitalise the area for the community.

Did you know that Manly's West Esplanade has a rich history spanning
thousands of years?

Northern Beaches Council has received a Heritage Near Me Activation Grant
from the NSW Government Office of Environment and Heritage to develop
a Heritage Activation Plan for Manly West Esplanade.

The Heritage Activation Plan aims to:

- Highlight the history of the area pre and post European settlement
- Define opportunities and initiatives for the community to appreciate
the heritage of the area
- Create opportunities for the community to interact and enjoy heritage items
- Investigate the nostalgia of the lost heritage of West Esplanade including
the art gallery facade and boardwalk



The Site

Stretching from Manly Wharf around to the Manly Pavilion, the area includes
a number of land owners including Northern Beaches Council, Crown land
(managed by Northern Beaches Council) and Roads and Maritime Services
(The Manly Pavilion, Aquarium and Ferry Wharf).

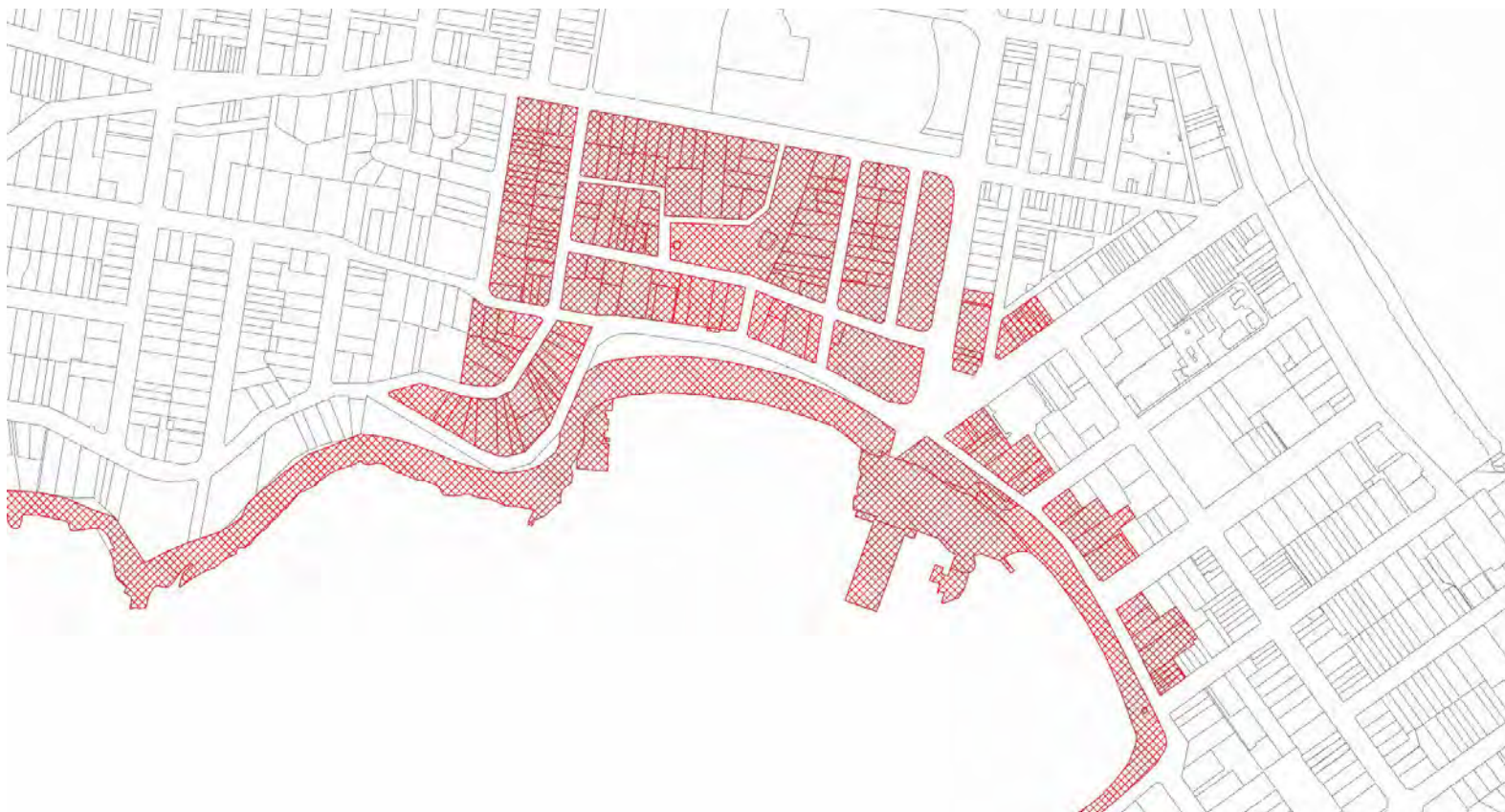


How to Get Involved

- Visit Manly West Esplanade Your Say page on
northernbeaches.nsw.gov.au to register for updates
- Answer the online survey available on Your Say
- Come along to a drop in event at West Esplanade
Saturday 6 April 12 - 3pm



Appendix III Notification Area Map





NORTHPOINT HERITAGE

HERITAGE REPORT
(Preliminary Analysis & Advice)

For The West Esplanade Heritage Activation Plan

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NORTHPOINT HERITAGE

ISSUE DATE: 11 MARCH 2019/ 15 MAY 2019

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FOR: NORTHERN BEACHES COUNCIL

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NORTHPOINT HERITAGE

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APPENDIX 1: SUMMARY HISTORY TIMELINE

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APPENDIX 3: STATE HERITAGE INVENTORY ASSESSMENT FORMS

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EXECUTIVE SUMMARY

This document has been prepared to provide initial guidance and advice to guide the development of the West Esplanade Heritage Activation Plan. The subject of this document is the area immediately west of Manly Wharf, bounded by West Esplanade/Commonwealth Parade to its north, and terminating at Federation Point.

The traditional owners of the study area are generally considered to be the Gayamaygal or Gamaragal people. Manly was given its name by Captain Arthur Phillip in 1788 when he travelled north of Botany Bay. He named the area to the north of the harbor Manly Cove after spotting a group of Aboriginal people in the area, about who he stated, "their confidence and manly behaviour made me give the name of Manly Cove to this place".

People gradually began settling in the Manly area around 1820, but it was not until the late 1850s that the area began to gain momentum, albeit slowly at first. Henry Gilbert Smith, widely considered to be the founder and developer of modern Manly, had the vision of Manly as a seaside resort. In 1853 he acquired two large parcels of land and built a wharf two years later and there were soon regular steamer services to Manly. Ferries eventually took over from steamers and ownership was taken over by the Port Jackson & Manly Steamship Company which coined the expression about Manly being 'Seven miles from Sydney and a thousand miles from care', to promote its ferry service. The Port Jackson & Manly Steamship Company built several attractions including a large ocean pool and bathing pavilion, and the Manly Fun Pier which would define the study area. As time went by, the Art Gallery and Aquarium were built and became popular drawcards, complementing the 300m swimming pool. Even after the pool was destroyed by a storm in 1974, the area remained popular and the Manly Waterworks proved to be a popular with locals and visitors from the early 1980s.

Today West Esplanade forms the first impression of Manly. With the recent closure of Manly Sea Life Sanctuary (in the Aquarium building), and calls to reinstate the Manly Harbour Pool (otherwise known as the Boardwalk), an excellent opportunity has eventuated for Northern Beaches Council to consider the activation of this precinct. There are several significant environmental and heritage aspects to the area including the Manly Pavilion, The Manly Art Gallery & Museum, Manly Cove Amenities Block, Governor Phillip Monument, The Park, Indigenous heritage, the site of early settlement and early interaction between the First Fleet and indigenous people, and the Manly Boardwalk (destroyed in a storm in 1974). The area also features a diverse biophysical environment including seagrass, sea horses, little penguins

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and long-nosed bandicoots, threatened grey-headed flying foxes, pockets of remnant bushland, and soft and hard corals.

This document forms the first part of that activation, to assist Council (as proponent) in undertaking what will be known as the *West Esplanade Heritage Activation Plan*, including recommendations to RMS for the future use and revitalisation of these sites. It is a high-level document to provide preliminary guidance on issues, opportunities, and constraints on the site.

Following a review of the area, its history, and an analysis of the use of the site, the following recommendations are made for Council's consideration in developing the West Esplanade Heritage Activation Plan:

| Site | Heritage Item | Recommendations |
|---------------------|------------------------------|---|
| West Esplanade Park | Yes | Activation of area as a precinct is required. Areas of soft landscaping should be retained and increased where possible. Furniture can be upgraded. Consideration should be given to alternative vehicle access options, with current road currently intersecting the park. Plantings (Norfolk Pines, Canary Palms, etc.) and stone must be retained and Edwardian landscaped character retained. Consideration of soft landscaping in the paved area to the east of the Park (reinstatement of 1930s plantings) could be beneficial. |
| Aquarium | No | In the first instance, the building should be retained and repairs undertaken to ensure ongoing use in accordance with the sites marine conservation use. If retention is not possible (structural assessment will be required), the site should be left open to reinstate historic views to the pavilion and opportunities for heritage interpretation to tell the Indigenous history of the precinct. Ideally this should also link with marine conservation themes. Installation of structures including rides or amusements is not considered the best heritage response in this area. |
| Art Gallery | Yes (not as a discrete item) | Retain in its use as Art Gallery. However, the Art Gallery is reaching its operational limit in its current form, and a Masterplan for the Art Gallery is being undertaken as a separate project. As such, the following general recommendations are made: <ul style="list-style-type: none"> - Sympathetic expansion is acceptable but will need to ensure no visual clutter is added to the precinct. Works should seek to expose the original 1930s façade (of which the 1920s concert pavilion is readily identifiable) - Retain site in its current form with a different cultural use (eg. Environmental Centre, Aboriginal Heritage Office, etc.) - Reinstatement of Concert Pavilion is also a potentially desirable outcome but would need to be balanced with the adverse impact of losing a prominent location for community and cultural experiences and the site's significance as an Art Gallery in its own right. |

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| Site | Heritage Item | Recommendations |
|--------------------------|--|---|
| Swimming Enclosure | No* (Partially included in Harbour Foreshores) | Replacement and reinterpretation of the existing swimming enclosure is possible. The swimming enclosure should not be removed until replacement works are physically commenced. Reinstatement of the Harbour Pool may provide some heritage benefit, subject to impact on adjacent heritage items (impact to the biophysical environment is beyond the scope of this report). Reinstatement should only be considered in context of a precinct-wide approach. Visual impact of introducing a new built element into the landscape, the impact of further reduced visibility of the Pavilion building, and potential clutter should be carefully considered, particularly in the context of the Aquarium building that currently dominates the precinct. |
| Harbour Pool (Destroyed) | N/A | |
| Amenities Building | Yes | Retain in current form and use. |
| Governor Philip Memorial | Yes | Retain in current form and use |
| Pavilion | Yes | <ul style="list-style-type: none"> Retain use as restaurant Activate ground level |
| Waterslide complex | Yes (as part of the Pavilion SHR listing) | <ul style="list-style-type: none"> Retain use as water park. Activate adjacent public domain Reinstate café |
| Promenade | Yes (not as a discrete item) | <ul style="list-style-type: none"> Improve accessible pedestrian links at Manly Art Gallery Consider improvement of views from roadside lookout (Commonwealth Parade) Improve pedestrian links at Pavilion (possibly through reinstatement of Harbour Pool/Boardwalk) |

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1. INTRODUCTION

1.1 Document Purpose

This report has been prepared as an initial guiding document to consolidate the history of the West Esplanade area and to assess the significance of existing built heritage. It seeks to provide high level recommendations regarding the following:

- Key elements of the area's history that should be highlighted
- How Council could best showcase the history of the area at West Esplanade
- Recommendations to improve, conserve and restore listed items

This report has been prepared in accordance with the Consultants Brief issued by Northern Beaches Council in January 2019. It is a guidance document in accordance with the project requirements and is not intended as a comprehensive Heritage Assessment or Heritage Impact Statement for any statutory purpose or application.

The document is structured in the following way:

Section 2: History- An overview of the history of the precinct and individual elements. Appendix 1 and 2 provide a summary history of the entire precinct by timeline (Appendix 1) and aerial photography (Appendix 2)

Section 3: Assessment of Elements – Summary heritage assessment and high level management recommendations for sites in their current state and individual elements. Assessment against the criterion is applied at Appendix 2

Section 4: Recommendations- high level review of issues and opportunities in consideration of the entire precinct

1.2 Site Identification

The area is generally referred to as "West Esplanade" throughout this report. The site is the area immediately west of Manly Wharf, bounded by West Esplanade (road) to the north, and terminating at Federation Point. It consists of West Esplanade Park, promenade, beachfront, cluster of buildings to the west of the site including aquarium and associated jetty, art gallery, water slide park, vacant café, Manly Pavilion, and a timber boardwalk linking the site to Federation Point. Manly Wharf is **not** within the study area. However, it is referred to in this document as its history and location have an unavoidable impact on the study area, both on its presentation and its use.

NORTHPOINT HERITAGE



Figure 1: Identification of individual elements within the subject site (Source: Northern Beaches Council)

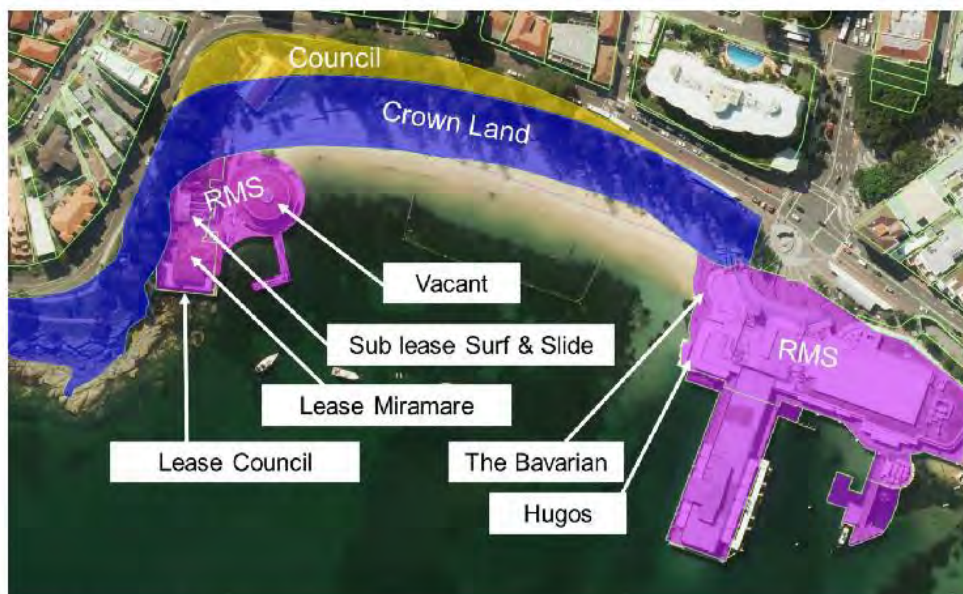


Figure 2: Ownership/management of various components within the subject site (Source: Northern Beaches Council)

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Figure 3: Site plan detailing terminology used in this document (Source: Basemap via NearMap, overlay by Northpoint Heritage)

1.3 Statutory Context (Heritage)

The entire subject area falls within the Statutory curtilage of the Harbour Foreshores heritage listing, except for the Manly Aquarium, which is excluded from the listing. The following items are also individually listed within the study area:

| Item Name | Instrument | Lot/DP |
|--------------------------|---|-------------------------|
| Manly Cove Pavilion | Heritage Act 1977, SHR No. 01433 ¹ , RMS s170 | 2/ 1019352 1/1019352 |
| Amenities Block | Manly Local Environmental Plan 2013, Item No. 1250 ² | Not defined |
| Governor Philip Monument | Manly Local Environmental Plan 2013, Item No. 1248 ³ | Not defined |
| Harbour Foreshores | Manly Local environmental Plan 2013, Item No. 11 ⁴ | Not defined |
| Park | Manly Local Environmental Plan 2013, Item No. 1251 | Not defined |

¹ <https://www.environment.nsw.gov.au/heritageapp/HeritageItemImage.aspx?ID=5051352>

² <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2020185>

³ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2020455>

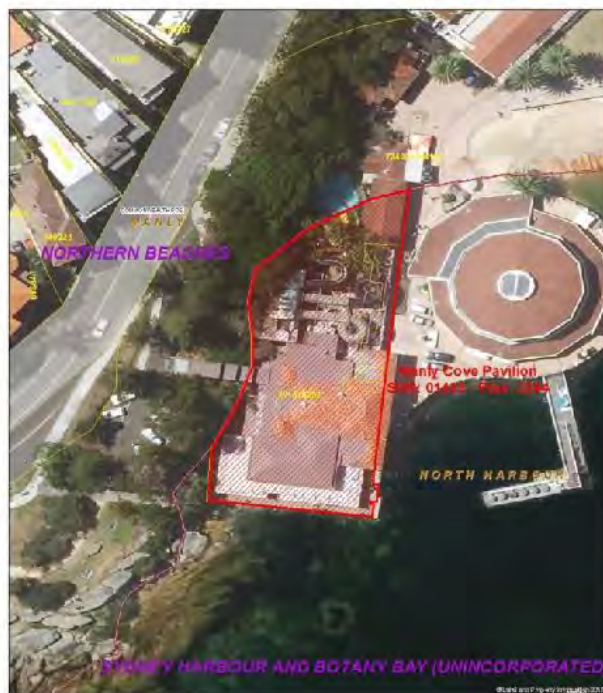
⁴ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2020474>

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Figure 4: Heritage Map of the subject site and surrounds (Source: NSW Planning Portal).

Heritage Council of New South Wales



State Heritage Register - SHR 01433 Plan 2244
Manly Cove Pavilion
West Esplanade, Manly
Gazetted Date: 18 April 2009
Scale: 1:500 @A3
Datum/Projection: GCS GDA 1994

Legend
SHR Curtilage
Lined Perimeter
Railways
Roads
LDAs
Suburbs

Figure 5: SHR Curtilage for the Manly Cove Pavilion (Source: Office of Environment & Heritage)

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Figure 6: Manly Heritage Maps 003 (Manly Local Environmental Plan 2013)

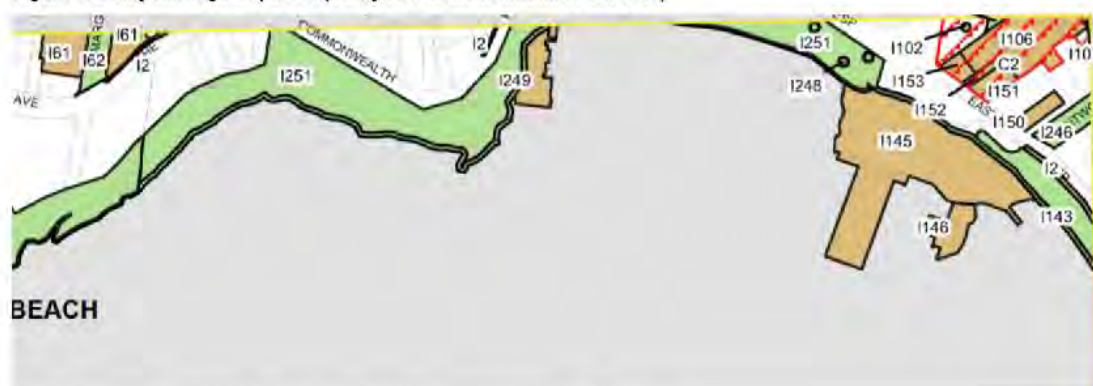


Figure 7: Manly Heritage Map 004 (Manly Local Environmental Plan 2013)

1.4 Methodology

This report uses the method of investigation and analysis established by the *Australia ICOMOS* (International Council on Monuments and Sites) Charter for the Conservation of Places of Cultural Significance (Burra Charter), 2013 and the Heritage Division's guidelines as its base. This report considers the heritage significance of the site and assesses the likely impacts of the proposed development on the heritage items in its close proximity. Numerous site inspections were carried out by Northpoint Heritage in January and February 2019. Historical review was based primarily on information available from published sources and the Manly Local Studies Collection. Social analysis and values were identified through numerous local history groups available online through social media including "Good for Manly" (operated by Councilor Candy Bingham) "Lost Manly and Northern Beaches" and "Lost Sydney".

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1.5 Authorship & Acknowledgements

The report has been prepared by Susan Kennedy (Director/Principal Heritage Consultant) and Iain Miller (Heritage Consultant).

The assistance of the following is gratefully acknowledged:

- Karen Smith, Aboriginal Heritage Office for her input and provision of information in relation to the Aboriginal history and heritage of the site
- Racheal McMullan (Heritage Specialist, Roads and Maritime Services) for assistance in relation to the aquarium building
- Catherine Buddin (Team Leader Local Studies & Family History) for providing access to the extensive Local Studies collection for consolidation of this history
- Claire Chaikin-Bryan and Eilis O'Beirne (Northern Beaches Council) for providing context for the heritage activation plan, project support, and operational information.

1.6 Limitations

In accordance with Council's requirements, this document is intended as an initial guiding document only to consolidate existing historic information. As such the following limitations are noted:

Social Analysis & Community Consultation: Formal community consultation and Oral History is the recommended approach to "Identify people's stories/memories of the area of significance". However, this cannot be achieved in this timeframe. Many anecdotes of this area have been published through the Manly Daily, social media, blogs and websites. These resources will be accessed for the purposes of this report, as well as any previous studies that can be supplied by Council.

Aboriginal Community Consultation: The project timeline does not allow for formal consultation with the Local Aboriginal Land Councils or formal Aboriginal Cultural Heritage Due Diligence in accordance with OEH Guidelines.

Historic Research: An review of historical information has been reviewed in the preparation of this report from a variety of secondary sources including Manly Local Studies, Dictionary of Sydney, Trove, and other resources as noted. This report relies on the comprehensive research undertaken of the area as part of previous studies and brings these resources together as a cohesive resource. Detailed additional research into primary sources such as Council Minutes, Land Title Records was not undertaken in accordance with Council's requirements.

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Comparative Analysis: for a heritage assessment, typically a comparative analysis would be undertaken to identify levels of rarity and technical achievement. The time constraints for this project mean this is excluded from the document at this time. Inclusion of this task may be negotiated at an additional rate.

Biophysical Environment: The RFQ notes significant flora and fauna, namely seagrass, sea horses, little penguins and long-nosed bandicoots, grey-headed flying foxes, remnant bushland, Soft and hard corals. An assessment of the cultural and environmental significance of biophysical items individually is not within the scope of this report.

Recommendations: This document provides high level advice and is intended to guide the internal consultation and subsequent design process. The recommendations provided in Sections 3 and 4 are not proposals or statutory requirements, but rather matters that can be considered by Council in the preparation of a Heritage Activation Plan.

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2. HISTORY OF WEST ESPLANADE

West Esplanade features a complex and varied history, which remains apparent even today when a visitor's attention is drawn to it. Its calm waters have been used by people for thousands of years in an extraordinarily similar way despite the highly visible changes in buildings, technology and population. West Esplanade was used for thousands of years by Aboriginal people as a meeting place, fishing location, for recreation and as a site for ceremonies. West Esplanade is the site of some of the earliest Colonial interactions with Aboriginal people- ranging from the positive initial experiences where both sides were curious, through to the subsequent demise of relations, kidnappings, and retaliations. It is where of some of the earliest colonial farming occurred- where a small group of the earliest and most enterprising convicts branched out from the City and grazed their cattle. It is the site of the first major private ferry transfers- which would subsequently become a government transport that continues through to today. As transport improved, so did development- and Manly Cove became as much of a home to residents as it is a holiday location for local day trippers and international tourists. Through that history is a constant character defined by its calm harbour setting and natural beauty, where people of varied cultural background have come to relax, enjoy the scenery, and admire the precincts natural beauty, which continues regardless of the time period.

A summary timeline is annexed to this document at Appendix 1. Also refer to the historic aerials at Appendix 2 for a general overview of changes to the site from 1930. The following history draws on the resources of the Manly Local Studies Collection, and their assistance in the preparation of this history is gratefully acknowledged.

2.1 Indigenous History (pre 1788 & Early Colonial Contact)

2.1.1 Pre- European History & Kai'yamay⁵

Kai'yamay, or Manly Cove, a sandy cove on North Harbour on the western side of the Manly peninsula, is a key site of the earliest contacts between Aboriginal people, the Eora (this is the local word meaning 'people') and the British people who arrived on the First Fleet in 1788. It continued to be the place to which Governor Phillip and his officers returned in their attempts to open communications with Aboriginal people – sometimes by force. It was also where Aboriginal people took action against the newcomers in their land – Governor Phillip was speared here by an Aboriginal warrior in September 1790, an event that

⁵ The following history draws upon the comprehensive Aboriginal history prepared by Grace Karskens, 2015 for the Dictionary of Sydney and supported by the Office of Environment & Heritage Aboriginal Projects program

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ultimately led to the first reconciliation between Aboriginal people and white settlers in Australian history. A number of the early Sydney paintings depict Manly Cove and these key moments in cross-cultural contact as they unfolded on the beach.

The name of the Aboriginal clan of Kai'ymay is not known for certain. It may have been *Kai'ymaygal*, or *Gayamaygal*, for in the Sydney language, the suffix 'gal' was usually added to the place name to indicate the people of that place. But these people may have been Cameragal, or closely associated with them. The Cameragal were the people of the north shore of Sydney Harbour, a dominant group, famous for their strength, authority and the skills of their *karajdi* (doctors). Certainly, the admiring comments of the First Fleet officers on the physique of the Kai'ymay warriors suggest they may have been from the same clan.⁶

However, it is important to note that Aboriginal social structure and territorial boundaries were much more complex than simply groups of people with a single name 'belonging' to one specific, clearly bounded area. Aboriginal people had multiple identities, names and affiliations through ancestry, birth and marriage relationships. While each clan was associated with a particular area, the smaller family bands had access to different country through family and marriage connections. Paul Irish has identified much larger cycles of movement as well, which he calls the 'affiliated coastal zone', a series of interlinked areas reaching from Port Stephens in the north to Shoalhaven on the south coast.⁷ Kai'ymay lay in this zone – in fact a well-marked pathway literally led from here north along the peninsula to Pittwater on Broken Bay.⁸

Like the other coastal groups, the Cameragal were saltwater people, reliant on the sea and harbour for a diet of fish and shellfish, as well as seabirds. They were at home on the waters as well as on land. The women especially were skilled canoeists and fisherwomen, paddling and fishing from bark *nowie* with their children and babies, and a small fire on a clay pad to cook the catch.⁹ The sandstone country of the Manly region provided rock platforms and walls for art works and is still richly endowed with rock carvings

⁶ Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 11; Val Attenbrow, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records* (Sydney: University of New South Wales Press, 2002), 22–28, esp 25; David Collins, *An Account of the English Colony of New South Wales*, facs ed, vol 1 (Adelaide: Adelaide Libraries Board of South Australia, 1971), 558; Watkin Tench, *A Complete Account of the Settlement at Port Jackson*, published as *Sydney's First Four Years*, ed LF Fitzhardinge (Sydney: Library of Australian History, 1979), 285

⁷ Val Attenbrow, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records* (Sydney: University of New South Wales Press, 2002), 22–28, esp 25; Paul Irish, 'Hidden in Plain View: Nineteenth Century Aboriginal People and Places in Coastal Sydney', PhD thesis, University of New South Wales, 2014, pp. 57–59

⁸ See Alan M Dash, 'Phillip's Exploration of the Hawkesbury River', in *Hawkesbury River History: Governor Phillip, Exploration and Early Settlement*, eds Jocelyn Powell and Lorraine Banks (Sydney: Dharug and Lower Hawkesbury Historical Society, 2000), 11–30. See also 'A Map of the hitherto explored country, contiguous to Port Jackson, laid down from actual survey', J Walker, engraver, 1791 or 1792, reproduced in Paul Ashton and Duncan Waterson, *Sydney Takes Shape: A History in Maps* (Brisbane: Hema Maps Pty Ltd, 2000), 11

⁹ Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 38–40, 401–21

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depicting people, implements, birds, animals and fish, as well as grinding grooves for making and sharpening axes and other tools. Sharp stone (basalt, silcrete) for weapons and tools was imported from inland quarries and rivers, while spears and fishgigs (*callarr* and *mooting*) were also tipped with shell.¹⁰ As in other parts of Australia, the Cameragal used fire to keep the country clear, to attract animals to new grass and make root vegetables easier to find. The early officers witnessed these blazes, and observed that they were lit on windy days.¹¹ And here, as elsewhere, society was ordered by Aboriginal law, which revolved around payback: the guilty person stood trial by spear. In 2005, the remains of a warrior were found at nearby Narrabeen – the first archaeological evidence of death by spearing in Australia. This man died over 3,600 years ago from spear wounds – the stone barbs are still embedded in his spine – and an axe wound to his head.¹²

2.1.2 European arrival

The European name of Manly Cove originated from the first encounter of the people of Kai'ymay with the British officers and sailors in January 1788. Disappointed and concerned by the lack of fresh water and exposure to the winds at Botany Bay, Governor Phillip took a boat to explore Port Jackson, a harbour to the north, seen by James Cook on his 1770 voyage. The boat nosed around the long headlands and into several coves, looking for building land and freshwater streams, and the strangers were struck by both the beauty and the utility of the harbour. When they approached Kai'ymay in the north arm, they saw a group of 20 strong men wading out towards their boat. These men took the gifts offered and were curious about the boats, inspecting them closely. Phillip and the officers were impressed. They expected Aboriginal people to be as Cook and Joseph Banks had described them – weak, timid, cowardly and 'incurious'. These men were just the opposite. Phillip later wrote that he named the place 'Manly' for their admirable manly qualities.¹³

Shortly after that first encounter, as well as other friendly encounters in the lower harbour area, Kai'ymay was the site of the first meeting with Aboriginal women. On most other occasions, the Eora warriors had kept the women and children well out of sight – the British thought this was probably another sign of their

¹⁰ Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 11; Val Attenbrow, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records* (Sydney: University of New South Wales Press, 2002), 120–4; and see Peter Stanbury and John Clegg, *A Field Guide to Aboriginal Rock Engravings* (Sydney: Sydney University Press, 1990). A fishgig is a multi-pronged spear used for spearing fish.

¹¹ See George Worgan and John Hunter, 1788, cited in Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 15–16 and notes 282

¹² Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 443–6; Josephine J McDonald, Denise Donlon, Judith H Field, Richard LK Fullagar, Joan Brenner Coltrain, Peter Mitchell and Mark Rawson, 'The First Archaeological Evidence for Death by Spearing in Australia', *Antiquity*, 81 (2007): 877–85

¹³ Arthur Phillip, cited in Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 9–10; Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 52

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gallant 'manliness'. But they still asked constantly to meet the women, proffering gifts of beads and trinkets. On another visit to Manly Cove on January 29, they negotiated with an elder, and finally some of the younger women came forward. They stood by the boats trembling and laughing as the white men reached over to drape them with strings of buttons and beads. The English officers described them as 'naked beauties', who were 'perhaps, inseparable from the female character in its rudest state'. So they renamed Manly Cove: it became Eve's Cove.¹⁴ But it seems that neither name was much used at first. People referred to the area more casually as 'down the harbour' or 'North Arm'. Manly Cove did not come into use until after the story of Phillip's renaming was published in *The Voyage of Governor Arthur Phillip to Botany Bay* in November 1789.¹⁵



Figure 8: Bora Rock: aboriginal markings near Manly Waterworks Gully 13 September 1891 (Source: State Library, [c004070016 / PXA 187, 14])

2.1.3 Manly Cove encounters

Phillip was instructed to treat 'the natives' with 'kindness', and to live with them in 'peace and amity'.¹⁶ He took these instructions seriously. One reason he may have chosen the snug Sydney Cove – Warrane – for the settlement was that it was the one place in the harbour where there were no warriors shouting from the ridges or wading out to meet the boats, as at Manly Cove. But after the early meetings on the beaches,

¹⁴ Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 52–4. Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 20. Eve's Cove was inscribed on the earliest known map of Port Jackson, an anonymous copy of John Hunter's Chart of Port Jackson, New South Wales, Survey'd Feby 1788 (Watling Collection, Natural History Museum, LS3), see *Art of the First Fleet and Other Early Australian Drawings*, eds Bernard Smith and Alwyne Wheeler (New Haven: Yale University Press, 1988), 73

¹⁵ Pauline Curby, *Seven Miles from Sydney: A History of Manly* (Manly: Headland Press/Manly Council, 2001), 10

¹⁶ Governor Phillip's Instructions, 17 April 1787, *Historical Records of Australia*, series 1, 1:13–14

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the Eora promptly shut down communication and avoided the strangers and their camp in Warrane/Sydney Cove altogether. Skirmishes increased when they ventured into the surrounding areas and, in May 1788, two convicts were killed by warriors. Eleven months after arriving, Phillip still had little clue of the Eora's numbers, or their intentions. After an Eora attack on the convict brickmakers at the Brickfields (near present-day Central Station), he resorted to kidnapping an Aboriginal man in the hope of forcing open a means of communication. His target area was Manly Cove. Phillip wanted one of the superior 'manly' warriors, someone from the group with whom they had established such good relations in those earliest days. The kidnapping from the beach was violent and distressing. The captive man remained silent, so they called him Manly, only later discovering his name was Arabanoo.¹⁷ Arabanoo was a dignified and gentle man who refused to play the role of cross-cultural envoy. He was kept a prisoner in Sydney, and after the outbreak of the terrible smallpox epidemic among the Eora in April 1789, he nursed his stricken countrymen in Sydney's hospital. He contracted the disease himself and died on 18 May 1789.

Cross-cultural relations soon deteriorated and in November Phillip once more sent the boats out to kidnap warriors. Again they rowed down the harbour to the beach at Manly Cove, violently abducting two men. This time they returned with Coleby, a Gadigal man from the south shore of Sydney Harbour, and Woollarawarre Bennelong, of the Wangal of the south shore of Parramatta River. Ironically neither was from the 'manly' clan of Kia'ymay as Phillip had clearly intended. Coleby soon escaped from Sydney, but Bennelong remained, and proved enthusiastically receptive to learning all about the British, their language, resources and intentions. He and Phillip became friends and often walked out together, but after seven months, Bennelong escaped too. Phillip and the officers were devastated – another hopeful cross-cultural experiment had failed. They rowed up and down the harbour, calling Bennelong's name. The Eora fisherwomen mimicked them in their higher voices.¹⁸

Four months later, in September 1790, a whale washed up on the beach at Manly Cove and a large number of Eora gathered for a great whale feast. Bennelong summoned Phillip to attend by sending him a packet of whale meat, and an invitation, and Phillip hurried over in a boat to meet his old friend. It was a happy reunion there on the sand of the cove, with gift giving and conversation, Bennelong asking after his old Sydney friends and toasting 'the King' with a glass of wine, as he had done during his time at Government House. But suddenly Bennelong disappeared and a circle of warriors began to close in on Phillip. A stranger, a man named Willemering, seemed agitated and when Phillip began to approach him in his customary way, slowly, hands outspread, Willemering picked up a barbed wooden spear and hurled it at the governor with such force that it passed through his shoulder. Panic broke out. Phillip was unable

¹⁷ Keith Vincent Smith, *Bennelong: The Coming in of the Eora, Sydney Cove 1788–1792* (Sydney: Kangaroo Press, 2001), 23–38; Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 351–78

¹⁸ Keith Vincent Smith, *Bennelong: The Coming in of the Eora, Sydney Cove 1788–1792* (Sydney: Kangaroo Press, 2001), 39–48; Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 378–83

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to run because the spear was so long it hit the ground. A frantic Lieutenant Waterhouse eventually broke the tough spear shaft, whereupon they bundled the governor down the beach and into the boat and rowed as fast as they could back to Sydney. There the surgeons extracted the spear and pronounced the wound non-lethal. Phillip was up and about only ten days after his ordeal.¹⁹

Historians have long puzzled over the meaning of this dramatic event but in recent decades several have suggested that what Phillip experienced was a payback ritual.²⁰ In Aboriginal law the guilty must stand trial for their crimes and the crimes of their people. The encircling warriors and the spearman's actions that day on the beach at Manly Cove echo the way traditional Aboriginal law was imposed. Kai'ymay was, after all, Aboriginal land; the Europeans were in Aboriginal country and subject to their laws. Perhaps Phillip sensed something of this: much to his officers' confusion and frustration, he refused to retaliate.

As a result, instead of the outbreak of violence and war the officers feared, peace was made between the two groups. Good relations were re-established through meetings, gifting and dancing, and Bennelong finally agreed to come into Sydney with his wife Barangaroo and their friends in November 1790. The officers were delighted. Finally, a lasting peace with the Eora had been achieved.²¹

The later nineteenth-century history of the Aboriginal people of the Manly area is not yet clear – there were reportedly camps in the area from the 1850s until at least 1881, when a number of Aboriginal people from Manly were persuaded by the Reverend Daniel Matthews to join his Aboriginal mission at Maloga. Given the slow rate of development in the area, it is likely that Aboriginal presence here was continuous at least until that time.²² As late as the 1870s a traditional camping place in Whistler Street (further inland the study area) was 'nearly always occupied' by Aboriginal people. The site was on the north-east corner of Raglan Street adjacent to the weatherboard Catholic church of Mary Immaculate and St Athanasius built in 1868. The Aboriginal camping area was later occupied by the present stone Catholic church, built in two stages in 1892 and 1909.²³

¹⁹ Keith Vincent Smith, *Bennelong: The Coming in of the Eora, Sydney Cove 1788–1792* (Sydney: Kangaroo Press, 2001), 51–9; Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 383–5; Inga Clendinnen, *Dancing with Strangers* (Melbourne: Text Publishing, 2003), 110–32.

²⁰ See Inga Clendinnen, *Dancing with Strangers* (Melbourne: Text Publishing, 2003), 110–32; Keith Vincent Smith, *Bennelong: The Coming in of the Eora, Sydney Cove 1788–1792* (Sydney: Kangaroo Press, 2001), 51–9; William Stanner, 'The History of Indifference Thus Begins', *Aboriginal History*, 1 (1977): 2–26.

²¹ Grace Karskens, *The Colony: A History of Early Sydney* (Sydney: Allen & Unwin, 2009), 386–92; Inga Clendinnen, *Dancing with Strangers* (Melbourne: Text Publishing, 2003), 133–40; Keith Vincent Smith, *Bennelong: The Coming in of the Eora, Sydney Cove 1788–1792* (Sydney: Kangaroo Press, 2001), 60–71.

²² Tom Griffiths, 'Ecology and Empire: Towards an Australian History of the World', in *Ecology and Empire: Environmental History of Settler Societies*, eds Tom Griffiths and Libby Robin (Melbourne: Melbourne University Press, 1997), pp. 3–4.

²³ C. Swancott, *Manly, 1788 to 1968*, author, Sydney, 1933, p.56; J. Childs, *A History of St Mary's Church, Manly*, Manly, 1994, revised 2014 in Pittwater Road Heritage Conservation Area Review (supplied: Northern Beaches Council).

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Figure 9: "First interview with the Native Women at Port Jackson New South Wales February 1788"



Figure 10: Taking of Colbee (Colebee) and Benalon (Bennelong), Manly Cove, 25 November 1789

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2.2 1800- 1900: The Early Development of Manly

2.2.1 The First Land Grants

On January 1, 1810, the First European land grants in the area were 100 acres to Richard Cheers and 30 acres to Gilbert Baker, both bounded by The Corso and later sold to D'Arcy Wentworth, who was also granted 380 acres in the area. The first two land-grants in central Manly were ratified by Governor Macquarie with the notional date of 1 January 1810, both confirming surrendered grants made on 6 November 1809 in the period after Governor Bligh's overthrow. The 30 acres granted to Gilbert Baker, a constable, had the later Corso as the northern boundary, extending from the ocean to the cove, while Richard Cheers' 100 acres lay to the south of Baker's land.

Both Baker and Cheers were ex-convicts. Cheers had become a successful butcher in the city while Baker worked for him as a clerk. The Manly grants operated as a unit, where Cheers ran cattle for his Sydney business. The stockyard was quickly fenced but in October 1811 Cheers complained that "some evil-disposed Person or Persons have at different Times committed serious Depredations on my Farm in North Harbour, by destroying and burning the Paling and Railing of the Stock-yard"

The situation of this grant was roughly from Ashburner Street to the Roman Catholic property & ran from the Harbour Beach to the Ocean Beach. Certain descendants of Richard state that he added 600 acres to his original grant of 100 acres to accommodate his dairy and grazing animals, & thus supply his butchering business at the corner of Hunter and George Streets; and that the extra acreage included the area now occupied by St. Patrick's Theological College²⁴

John Thompson, who was later the Deputy Surveyor General, purchased 100 acres at Manly Cove, advertised as Lot 6 on 8 February 1842, for £72-10-0, and the deed was executed on 13 April 1842. [LTO SN75/11] On 9 March 1853 this land was sold to Henry Gilbert Smith for £800. [LTO Book 25 No.609]

Up until 1852, the area was mostly undeveloped and uncleared. It was only accessible by road through Parramatta or by punt via the Spit or North Sydney. Unsurprisingly, little development happened with these grants, with land being subdivided and sold to various landowners who used the area for grazing, camping, occasionally residential occupation, and little else. In the 1841 Census there were only 29 residents in the (now) Manly Local Government Area. By the 1848 Census the number had risen to just 60 residents.²⁵

²⁴ <https://immigrationplace.com.au/story/richard-cheers-part2/>

²⁵ Curby, P., 2001, Seven miles from Sydney: A history of Manly. Manly Council, Manly, NSW, p50.

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Figure 11: Parish map of Manly Cove, 1842 on the left, showing grants of John Thompson, Gilbert Balet, Charles Chapman, within the study area, Source: P. Curby, Seven Miles from Sydney: A History of Manly, Manly Council, Manly, rev. ed. 2002, p.50

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2.2.2 1850s: Henry Gilbert Smith & a vision for Manly

Henry Gilbert Smith, who had arrived in Sydney in 1827, saw the potential of Manly as the location for a 'day trip' from Sydney, the new 'Brighton' of the Colony. He was instrumental in establishing a hotel, wharf, regular ferry service and baths in Manly in the mid-1850s. Smith referred to the area as 'Ellensville' and 'Brighton', but ultimately the original name of Manly was retained. Because of its remoteness from the main settlement at Sydney Cove, the Manly area was slow to develop.

Smith's vision commenced through the purchase of the original grants of Manly. First he purchased John Thompson's grant of 100 acres on 9 March 1853. This land stretched from the north-western side of the Corso back to about present Steinton Street. Next he took a twenty-one year lease of Gilbert Baker's 30 acre grant on 1 April 1853, and a similar lease of Richard Cheers' 100 acre grant on 10 May 1853. This land had been left by D'Arcy Wentworth to his daughter Katherine and by the terms of his will could not be sold. The land stretched back from the south-eastern side of the Corso towards North Head. On 11 May 1853 Henry purchased John Parker's 20 acre grant on which he was to later develop his private estate of Fairlight. John Parker, a market gardener, had already erected a well-constructed stone cottage on his land. Henry at first did not take up permanent residence but had accommodation available to him for the visits he made on horseback once or twice a week via the North Shore Steam Ferry and the hand punt at The Spit. The journey one way took about two hours. Henry also made a series of purchases of land along the ocean front north of the Corso around 1855, which gave him almost total ownership.

By January 1855 Henry, having acquired so much land, was well placed to begin planning development. His first plan for a village was titled "Ellensville", in memory of his first wife Eleanor who died in England. This plan was most elaborate and contained many names connected with the Crimean War, which ended the following year. However it was to be a long time before any land sales actually took place. At the same time Henry drew up another plan for the land he had leased on the south-eastern side of the Corso, stretching towards North Head, and called it "Montpelier".

Manly area in 1855 was very isolated. The Corso, which Smith named after that in Rome, was just a sand track. There were no shops or buildings on it. No services, such as that of a doctor, were available, nor any school. In fact the scattered population of Manly then consisted of about twelve families.

In spite of the almost complete lack of facilities, ferry excursions took place on an irregular basis. For example the steamer *Huntress* made one return trip each Sunday to Big Manly beach during May, June, July and August 1855. The fares were expensive, being 4 shillings, children halfprice. Before the pier was built visiting ferries had to pull alongside a large rock, probably at the end of Stuart Street, so that excursionists could disembark. Sometimes a waterman's boat would be towed behind the paddle steamer so that parties could be taken fishing or for picnics.

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People were also attracted to Manly in the early days for shooting purposes, particularly duck, wattle birds and other wild life around the lagoon, marshes, and elsewhere. However, others visited because the area still retained much of its majestic wilderness. The natural beauties of the harbour, the unpolluted ocean beach with its untamed sand dunes stretching for about a mile, were grand beyond description. The undisturbed flora of cabbage tree palms, tree ferns in the gullies, eucalypts, Port Jackson figs, coastal tea-trees, banksias, wattles rock lilies, oaks and wildflowers were also enjoyed. Fish were in abundance as well as oysters and other shell fish. There were also fresh water streams such as that which ran across the harbour beach near the present Art Gallery and Museum. It is little wonder that Manly was so popular with the indigenous inhabitants in years gone by.

Henry realised that it was essential to build a pier at Manly and in August 1855 made application to build one at Manly Cove measuring 200 feet in length by 11 feet in breadth. This request was granted and the pier was built. But this did not bring about an immediate daily ferry service or a great influx of people to Manly, because development continued to be very slow, with few sales of land for many years. However, extra ferry excursions were undertaken to Manly beach on Sundays and special days, such as Christmas and Boxing Days, by steamers, including the *Emu*, *Planet* and *Illawarra*. On Boxing Day 26 December 1855, for instance, the *Illawarra* plied throughout the day, four services each way, between Sydney and Manly Beach, indicating that demand must have been heavy.

To have any success in proceeding with his plans for village development Henry knew that one of the first buildings which must be erected was a hotel, with the Pier Hotel constructed also in 1855. In fitting with his plans for the 'New Brighton', Smith also had baths constructed in 1857 on the western side of Manly Cove, on a site near the present day Art Gallery/Museum. The baths were erected without consulting the authorities, leading to the request for official bathing facilities in Manly ²⁶

Bathing in colonial Sydney was subject to the provisions of The Sydney Police Act 1833, Section 21, which forbade bathing 'between the hours of six o'clock in the morning and eight in the evening', to ensure public decency and safety in this busy working harbour. Initially, Manly's remoteness from Sydney deemed the area exempt from The Sydney Police Act with no legal impediment to bathing in open water at Manly at any time of the day or night. However, the Towns Police Act 1838 extended the provisions of The Sydney Police Act to towns as far a field as Parramatta, Windsor, Maitland and Bathurst, and in July 1880 was implemented in Manly.

²⁶ Champion, S. and G., 2000, Bathing, drowning and life saving in Manly, Warringah and Pittwater to 1915. Shelagh and George Champion, Killarney Heights p 3)

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On 11 January 1878, a deputation from Manly Council (including the Mayor) saw the Minister of Lands, Mr Farnell, about the construction of two new baths in the Municipality, one for women and one for men, to replace the dilapidated facilities built by Henry Gilbert Smith 20 years earlier. The Council preferred to situate the baths on either side of Manly Cove—the men's on the south-east corner and the women's on the western end of the Esplanade.

In 1903 an insight into life at the Ladies Baths at West Esplanade was published in the *Mosman Mail*:

When you get off the boat at Manly if you look around the beach to the left you will have a glimpse of the palings and buildings of one of the best bath houses in the colony. Go through the little opening in the fence near the fruit shop, on along the path under the trees, and in a couple of minutes you will arrive at the ladies baths, where Mr. Leon Ferrett and his family of four sons and one daughter the latter now only twelve years of age with Mrs. Ferrott, all accomplished swimmer and experienced instructors and life savers, are workers in the institution. There are 46 dressing rooms, with green lattice work running along in front of them, thus ensuring privacy. They form an arc around the beach. From the side nearest the wharf the palings run out into the water to a sufficient distance to give an outward swim of 75 feet, and from the extreme end they branch off at right angles back to the circular beach giving another swim of 60 feet. There is an excellent waiting room for ladies where they can sit and look out upon the bay Of course there are spring-boards, life-lines, and every up-to-date appurtenance.

As you enter when going for a bath you see above the ticket window a beautifully illuminated certificate, which was presented to Mr. Ferrett for one of his heroic life-savings. But he has had a long and varied, experience in this line it having become to fcima matter of Almost common occurrence to plunge into the water anywhere he may be, clothes on or off, as it may happen - for he would never think of wasting a minute, in undressing for the purpose - to save a life. Mr. Ferrett [and his family have] enjoyed the honor of saving... a grand total of 60 [people in the Ladies' Baths].

So well thinking, and so much confidence have the mothers in Manly in the way things are looked after at the ladies baths that they, often send down their little girls from three years of age upwards, and the tots, some of whom can scarcely reach up with their fees to the ticket window, are often taken in hand by the fatherly Mr Ferrett himself, and led into the water and watched over with the most willing, genial, and most constant care. He has been so long there, and has served so well, that many of Manly's matrons will neither go themselves nor send their children anywhere else to bathe, so many of them having been trained in swimming by Mr and Mrs Ferrett.²⁷

Following the development of the new Mens baths (near the current Manly Sailing Club), sometime between 1907 and the late 1920s, the wooden fence was removed and the Ladies Baths became more of a swimming enclosure of timber piles and mesh. It is likely this initially occurred following storm damage, and also reflects changing community standards and expectations around segregated public bathing, with regulations around public modesty were beginning to fade by the late 1920s.

²⁷ The Ladies' Baths at Manly. (1903, May 23). *The Mosman Mail* (NSW : 1898 - 1906), p. 1. Retrieved December 9, 2018, from <http://nla.gov.au/nla.news-article247005667>

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Figure 12: [Manly Cove from North Harbour, after 1855 (the wharf is just visible at the centre), Source: State Library of NSW (File No. FL3197705)]



Figure 13: The Wharf, west esplanade, and east esplanade in 1856. This is generally dated as the earliest imagery of Manly Wharf (Source: "Approach to Manly Beach near Sydney" [picture] / S.T.G, lithograph by Sydney : Allan & Wigley lith., [1856] courtesy National Library of Australia. <http://nla.gov.au/nla.obj-135666969>)

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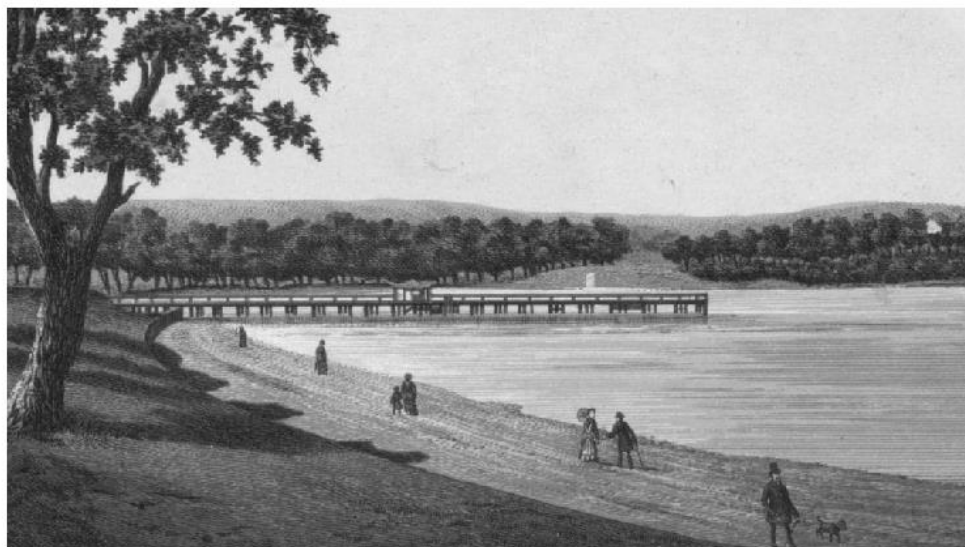


Figure 14: Manly Wharf c.1870 (Source: Manly Daily, January 21, 2018)



Figure 15: Manly Wharf 1874 (Source: courtesy of James Ritchie and published in the Manly Daily, January 21, 2018)

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Figure 16: Western end of Manly Cove, likely 1875. The image appears to show Gilbert Smiths first baths, before Manly Council had contracted the new Ladies baths. Above the Baths, top left of picture, is the mansion Roslyn Hall, built for George Alexander Murray. The exact construction date of Roslyn Hall isn't known, and is generally dated as 1875-1878 (Source: Private collection, published on facebook.com)



Figure 17: West Esplanade, Manly Wharf, and East Esplanade in 1880 (Source: Manly Daily, January 21, 2018)

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Figure 18: West Esplanade in 1876. Note the new plantings for the Norfolk Pines protected by the timber and wire enclosure (Source: 'Pier at Manly', New South Wales, ca. 1876, photo by Charles Bayliss - courtesy National Library of Australia <http://nla.gov.au/nla.obj-141520962>)



Figure 19: THE first hotel in Manly was the Pier Hotel, image from 1876, which was built in the most obvious location to attract the attention of anyone arriving at Manly by boat (Source: Manly Daily, January 21 2018). It was ultimately replaced by the former Hotel Manly in 1926.

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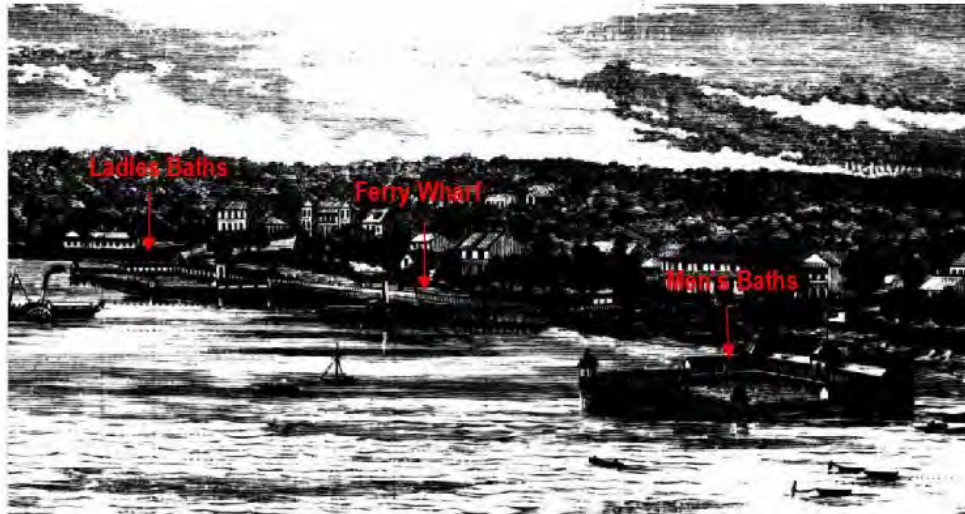


Figure 20: The scheme presented by Mr. F. A. Franklin, OE in April 1878. It shows Ladies Baths to the west, and Mens Baths to the east, separated by Manly Wharf. (Source: PROPOSED NEW BATHS, INNER BEACH, MANLY. (1878, April 20). *Illustrated Sydney News and New South Wales Agriculturalist and Grazier* (NSW : 1872 - 1881), p. 21)



Figure 21: This photo is Council's first baths, replacing Gilbert Smiths in 1878. It is unclear when the photo dates from, but is likely shortly after construction of the new pool due to the lack of formal landscaping in the background (compare with the 1880 image at Figure 14) The grand building behind it is the "Spey". (Source: Private Collection, shared on facebook.com)

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Figure 22: Manly Cove, showing the early Ladies' swimming enclosure to the west of the beach in 1890
Source: Manly Beach, circa 1890 - from Picturesque New South Wales / Kerry & Co., Photo., Sydney.
Digital Order Number: a5091010, State Library of NSW)



Figure 23: Manly Cove in the 1880s (the windmill has not yet been constructed, but the Norfolk pines are established), showing the Ladies Baths clearly in the background (Source: State Library of NSW Call No. PXE 711/273)

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Figure 24: Manly Cove between around 1885. The new Ladies' baths are visible behind Manly Wharf
(Source: Powerhouse Museum, Object ID 29312).



Figure 25: Roslyn Hall turret visible, circa 1885. MAGAM image, photographer possibly Henry King. Note the additional rock that has been installed in the Ladies Baths, which does not appear in earlier images (see Figure 20)

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Figure 26: Manly Wharf 1900 (Source: Manly Local Studies)



Figure 27: 'MANLY, THE WHARF.' It has a message on the front and it is dated 3 Aug 1907. West Esplanade is visible on the right. Source: National Museum of Australia at <http://collectionsearch.nma.gov.au/object/32509>)

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Figure 28: Postcard with a colourised photograph of 'MANLY WHARF, SYDNEY, N.S.W.'. It has a message on the reverse, and it is postmarked 1908. Source: National Museum of Australia at <http://collectionsearch.nma.gov.au/object/32646>)

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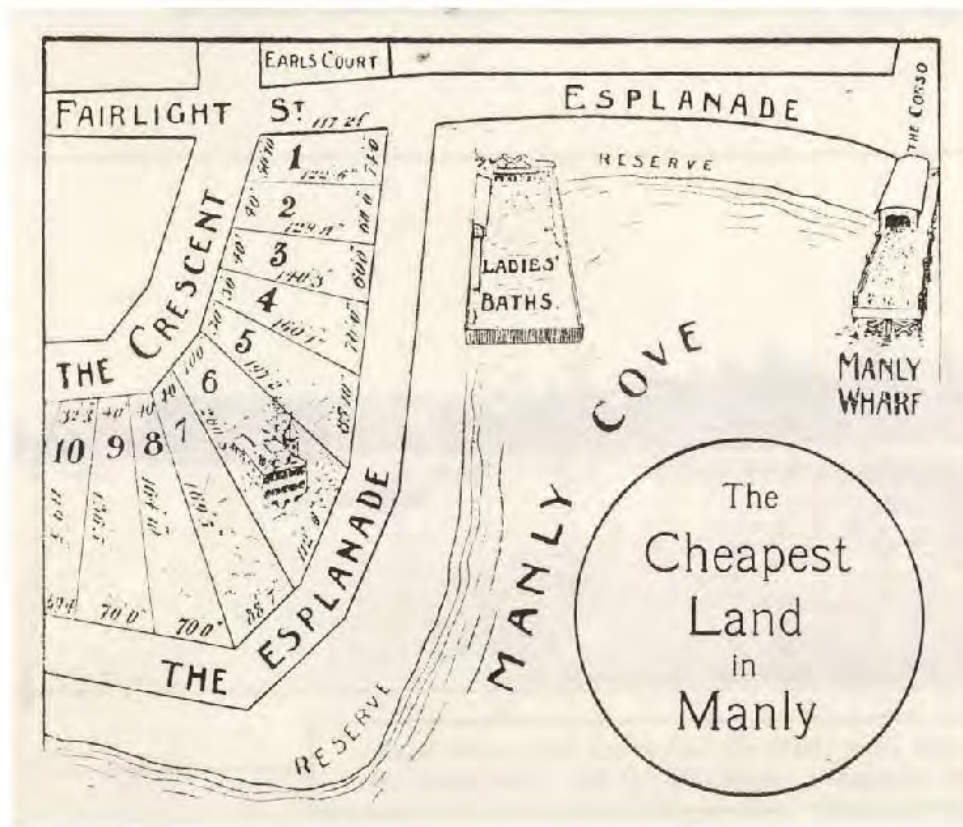


Figure 29: Action poster, 1911 (Source: Manly Local Studies)

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Figure 30: This postcard, circa 1907, shows the Harbour beach at Manly, curving round to the Ladies' Baths, secluded behind the decent privacy of a stout wooden fence. Iconic mansion of the era, 'Roslyn Hall', is clearly seen in the background (Source: Manly Library)



Figure 31: Image dated to circa 1910, showing Ladies Baths in the foreground (Source: Manly Local Studies via <http://mtchl.net/ManlyImages/>)

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Figure 32: Ladies Baths, circa 1928 (Source: Sam Hood Collection, State Library of NSW)



Figure 33: Ladies Baths, circa 1928 (Source: Sam Hood Collection, State Library of NSW)

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2.3 The Art Deco, Interwar & Post War Period: 1920s – 1950s

The interwar period saw West Esplanade saw Gilberts vision of a seaside playground come to fruition. A Concert Pavilion was constructed- which unfortunately did not live up to expectations when its charismatic inaugural- and only regular- performer did not continue. But in its short life, it appears to have been the scene of some dramatic shows featuring fireworks, music, and the like. After some years of reduced use, the site was subsequently converted to an Art Gallery, which revitalized the space once again. However, the most dramatic and iconic change to the precinct was undoubtedly the 1930s construction of the boardwalk, swimming enclosure, and associated structures that would define the Manly Cove area for the next forty years.

2.3.1 Manly Concert Pavilion & Art Gallery (1920s- 1940s)

In November 1922, Manly's Concert Pavilion was opened by the Mayor of Manly, alderman Heaton. Media at the time would praise Council for its "keen business acumen", and the Mayor was pleased with the prospect of its location, being sheltered from the full force of north-easters, "which sometimes made the ocean beach uncomfortable". When the Pavilion opened for the Poster King's inaugural performance, media estimated 10,000 people in attendance and the shoreline was filled from the pavilion to the pier.²⁸ The success- and subsequent failure- of the pavilion was inexorably linked with the Poster King's performances.

The Poster King was Arthur von Tossau, a talented "lightning sketch" artist who moved about Australia in the years before WWI. In 1897 there is a glimpse of him, self-styled as 'Baron von Tossau, the aquatic king and world's premier natator' performing at the Coogee Aquarium. His act included 37 underwater tricks, including eating and drinking underwater, playing cards, and 'the Monte Cristo change trick'. His act concluded with a piece of escapology when he was tied up in a bag which was set on fire and thrown into the water. He was something of a pioneer in the art of window-dressing – the idea that artistic decoration could be used in stores was still comparatively novel. He decorated stores in Perth and Adelaide, on one occasion being arrested for causing an obstruction, so many spectators had gathered to see him work. He decorated Perth Town Hall for the 1902 Coronation festivities.

He is mentioned in various press reports of the 1900s, making claims such as that he had studied art at the Berlin Royal Academy, that he was English by birth, that he had performed at the Crystal Palace, London. It is not known how much of this is embroidered. In 1906, he had performed on Manly Beach in front of 3000 people, painting with great speed posters for well-known companies such as Schweppes, Lipton Teas, Reckitt's Blue and Lasseters' Wares. He could paint blindfolded on a subject called out from the audience. Some of his posters can be seen on Picture Australia, in the collection of the State Library

²⁸ MANLY'S PAVILION (1922, November 16). *Evening News (Sydney, NSW : 1869 - 1931)*, p. 12. Retrieved February 15, 2019, from <http://nla.gov.au/nla.news-article118822913>

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of Victoria. He helped organise the first carnival of the Freshwater Surf Life Saving Club in 1909, and designed the club's badge.

It is not known how he spent the war years, but he reappeared in the Manly area in the 1920s for the opening of the Concert Pavilion, now spelling his surname "von Tousseau", perhaps to lessen its German look. He was a Vice-President of the Queenscliff SLSC in the 1920s. Something of an extrovert, he was in great demand for vaudeville concerts. In the 1920s he leased the new Concert Pavilion on West Esplanade, Manly (adjacent to the Manly Art Gallery). The annual lease was £108, and it proved difficult to make the venue pay, but on the opening night of the Concert Pavilion, thousands of spectators turned up.

The late Bert Owen recalled in the 1970s: "The Poster King ran a variety show for two or three seasons. He had three big easels on the stage and he would do lightning sketches, like Rolf Harris - White Wings Flour and all this sort of thing, and of course he was paid for that and then after the interval he'd do another three there, he had some good artistes there and of course why I know all these was, I worked at the Serenaders as a boy. I worked at the Poster King's, and he used to pay me 7/6d a week, which was a lot of money, you know, in those days." Mr von Tossau and his wife travelled widely, and drove by car around Australia in the early 1920s, which must have been demanding on both car and travellers. He died in 1927, aged 54, in a traffic accident in Wellington, NSW. His widow, known to friends as 'Tossy', died in the 1960s.²⁹

In the end 1923, the rapid decline of the Concert Pavilion was articulated in a media report:

*A year ago the Manly Council built this pavilion at the western end of the harbour beach. It cost 1000p. Last year it was occupied for several months but this year, although council invited tenders for two years' lease, it is still unoccupied, except for concerts by the Manly Band on Saturdays and Tuesdays. A lot of Manly people are saying "We told you so"*³⁰

Eventually the little-used bandstand pavilion at the western end of Manly Cove was converted into an art gallery containing 200 exhibits, which was opened on June 14, 1930. In opening the gallery, chief justice Sir Philip Street congratulated the people of Manly for recognising "that material prosperity was not enough in itself but that it should be accompanied by the development of refined and cultivated tastes". In the course of his address Sir Phillip congratulated the people of Manly on having such an excellent selection of examples of the work of prominent Australian artists:

²⁹ <http://manlylocalstudies.blogspot.com/2010/10/who-was-poster-king.html>

³⁰ "MANLY'S OWN REAL WHITE ELEPHANT" Evening News (Sydney, NSW : 1869 - 1931) 18 December 1923: 11. Web. 15 Feb 2019 <<http://nla.gov.au/nla.news-article119200707>>.

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The fact that Manly Art & Historical Society has been in existence for a little more than six years, and the fact that today we are present at the formal opening of a building which has been erected for the purpose of housing and exhibiting this collection, shows that the civic authorities and the residents of Manly recognise that material prosperity is not enough in itself but that it should be accompanied and enlightened by the development of refined and cultivated tastes.

The concept of a suburban art gallery was popular with artists and many works were donated by artists. In 1939 one of the original committee members, artist Antonio Dattilo-Rubbo, donated a valuable collection of 100 works. By this time the collection had increased to 200 exhibits including 79 paintings and 62 historical photographs. The maintenance and care of the works was the responsibility of the voluntary Manly Art and Historical Committee consisting of 3 artists, 3 historians, 6 laymen or administrators, and 3 aldermen nominated by Council which brought the committee to fifteen. Some of these members were on the committee for the best part of three decades.

In July 1931, the Art Gallery building was damaged by a severe gale, whereby the parapet on top of the Gallery crashed through the roof. However, repairs were swiftly effected and the building was reopened in September of the same year

The collection was further expanded in March 1939, when Antonio Dattilo-Rubbo presented a valuable group of 100 works including his own paintings, works on paper, watercolours and etchings, plus a number of classical plaster models as well as works by other artists from his private collection including: Lister Lister, A Rossini, H. S Power, John Richard Flanagan, Seymour Lucas, Grace Cossington Smith and Daniel Vere-Smith (The classical plaster models are now located in the restored chapel at the National Art School in Forbes St Darlinghurst).

To mark this significant and generous donation, Manly Council financed construction of an annex to house this collection, called the 'Dattilo-Rubbo Room', which was opened on 26th September 1940 by the Mayor, Ald. A. Hanson Norman.

The middle gallery continues to be named in Rubbo's honour as upon his death in 1955 he bequeathed more of his paintings and a sum of £500 to be invested to pay for the care of the collections.

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Figure 34: West Esplanade Concert Pavilion, 1924 (Pittwater Local Studies Collection)



Figure 35: "MANLY'S OWN REAL WHITE ELEPHANT" Evening News (Sydney, NSW : 1869 - 1931) 18 December 1923: 11. Web. 15 Feb 2019 <<http://nla.gov.au/nla.news-article119200707>>.

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Figure 36: The conversion of the Manly Concert Pavilion to the Manly Art Gallery before opening in 1930
(Source: Manly Local Studies)



Figure 37: The converted art gallery in the early 1930s (Source: NLA at <http://nla.gov.au/nla.obj-157495879>)

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Figure 38: A new wing in 1972 (Source: Manly Local Studies)



Figure 39: The art gallery in 1972 (Source: Manly Local Studies at <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=001688>)

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Figure 40: Inside the art gallery in 1950 (Source: NLA at <https://catalogue.nla.gov.au/Record/1879368>)

2.3.2 The Manly Harbour Pool (1931)

By 1930, ferry patronage on the harbour was at its peak but the ferry were apprehensive of the impact the opening of the Sydney Harbour Bridge may have. Most of the inner-harbour ferry companies were heavily impacted. However, the Manly ferry operators were optimistic that they may only lose about 20 per cent of their patrons after the bridge opened. Their confidence was based on the growth over the previous decades of daytime tourism to various harbourside locations, of which Manly was the premier spot.

In 1928, the company had bought to glamorous new ferries, the Curl Curl and Dee Why, which added to the prestige of the Manly fleet and attracted new patrons. As the Depression began to take effect, patronage on the Manly ferries grew as Sydneysiders discovered the inexpensive pleasure of a ferry trip to Manly and a day at the beach.

There were already several swimming enclosures around the harbour but the Port Jackson company decided to build what was touted as the largest swimming pool in the country — if not the world — as an added attraction patrons of its ferries. The small shark netted enclosure of stone and net was not to last long. On Thursday 17 September 1931, the Sydney Morning Herald published The Manly Municipal Council has before it a proposal, which was submitted by the Port Jackson and Manly Steamship Co, Ltd, for an enclosed shark-proof bathing pool and pier promenade at West Esplanade. The plan provides for

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an extension of the existing steamer pier in a northerly direction to a point near Fairlight Pool. On the pier will be a refreshment kiosk, and from it will depend the shark-proof net. The pier will be about 12 feet wide.³¹

Designed and built by the ferry company and its workers at Kurraba Point, the structure enclosing the pool stretched from Manly Wharf to what is now called Federation Point at the western end of Manly Cove and was opened in December 1931. On Saturday December 26, 1931 the Sydney Morning Herald again published that "Manly's New Pool" had been popular yesterday and today.

Constructed of north coast hardwoods on turpentine piles, the giant pool built by the ferry company consisted of a promenade 335m long and 3.4m wide, with a 2m wide bathers' platform at a lower level. The pool itself was 275m long, 69m wide at its widest point and up to 6m deep, and contained more than 50 million litres of water.

The pool was equipped with an array of amusements, including pontoons with slides, water wheels, spring boards and even tethered logs designed to buck and roll at the slightest touch, so that mounting them required practice and skills. Mounted on the promenade were several diving boards at different heights and a water slide more than 15m above water level.

In June 1933, a dressing pavilion and refreshment rooms were built at the western end of the pool. Above the dressing rooms was a tea room serving everything from snacks to substantial meals, while an open-air kiosk called the West End was situated on the beach.

Within two years, a quarter of a million people were using the pavilion annually, even though a small charged was made for the use of lockers, showers, toilets and hair-dryers, but admission to the pool remained free.

The pool had its own lifesaving club, the Harbour Pool Life Saving Club, which appears to have been formed in 1935 and was quartered in the dressing pavilion.

In November 1932, the pool was further improved when floodlights were installed- 50 floodlights on the promenade, 22 on the beach and four underwater.

The Manly Cove pool proved to be exceptionally popular, and remains fondly remembered by many Northern Beaches residents and tourists. In a recent ABC radio call-program, Ninety-one-year-old Ross from Allambie Heights said he remembered thousands of people packing into the pool in 1935, which included pontoons and tall diving towers. Talkback caller Russell, who grew up in Chatswood, also

³¹ Manly Pier Proposal (1931, September 17). The Sydney Morning Herald (NSW : 1842 - 1954)

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recalled spending times enjoying the boardwalk, which didn't always end well. "This mate of ours that we went to school with was walking along there and dived into the water and the water wasn't deep enough," he said. "His head was stuck in the mud and his feet were flapping out in the air. So [our friend] jumped in and pulled him out and took him to Manly Hospital with a broken neck in a bus, holding him from the seat behind him." ³²

2.3.3 Manly Cove Dressing Pavilion (1933)

By May 1933 a dressing pavilion and refreshment rooms had been built at the western end of the pool, although the official opening of the pavilion didn't take place until October that year.

Initially Manly Council agreed to build the pavilion with money lent to it by the ferry company.

Then it was agreed that the ferry company would build the pavilion and that the council would take it over after 12 years but eventually the construction and ongoing maintenance was left to the ferry company with no contribution from the council.

The pavilion was built on a concrete platform over the water and connected to the shore by a timber boardwalk to the south-west and a concrete esplanade to the north-east. As with the pool, the area occupied by the pavilion was leased, first from the Sydney Harbour Trust and then by its successor, the Maritime Services Board.

Freed of any involvement with Manly Council, at the annual general meeting of the ferry company in June 1933, the managing director, Walter Dendy, told the board that: "We are particularly fortunate, as we are now outside any control or interference from the council and entirely independent of those congratulatory comments from some aldermen seeking a little cheap publicity."

The ferry company retained the lease of the dressing pavilion until 1975 – the year after the huge harbour pool was destroyed by a storm. Initially the pavilion provided dressing rooms, a refreshment room, a caretaker's residence and a room for the pool's lifesavers but over the years it has had additions and modifications, although nothing altered the appearance – or disappearance – of the pavilion as much as the construction of Marineland in 1963 (see Section 2.4.1).

Harbour Pool Life Guards

The completion of the Harbour Pool Swimming Enclosure led to a big increase in the number of people bathing at Manly's Harbour Beach. Although the life-saving clubs on the ocean beach were well-established, there was no life-saving presence at the Harbour Pool. Then, in the mid 1930s the Harbour Pool Life Saving Club formed, which patrolled the area. Although the beach and pool were often very

³² <https://www.abc.net.au/news/2018-08-15/should-the-manly-boardwalk-be-rebuilt/10118472>

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crowded, no lives were lost there throughout the 1930s, which is a great testament to the effectiveness of the lifeguards. In 1936 there were forty lifeguards in the club, and they met in quarters provided by the Port Jackson Company adjacent to the Harbour Pool Pavilion. These premises are shown in Figure 44

The Harbour Pool was a regular venue for the carnivals of the Royal Life Saving Society in the 1930s, and the Australian championships were held there in 1938.

Manly Council's Health Inspector was concerned at the amount of skylarking which was permitted at the Harbour Pool, and recommended the appointment of a beach inspector, who patrolled from 1937 onwards. However the outbreak of war saw many of the lifesavers enlist, with the result that there were several drowning deaths in the 1940s. Saddest was the drowning on 20 November 1949 of Mohomet Osman, 40, a Cypriot who had not long been in Australia, whose death occurred while lifesavers were on duty. He left a widow and family back in Cyprus. The Harbour Pool Life Saving Club struggled for membership post-war, and appears to have wound up its activities some time in the early 1950s.

In 1961, the Manly Cove Life Saving Club was established, and patrolled the Harbour Pool for several years, but it does not appear to have lasted into the 1970s.

2.3.4 Landscaping West Esplanade Park

Historic photography indicates that extensive landscaping and repair works also occurred to West Esplanade Park in this period, particularly 1935-1938. This is hardly surprising given the increased demand on the precinct caused by the new harbour pool, the Art Gallery, and Bathing Pavilion, all fuelled by visitors travelling on the improved ferry connections. In particular, the seawall was improved and landscaping that is largely consistent with what can be seen today at Gilbert Park, was planted and garden beds around the characteristic Norfolk Pines formalised with split sandstone garden beds.

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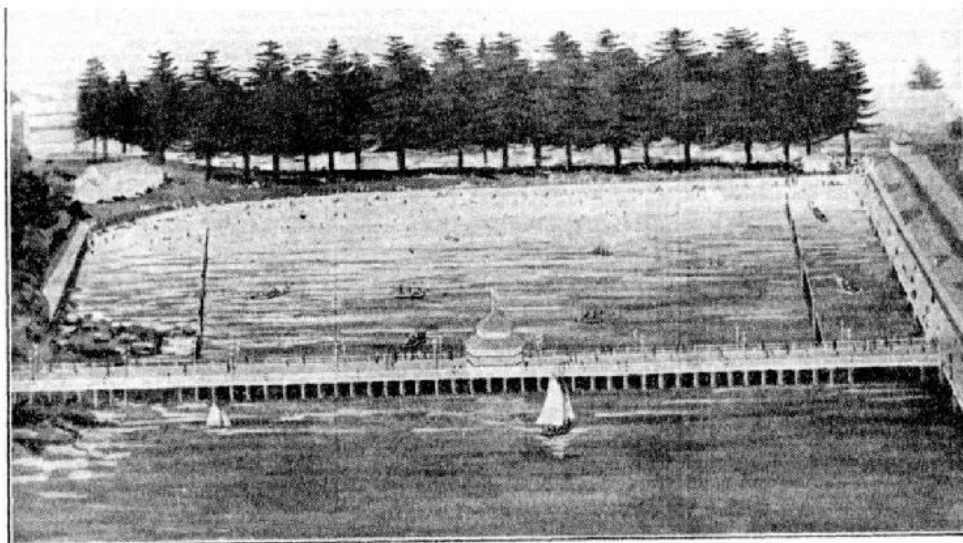


Figure 41: The proposal published in the Sydney Morning Herald in 1931



Figure 42: An early image of the swimming enclosure, possibly showing the boardwalk still under construction, and there are none of the floating pontoons or slippery-dips installed yet. (Source: Manly Library)

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MANLY

A wealth of enjoyment awaits you there!

Miles of tree-fringed Ocean Beaches with golden sands and curling surf to enthrall you, and the Children can romp and paddle in safe rock pools provided specially for them.

Manly's gigantic FREE Shark-proof Bathing Pool—

Nine acres, with 9 million gallons of calm, crystal-clear water, is the largest and best equipped of its kind in the world. It is enclosed by a steel Mesh Net and a modern promenade and sun platform 1050 feet in length. The bottom slopes gently downwards and is absolutely safe even for the tiniest toddler, and aquatic societies, spinning floats, rolling logs, diving balls, spring-boards (8), etc., are there for your enjoyment — FREE!

No outing in the World is more enjoyable, and none so cheap, as the trip to
MANLY BEACH.

FARE:
ADULTS 6d, CHILDREN ONE PENNY (five years and under FREE).
A Weekly Ticket — travel when and as often as you like — costs only
GENT'S, 4/-, LADIES, 3/3.
Steamers every half-hour from No. 3 Jetty, Circular Quay.

MANLY—Why not live there?

THE PORT JACKSON AND MANLY STEAMSHIP COMPANY, LIMITED
Telephone: B-3221.

Figure 43: An advertisement for the pool in 1932 (Source: Daily Telegraph). Note the Bathing Pavilion is not shown in this illustration.

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Figure 44: The dressing pavilion in the 1930s



Figure 45: A flyer for the Manly Pool Pavilion Tea Room

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Figure 46: The Harbour Pool LSC premises in the 1930s. (Source: Manly Library)



Figure 47: Scenes from the Manly Cove Swimming Pavilion at its peak (Source: State Library of NSW, FL1087402)

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Figure 48: Scenes from the Manly Cove Swimming Pavilion at its peak (Source: State Library of NSW, FL1087402)



Figure 49: A night photo graph of the new shark-proof swimming pool at Manly (New South Wales). Lamps totaling 3, 000, 000 candle-power on area of seven acres. (Source: Manly Library)

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Figure 50: 1928 (<http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=004575>)



Figure 51: Seawall 1932 (Source: <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101085>)

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Figure 52: Spit stone edging in 1938 (Source: Manly Local Studies via <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101081>)



Figure 53: West Esplanade Sea Wall 1938 (Source: Manly Local Studies via <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101083>)

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Figure 54: West Esplanade seawall before repairs in 1932. Note the ornate pot at the top of the stairs.
(Source: Manly Local Studies at <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101084>)



Figure 55: Seawall in 1932 (source: Manly Local Studies via <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101087>)

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Figure 56: West Esplanade after remodeling in 1935 (Source: Manly Local Studies at <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=101082>)



Figure 57: Landscaping improvements in 1936 (Source: Manly Local Studies via <http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=004602>)

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Figure 58: Landscaping improvements in 1937 (Source: State Library of NSW at http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=FL1906088)

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2.4 1960s-1980s

Sydney's dynamic surf scene gained momentum in the 50s, 60s and 70s: spanning an amazing period of social upheaval, post war optimism, teen angst, rock and roll, prosperity, drugs and shifting cultural frontiers. Manly's focus started to move to the surf side at this point, and while the swimming enclosure remained incredibly popular, it did not hold the novelty and fascination that it once had. Perhaps it was for this reason, that two new elements were introduced that would once again change the landscape of Manly Cove: The aquarium in the 1970s and the Manly Waterworks in the 1980s. At the same time, the Art Gallery was expanded. The 1974 Sygna storm, which would destroy the iconic Harbour Pool, meant that the precinct was yet again transformed. Combined, these events and elements obscured the art deco elements of the area and the character of the precinct changed from a destination in itself, to a series of individual attractions.

2.4.1 Marineland & Ocean world

In December 1961, Manly Council adopted a recommendation from its finance and general purposes committee that an aquarium at the end of the harbour pool be approved, although it was not until January 1962 that the proposal became public knowledge. The South African company behind the proposal said the aquarium would be 16.7m in diameter and 6m deep, and would be the first of its kind in Australia. It was estimated it would cost at least £90,000. The company, DSM MacDonald P/L, said there would be between 1000 and 1500 fish of about 100 different species, including several sharks.

The company's director said the aquarium would be surrounded by two air-conditioned decks, each with portholes to give visitors "a skindiver's view". He also said the proposal had the tentative approval of Manly Council, the Maritime Services Board, which was responsible for the location, and the Port Jackson and Manly Steamship Company, which had built the giant harbour pool. The council's only concern about the location of was the lack of parking for staff or visitors, so DSM MacDonald offered to pay Manly Council £520 a year to be used by the council to provide communal parking at the corner of Darley Rd and Wentworth St in the Manly CBD.

But the proposal was not without critics, including from those who said it would obscure the attractive Bathers' Pavilion behind it.

Construction of the aquarium was approved by Manly Council in May 1962 but construction was delayed for several months due to bad weather and delays while building the foundations.

Construction took longer than estimated, and the company behind it changed its trading name to Marineland Pty Ltd.

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Marineland, as the aquarium was called, opened in November 1963, at which time it was the largest in the southern hemisphere and the third largest in the world. It was officially opened by Chief Secretary and Tourism Minister Christopher Kelly, who congratulated Manly Council on securing the project. During his speech, Mr Kelly said that Marineland was ideal for Manly and that Manly was ideal for Marineland.

The first director was Jim Thomson, who had worked for many years as a research officer on marine life with the CSIRO. The first shark was introduced in June 1964 after being caught off Sydney Heads and airlifted into the aquarium.

But it wasn't all plain sailing for Marineland. In February 1965 the aquarium was accidentally emptied when a valve failed with the loss of almost all the fish.

Marineland survived the Sygna Storm in late May 1974 that demolished the harbour pool, but in 1987 it was demolished and in 1988 Manly Underwater World was built in its place.

Underwater World was reopened in 1992 as Oceanworld and in 2012 it became Manly Sea Life Sanctuary. Marineland was demolished in 1987 but replaced in 1988 by Marine Underwater World (later Manly Underwater World), which was opened in 1992 but which reopened as Manly Sea Life Sanctuary,



Figure 59: NOVEMBER 1963 - Marineland officially opens, and is the largest oceanarium in the Southern Hemisphere, the 3rd largest in the world and the 7th of its type.

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Figure 60: Marineland. (Source: Daily Telegraph/ J.H. Labaysse and Sons)



Figure 61: Marineland obscuring the view of the dressing pavilion. (Source: Manly Local Studies)

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Figure 62: 1960s (Manly Local Studies Collection/Trove)



Figure 63: Pool at the top of Marine land (Source: Manly Local Studies)

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Figure 64: Marine Land is demolished and replaced by what would become Manly Sea Life Sanctuary in February 1988. After \$12 million of construction, Underwater World opens and is home to the biggest underwater tunnel in the world at the time.

2.4.2 1974 Storm: Sygna

An intense East Coast Low that came to be known as the Sygna Storm smashed the grand promenade to pieces on the night of May 24, 1974. The storm took its name from the Sygna, the giant bulk carrier that was driven ashore on Stockton Beach, north of Newcastle, and remains the largest ship ever wrecked on the Australian coastline.

Manly Wharf was damaged and had to be repaired before the ferries and hydrofoils could return to service once the seas had subsided, and the adjacent fun pier was also damaged. Manly Baths, were also damaged, as was Manly 16ft Skiff Sailing Club, while the North Harbour Sailing Club was destroyed. Every one of Sydney's northern beaches suffered severe erosion, seawalls were undermined and several surf clubs and rock pools damaged.

However the most dramatic damage was the destruction of Manly's Harbour pool. The 335m-long promenade was pounded by the waves until it gave way, and by Sunday morning the shore of Manly Cove was strewn with the wreckage of the iconic structure.

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Figure 65: West Esplanade Park & Pools in the 1970s , close to the destruction by Sygna
(<http://www.photosau.com.au/Manly/scripts/ExtSearch.asp?SearchTerm=006084>)



Figure 66: Media coverage of the storms and destruction of the promenade, Manly Daily 1974



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2.4.3 Art Gallery Expansion and inclusion of Museum

On 17th March 1981, Clarice Thomas was appointed full-time Director of the Manly Art Gallery, after acting as Honorary Director for some fourteen years. A grant received in the same year from the NSW Ministry for the Arts also contributed towards the building of a Museum to adjoin the Gallery on the eastern side. The name Manly Art and Historical Collection was discarded at this stage as new terms of reference were drawn up for the new entity. A foundation in support of the Manly Museum was initiated to raise extra funds to match the State Government grant. The art collection was moved off site while the building was upgraded. At this stage in the history of the Gallery and Museum there seems to have been a natural watershed in the operations and funding, with more government support and professionalisation of staff and better collections management.

These significant renovations provided a new entrance and reception area creating a spacious introduction to the exhibition galleries. The Rubbo Room was doubled in size and a kitchen and loading dock were installed to serve both Art Gallery and Museum. Architects Cox, Tanner and Partners redesigned the Art Gallery and Museum, which was opened by the Premier, Mr Neville Wran, on 13th September, 1982, by which time the complex had been officially named the Manly Art Gallery & Museum. The addition of an area to be used specifically as a Museum was largely the result of the vision and efforts of Mayor Ald Joan Thorburn and General Manager of Manly Council, Mr Wayne Collins. Mrs Jean Hay was the Chair of the fundraising committee and organized the first function at the Manly Pacific Hotel called the Museum Ball to raise funds for the fitting out of the Museum. An editioned gold coin was struck for the occasion and No.1 was gifted to Premier Neville Wran when he officially opened the Museum.

Clarice Thomas retired in 1982 after the Museum addition. The Museum had its own Director Mr Warren Wickman who was appointed during 1982 to bring the first Museum exhibition to fruition. The subsequent professional and salaried joint Gallery & Museum Directors that followed are: Peter Timms from 1983 to 1986, Michael Pursche from 1987 to 1998 and Therese Kenyon from 1999 to early 2011. Jackie Dunn began as Director in mid 2011.

Manly Art Gallery & Museum has developed considerably since the major renovations in the 1960s and then later in 1980s with the opening of the Museum. The Bicentennial year exhibition *Manly 200 Too! – Explore our History* under the directorship of Michael Pursche led to the major exhibition *In the Swim* in the Museum, 1992-1999, that realigned the Museum towards beach culture as well as local history.

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2.4.4 Manly Waterworks (1981)³³

The Manly Cove tourist attraction opened in 1981 and operates essentially the same way today as it did at its opening, with the exception of the removal of one slide. Since its inception, the water works were marketed as an alternative to keeping kids cool in the summer months when the beach is closed and the Manly Waterworks has been a holiday staple for many northern beaches in summer.

Grandparents Cathy and David Brigden first started bringing their three children during the 1980s. Now son James, 42, brings his two children, Jack, 11, and nine-year-old Sophie. "It looks exactly like I remember it and the kids are having as much fun as I did," he said. Last year, he wrote to Manly Council making a case for Waterworks to be heritage listed as "the last of Manly's historical amusement parks". While the council didn't think it met the criteria for listing, Mr Forlonge is trying again.

"Through the lens of a child, or a mother or father returning after 20 years to slide with their children, I believe it is more than possible to comply," he said. "As child I fondly remember visiting similar water parks up and down the NSW coast, however, we now are the last of our kind," he said.

Waterworks newbies were advised to start with the "mellow yellow" Twisted Cobra slide before venturing on to the green Slippery Python or the Insane Earthworm, Mr Forlonger said.. "The green one is the fastest. It tends to throw you left and throw you right – and throw you into the pool."

³³ The following summary is extracted primarily from The Manly Daily, October 2, 2014 "Calls for the Manly Waterworks to be heritage listed"

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Figure 67: The Waterworks at Manly in 1983. Courtesy Manly Library and published in the Manly Daily



Figure 68: The Waterworks at Manly in 1983. Courtesy Manly Library and published in the Manly Daily

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Figure 69: The Waterworks at Manly in 1983. Courtesy Manly Library and published in the Manly Daily



Figure 70: The Waterworks at Manly in 1983. Courtesy Manly Library and published in the Manly Daily

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2.5 Recent History (2000 – present)

The onset of the 21st century saw somewhat of a cultural shift in Manly. The waterslide complex reopened after years of closure. The adjacent Manly Wharf was redeveloped again, marketing the area a premier restaurant destination. Awareness of the unique environment was raised with the return of the Little Penguin Colony. The Dressing Pavilion reopened as a premier restaurant destination. And, most recently, the Aquarium site was vacated, leaving somewhat of an inconsistent gap in an area that was seemingly coming back to life.

2.5.1 Sealife Sanctuary Closes

In April 2017, Merlin Entertainments Group, which ran what was formerly known as Oceanworld Manly, advised that the business is no longer viable in the aging building where it is located. Merlin Divisional Director - Australia & New Zealand Rob Smith told local newspaper *The Manly Daily* "as a building it's not a viable investment to keep on running it as an aquarium. From 1965 to now, it has had lots of different additions, different elements added, which has overall impacted the lifespan of the building as an aquarium."³⁴

At the time of closing, the aquarium is home to more than 100 sharks and rays, 2000 fish, 19 penguins and 11 reptiles. There also 500 invertebrates, including octopuses, at the venue.



Figure 71: Staff assemble for moving aerial photo on last day in 2018 (Source: Sydney Morning Herald at <https://www.smh.com.au/national/nsw/manly-sea-life-sanctuary-closes-its-doors-after-55-years-20180128-h0pjy4.html>)

³⁴ <https://www.ausleisure.com.au/news/merlin-to-close-manly-sea-life-sanctuary-after-50-years/>

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2.5.2 Calls for new Promenade

Following the storm, the current swimming enclosure was installed to provide a shark-proof enclosure for swimmers with minimal disruption. Despite occasional calls for the promenade and pool to be rebuilt, no further development has eventuated, and Manly Cove is enjoyed for its natural beauty. In August 2018, Northern Beaches Council announced funding has been awarded by the Heritage Near Me program (funded by the Heritage Council of NSW) to develop a masterplan for the West Esplanade Precinct Manly to rejuvenate, increase appreciation and visitation to the areas heritage and historical items, and included a feasibility study for reinstating the boardwalk and harbour pool (c1931), and showcasing the Art Gallery façade (c1924).³⁵

³⁵ Office of Environment & Heritage, Heritage Near Me funded projects, OEH Website
<https://www.environment.nsw.gov.au/topics/heritage/support-for-local-heritage/heritage-near-me-incentives-program/heritage-near-me-funded-projects>

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3. ASSESSMENT OF ELEMENTS

As noted in Section 1.4, there are numerous items within the precinct that have been recognized on statutory listings for the heritage significance. Others are of significance, but are not listed as discrete heritage items. This section provides a summary of the identified and potential significance of discrete elements, in addition to management in their current state. Detailed Inventory Forms for existing heritage items are annexed to this document at Appendix 3.



Figure 72: Image showing the layout of the built elements within the western portion of the site

3.1 West Esplanade Promenade & Forecourt

3.1.1 Description

The West Esplanade Promenade describes the area of shared path (cycle and pedestrian) separating West Esplanade Park and the beach foreshore. It commences at Manly Wharf and runs the length of the beach, and terminating at the boardwalk to Federation Point (considered part of the Pavilion complex). It is a mixture of concrete and paving and features "The Pathway of Olympians" along the foreshore. The Pathway of Olympians celebrates more than 100 years of Manly residents who represented Australia in Olympic Games - both summer & winter. The pathway consists of a stroll from Manly Wharf to Sealife Sanctuary. There are now more than 80 plaques on the walk, which is a living history and is added to after each Olympic Games. The West Esplanade Promenade forms part of the Harbour Foreshores listing. The forecourt refers to the round area in front of the aquarium, art gallery, and café area. It is also part of the foreshores listing.

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Figure 73: Promenade looking west



Figure 74: Promenade/forecourt in front of Manly Pavilion

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Figure 75: <https://www.dailytelegraph.com.au/newslocal/manly-daily/sport/proof-the-northern-beaches-is-an-olympic-stronghold/news-story/345a1835c3a585ca6fe61ada4d4340f7>

3.1.2 Historic Overview

There is no specific history for the promenade as a discrete element. It first appears as an element comparable to the current configuration the early late 1930s/1940s when improvements were being made to the Harbour Pool and adjacent West Esplanade Park (see Section 3.8). It became increasingly formalised with the current layout (including steps adjacent to the aquarium) appearing around 1998.

3.1.3 Statement of Significance

The promenade is not considered as being of significance as a discrete element. Considerations to appropriately manage significant aspects, namely landscape setting, are appropriately captured in existing statutory listings, namely the Manly Cove Pavilion and West Esplanade Park listings.

3.1.4 Management Recommendations

The promenade should be retained and upgraded as required. Consideration of improved sympathetic paving should be considered. The Pathway of Olympians should be retained. Promenade lighting, particularly concrete bases, adjacent to beachfront date to the 1930s period and must be retained. Consideration of reinstating historic streetlamp style should be made.

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3.2 Art Gallery

3.2.1 Description

The Manly Art Gallery building and adjoining toilet block, standing together in Esplanade Park at the western end of Manly Cove, are two well-designed public buildings. Manly Art Gallery was opened on 14th June 1930. It has a large entrance, flanked on both sides with Ionic columns, underneath a moulded entablature showing strong classical influence. Later additions have been constructed forward of the original entrance way, detracting somewhat from the original style of the building. The end walls form gables to the pitched tiled roof, protruding above the roof line to form parapets. The building was almost perfectly symmetrical. In 1982 the Manly Art Gallery was extended to house the Manly Museum. These additions have produced an asymmetrical building but in a manner respecting the style of the original building.” The Art Gallery building resulted from alterations and additions to the West Esplanade Concert Pavilion, designed by architect Hedley V Graham in 1922. The 1930 remodelling was carried out by builder J Porter. In 1939/40 an extension to the Art Gallery was designed by the practice of Kaberry and Chard.³⁶

3.2.2 Historic Overview

Manly Art Gallery opened in 1930. The present building was formerly an outdoor concert pavilion (opened in 1922) and its adaptive re-use was made possible with the closure of the proscenium arch. The building was renovated in 1966. A museum was added in 1982. Since 2000 internal changes were made to the art gallery with a mezzanine storage for the Museum collection of beach culture in 2001, a refurbished kitchen in 2004, a new administration and photography storage area in 2008 and more recently in 2009 a new fit-out for the reception and gallery shop.

3.2.3 Statement of Significance

Manly Art Gallery and Museum is the oldest metropolitan purpose-built regional gallery in NSW having been established on its present site in West Esplanade in 1930. Evidence remains of the original 1920s concert pavilion and conversion to Art Gallery in the 1930s. It is of historic significance for its association with Manly's growing sense of municipal identity and cultural demands, which has grown during the Gallery and Museum's history and is reflected in its expansion and inclusion of museum component in the 1980s.

³⁶ *Buildings of Historical and Architectural Interest* (1976) stated (p177) from Manly Local studies:

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3.2.4 Management Recommendations

The art gallery should be retained as a cultural centre, ideally in its current use. Areas of historic and aesthetic significance are limited to the 1930s wing. Consideration should be given to revealing this layer of history in any future development.

3.3 Amenities Building

3.3.1 Description

The West Esplanade toilet block, designed by Kaberry and Chard 1933, with its columned entrance ways, is a symmetrical building showing a similar classical influence. Tiles have been used with good effect to create a mock entablature beneath the eaves and for a decorative effect on the front of the building. It is the only publicly accessible amenities block (showers and toilets) in this part of Manly Cove and receives high visitation from beach goers.

3.3.2 Historic Overview

Constructed in 1933 as part of the Manly Dressing Pavilion complex, constructed by the Manly and Port Jackson Steam Ship Co. Ltd. It was built to serve the public swimming at the Manly Harbour Pool. Manly Council's Contracts Register for 1933 notes the erection of lavatory conveniences at West Esplanade by well-known local builder Frank Tolhurst of Rosedale Avenue, Manly, at the substantial cost of £2645, in June 1933. Tenders to lease the lavatories were invited in November 1933 by the architects, Kaberry and Chard.³⁷ Since about 2007, upgrade works were deemed necessary due to frequent leaking of aged ceramic elements and to fulfil an essential need for an accessible toilet in the area of West Esplanade. An upgrade of the interior was carried out in 2009.

³⁷ *Sydney Morning Herald* 25 November 1933, p21; 21 November 1933, p7.

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Figure 76: Amenities building in 1933 (Source: Manly Local Studies)

3.3.3 Statement of Significance

The existing statement of significance for the amenities block is considered appropriate:

The Public toilet block significant for its association with the Manly Pavilion and its complementary simplified Inter War Spanish Mission style.³⁸

3.3.4 Management Recommendations

The site should be retained in its current condition and continue to be used as an amenities block. No significant internal fabric remains and internal upgrades should be undertaken as required.

3.4 The Aquarium Building

3.4.1 Description

The aquarium building is a distinctive three level round building dominating the West Esplanade and originally modelled on an oceanarium in Durban South Africa. The aquarium's latest incarnation was Sea Life Sanctuary. It was split over three levels. And the levels are only connected by stairs, two sets to the bottom level and one to the top. On the entry level, there are a number of large fish tanks in a circle around a centre, feature tank. They contained turtles, jelly fish, coral, clown fish and lobsters which it is understood have either been released or relocated to other aquariums. Also on this main level is a rock pool and area near the exit, with views out to the beach and wharf. In previous incarnations of the aquarium, this space operated as a café with outdoor seating at the promenade. The top floor (accessed

³⁸ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2020185>

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by stairs) contained the penguin enclosure (previously filled in and used as a reptile showcase, and before that a seal enclosure). This area contains elevated bench seating with key vistas 270 degree views of the precinct, including the Manly Pavilion restaurant. The ground level is the round underwater viewing area. Originally a moving platform, this was removed and at the time of closure, was a path walking through the underwater tank.

The site was not able to be inspected during preparation of this report as it has ceased functioning and was closed to the public. Recent images of its are shown below, taken in 2017



Figure 77: Manly Sea life Sanctuary



Figure 78: Penguin enclosure at the top floor (Source: Google Maps Streetview)

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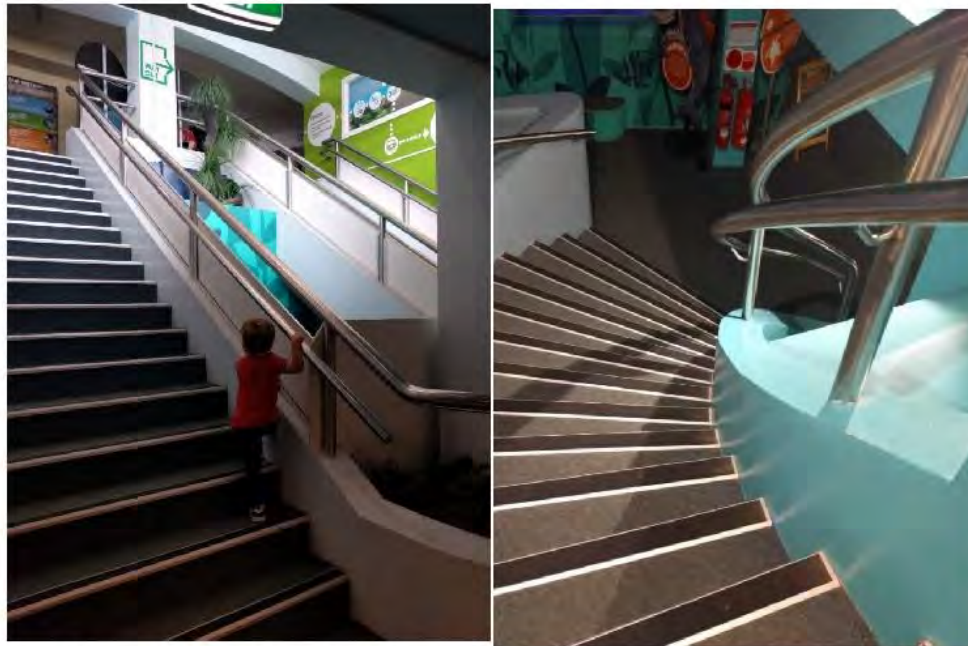


Figure 79: Stairs connecting ground floor and entry level (Source: <http://www.parraparents.com.au/things-to-do/attractions/manly-aquarium-manly-sea-life-sanctuary/>)



Figure 80: Penguin show at the top level (Source: <http://www.parraparents.com.au/things-to-do/attractions/manly-aquarium-manly-sea-life-sanctuary/>)

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Figure 81: The Penguin enclosure drained during repairs at aquarium. Date unknown (Source: <https://www.fluidbuilding.com.au/projects/manly-sea-life-sanctuary-oceanworld/>)



Figure 82: Sedimentary tank undergoing repairs. Date unknown (Source: <https://www.fluidbuilding.com.au/projects/manly-sea-life-sanctuary-oceanworld/>)

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Figure 83: Views to harbour and Manly Pavilion (Source: <http://www.parraparents.com.au/things-to-do/attractions/manly-aquarium-manly-sea-life-sanctuary/>)



Figure 84: Underwater viewing area (Source: <http://www.parraparents.com.au/things-to-do/attractions/manly-aquarium-manly-sea-life-sanctuary/>)

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Figure 85: Deck of the aquarium building when used as a dining space (circa 2015) (Source: <http://www.merlinevents.com.au/our-venues/sydney-nsw-venues/manly-sea-life-sanctuary.aspx>)

3.4.2 History

The aquarium first opened in 1965. It was refurbished and reopened in 1989 as Manly Underwater World. It was purchased and renovated by Coral World International, and re-opened as Oceanworld in 1992. When Marineland first opened, it was the third largest aquarium in the world. It featured a standalone tank at the top (which later became the penguin enclosure). A major renovation was undertaken in the 1980s when a walk-through tunnel was installed.

After its renovation, the aquarium boasted the longest aquarium tunnel in the world, at 110 metres (361 ft). The aquarium was sold to the Sydney Aquarium Company (later Sydney Attractions Group) in 1999 to be operated as a branch of the Aquarium. At that time the former seal tank was converted to a reptile show area, to link the site with the operator's Darling Harbour Wildlife Park. In February 2008, Merlin Entertainments acquired the Sydney Attractions Group division of Village Roadshow Theme Parks. On 28 June 2012, the attraction officially relaunched as Manly Sea Life Sanctuary following a renovation which saw the addition of the Penguin Cove exhibit. It closed on 28 January 2018.

3.4.3 Assessment

The Aquarium building has significance as evidence of a world-class aquarium of its time. While it does not appear to be held in the high esteem it once was, it remains an iconic destination with strong social significance and cultural values. It is likely to meet the criterion for heritage listing, subject to condition assessment.

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3.4.4 Management Recommendations

In March 2018 a statement was issued by RMS to the Manly Daily, a spokeswoman for the RMS said the following:

*"The Manly Sea Life Sanctuary site is zoned W2. Roads and Maritime Services will in the first half of this year call for expressions of interest to lease the site in accordance with the current zoning. The community will continue to be kept informed."*³⁹

While an analysis of the planning constraints is beyond the scope of this report, Zone 'W2' is for recreational waterways use, which can include marinas and kiosks. The zone prohibits the following: Industries; Multi dwelling housing; Residential flat buildings; Seniors housing; Warehouse or distribution centres. Objectives within W2 include protecting the ecological, scenic and recreation values of recreational waterways; allow for water-based recreation and related uses; provide for sustainable fishing industries and recreational fishing. The site in its current planning framework is therefore constrained to the above. In April 2018, Manly Daily reported the site was being considered by Northern Beaches Council as a site for a university school specializing in marine or maritime sciences⁴⁰, which is consistent with the above. The zoning of this area is consistent with the heritage attributes of the building, and any future building or structure on this site should also be consistent with this zoning from a heritage perspective.

3.5 Water Slide Complex (Manly Surf & Slide complex, former Manly Water Works)

3.5.1 Description

The Manly Waterworks Site operates in a space behind the Manly Pavilion. It is understood the leased area also incorporates the former café known as Café Cruz which closed in 2017. It forms part of The Pavilion site and is understood to be managed by a subleasee of the restaurant.

³⁹<https://www.dailytelegraph.com.au/newslocal/manly-daily/whats-replacing-manly-sea-life-sanctuary/news-story/e21a1e55eb834cda9756de9309b040fa>

⁴⁰ <https://www.dailytelegraph.com.au/newslocal/manly-daily/proposal-to-turn-manly-sea-life-sanctuary-aquarium-into-a-university/news-story/ac69d2aecd751511ac564a2b328c5563>

NORTHPOINT HERITAGE

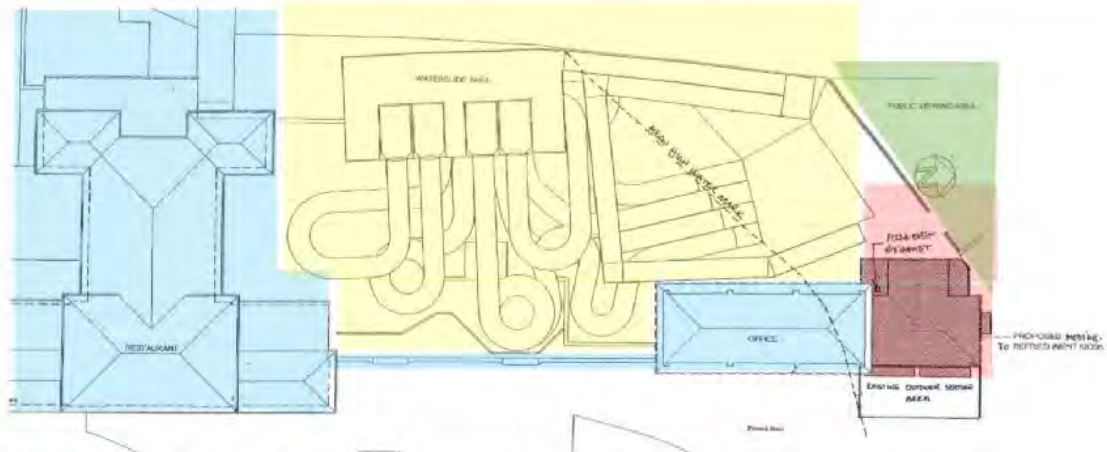


Figure 86: 2006 Site Plan of the Waterworks in the context of the Manly Pavilion site. Note there have been changes to the waterworks site since this time (namely one slide has been removed). The red shaded area is understood to be within the waterworks site but part of the historic Pavilion, the green area is public space (Council owned) used by waterworks patrons for birthday parties and general observation. The blue is the Manly Pavilion restaurant lease. (Source: Base plan extracted from DA 381/2006, overlay by Northpoint Heritage)

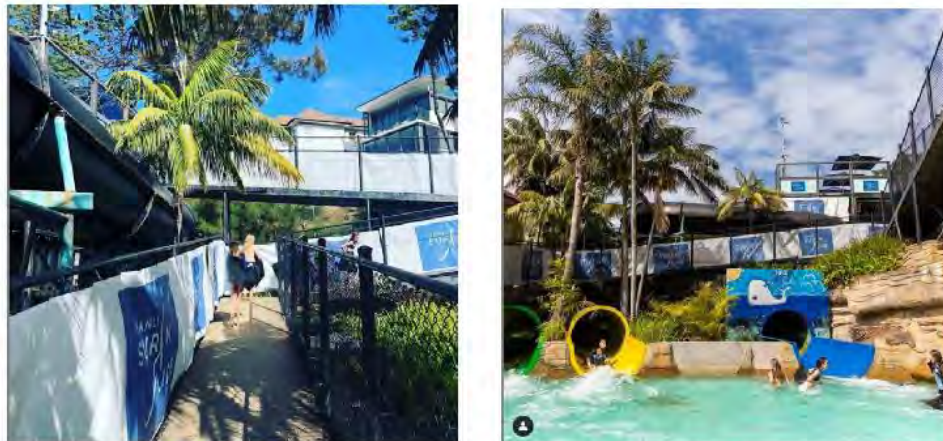


Figure 87: Manly Surf n Slide as it operates today (Source: Manly Surf n Slide Instagram)

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Figure 88: Note the filled in slide second from the right. (Image Source: <https://www.hellosydneykids.com.au/manly-waterworks-manlysurfnslide/>)

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Figure 89: General use of the area shown in green (See Figure 84) (Image Source: <https://www.hellosydneykids.com.au/manly-waterworks-manlysurfnslide/>)



Figure 90: Adjacent area in need of activation (see Figure 87 and Figure 90). The rear structure is part of the Amenities Block.

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Figure 91: Café understood to be associated with the Surf n Slide. This area is not within the SHR curtilage (shaded in blue) for the Manly Pavilion, but is within the LEP curtilage for the amenities block (Item I250).

3.5.2 History

The Manly Cove tourist attraction opened in 1981 and has been an integral part of every northern beaches kid's childhood ever since. It's most famous visitor was Hollywood star Nicole Kidman who braved one of the slides in the movie *BMX Bandits*. Not much has changed since it opened except for small changes including new security cameras, improved lighting, new hoardings, a music system and well as minor amenities such as drinks machines. It's now known as Manly Surf n Slide.

3.5.3 Statement of Significance

The Manly water slide complex is of local significance for its long history of consistent amusement and recreation activities on the site that were much sought after following the destruction of the harbour pool in 1974. It has aesthetic significance as a rare example of 1980s water slides, and is held in high esteem by the local community.

3.5.4 Management Recommendations

The site should continue to operate as a water slide park, consistent with recent history. The vacant café should be reinstated to provide much needed casual food & beverage offerings and active the area.

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3.6 Swimming Cove Swimming Pool (Current & Former)

3.6.1 Description

The Manly Cove Swimming Enclosure is swimming enclosure measuring 109m wide at the beach (north end), extending 44m into the harbour, with its width reduces to 99m wide at the southern (water) end. It is defined by its boundary 15 timber enclosure posts (piles) and its temporary net placed on the outside, with the sole intention to protect swimmers from sharks. At its deepest, the pool is approximately 2m depth (with a maximum depth of 5m depending on tide) The timber piles appear in average condition from a visual perspective, although of varying height and condition. All piles are painted white in the upper portions.

No known physical evidence remains of the destroyed Harbour Pool.



Figure 92: Manly Cove Swimming Enclosure

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Figure 93: Manly Cove Harbour Pool, 1932 (Source: Supplied Manly Local Studies). Note the link with the Federation Point Stairs

3.6.2 History

Built in 1931, the original boardwalk and shark-proof pool extended from the wharf across to the pavilion and aquarium. However, in the 1960s maintenance costs rose and the diving boards and floating platforms became unserviceable. It was estimated in 1968 that demolition of the whole structure would cost \$135,000. However, on the weekend of 25th/26th May 1974, a severe gale completely destroyed the Harbour Pool boardwalk, and the remaining structure was removed by the owners, Brambles Industries, in the following weeks. A plan in 1984 to rebuild the boardwalk never came to fruition.

3.6.3 Statement of Significance

The Manly Cove Swimming enclosure has some local significance to the community for its long term use as a public recreation area. While the area on which it is sited is the location for many significant historic interactions with early European colonists and Aboriginal people, this association is broader than the enclosure itself. As a discrete element, the Manly Cove Swimming Enclosure does not fulfil the criteria for statutory heritage listing.

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3.6.4 Management Recommendations

Continue ongoing maintenance. Removal of existing enclosure is possible subject to an appropriate replacement facility being provided for community use.

3.7 The Pavilion

3.7.1 Description

Ferro-concrete two-storey tiled roof pavilion built on pier. Colonnade to ground floor. Capitals to column have fish, shell and acanthus leaf decoration, and original wrought-iron balustrading between columns beside water. Pavilion walls have decorative tile inlays using burnt orange and ultramarine ceramic tiles. A Greek key motif pattern is surmounted by semi-circular tiles, surmounted by ceramic decoration in scrolls and by urns. There is a strong Spanish influence throughout. The toilet block is of the same period. Special elements include the tile inlay bearing the letter 'M'; the floral motif in cornice decoration, original tiling to walls, and the timber pagoda-style entry. The building is of major significance as one of the few remaining harbour pavilion structures of this period and style in Sydney."



Figure 94: Manly Pavilion viewed from the water (<https://www.spicenews.com.au/hotel-venue-news/manly-pavilion-set-to-reopen/>)

3.7.2 History

The Manly Cove Pavilion on the West Esplanade was built in 1932-33 by the Port Jackson and Manly Steamship Company and opened in October 1933. The new pavilion was built to serve as refreshment and change rooms for up to 3000 bathers using the harbour pool enclosure in Manly Cove, also built by the company which had opened in December 1931. In 1939 new modern 'Hot Sea Baths and Massage

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Rooms' were opened as part of the Dressing Pavilion complex. The pavilion charged 3d admission which entitled use of a clothes peg and showers, and lockers were 3d extra.

After the Second World War the pool continued to be very popular. Wooden speedboats took visitors on thrilling trips around Manly Cove, and the Fun Pier adjacent to Manly Wharf did good business.

However, in the 1960s maintenance costs rose and the diving boards and floating platforms became unserviceable. In 1964 the PJMS Co approached Manly Council to take over the running costs of the pool, but Council's Engineer reported that there were numerous expenses involved: demolition of two unused jetties in very poor condition; repairs to promenade structure and shark netting; repair of concrete substructure of the dressing pavilion; repairs and repainting of the dressing room pavilion; removal of the steel diving tower in very poor condition; and the hot salt water baths in the pavilion were no longer in working order. Regular maintenance would require \$2000 per annum, and further maintenance would be uneconomic in the next ten years – complete demolition would then be necessary at a cost of circa \$60,000⁴¹.

It was estimated in 1968 that demolition of the whole structure would cost \$135,000. However, on the weekend of 25th/26th May 1974, a severe gale completely destroyed the Harbour Pool boardwalk, and the remaining structure was removed by the owners, Brambles Industries, in the following weeks. A plan in 1984 to rebuild the boardwalk never came to fruition, due to prohibitive costs. A shark-netted area came back into use in November 1975, following the loss of the previous net in the storm of 1974.

For most of its existence the Bathing Pavilion has had a restaurant as part of the complex. According to the *Manly Daily*, the Manly Pier Seafood restaurant began in 1932⁴². Subsequently it had various owners. In 1950, The PJMSS Co Ltd leased the Pavilion Tea Rooms for five years to the Le Gourmet Club Restaurant Syndicate, who ran it as a French restaurant. Later it was one of the Cahill's chain. In the 1960s and 1970s it was Doyle's Seafood Restaurant. In September 1979 a fire in the Manly Pier Seafood Restaurant destroyed the restaurant's interior, but after refurbishment it re-opened in December 1979. The restaurant celebrated its 50th anniversary in November 1982.

A Development Application for adaptive re-use of the Pavilion building to provide licensed refreshment rooms and maritime uses was lodged with Manly Council on 3rd June 2003 (DA279/03). The Pavilion restaurant re-opened in March 2010 with chef Jonathan Barthelmess in the kitchen. The re-design was by Squillace Nicholas Architects.⁴³

⁴¹ *Manly Daily* 15 August 1964.

⁴² *Manly Daily* 19 November 1982.

⁴³ SMH Good Living supplement 23 March 2010 p3.

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In 2011 the go-ahead was given by the Land and Environment Court for a function centre to open on the ground floor of the building, following previous rejections by the court and the Manly Council independent assessment panel.⁴⁴

The Pavilion restaurant closed its doors in May 2012.⁴⁵ It reopened again in late 2016 with a new operator.

3.7.3 Statement of Significance

The Manly Cove Pavilion is a rare surviving relic of the private pleasure-grounds and recreation resorts that were once common in the Sydney region in the late nineteenth and early twentieth centuries and which were, in their day, the focus of public recreation activity. It demonstrates the typical features and characteristics of architecture of the type and is important locally as a substantial remnant of the once extensive recreation facilities established by the Port Jackson and Manly Steamship Company that were a feature of Manly Cove and key elements in the history of the development of the suburb.⁴⁶

3.7.4 Management Recommendations

The Manly Pavilion should be retained in its current use as a restaurant. Activation of the ground level should be considered in uses compatible with the historic recreation character of the site and broader precinct and consistent with the Conservation Management Plan for the site.

3.8 The Park (including monuments)

3.8.1 Description

Open space, beach, sandstone retaining wall, pavings, grassed surfaces, monument, structures and cultural plantings of Norfolk Island pine, Moreton Bay Figs, Port Jackson figs and Canary Island Palms. Raised planting beds, with spilt stone edging of Edwardian period characterise the eastern part of the Park. Recent paving detracts from the Edwardian character.⁴⁷ The park includes the hard landscaping implemented during the 1930s and the Manly District Hospital Wishing Well is located prominently at the entry stairs. The park is intersected by an entry way (opposite Eustace Street) with a paved area to the east and grassed area, which is largely consistent with original plantings, to the west. The park also features the Manly District Hospital Wishing Dial, installed in 2007 as a historic artwork. The Wishing Dial was originally located in the shelter at Manly Ocean Beach. The shelter was leased by a sand sculptor who was well known for lifelike sand sculptures. After the shelter was vacated by the artist, it

⁴⁴ *Manly Daily* 15 April 2011, p3.

⁴⁵ *Manly Daily* 23 May 2012, p3.

⁴⁶ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4920001>

⁴⁷ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2020464>

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used by Manly Hospital to use it to house the scale model of the hospital and the subject wishing dial to raise money for it.



Figure 95: Western end of West Esplanade Park, which largely retains its original landscaping although the 1930s planting has been removed. It is highly recognizable from early 1900s imagery from the same location (see Figure 99)

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Figure 96: Eastern end of West Esplanade Park. 1930s paving and stonework has been retained, but planting and soft landscaping has been removed, creating a somewhat disjointed experience



Figure 97: Retained significant hard landscaping. The removal of planting in this area has had an adverse impact on the presentation of this area. Consideration should be given to reinstating planting in this area

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Figure 98: Detail of the Manly Hospital Wishing Dial



Figure 99: Interpretation plaque for the Wishing Dial

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Figure 100: Stairs to West Esplanade (Road), retained from c1930s redesign works. The Manly Hospital Wishing Dial is installed on the right.

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3.8.2 History

Part of the initial grant to John Thompson 1842, purchased by HG Smith. Manly Municipal Council commenced control of the area in 1880, although it was not until 1891 that Alderman Hayes relinquished the position of trustee of the West Esplanade Park.⁴⁸ The first documented works occurred in 1887 when tenders were called to enclose both East and West Esplanade Parks with iron palisading.⁴⁹ Early landscaping had already occurred with the planting of Norfolk Pines by Smith, with ongoing improvements continuing following Council management of the site. On June 13 1930, additional areas to the north were included in West Esplanade park under the Public Parks Act 1912.⁵⁰ Major refurbishment works occurred shortly after in 1936, when the characteristic stone edging was installed and the seawall was upgraded. Aside from routine maintenance, it is likely that the increased demand on the Reserve resulting from the new Harbour Pool prompted these works.



Figure 101: West Esplanade Park in 1907 (Source: Manly Local Studies)

3.8.3 Statement of Significance

Part of earliest cultural treatment of Manly landscape and provision of designed open space. High visual significance

⁴⁸ MUNICIPAL COUNCILS. (1891, December 10). *The Sydney Morning Herald (NSW : 1842 - 1954)*, p. 6. Retrieved March 10, 2019, from <http://nla.gov.au/nla.news-article13857666>

⁴⁹ MANLY. (1887, March 4). *The Daily Telegraph (Sydney, NSW : 1883 - 1930)*, p. 6. Retrieved February 10, 2019, from <http://nla.gov.au/nla.news-article236755378>

⁵⁰ PROCLAMATION OF ADDITION TO ESPLANADE PARK, MANLY. (1930, June 13). *Government Gazette of the State of New South Wales (Sydney, NSW : 1901 - 2001)*, p. 2243. Retrieved January 10, 2019, from <http://nla.gov.au/nla.news-article223052832>

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3.8.4 Management Recommendations

Retain current use, minor landscaping improvements required. Consider reinstatement of 1930s planning at eastern portion to soften concrete areas (ie. plantings consistent with or referencing this design). The Manly Hospital Wishing Dial is of significance and should be retained. Suitable landscaping treatments could be considered to reinstate the sense of entry from West Esplanade (road) opposite Eustace Street.

3.9 Governor Phillip Monument

3.9.1 Description

The monument is a 2 meter tall sandstone plinth commemorating the landing at Manly of Captain Arthur Philip, Royal Navy, the first governor of New South Wales on the 21st January 1788. It also contains a plaque erected in 2006 which tells the story of the spearing of Governor Phillip. Rock face stonework coursed, with one marble and two brass plaques attached.



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Front Inscription

This Monument
Commemorates The
Landing Of The First
White Man At Manly
CAPTAIN ARTHUR
PHILLIP R.N
1st GOVERNOR OF
NSW 21st January
1788
Erected By The Manly
Warringah And
Pittwater Historical
Society
1928



Back Inscription

This monument was
erected in 1929 by the
people of Manly,
Warringah and
Pittwater Historical
Society and a plaque
was later placed on
the street side to
commemorate
the landing of
Governor Phillip in
1788.
More recent
research indicates
that although Philip
was in our area on the



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21st January he did
not come ashore on
that date

Right Side Inscription

THE SPEARING OF
GOVERNOR PHILLIP
NEAR THIS PLACE AT
MANLY COVE ON 7
SEPTEMBER
1790 DURING AN
ABORIGINAL FEAST ON A
BEACHED WHALE, THE
FIRST GOVERNOR OF
NSW, CAPTAIN ARTHUR
PHILLIP RN, WAS
SPEARED IN THE
SHOULDER BY AN
ABORIGINAL MAN, WIL-
LE-ME-RING, WHEN
PHILIP APPROACHED
HIM. THE GOVERNOR
MADE A FULL
RECOVERY.
Erected By Manly,
Warringah & Pittwater
Historical Society In
Conjunction With Manly
Council 2006



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3.9.2 History

The monument was erected in 1928 by the Manly Warringah and Pittwater Historical Society. The memorial was officially unveiled on the 20th January 1929. A new plaque was added in 2006.

3.9.3 Statement of Significance

The memorial to Governor Philip, a marble and sandstone structure standing in a prominent location on the promenade of Manly Cove, has historic and social significance as a remembrance to Governor Philip. It has social significance for commemorating a particular historic event that coincided with Manly's increasing sense of municipal identity as one of the early physical projects undertaken by the Manly Warringah & Pittwater Historical Society.

3.9.4 Management Recommendations

The Monument should be retained as is. While a significant action, relocation within the precinct *may* be acceptable, subject to consultation, considered design, and acceptable heritage interpretation. However, relocation is not considered essential, and should be avoided if possible.

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4. RECOMMENDATIONS

4.1 Overview

The structures at the western end of West Esplanade are not cohesive. With the closure this year of Manly Sea Life Sanctuary and calls for the harbour pool in Manly Cove to be rebuilt, opportunities are presented for entire precinct, particularly the dressing pavilion that was built in the 1930s. With the harbour pool destroyed, the dressing pavilion at the western end of Manly Cove has been partially obscured by aquariums since Marineland was built in 1963/1998 and has lost its connection to the precinct. The result is that one of the most significant buildings on the waterfront at Manly has been almost completely obscured.

As stated previously, this section is intended to provide high level guidance to for consideration in planning and development of the Heritage Activation Plan. It is not intended to form or assess any formal proposal(s).

4.2 Issues & Opportunities

4.2.1 The Park (including monuments)

The park is generally functional. The current layout of the site is loosely based on the 1930s layout of the site, with reconfiguration and expansion of hard landscaped/paved areas. There are opportunities to improve the general configuration and layout of the site to improve user access based on historic imagery. Retention of the 1867 Norfolk Pines is essential. Similarly, the Manly Hospital Wishing Dial is suitably located and should not be relocated.

4.2.2 Promenade

While the promenade does cause an inevitable disconnect between the Park and beachfront, this is considered acceptable in order to retain connection to the western side of West Esplanade. Minor reconfiguration of the promenade along Manly Cove consistent with historic layouts may be acceptable, however consideration would need to be made for the Olympic plaques, which should be retained.

4.2.3 Governor Phillip Monument

The Governor Philip monument has not been moved since its installation the 1920s and is a significant obstruction to the flow of pedestrian traffic on the promenade. However, its somewhat cumbersome location does force users to notice the item. On numerous occasions during peak use (weekend), pedestrians were observed walking around the monument, initially to avoid it, and then pausing to briefly read a plaque before moving on. It is questionable whether any genuine historic insight was obtained by these casual observers (noting that few walked around to observe all four sides, rather pausing to read just one), but it remains clear that visitors do interact more with this item that may be initially thought.

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As such, it is recommended that the monument remain in its current location. Should any significant landscaping changes be proposed to West Esplanade Park, opportunity for integrated design should be considered. The relocation of the monument to a site of appropriate prominence, subject to cautious and considered design, may be appropriate.

4.2.4 The Swimming Enclosure

Existing Swimming Enclosure (Existing)

No issues or opportunities were identified in relation to the current swimming enclosure. There are some maintenance issues with management of timber piles, however maintenance issues are beyond the scope and intention of the report.

Harbour Pool/Boardwalk (Reinstatement)

It is apparent from the history of the site that the most significant element on the site has been the Harbour Pool. Its loss has been keenly felt by those who remember it. Recent initiatives have been taken by Northern Beaches Council to investigate the reinstatement of the Manly Harbour Pool.

From a cultural heritage perspective, indeed it would provide a very positive user experience for visitors to the area. Aside from attracting tourists to the area, the boardwalk would allow safe diving locations (mitigating safety risks at Manly Wharf and the Aquarium, where this currently occurs). It would have a positive impact on the connection of the Wharf with the Manly Pavilion particularly, reinstating the link between the sites that is an intrinsic part of both sites' histories. Indeed, the concept of a 'bathing pavilion' at the Pavilion site has been lost, and this element of this site's history is unknown to those who never saw the pool (generally residents and visitors born from 1970 onwards).

It is noted that a perfectly straight pool is likely not be possible given operational changes to the wharf since 1974. If reinstated, priority should be given to linking the boardwalk with the Federation Point stairs, as existed throughout the history of the Manly Harbour Pool. This would greatly improve access to this area and would be considered a positive heritage outcome. Heritage interpretation (signage in this instance) would be appropriate to detail the history of the pool, and likely design variation.

While reinstatement has an obvious heritage benefit given the 1930s origins and potential for strong community engagement, careful consideration of visual impact is necessary. While the Harbour Pool and Aquarium co-existed for nearly a decade (1965 – 1974), attention should be given as to the appropriateness of visual clutter in this area, particularly as the existing Aquarium is more dominant than the original 1965 construction. In designing any scheme, managing this visual impact should be

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considered at a precinct wide level, particularly when considering future uses of the Aquarium site and any improvements to the Waterslide complex or Art Gallery.



Figure 102: 1943 and 2019 aerial photography from SIX Maps, overlaid to show changes to the Wharf, highlighting areas where any reinstatement of the Boardwalk is likely not to be able to connect to the Wharf in its original location if reinstated (Source: SIX Maps)

4.2.5 The Aquarium

The aquarium is not listed as a heritage item on either the Manly LEP, nor the RMS s170 register. As detailed in Section 2.4, it is of some significance as an aquarium given its long history and pioneering role in marine conservation, and initial assessment is that it may meet the requirements for listing on the Manly Local Environmental Plan 2013. However, it is understood that there are potentially significant structural concerns with the site, which may render retention impossible in its current state. It is understood there are also zoning restrictions on permissible uses of the site.

Retention

The site should continue its use as an aquarium or a compatible maritime use consistent with zoning requirements. Adaptive reuse is not considered appropriate from a heritage perspective as the site's significance retains to its continuous use as an aquarium. Compatible uses such as an environmental or cultural centre continuing a message of marine conservation would also be appropriate in the context of its heritage significance.

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Demolition

It is understood that retention and adaptive reuse of the existing building may not be feasible, and that consideration is being made to whether the building has reached the end of its usable lifespan.

Demolition of the building should be considered as a separate matter and is beyond the scope of this report. Given its potential heritage value, a structural engineering assessment is recommended. While the building does resemble its 1963 construction, this appears to be a response to the foundations of the site rather than any link to the original design. A comprehensive heritage assessment will be required of the building and its history to conclusively determine any aesthetic or technical significance.

However, if retention of the building is not possible, the following recommendations are made for the site:

- No new buildings should be built on the site in order to reinstate the views of the significant buildings
- The round footprint of the existing area should be retained provide evidence of the former aquarium and this chapter of the site's history.
- Conversion of this round footprint to open park which will allow improved sightlines to other heritage items within the precinct
- Consideration of the possibility of dual naming of the site to draw on "Eves Cove" and Ka-ye-may stories (noting that Ka-ye-may point has been named beyond the subject area near Fairlight park) to highlight the colonial history of this site. Broader consultation with the Aboriginal Community will be required in this regard, particularly in the development of artwork and appropriate stories, although initial responses from the Aboriginal Heritage Office are supportive of this concept.
- Incorporation of artwork drawing on marine conservation theme of the site, to create a sense of place, while maintaining significant sight lines.
- The area of the Aquarium site is very large- estimated at 1260m². If a park were to be installed in this location, there is some potential to install limited amusements within this site (for example, a merry-go-round) to reinstate the sense of the Manly Fun Pier that has been lost since the redevelopment of Manly Wharf in the 1990s. However, this 'carnival' aspect is not directly related to the site and may not be necessary with appropriate activation of the Water Slide Complex and swimming area. It is considered that interpretation of marine environment and Indigenous Cultural Heritage would be a better heritage outcome in this area should it become vacant.

4.2.6 The Art Gallery

While elements of the art gallery building are highly significant, these have been obscured by the later addition, rendering them unrecognizable. The following recommendations are made

- The site should continue be to be used as an art gallery or other cultural centre
- Should the site be vacated in the future and a compatible use not be established, consideration of uncovering the 1931 façade (in the first instance) should be made. A

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- Community entertainment activation could be achieved in reinstating the Concert Pavilion façade, with opportunities for cultural activation in Manly cultural events such as the Jazz Festival and the like, particularly if sight lines between a new park at the Aquarium site could be positively designed and linked.
- However, any potential benefits of reinstating of the Concert Pavilion should be carefully balanced against the potential loss of community cultural space, which is not readily available within the Manly area generally, and, more significantly, the historic significance of the Art Gallery as cultural institution.
- It is considered that the most positive heritage outcome in this space to balance the competing values would be removal of later additions to the Art Gallery to reinstate the 1930s façade, and a contemporary lightweight addition to provide a useable gallery space consistent with current needs, appropriately designed to reference and be subservient to the original Art Gallery façade (of which the Concert Pavilion is readily identifiable)

4.2.7 Water slide complex

There are no specific opportunities identified in this study for the Waterslide complex itself. It should continue its current use, with the current Manly Surf N Slide being a well-used and popular summer attraction. However, careful consideration of appropriate design should be made in the context of both the Pavilion and the historic values of the waterpark as a discrete element. Contemporary waterpark concepts such as seen in Figure 103 are not necessarily appropriate in this context and has the potential to dominate the precinct and the Pavilion. The vacant café should be reopened as a matter of priority, and its vacancy is a poor outcome for the precinct.

The area immediately adjacent to the waterslides (bordering to the Amenities Block) has opportunity for improved use. There are no heritage constraints on this site, except for significant planting such as figs. An arborists assessment of this landscape area is recommended. General consideration should be given to improving landscaping in this area – particularly removal of visually intrusive chain link fencing- and the general user experience in this area through improved furniture, soft landscaping, and possible artwork.

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Figure 103: Artists Concept showing a contemporary activation of the Manly Water Works site. While the site is not subject to any statutory listing for its values in relation to the 1980s slides, any proposal should be more in keeping with the traditional operation, noting the 'old world charm' referred to by media reports, and be in keeping with the historic recreation character of the precinct. However, the activation of the pavilion buildings within this concept would be considered to have a positive heritage impact. (Source: <https://www.dailytelegraph.com.au/newslocal/manly-daily/artists-impressions-show-former-waterworks-site-surf-n-slide-in-manly-to-get-major-overhaul/news-story/0b3b075b3a674400b200e10aba92996f>)

4.2.8 Amenities Block

No opportunities were identified during this review of the Amenities Block. It functions well, is in good condition and provides facilities which were observed to be well used. The block should continue its current use and is the only public amenities facility in this precinct.

4.2.9 Access to Federation Point

Note: Federation Point is not within the study area.

Pavilion Stairs

The stairs adjacent to Manly Pavilion are the primary access to the Fairlight leg of the Manly to Spit Scenic Walk. The boardwalk and stairs at Manly Pavilion form the 'scenic' route for visitors accessing Fairlight and Federation Point. While well used, it is not a readily visible pathway to the uninitiated and is not well signposted, despite its demand.

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Any reinstatement of the Manly Harbour Pool should have a direct links with these stairs (as an associated boardwalk). As detailed in Section 4.2.4, reinstatement of the boardwalk linking Manly Wharf and Manly Pavilion generally has a positive heritage impact. Activation of these stairs, thereby providing improved access to Federation Point, is considered a positive opportunity. Reinstating the historic link between the Wharf and the Pavilion would provide a much-improved visitor experience, both from a historic and practical perspective.

Accessible Path

Access to Federation Point and the Fairlight Walkway is by two separate paths- an accessible path that follows the rear of the Art Gallery. The most frequently observed group using this access was is the primary access for the Manly to Spit Scenic walk for pram users.

The accessible path is obscured. The area immediately adjacent to the Art Gallery has been extensively modified and there are no heritage constraints on the path itself. Consideration should be given to generally improving this access and providing a more engaging user experience. Remnant sandstone from 1930s landscaping (and earlier) is visible and should be retained.

Look out off Commonwealth Parade (Behind Art Gallery)

There is pedestrian seating that appears to have once been a lookout, but vegetation has now obscured this. Historic sandstone is also noted in this location. Aerial photography of the precinct appears to show this lookout as early as 1947 (and possibly even earlier, though it is difficult to conclusively identify). The landscaping is consistent with works that occurred in the West Esplanade park in the mid-late 1930s and the alignment is considered to date to this point . It is considered to have a positive impact and is consistent with historic design of the precinct, and should be retained in this location. An undated postcard (likely to be the pre1920s) provides some indication of what this vista may have been like when constructed (Figure 104). The significance of individual trees in this area and appropriateness of sympathetic pruning in this location should be considered.

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Figure 104: Undated postcard providing indicative views of what may have been visible from the lookout when constructed, compared with current views (Source: <http://collectionsearch.nma.gov.au/object/30948> and Google Streetview)

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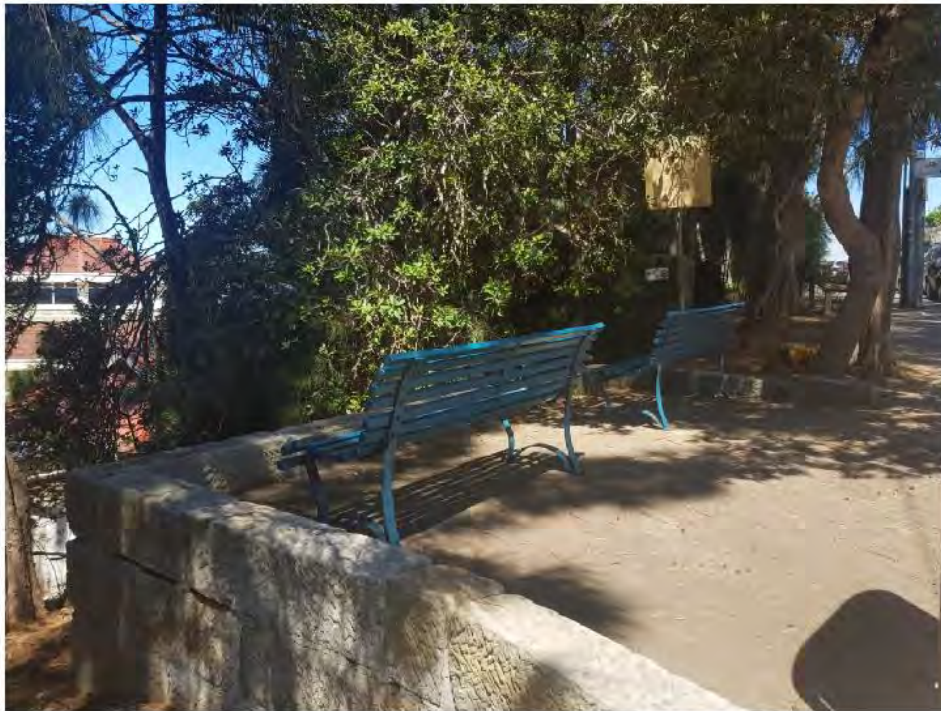


Figure 105: Look out off Commonwealth Parade showing views obscured by growth



Figure 106: Look out adjacent to Commonwealth Parade

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4.3 Constraints

As detailed in Section 1.3, most of the site is subject to statutory Heritage Listings. The following statutory constraints should be noted in the development of any additional concepts:

- Any proposed boardwalk linking the Pavilion to Manly Wharf will be considered to have a substantial heritage impact on both sites, which are listed on the State Heritage Register. Any works would require consultation and statutory approval from the NSW Heritage Council
- The current layout of the West Esplanade Park has basis in its historic layout, particularly 1930s refurbishment works. Any reconfiguration or landscaping treatment should reference these schemes in the first instance.
- The individual elements discussed in Sections 3 and 4 have a long historic connection as a precinct and should be treated as a whole, with a consistent design policy to manage them. The area should be regarded as a heritage precinct within its own element should be managed with ongoing urban design guidelines.
- Any works to the Harbour Foreshores will require consideration under the Manly Local Environmental Plan 2013, Manly Development Control Plan 2014, and Heritage Act (NSW) 1977

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5. CONCLUSION

A preliminary analysis of the history of West Esplanade and its associated structures indicates there is an incredibly complex and layered history of the Precinct. The key opportunity of the site is the potential reinstatement of the Harbour Pool, which would have a positive aspect on the precinct in terms of reinstating the 1930s use of the precinct, and particularly in connecting the Wharf and Manly Pavilion, and improving links to Federation Point.

The following additional studies are recommended in preparation of the future Heritage Activation Plan:

- Analysis of needs and use of the Manly Art Gallery to determine whether it is operating at full capacity within its current space
- Visual Impact Assessment of any proposed Harbour Pool structure
- Comprehensive Heritage Assessment of the Aquarium Building, including Structural Engineer's Assessment of the building is required to clarify its structural integrity which may impact its assessment (ie. Whether any necessary repairs may compromise technical integrity in heritage terms). The heritage assessment should also specifically identify the similarities and variations between the current structure and the original 1960s building and confirm whether significant architectural links remain.
- An arborists assessment should be undertaken of the pocket of remnant bushland between Manly Art Gallery, Water Slide Complex, and Commonwealth Parade
- A formal Heritage Interpretation Plan will be required for the precinct, which should be developed in conjunction with design scheme. This will require resolution of issues, namely the feasibility of boardwalk reinstatement and the future use of the Aquarium site

Overall, the West Esplanade Precinct is an area with a unique and layered heritage, with many opportunities to improve user engagement. Given the complex visual relationship between the various sites, particularly the aquarium building, a well-thought-out precinct-wide Heritage Activation Plan is considered positive outcome for the area and will greatly add to users understanding and interpretation of West Esplanade.

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APPENDIX 1: SUMMARY HISTORY TIMELINE

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SUMMARY TIMELINE

The following is a summary only of key events within West Esplanade. Refer to the full report for a more detailed history. NB. Shaded areas are events which did not occur within the study area but are directly related to, or impacted the site.

| Year/Period | Event | Report Ref. |
|--------------------|--|-------------|
| Pre 1788 | The area is known as West Esplanade is populated by the Gayamaygal people | Page 11 |
| 1788 (January) | Governor Phillip takes a boat to explore Port Jackson, a harbour to the north. They approached Kaiymay (Manly Cove) and meet about 20 Aboriginal men who meet the boats. Phillip and the officers are impressed and Philip later names the place 'Manly' for their manly qualities | Page 12 |
| 1788 (January 29) | European colonists encounter Aboriginal women for the first time at Manly Cove, and name the area "Eve's Cove" in tribute | Page 39 |
| 1788 (31 December) | Kidnapping of Aranaboo | Page 14 |
| 1789 (April) | <i>Smallpox outbreak which rapidly decimates the Aboriginal population</i> | |
| 1789 (May 3) | <i>Arabaroo dines on the HMS Sirius</i> | |
| 1789 (May 18) | <i>Arabaroo dies from smallpox contracted eight days earlier</i> | |
| 1789 (November 25) | Kidnapping of Bennelong and Colebee | Page 14 |
| 1789 (December 12) | Colebee escapes | |
| 1790 (3 May) | Bennelong escapes | |
| 1790 (7 September) | Bennelong invites Philip to Manly Cove. Philip is speared by Willemaring | Page 14 |
| 1790 (29 December) | <i>Bennelong and his wife Baragaroo return to Sydney Cove under the own volition</i> | |
| January 1810 | The first Crown Grants of Land at Manly are issued to Richard Cheers (100 acres) and Gilbert Baker (300 acres) | Page 17 |
| 1827 | Henry Gilbert Smith arrives in Sydney, his vision of which would shape the precinct | Page 19 |
| 1855 | The first wharf was an open-decked pier built in 1855 so Manly's founder, Henry Gilbert Smith, could excursion ferries from the city to bring people to his new seaside resort at Manly | Page 20 |
| 1857 | Daily ferry service was in operation and the following decade the open-decked pier was extended by about 15 metres | Page 21 |
| 1857 | Henry Gilbert Smith has the first baths at Manly Cove Constructed | Page 21 |
| 1878 | New baths constructed by Manly Council | Page 21 |
| 1883 | <i>Significant improvements to wharf</i> | |
| 1900 | <i>Wharf demolished in 1900 due to plague concerns</i> | |
| 1907 | <i>Improvements made to wharf</i> | |
| 1908 | <i>Improvements made to wharf</i> | |

NORTHPOINT HERITAGE

| Year/Period | Event | Report Ref. |
|-------------------|--|-------------|
| 1911 | Improvements made to wharf | |
| 1916 | Improvements made to wharf, including the introduction of the clocktower | Page 34 |
| 1922 | Manly Concert Pavilion opens and the Poster King performs a season | Page 33 |
| 1928 | The "Ladies Baths" now form more of a swimming enclosure | Page 34 |
| 1921 | Tenders for the extension of the retaining wall on the harbour beach invited | Page 34 |
| 1930 (14 June) | The Concert Pavilion conversion is completed, and Manly Art Gallery opens | Page 40 |
| 1931 | The Manly Cove Swimming Pool opens | Page 41 |
| 1932 | Swimming pool improved- installation of lights and other general improvements including water amusements | Page 42 |
| 1933 | Dressing room & pavilion built | Page 43 |
| 1935-1938 | Various landscaping works occur to West Esplanade Park | Page 54 |
| 1963 (November) | Marineland officially opens | Page 58 |
| May 24 1974 | Sydney Storm destroys the boardwalk and causes extensive damage to the entire area | Page 61 |
| 1981 | Manly Waterworks opens | Page 60 |
| 1981 | Manly Art Gallery undertakes renovations and significant extensions, becoming Manly Art Gallery & Museum | Page 54 |
| 1988 (February) | The aquarium reopens after \$12 million construction as Underwater World | Page 54 |
| 2000 | the attraction is renamed Manly Oceanworld after being bought by Sydney Aquarium and has minor operational changes | Page 55 |
| 2012 (June) | Manly Oceanworld changes ownership and becomes as Manly Sea Life Sanctuary with minor internal works and operational changes | Page 61 |
| 2015 | Manly Waterworks closes and the site remains vacant | Page 61 |
| 2016 (December) | Waterslide complex reopens as Manly Surf n Slide after renovations | Page 64 |
| 2018 (28 January) | Manly Sea Life Sanctuary closes and building remains vacant | |
| 2019 | Northern Beaches Council commences the West Esplanade Heritage Activation study | |

NORTHPOINT HERITAGE

APPENDIX 2: HISTORIC AERIAL PHOTOGRAPHY

NORTHPOINT HERITAGE

SUBJECT SITE IN 1930



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1943



Source: Land & Property Information

NORTHPOINT HERITAGE

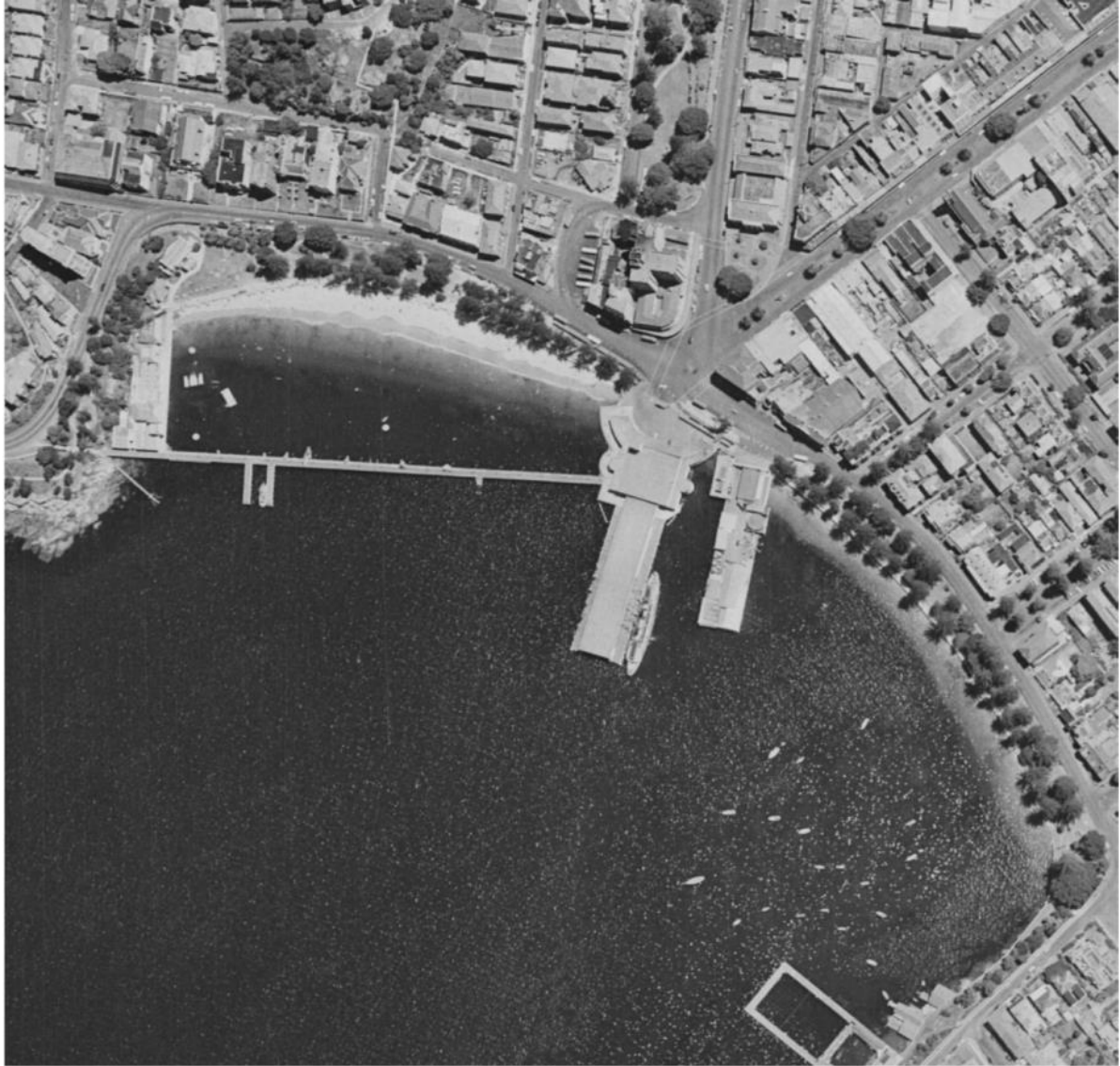
SUBJECT SITE IN 1947



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1956



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1961



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1979



Source: Land & Property Information

NORTHPOINT HERITAGE

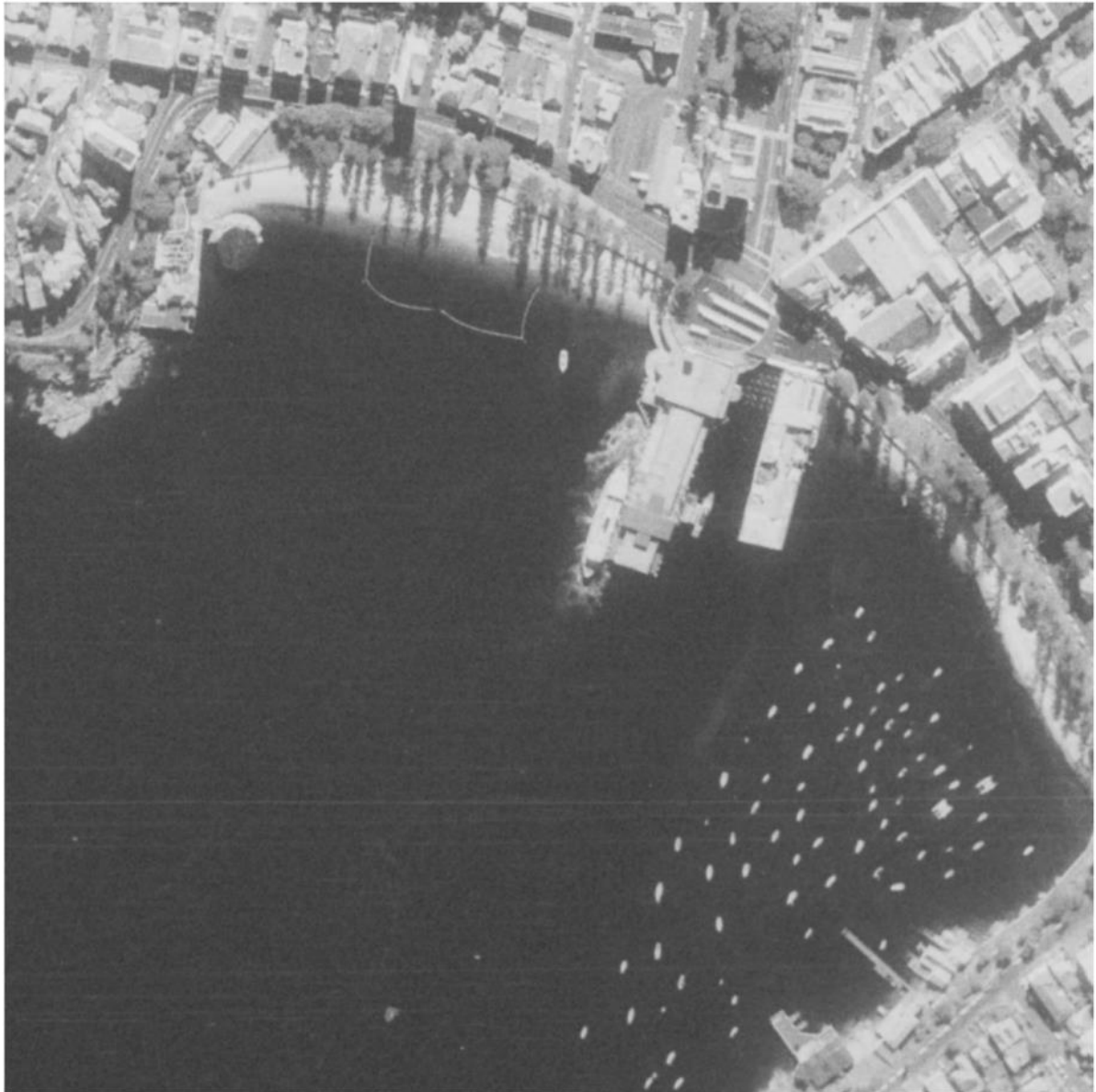
SUBJECT SITE IN 1982



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1984



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1994



Source: Land & Property Information

NORTHPOINT HERITAGE

SUBJECT SITE IN 1998



Source: Land & Property Information

NORTHPOINT HERITAGE

APPENDIX 3: STATE HERITAGE INVENTORY FORMS

Manly Cove Amenities Block

Item details

Name of item: Manly Cove Amenities Block
Other name/s: Dressing Pavilion, Toilet Block
Type of item: Built
Group/Collection: Community Facilities
Category: Public Lavatory
Primary address: West Esplanade, Manly, NSW 2095
Local govt. area: Manly
All addresses

| Street Address | Suburb/town | LGA | Parish/County | Type |
|----------------|-------------|-------|---------------|-----------------|
| West Esplanade | Manly | Manly | | Primary Address |

Statement of significance:

Public toilet block significant for its association with the Manly Pavilion and its complementary simplified Inter War Spanish Mission style.

Manly Council is in the process of updating the inventory sheets for places listed as Items of Environmental Heritage on the Manly Local Environment Plan (2013) as amended.

The information in this inventory entry may not be complete.

For further information, please contact Manly Council's Heritage Advisor.

Date significance updated: 13 Feb 02

Note: The State Heritage Inventory provides information about heritage items listed by local and State government agencies. The State Heritage Inventory is continually being updated by local and State agencies as new information becomes available. Read the [QEH copyright and disclaimer](#).

Description

Physical description: Single storey freestanding rendered brick building containing public toilets for men and women. Features a hipped, multicoloured terracotta tile roof with gable vents, timber framed double hung obscure glass windows, external frieze of blue and cream glazed tiles with wave and water lily motifs, glazed terracotta tiles and panels decorating the facade. The entries to the areas for each gender, are defined by small timber pergolas carried on 4 doric columns. Internally, there are original cream interior wall tiles and beige terrazzo cubicles.

Physical condition and/or Archaeological potential:

Intact

Date condition updated: 01 Dec 99

History

Historical notes: Constructed in 1933 as part of the Manly Dressing Pavilion complex, constructed by the Manly and Port Jackson Steam Ship Co. Ltd. To serve the public swimming at the Manly Harbour Pool.

Historic themes

| Australian theme (abbrev) | New South Wales theme | Local theme |
|--|--|-------------|
| 4. Settlement-Building settlements, towns and cities | Utilities-Activities associated with the provision of services, especially on a communal basis | (none) |

Assessment of significance

SHR Criteria a)
[Historical significance] Significant for its association with the Manly Dressing Pavilion, a major tourist facility from 1933.
SHR Criteria c)
[Aesthetic significance] Significant for its Inter War Spanish Mission style complementing the associated Manly Dressing Pavilion.
SHR Criteria d)
[Social significance] Significant for its association with tourism since 1933.
Integrity/Intactness: Intact
Assessment criteria:

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=20...> 15/05/2019

Manly Cove Amenities Block | NSW Environment & Heritage

Page 2 of 2

Items are assessed against the ^{PDF} [State Heritage Register \(SHR\) Criteria](#) to determine the level of significance.
Refer to the Listings below for the level of statutory protection.

Recommended management:

Requires Conservation Management Plan prior to any work other than repair.

Listings

| Heritage Listing | Listing Title | Listing Number | Gazette Date | Gazette Number | Gazette Page |
|--------------------------|----------------------------|----------------|--------------|----------------|--------------|
| Local Environmental Plan | Manly Cove Amenities Block | L250 | 05 Apr 13 | | |

Study details

| Title | Year | Number | Author | Inspected by | Guidelines used |
|-----------------------------|------|--------|----------------------------|--------------|-----------------|
| Manly Heritage Study | 1986 | | Blackmore, Ashton, and Co. | | No |
| Review and Database Listing | 1999 | | C. Kemp/ W. McArthur | | Yes |
| Review and Database Listing | 1999 | | C. Kemp/ W. McArthur | | Yes |

References, internet links & images

None

Note: internet links may be to web pages, documents or images.



(Click on thumbnail for full size image and image details)

Data source

The information for this entry comes from the following source:

Name: Local Government
Database number: 2020185

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=20...> 15/05/2019



[Home](#) > [Topics](#) > [Heritage places and items](#) > [Search for heritage](#)

Harbour Foreshores

Item details

| | |
|--------------------------|---|
| Name of item: | Harbour Foreshores |
| Type of item: | Landscape |
| Group/Collection: | Landscape - Natural |
| Category: | Coastal environment |
| Primary address: | Extent of Municipal boundary adjacent to the Harbour ; NSW |
| Local govt. area: | Manly |

All addresses

| Street Address | Suburb/town | LGA | Parish | County | Type |
|--|-------------|-------|--------|--------|-----------------|
| Extent of Municipal boundary adjacent to the Harbour | | Manly | | | Primary Address |

Statement of significance:

Natural
landscape type - Aesthetic.

Manly Council is in the process of updating the inventory sheets for places listed as Items of Environmental Heritage on the Manly Local Environment Plan (2013) as amended.

The information in this inventory entry may not be complete.

For further information, please contact Manly Council's Heritage Advisor.

Date
significance updated: 24 Nov 00

Note: The State Heritage Inventory provides information about heritage items listed by local and State government agencies. The State Heritage Inventory is continually being updated by local and State agencies as new information becomes available. Read the [DEH copyright and disclaimer](#).

Description

| | |
|------------------------------|--|
| Physical description: | Length of foreshore including natural and built elements of the landscape. Rocky sandstone ledgers, beaches, mud flats and |
|------------------------------|--|

sandstone retaining walls and timber structures.


Current use: Private and public environment.

Historic themes

| Australian theme (abbrev) | New South Wales theme | Local theme |
|---|--|-------------|
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | (none)- |

Assessment of significance

SHR Criteria a) [Historical significance]
Landscape, Isolation, Splendid isolation, Permanent Settlement, Villas.

Assessment criteria: Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Listings

| Heritage Listing | Listing Title | Listing Number | Gazette Date | Gazette Number | Gazette Page |
|--------------------------------|-----------------------|----------------|--------------|----------------|--------------|
| Local Environmental Plan | Harbour Foreshores | 11 | 05 Apr 13 | | |

Study details

| Title | Year | Number | Author | Inspected by | Guidelines used |
|----------------------|------|--------|----------------------------|--------------|-----------------|
| Manly Heritage Study | 1986 | | Blackmore, Ashton, and Co. | | N D |

References, internet links & images

None

Note: internet links may be to web pages, documents or images.



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Data source

The information for this entry
comes from the following source:

Name: Local Government

**Database
number:** 2020474

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send your comments to the **Database Manager**

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Manly Cove Pavilion

Item details

| | |
|--------------------------------|--|
| Name of item: | Manly Cove Pavilion |
| Type of item: | Built |
| Group/Collection: | Recreation and Entertainment |
| Category: | Restaurant (food outlet) |
| Location: | Lat: -33.7991833492 Long: 151.2809441870 |
| Primary address: | West Esplanade, Manly, NSW 2095 |
| Local govt. area: | Manly |
| Local Aboriginal Land Council: | Metropolitan |

Property description

| Lot/Volume Code | Lot/Volume Number | Section Number | Plan/Folio Code | Plan/Folio Number |
|-----------------|-------------------|----------------|-----------------|-------------------|
| LOT | 2 | | DP | 1019352 |

All addresses

| Street Address | Suburb/town | LGA | Parish/County | Type |
|----------------|-------------|-------|---------------|-----------------|
| West Esplanade | Manly | Manly | | Primary Address |

Owner/s

| Organisation Name | Owner Category | Date Ownership Updated |
|-------------------|------------------|------------------------|
| NSW Maritime | State Government | |

Statement of significance:

One of the few remaining harbour pavilion structures of this period and style in Sydney. (Blackmore, Ashton, Higginbotham, Rich, Burton, Maitland, Pike 1986)

Date significance updated: 12 Jun 98

Note: The State Heritage Inventory provides information about heritage items listed by local and State government agencies. The State Heritage Inventory is continually being updated by local and State agencies as new information becomes available. Read the [OEI copyright and disclaimer](#).

Description

| | |
|---|--|
| Physical description: | Largely intact exterior retaining the ambience of the interwar Mediterranean style; white painted rendered brick, decorative ceramic tile insets and arched colonnade. (Anglin 1990:1047) |
| | Ferro-concrete two storey tiled roof pavilion built on pier. Colonnade to ground floor. Capitals to columns have fish, shell and acanthus leaf decoration; original wrought iron balustrading between columns beside water. |
| | Pavilion walls have decorative tile inlays using burnt orange and ultramarine ceramic tiles. A Greek key motif pattern is surmounted by semi-circular tiles which is in turn surmounted by ceramic decoration in scrolls and by urns. |
| | There is a strong Spanish influence throughout. The toilet block is of the same period. Special elements include the tile inlay bearing the letter "M", the floral motif in cornice decoration, original tiling to walls and the timber pagoda-style entry. (Blackmore, Ashton, Higginbotham, Rich, Burton, Maitland, Pike 1986) |
| Physical condition and/or Archaeological potential: | Good condition. Largely intact exterior retaining the ambience of the interwar Mediterranean style. (Anglin 1990:1047) |
| | Date condition updated: 15 Jun 98 |
| Modifications and dates: | The original pavilion has undergone interior refurbishment c.1980 - restaurant fitout. (Anglin 1990:1047) |
| Current use: | Restaurant and public amenities |
| Former use: | Dressing pavilion and amenities block |

History

| | |
|-------------------|--|
| Historical notes: | Built during the interwar period when Manly was a favourite and fashionable seaside resort. (Anglin 1990:1047) |
| | Sequential development (where known): Parts of Wheeler (1842) and Johnston (1842) grants, erected c.1933 by Port Jackson and Manly Steamship Company. (Blackmore, Ashton, Higginbotham, Rich, Burton, Maitland, Pike 1986) |

Historic themes

| Australian theme (abbrev) | New South Wales theme | Local theme |
|--|--|--|
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | Developing local, regional and national economies-National Theme 3 |
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | Significant Places: How are significant places marked in the landscape of Parramatta by, or for, different groups?-Monuments and Sites |
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | Tourism- |
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | Landscapes of coastal swimming, diving, surfing and sunbathing- |
| 4. Settlement-Building settlements, towns and cities | Land tenure-Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal | Changing land uses - from rural to suburban- |
| 4. Settlement-Building settlements, towns and cities | Land tenure-Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal | Changing land uses - from rural to tourist- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | (none)- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | 20th century Suburban Developments- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Shaping coastal settlement- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | A Picturesque Residential District- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | 20th Century infrastructure- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Creating landmark structures and places in suburban settings- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Vernacular towns serving a specific industry- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Beautifying towns and villages- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Role of transport in settlement- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Developing suburbia- |
| 5. Working-Working | Labour-Activities associated with work practises and organised and unorganised labour | Working on the waterfront- |
| 8. Culture-Developing cultural institutions and ways of life | Creative endeavour-Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities. | Architectural styles and periods - Interwar Mediterranean- |
| 8. Culture-Developing cultural institutions and ways of life | Leisure-Activities associated with recreation and relaxation | (none)- |
| 8. Culture-Developing cultural institutions and ways of life | Leisure-Activities associated with recreation and relaxation | Tourism- |

Assessment of significance

| | |
|--|---|
| SHR Criteria a) [Historical significance] | For its associations with the early 20th century developments of the Manly seaside resort.(Anglin1990:1047) The sandstone pillar is a relic from past maritime activity and is evidence of Sydney Harbour's nautical development |
|--|---|

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=50...> 15/05/2019



| | |
|---|---|
| | and early evidence of interest in retaining and re-using old buildings. (Travis 1986) |
| | Further research required. |
| SHR Criteria c) [Aesthetic significance] | As an intact example of the interwar Mediterranean style.(Anglin 1990:1047) |
| SHR Criteria d) [Social significance] | To be assessed - further research required. |
| SHR Criteria e) [Research potential] | To be assessed - further research required. |
| SHR Criteria g) [Representativeness] | One of few remaining harbour pavilion structures of this period and style in Sydney.(Blackmore, Ashton, Higginbotham, Rich, Burton, Maitland, Pike 1986) |
| Integrity/Intactness: | Largely intact exterior.(Anglin 1990:1047) |
| Assessment criteria: | Items are assessed against the ^{PDF} State Heritage Register (SHR) Criteria to determine the level of significance. Refer to the Listings below for the level of statutory protection. |

Procedures /Exemptions

| Section of act | Description | Title | Comments | Action date |
|----------------|---|---|---|-------------|
| 21(1)(b) | Conservation Plan submitted for endorsement | Manly Bathers Pavilion, West Esplanade, Manly NSW 2092 (Noel, Bell Ridley Smith and Partners, April 2002) | | Jun 21 2005 |
| 57(2) | Exemption to allow work | Standard Exemptions | <p>SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977</p> <p>I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order;</p> <p>1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and</p> <p>2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.</p> <p>FRANK SARTOR Minister for Planning Sydney, 11 July 2008</p> <p>To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.</p> | Sep 5 2008 |

^{PDF} [Standard exemptions](#) for works requiring Heritage Council approval

Listings

| Heritage Listing | Listing Title | Listing Number | Gazette Date | Gazette Number | Gazette Page |
|---|---------------|----------------|--------------|----------------|--------------|
| Heritage Act - State Heritage Register | | 01433 | 18 Apr 00 | | |
| Heritage Act - s.170 NSW State agency heritage register | | 4920001 | | | |
| Local Environmental Plan | | LEP1988 | 16 Sep 88 | 145 | 4916 |
| Within a conservation area on an LEP | | Manly UCA | 24 Sep 97 | | |
| Heritage study | | | 01 Jan 86 | | |

Study details

| Title | Year | Number | Author | Inspected by | Guidelines used |
|---|------|--------|---|--------------|-----------------|
| Heritage Study:Municipality of Manly | 1986 | | C.Blackmore, P.Ashton, E.Higginbotham, E.Rich, C.Burton, N.Maitland, P.Pike | | No |
| Maritime Services Board Heritage and Conservation Register : Sydney Harbour | 1990 | 1047 | Anglin Associates | | No |
| Marine Ministerial Holding Corporation S170 Register | 1999 | | Heritage Unit, Department of Public works & Services | | Yes |

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=50...> 15/05/2019



References, internet links & images

None

Note: internet links may be to web pages, documents or images.



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Data source

The information for this entry comes from the following source:

| | |
|------------------|-----------------|
| Name: | Heritage Office |
| Database number: | 5051352 |
| File number: | Ho2/00197 |

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=50...> 15/05/2019

Park

Item details

Name of item: Park
Other name/s: Esplanade Park
Type of item: Landscape
Group/Collection: Landscape - Cultural
Category: Other - Landscape - Cultural
Primary address: West Esplanade, Manly, NSW 2095
Local govt. area: Manly
All addresses

| Street Address | Suburb/town | LGA | Parish/County | Type |
|----------------|-------------|-------|---------------|-----------------|
| West Esplanade | Manly | Manly | | Primary Address |

Statement of significance:

Part of earliest cultural treatment of Manly landscape and provision of designed open space. High visual significance.

Manly Council is in the process of updating the inventory sheets for places listed as Items of Environmental Heritage on the Manly Local Environment Plan (2013) as amended.

The information in this inventory entry may not be complete.

For further information, please contact Manly Council's Heritage Advisor.

Date significance updated: 24 Nov 00

Note: The State Heritage Inventory provides information about heritage items listed by local and State government agencies. The State Heritage Inventory is continually being updated by local and State agencies as new information becomes available. Read the [OEI copyright and disclaimer](#).

Description

Physical description: Open space, beach, sandstone retaining wall, pavings, grassed surfaces, monument, structures and cultural plantings of Norfolk Island pine, Moreton Bay Figs, Port Jackson figs and Canary Island Palms. Raised planting beds, with split stone edging of Edwardian period characterise the eastern part of the Park. Recent paving detracts from the Edwardian character.

Current use: Park

History

Historical notes: John Thompson 1842; HG Smith; Manly Municipal Council 1880

Historic themes

| Australian theme (abbrev) | New South Wales theme | Local theme |
|--|--|-------------|
| 3. Economy-Developing local, regional and national economies | Environment - cultural landscape-Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | (none)- |
| 4. Settlement-Building settlements, towns and cities | Towns, suburbs and villages-Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | (none)- |

Assessment of significance

SHR Criteria a)
(Historical significance) Landscape, Splendid isolation, Resort, Installation, Infrastructure service.

Assessment criteria: Items are assessed against the [State Heritage Register \(SHR\) Criteria](#) to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Listings

| Heritage Listing | Listing Title | Listing Number | Gazette Date | Gazette Number | Gazette Page |
|--------------------------|---------------|----------------|--------------|----------------|--------------|
| Local Environmental Plan | Park | L251 | 05 Apr 13 | | |

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=20...> 15/05/2019

Study details

| Title | Year | Number | Author | Inspected by | Guidelines used |
|----------------------|------|--------|----------------------------|--------------|-----------------|
| Manly Heritage Study | 1986 | | Blackmore, Ashton, and Co. | | No |

References, internet links & images

None

Note: internet links may be to web pages, documents or images.



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Data source

The information for this entry comes from the following source:

Name: Local Government
Database number: 2020464

<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=20...> 15/05/2019

REPORT

Manly West Esplanade Precinct Masterplan

Reinstatement of the Boardwalk and Harbour Pool –
Considerations in a Feasibility Study

Client: Northern Beaches Council

Reference: PA1893-RP190319

Status: Final/P02.01

Date: 19 March 2019



Project related

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royalhaskoningdhv.com **W**

Document title: Manly West Esplanade Precinct Masterplan

Document short title: Manly West Esplanade

Reference: PA1893-RP190319

Status: P02.01/Final

Date: 19 March 2019

Project name: Manly West Esplanade Precinct Masterplan

Project number: PA1893

Author(s): Greg Britton

Drafted by: G Britton

Checked by: G Britton

Date / initials: 19/03/19 GWB

Approved by: G Britton

Date / initials: 19/03/19 GWB

Classification

Project related



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19 March 2019

MANLY WEST ESPLANADE

PA1893-RP190319

i

Project related



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Project related



1 INTRODUCTION

1.1 Background

Northern Beaches Council (Council) is preparing a maritime precinct masterplan for Manly West Esplanade. As part of the masterplan process, consideration is being given to the possibility of reinstating the boardwalk and harbour pool which existed up until 1974 when it was severely damaged in a coastal storm and subsequently demolished.

Haskoning Australia Pty Ltd, a company of Royal HaskoningDHV (RHDHV), was engaged by Council to provide expert technical advice in relation to the scope of feasibility studies for the concept of reinstating the boardwalk and harbour pool, from a coastal, maritime and environmental point of view.

An indicative concept plan for reinstatement of the boardwalk and harbour pool provided to RHDHV at the inception meeting, for illustration purposes only, is shown in **Figure 1**.

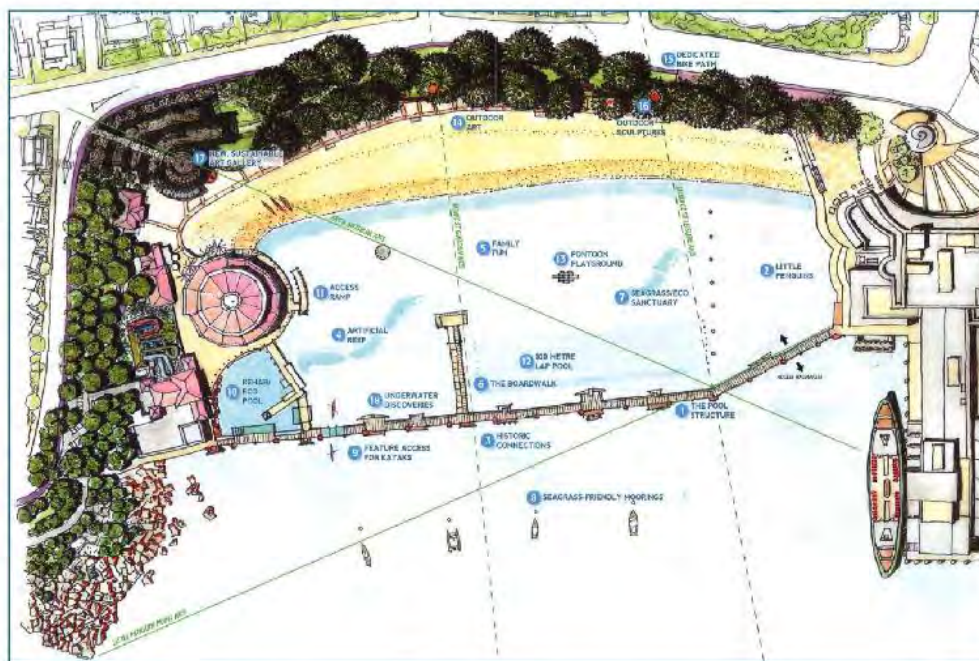


Figure 1 Indicative concept for reinstatement of boardwalk and harbour pool for illustration purposes only
Source: Northern Beaches Council

Project related



1.2 Scope of Work

The scope of work involved the following main tasks:

- inception meeting to discuss background, including a site inspection;
- advice on the architecture of the masterplan and mandatory requirements and recommended elements for a complete and robust feasibility study of the concept to reinstate the boardwalk and harbour pool¹;
- meeting with Roads and Maritime Services (RMS);
- preparation of a design concept for the boardwalk including hand drawn sketches;
- preparation of an order of cost estimate for construction of the boardwalk and harbour pool, compilation of indicative operating and maintenance costs, and preparation of a whole of life cost estimate;
- attendance at a workshop with Council staff to discuss the Manly West Esplanade Precinct Masterplan including a brief presentation of the main findings of the work undertaken by RHDHV; and
- preparation of the report herein setting out the findings of the scope of work.

1.3 Structure of the Report

The report is structured in the following way:

- **Section 2** sets out advice on the individual studies recommended for a complete and robust assessment of the feasibility of reinstatement of the boardwalk and harbour pool;
- **Section 3** sets out notes prepared from the meeting with RMS;
- **Section 4** sets out the design concept and cost estimates including the whole of life cost estimate;
- **Section 5** outlines the presentation and discussion at the workshop; and
- **Section 6** includes a number of concluding remarks.

The report assumes the reader has a good knowledge of the study area.

¹ Any feasibility study itself was to be a separate piece of work and subject to a subsequent project phase if approved. This work has not proceeded at this time.

Project related



2 ADVICE ON STUDIES TO ASSESS FEASIBILITY OF REINSTATING THE BOARDWALK AND HARBOUR POOL

2.1 General

Based on background provided at the inception meeting, the site inspection, local knowledge of the study area, and experience of the writer, 13 individual studies were recommended in order to assess the feasibility of reinstatement of the boardwalk and harbour pool at Manly West Esplanade in a complete and robust approach. These studies are listed below.

Brief comments on the scope of work for the studies are included in the following section. As agreed with Council, these comments do not constitute a detailed Brief for the individual studies. A preliminary program was also provided, which is included at the end of this section.

The information in this section was initially conveyed to Council in a memo dated 16 July 2018.

Recommended list of studies:

- hydrographic and land survey;
- geotechnical investigation;
- condition assessment of existing structures;
- coastal processes;
- aquatic ecology;
- landscape character and visual impact assessment;
- heritage study;
- ecological engineering opportunities;
- navigation impact assessment;
- safety in design;
- concept design;
- capital cost estimate and whole of life assessment; and
- planning strategy/approvals pathway.

2.2 Brief Comments on Scope for Studies

2.2.1 Hydrographic and land survey

A suitable land survey, including foreshore structures, may already exist for the Masterplan area. This should be confirmed.

An up-to-date hydrographic survey is important for a number of reasons:

- confirmation of available depth for diving safety assessment;
- confirmation of available depth for navigation access;
- input to coastal processes studies, eg. wave transformation; and
- input to cost estimates eg. length of support piles for the boardwalk.

Project related



An outline scope of work is provided below:

- coverage should include all foreshore structures within the Masterplan area, the sandy beach, and the seabed for a minimum distance of 50m seaward of the conceptual alignment of the boardwalk;
- levels should be in metres reduced to both Australian Height Datum (AHD) and Zero on the Fort Denison Tide Gauge (ZFDTG), and referred to MGA co-ordinates on the GDA94 datum;
- hydrographic data should be captured and certified by a Certified Professional in Hydrographic Surveying; and
- hydrographic data should comply with the latest version of the Information Guide – Maritime Property: Guidelines for Hydrographic and Geotechnical Data (RMS).

2.2.2 Geotechnical investigation

Geotechnical information is important for concept design of the boardwalk structure and for preparation of cost estimates. It is suggested that the geotechnical investigation be undertaken in a staged manner due to potential costs, commencing with a desk top study which assembles and reviews all existing geological and geotechnical information for the study area.

Existing geotechnical information may be available from previous investigations or from pile driving records associated with:

- former boardwalk;
- Manly Wharf;
- Manly Aquarium; and
- existing piled swimming enclosure

Depending on the extent of existing available geotechnical information and the outcomes of ongoing assessment of the feasibility of reinstatement of the boardwalk, additional studies may be justified. Such studies would likely include geophysical and geotechnical investigations.

A geophysical investigation should be conducted within a strip of seabed between Manly Wharf and Manly Pavilion having coverage of the expected alignment of the boardwalk and adjacent areas (to allow interpolation). This investigation would inform a program of drilling and possibly cone penetrometer testing.

2.2.3 Condition assessment of existing structures

A condition assessment of the following existing structures is recommended in order to assess their suitability for incorporation into the Masterplan, the need for repairs, upgrading or replacement, etc. Some condition assessments may have already been completed.

- Manly Wharf (at eastern take-off point for boardwalk);
- boardwalk structure at Manly Pavilion (at western take-off point for boardwalk);
- Manly Aquarium, including intake structures;
- seawall along West Esplanade; and
- existing swing moorings.

Project related



The condition assessment would normally comprise the following main activities:

- review of 'as constructed' drawings and basis of design (BoD) documents;
- detailed inspection above water, and below water by divers (as required), using non-destructive techniques;
- reporting of condition against established criteria; and
- preparation of recommendations for repairs/upgrading/replacement as required.

It is possible that access by plant and equipment to undertake repairs, and the like, to existing structures may be limited following reinstatement of the boardwalk which could therefore bring forward the need for such works to be undertaken on existing structures.

2.2.4 Coastal processes including climate change

A knowledge of the local coastal processes is important since, for example, the coastal processes will influence the design of the boardwalk (eg. wave loading) and since coastal processes may be potentially affected by the proposed boardwalk (eg. wave energy at the shoreline).

The following coastal processes should be documented to the extent necessary to assess the feasibility of reinstatement of the boardwalk and harbour pool:

- water level variation – astronomical tide, storm surge, wave setup and wave runup;
- wave climate – swell, local wind waves, and boat wake;
- currents – tidal, wind-induced and wave-induced;
- sediment movement;
- beach erosion;
- shoreline recession;
- oceanic inundation; and
- stormwater.

An assessment should be undertaken of the impact of coastal processes on the proposed structures and the impact of the proposed structures on coastal processes. This assessment may be based on existing available information or may involve specific studies such as numerical modelling of waves and currents, subject to the level of detail of existing information and the sensitivity of the particular issue.

A summary should be prepared of the current state of knowledge of Climate Change, in particular sea level rise and storminess, which have the potential to influence the design of the boardwalk and harbour pool. Reference should be made to the latest report of the Intergovernmental Panel on Climate Change (IPCC), which currently is the Fifth Assessment Report (AR5) released in 2013. It would be necessary to adopt a specific planning period for the proposed boardwalk and harbour pool for assessment of the potential impacts of climate change. The planning period is likely to be greater than 80 years, ie. to the year 2100 as a minimum. Consideration should be given to the potential to manage the impacts of Climate Change using adaptive approaches.

Project related



2.2.5 Aquatic ecology

Aquatic ecology at the site may influence the design of the boardwalk and harbour pool eg. avoidance of sensitive habitat, and may be potentially impacted by the structures. The structures may also provide additional aquatic habitat. In addition, opportunities may exist to purposely design beneficial ecological outcomes as part of the Masterplan (refer Section 2.8).

A study is required to document the existing aquatic ecology at the site, which would involve review of existing available information and site inspections including diver surveys. Key issues are likely to be Little Penguins and seagrasses. Manly is home to an endangered population of Little Penguins, understood to be the only mainland breeding colony in NSW, comprising approximately 60 breeding pairs.

An assessment of the potential construction phase and operational phase impacts of the boardwalk and harbour pool on aquatic ecology would need to be undertaken. Considerations would include seabed disturbance by piling, overshadowing of the seabed by the boardwalk structure, indirect impacts due to any changes to coastal processes, and impacts due to changes in the levels of usage of the site which may create greater disturbance.

2.2.6 Landscape character and visual impact assessment

The potential for the boardwalk to impact on the existing landscape character and visual environment is expected to be a key issue. A best practice methodology for this assessment would need to be adopted. This would be expected to include:

- ensuring all receptors (viewers) have been adequately identified, even at distance;
- prioritising views from the public domain as recommended in the Principles outlined in the Land and Environment Court;
- being clear on and separately defining quantitative impacts (distance, magnitude, direction, etc.) against qualitative impacts (viewer type, location, etc.);
- providing a clear rationale for how impacts are compared and contrasted;
- ensuring photo montages include views from 'worst case' locations, identified from the analysis above;
- being clear on the differing forms of adaptive options, namely avoidance, amelioration (eg. design), mitigation (eg. screening) and compensation (on or off site).

The landscape character and visual impact assessment (LCVIA) should be carried out in accordance with the Roads and Maritime Services Environmental Impact Assessment (EIA) practice note – Guideline for Landscape Character and VIA EIA – No. 4.

The VIA report should include:

- preparation of a view analysis matrix as the basis of the impact assessment. Criteria should include distance from proposed development, angle of view, magnitude of change and visual sensitivity (applied to each identified viewpoint);
- preparation of a visual impact assessment map – this map combines the total view-shed of the site with location of key receptors and cross references to the matrix table that evaluates those impacts;

Project related



- preparation of accurate photo montages to portray the proposal within the visual scene from agreed viewpoints;
- preparation of mitigation suggestions and assessment of residual impacts.

2.2.7 Heritage study

The history of the maritime development and recreational use of the site should be documented and the reinstatement of the boardwalk and harbour pool evaluated in the context of the heritage value.

It is understood the boardwalk and pool were built by the Port Jackson and Manly Steam Ship Company and were opened in December 1931. The boardwalk was constructed of NSW North Coast hardwoods on turpentine piles, approximately 335m long and 3.4m wide, with a 2m wide bather's platform at a lower level. The pool was equipped with an array of water recreation facilities including pontoons with slides, water wheels and springboards for diving.

The boardwalk was severely damaged in an East Coast Low storm on the night of May 24, 1974 (the so-called Sygna storm) and was subsequently demolished.

2.2.8 Ecological engineering opportunities

The opportunity exists to include the design of sustainable ecosystems (ecological engineering) as part of reinstatement of the boardwalk and harbour pool. The current draft concept shows a 'rehab/eco pool' between the former Aquarium and reinstated boardwalk which is an example of an ecological engineering approach. Other examples could include placement of artificial reef modules in selected locations below the footprint of the boardwalk (where they are not a hazard to navigation).

A specialist study should be dedicated to ecological engineering opportunities. The study should draw upon existing research findings at the UNSW Sydney Institute of Marine Science (SIMS) located in Chowder Bay in Sydney Harbour. Reinstatement of the boardwalk in itself could become an ecological research project.

2.2.9 Navigation impact assessment

The eastern end of the boardwalk would be located close to the berthing approach of Manly Ferries at Manly Wharf. An existing 'ferry arrestor' is located in this area to mitigate the risk to property and risk to life from a ferry overshooting the berth.

A navigation impact assessment should be undertaken to assess the risk to property and risk to life associated with a boardwalk being constructed close to the ferry berthing operations. This may involve navigation simulation studies utilising a navigation bridge simulator to quantify the risk.

The navigation impact assessment should also include the potential for conflict between motorised and non-motorised recreational vessels but this would be expected to be manageable with appropriate segregation and controls.

Project related



2.2.10 Safety in design

It is recommended that Safety in Design be addressed as a stand-alone topic given a number of specific risks associated with reinstatement of the boardwalk and harbour pool, which include:

- diving or jumping from the boardwalk structure;
- shark attack; and
- collision between ferries and the boardwalk structure.

The risk of collision would be addressed within the navigation impact assessment as noted above but should be cross-referenced in the Safety in Design study.

Assessment of the diving risks should have regard to documents such as the Safe Diving Depth Policy prepared by Swimming New South Wales Ltd. This document has been previously applied by the writer in relation to the upgrading of rock pools within the Northern Beaches Council local government area. The assessment of diving risk may influence:

- position (alignment) of the boardwalk;
- incorporation of diving platforms and the like on the boardwalk; and
- location and freeboard of floating pontoons located within the harbour pool.

The diving and jumping risk would also influence the separation distance between the boardwalk and any pontoons located within the harbour pool.

There have been at least 16 fatal shark attacks in Sydney Harbour since the late 1880s, all in the summer months of December, January and February. The latest was in January 1963 in nearby Sugarloaf Bay, Middle Harbour. The latest near-fatal attack was in February 2009 at Garden Island.

The harbour pool would need to be shark proof for safe swimming. Evaluation of netting and more rigid enclosures should be undertaken including review of the efficacy of nets and rigid enclosures adopted at other locations in Sydney Harbour. In addition to effectiveness for prevention of shark entry, consideration would include appearance and durability in the wave climate at the site.

Safety in Design should also ensure the boardwalk and harbour pool can be constructed using safe work methods. This should be relatively straightforward as maritime construction involving piling is a common activity in Port Jackson, although the West Esplanade site is more exposed to ocean swell and has a longer local wind fetch (to the south) in comparison to many other sites.

2.2.11 Concept design

It would be necessary to prepare a concept design (drawings) for the boardwalk having regard to the various site constraints and opportunities, and user requirements. Key considerations would include:

- alignment - end points are essentially fixed but curvature could be introduced;
- width – which may be variable, eg. provision for viewing platforms and the like;
- elevation – wave action, climate change, visual impact, and end connections etc.;
- need for access to and from the water, eg. by recreational vessels and swimmers;
- ecological engineering;
- balustrading;
- services such as lighting;

Project related



- safety, eg. diving and shark proofing;
- construction materials (durability, appearance, cost);
- structural system;
- buildability; and
- capital cost and maintenance cost.

A basis of design (BoD) document should be prepared and agreed with Council. This document should include the agreed design life for the structures and maintenance regime.

Drawings should include a general arrangement and typical sections.

2.2.12 Capital cost estimates and whole of life assessment

Preparation of capital cost estimates and a whole of life assessment ie. inclusive of maintenance over an agreed time period, would be fundamental to the feasibility study. It is recommended the estimates be prepared by an experienced Quantity Surveyor in consultation with a suitably qualified and experienced maritime/coastal engineer.

Further comments are provided below:

- the estimates should clearly set out all assumptions and inclusions/exclusions;
- where possible, rates should be benchmarked against similar recent projects, in particular the rates for piling which is likely to be the critical, higher construction risk, activity; and
- a P₅₀ and P₉₀ Risk Contingency allowance should be developed based on development of a Risk Register.

2.2.13 Planning strategy/approvals pathway

It is understood that Northern Beaches Council would be the Applicant should reinstatement of the boardwalk and harbour pool proceed to a Development Application.

It would be important to prepare a planning strategy/understanding of the approvals pathway for reinstatement of the boardwalk and harbour pool as this information can dictate the scope and staging of studies. Key principal planning documents would include:

- Sydney Harbour Catchment Regional Environmental Plan 2005 (REP); and
- Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005 (DCP).

It is noted that the Sydney Harbour Catchment REP is currently being reviewed and consolidated with other planning instruments. Other legislation may also apply depending on the details of the application, eg. Fisheries Management Act 1994.

Under the Sydney Harbour Catchment REP the subject site falls within Zone No. W2 – Environment Protection. The objectives of this zone are as follows:

- (a) to protect the natural and cultural values of waters in this zone;
- (b) to prevent damage or the possibility of longer term detrimental impacts to the natural and cultural values of waters in this zone and adjoining foreshores;

Project related



- (c) to give preference to enhancing and rehabilitating the natural and cultural values of waters in this zone and adjoining foreshores; and
- (d) to provide for the long term management of the natural and cultural values of waters in this zone and adjoining foreshores.

It is clear there is a strong emphasis on the natural and cultural values of the waters in this zone and adjoining foreshores.

Generally speaking, the approvals process would involve:

- Permission to Lodge (Land Owners Consent);
- Development Consent; and
- Construction Certificate.

2.3 Preliminary Program

A suggested preliminary program for the main studies is set out below. Each study would require preparation of a Brief, submission of proposals, and award of a Contract. The time for these activities is not shown here but would be expected to take around 8 to 10 weeks. A number of the studies could be awarded in combination.

The total duration of the studies would be expected to be around 16 weeks subject to the number of hold points or Workshops and the like Council may wish to introduce, and the time required for review and finalisation of draft reports.

| Study | Week No. | | | | | | | | | | | | | | | |
|---|----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Hydrographic and land survey | | | | | | | | | | | | | | | | |
| Geotechnical investigation (desk top only) | | | | | | | | | | | | | | | | |
| Condition assessment of existing structures | | | | | | | | | | | | | | | | |
| Coastal processes including climate change | | | | | | | | | | | | | | | | |
| Aquatic ecology | | | | | | | | | | | | | | | | |
| Landscape character and visual impact assessment | | | | | | | | | | | | | | | | |
| Heritage study | | | | | | | | | | | | | | | | |
| Ecological engineering opportunities | | | | | | | | | | | | | | | | |
| Navigation impact assessment | | | | | | | | | | | | | | | | |
| Safety in design | | | | | | | | | | | | | | | | |
| Concept design | | | | | | | | | | | | | | | | |
| Capital cost estimates and whole of life assessment | | | | | | | | | | | | | | | | |
| Planning strategy/approvals pathway | | | | | | | | | | | | | | | | |
| Allowance for review and finalisation of reports | | | | | | | | | | | | | | | | |

Project related



3 MEETING WITH ROADS AND MARITIME SERVICES

A meeting was held with RMS on 19 July 2018 to discuss the possible reinstatement of the boardwalk and harbour pool. The meeting was attended by Graham Middleton of Council, Greg Britton of RHDHV and three RMS personnel, namely:

- Ms Nhu Doan, Senior Project Manager;
- Mr Indee Chandrawansa, Grants & Property Manager;
- Mr Dan Duemmer, Manager Operations Sydney Harbour.

The following summary notes were compiled by the writer and previously supplied to Council by email on 16 October 2018:

- RMS are still investigating future uses at Manly Wharf, undertaking a patronage study;
- constraints for development of Many Wharf include Little Penguins, seagrass, and heritage;
- RMS do not anticipate any significant changes to use of the western side of the Wharf, some additional commercial vessels may utilise the western side in between usage by Freshwater class ferries;
- eastern side of the Wharf is at capacity at times;
- there is strong demand for use of the area west of the Wharf by recreational vessels;
- the fate of the aquarium building is uncertain, negotiations are ongoing with the tenant about 'making good';
- Council is looking at the feasibility of a University use for the aquarium building;
- temporary pick up/set down structure(s) for recreational vessels need to be considered on the Harbour side of any boardwalk;
- additional ferry arrestor may be required due to collision risk with boardwalk?
- any swing moorings need to be 'environmentally friendly', but the industry is not set up to install or maintain these types of moorings;
- RMS is undertaking a seagrass mapping exercise, *Posidonia* seagrass exists in the area;
- there is some scope to look at larger charter type vessel access at the western end of any boardwalk, depending on demand (noting most pick-ups are undertaken closer to the city);
- DPI Fisheries may have a concern at any additional motorised boating access due to impact on seagrass/ecology;
- the western end of the boardwalk could be the location for non-motorised access, e.g. kayaks, stand-up boards (as the eastern side of the Wharf, which is currently used, is not the safest location);
- 'Boating Now' program could be available for funding of recreational boating infrastructure, the program ends in 2019 but is likely to be replaced with a similar program, most grants are in the range \$100,000 - \$200,000, maximum has been \$1.2M, typical funding is 50:50 with Council but RMS can go to 60:40, preference is to fund infrastructure but the program can also fund studies/designs.

Project related



4 DESIGN CONCEPT AND COST ESTIMATES

4.1 General

In discussions with Council it was agreed that an appropriate initial task would be to develop a high level design concept for the boardwalk and harbour pool, an order of cost estimate for construction, indicative operating and maintenance costs, and a whole of life cost estimate. On this basis and other factors, Council could then consider whether it would be productive to proceed with detailed feasibility studies.

It was also agreed that the order of cost estimate for construction of the boardwalk and harbour pool, and whole of life cost estimate, should be prepared by a suitably qualified Quantity Surveyor (QS), with review by RHDHV based on our experience in the coastal/maritime sector.

4.2 Design Concept

A design concept for the boardwalk and harbour pool for purposes of costing was prepared by RHDHV. The design concept was to comprise a 'sympathetic replication' of the former structure but with modern materials where appropriate to achieve a minimum design life of 50 years and adequate durability in the marine environment. The overall layout of the structures was to be based broadly on the concept shown earlier in **Figure 1**.

Council provided a number of historical photos of the former structure for context, several of which are reproduced in **Figures 2, 3 and 4**.

Hand drawn engineering sketches of the boardwalk were prepared and are included in **Appendix A**. A number of features of the design concept are set out below. Main features were discussed and agreed with Council prior to preparation of the order of cost estimate for construction.

- boardwalk to comprise two levels, an upper level for main thoroughfare between Manly Wharf and the existing boardwalk at Manly Pavilion, and a lower level for access to the harbour pool, with upper and lower levels separated by 1m in elevation;
- an upper deck level of 3.0 above Australian Height Datum (3.0m AHD) was adopted for concept purposes, having regard to existing deck levels at Manly Wharf and the boardwalk at Manly Pavilion, extreme water levels during storms (astronomical tide, storm surge, wave conditions) and visual impact considerations;
- width of the upper and lower boardwalk levels to be each 2.5m;
- overall length of boardwalk approximately 260m;
- additional section of boardwalk approximately 30m long branching off the main boardwalk in a landward direction, at the lower deck level, 2.5m wide;
- two pontoons within the harbour pool for recreation purposes;
- intermittent viewing platforms along the main boardwalk on the harbour side;
- shark proof netting along the length of the boardwalk and returning at Manly Wharf;
- construction materials:
 - decking : recycled wood plastic composite (WPC) that looks as close to real timber as possible

Project related



- joists : fibre reinforced polymer (FRP) pultruded section
- headstocks : either reinforced concrete or steel hollow section
- foundations : pairs of steel tubular piles driven into the seabed (6m spacing along boardwalk)
- balustrade : traditional timber balustrade as visible in the historical photos
- services:
 - lighting
 - water
- ladders and life buoys at minimum 60m spacing.

Information on geotechnical conditions along the boardwalk alignment was not available, although based on the former structure it can be inferred that conditions were suitable for driven piles. For purposes of the design concept and order of cost estimate for construction it was assumed the foundation conditions comprise medium dense sand.

Construction of an over-water piled boardwalk structure at Manly West Esplanade would be technically feasible and could be competitively tendered to a number of suitably qualified maritime contractors. The estimated construction period would be approximately 40 weeks.



Figure 2 View of boardwalk and harbour pool looking towards Manly Wharf – 1940

Project related

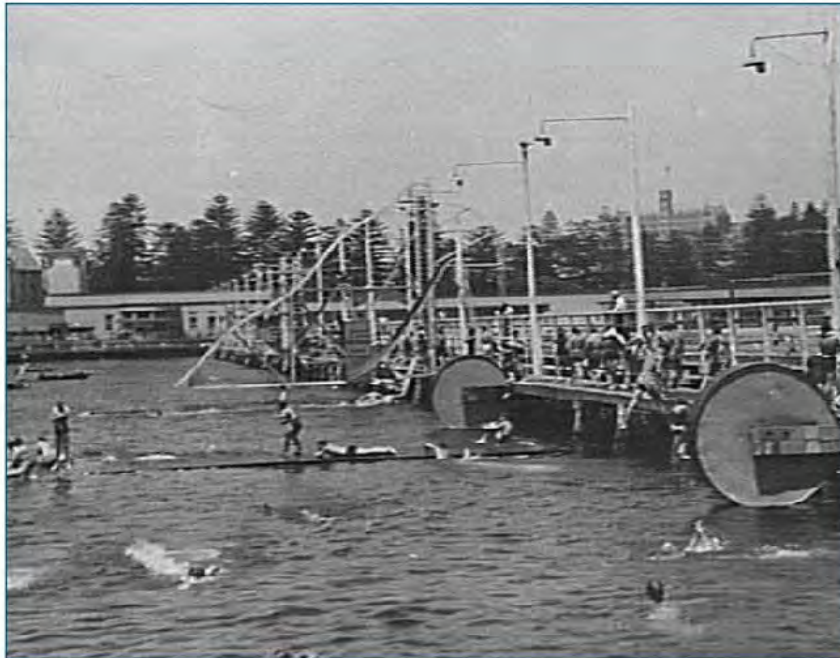


Figure 3 Closer view of boardwalk showing low level platform, recreational activities and lighting – 1950



Figure 4 View looking towards the harbour showing low level and upper level platforms and piling – date unknown

Project related



4.3 Order of Cost Estimate for Construction

4.3.1 Cost estimate for construction supplied by Quantity Surveyor

The order of cost estimate for construction prepared by the QS (Muller Partnership) is included in **Appendix B**. This cost estimate is summarised in Table 1. The cost estimate does not allow for a number of items including any property acquisition, finance costs, escalation, design and documentation, planning authority fees and charges, and client side project management.

A number of further qualifications, assumptions and exclusions also apply to the QS estimate as noted in the report in **Appendix B**.

An adjusted order of cost estimate for construction has been prepared by RHDHV using the QS estimate as a basis, which is set out in **Section 4.3.2**. It is recommended that the adjusted estimate be adopted by Council in assessing whether to proceed with detailed feasibility studies.

Table 1 Order of Cost Estimate for Construction (after Muller Partnership, November 2018)

| Ref | Description | Cost (excl GST) |
|------|------------------------------|--------------------|
| 1.0 | Demolition | \$28,400 |
| 2.0 | Piles | \$2,971,125 |
| 3.0 | Metalwork | \$573,610 |
| 4.0 | Decking | \$1,007,540 |
| 5.0 | Wharf furniture & equipment | \$647,000 |
| 6.0 | Services | \$230,000 |
| 7.0 | Design development allowance | \$273,000 |
| 8.0 | Preliminaries and margin | \$1,375,325 |
| 9.0 | Sub Total (excl GST) | \$7,106,000 |
| 10.0 | Identified risk items | \$75,000 |
| 11.0 | Construction contingency | \$1,437,000 |
| 12.0 | Total (excl GST) | \$8,618,000 |

4.3.2 Adjusted cost estimate for construction

The order of cost estimate for construction prepared by the QS has been adjusted by RHDHV based on our experience in the coastal/maritime sector, taking into account information provided to RHDHV by Council in relation to shark netting and client side project management following finalisation of the QS estimate, and so as to include several items not allowed for in the QS estimate. The adjusted estimate is set out in Table 2.

A number of exclusions still apply to the adjusted estimate including any property acquisition, finance costs, escalation, and planning authority fees and charges. A significant assumption concerns the geotechnical conditions (assumed to be medium dense sands), given that piling costs account for around 40% of the total construction cost. The identified risk items have been expanded to include geotechnical risk plus risk of delays due to ferry movements.



Project related

Table 2 Adjusted Order of Cost Estimate for Construction

| Ref | Description | Cost (excl GST) |
|------|--|-----------------|
| 1.0 | Base cost from QS estimate | \$7,106,000 |
| 2.0 | Add extra allowance for mobilisation and demobilisation of piling rig and jack-up barge | \$200,000 |
| 3.0 | Add allowance for piling for viewing platforms (not accounted for in QS estimate) | \$550,000 |
| 4.0 | Add extra allowance for shark netting (based on advice of Council) | \$140,000 |
| 5.0 | Add allowance for lifeguard stations or huts (not accounted for in QS estimate) | \$100,000 |
| 6.0 | Add extra allowance for pontoons and gangway | \$20,000 |
| 7.0 | Add allowance for divers to manage seagrass, penguins and seahorses for duration of construction contract over 40 weeks at \$8,000/week (based on advice of Council) | \$400,000 |
| | Adjusted Sub Total (excl GST) | \$8,516,000 |
| 8.0 | Identified risk items (eg. environmental controls, geotechnical, delays due to ferry movements) | \$250,000 |
| 9.0 | Construction contingency (20%) | \$1,703,200 |
| 10.0 | Allow for investigation and design costs, environmental studies and approvals, and client side project management (total 12%) | \$1,021,900 |
| 11.0 | Allow for client side project management during construction (10%) | \$851,600 |
| | Adjusted Total (excl GST) | \$12,342,700 |
| | Say | \$12.4M |

4.3.3 Whole of life cost estimate

A whole of life cost estimate was prepared by the QS and is included in **Appendix C**. It is based on a 50 year time period and discount rate of 7% as agreed with Council. The estimated operating costs over the 50 year period were supplied by Council in a spreadsheet. The maintenance requirements for the boardwalk and pontoons were determined by RHDHV and included in a spreadsheet for costing by the QS. The spreadsheets are included within the QS report in **Appendix C**.

The whole of life cost estimate is summarised below.

| | | |
|----------------------------------|---|--|
| Total Capital Cost: | : | \$12.4M (as adjusted by RHDHV – refer Table 2) |
| Operating Cost (50 year): | : | \$15.8M |
| Total Maintenance Cost (50 year) | : | \$0.7M |

Project related



5 WORKSHOP AND PRESENTATION

A workshop to discuss the Manly West Esplanade Precinct Masterplan was conducted at the Council Dee Why office on 21 November 2018 including all the relevant departments within Council. A brief presentation of the main findings of the RHDHV scope of work was made by the writer. A copy of this presentation is included in **Appendix D²**.

A complete report on the workshop is to be prepared by others and will inform the Masterplan process going forward. Several key points raised at the workshop regarding the boardwalk, noted by the writer, are summarised below:

- the boardwalk is relatively expensive as an additional pedestrian connection between Manly Wharf and the existing boardwalk at Manly Pavilion when a pedestrian connection already exists along the foreshore;
- the boardwalk and harbour pool would attract a significant operating cost, particularly in relation to user safety involving employment of lifeguards;
- the area has a quiet natural beauty which may be impacted adversely by the boardwalk and harbour pool; and
- environmental concerns include the existence of *Posidonia* seagrass, Little Penguins, and Seahorse.



Figure 5 View looking west/south-west towards the former Manly Aquarium and Manly Pavilion with the existing netted swimming enclosure in the foreground

² Note that the order of cost estimate for construction discussed at the workshop was \$11.2M. This cost is now estimated to be \$12.4M, as noted in **Section 4.3.2**, based on adjustments outlined in that Section.

Project related



6 CONCLUDING REMARKS

It would be technically feasible to reinstate the boardwalk and harbour pool at Manly West Esplanade. The order of cost estimate for construction is \$12.4M. Based on a 50 year time period and discount rate of 7% the net present value of operating costs and maintenance costs are estimated to be \$15.8M and \$0.7M respectively.

A range of individual studies would need to be undertaken for purposes of a complete and robust feasibility study to reinstate the boardwalk and harbour pool. These individual studies are outlined based on experience in **Section 2**.

Should the view be taken that reinstatement of the boardwalk and harbour pool is not preferred, there may be opportunity to activate additional waterway access and waterfront uses at the western end of the study area, in the area of the former Manly Aquarium and Manly Pavilion where maritime infrastructure has been in place for decades as part of the built environment (refer **Figure 6**).



Figure 6 View to existing maritime infrastructure at the western end of the study area

Project related



Appendix A Design Concept Engineering Sketches



Calc Ref

Project PA 18913

MANLY BOARDWALK CONCEPTS

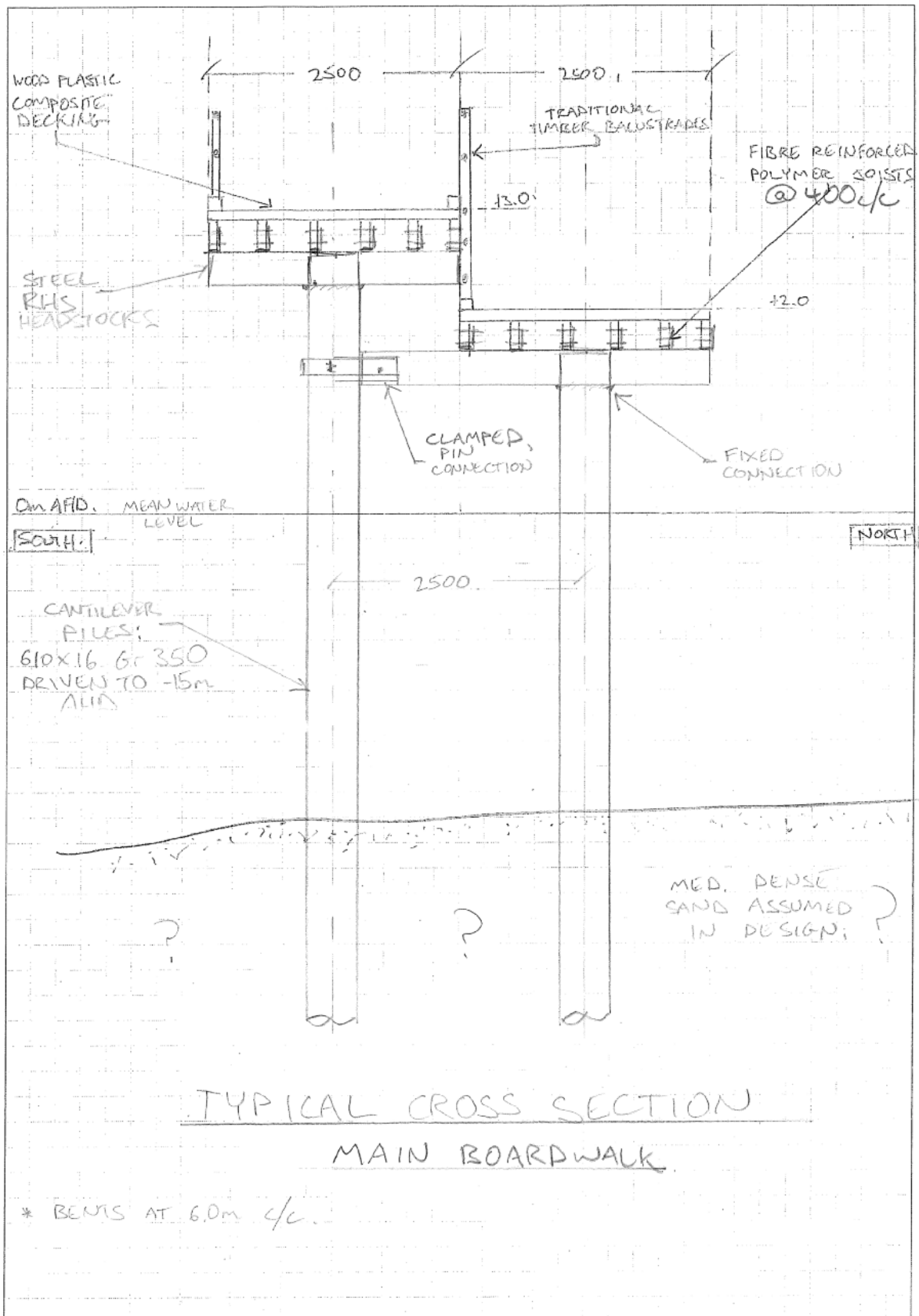
Date 26/10/18 Prepared by HG



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Enhancing Society Together

HASKONING AUSTRALIA PTY LTD
Maritime and Waterways

Page 1 of 3





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Project



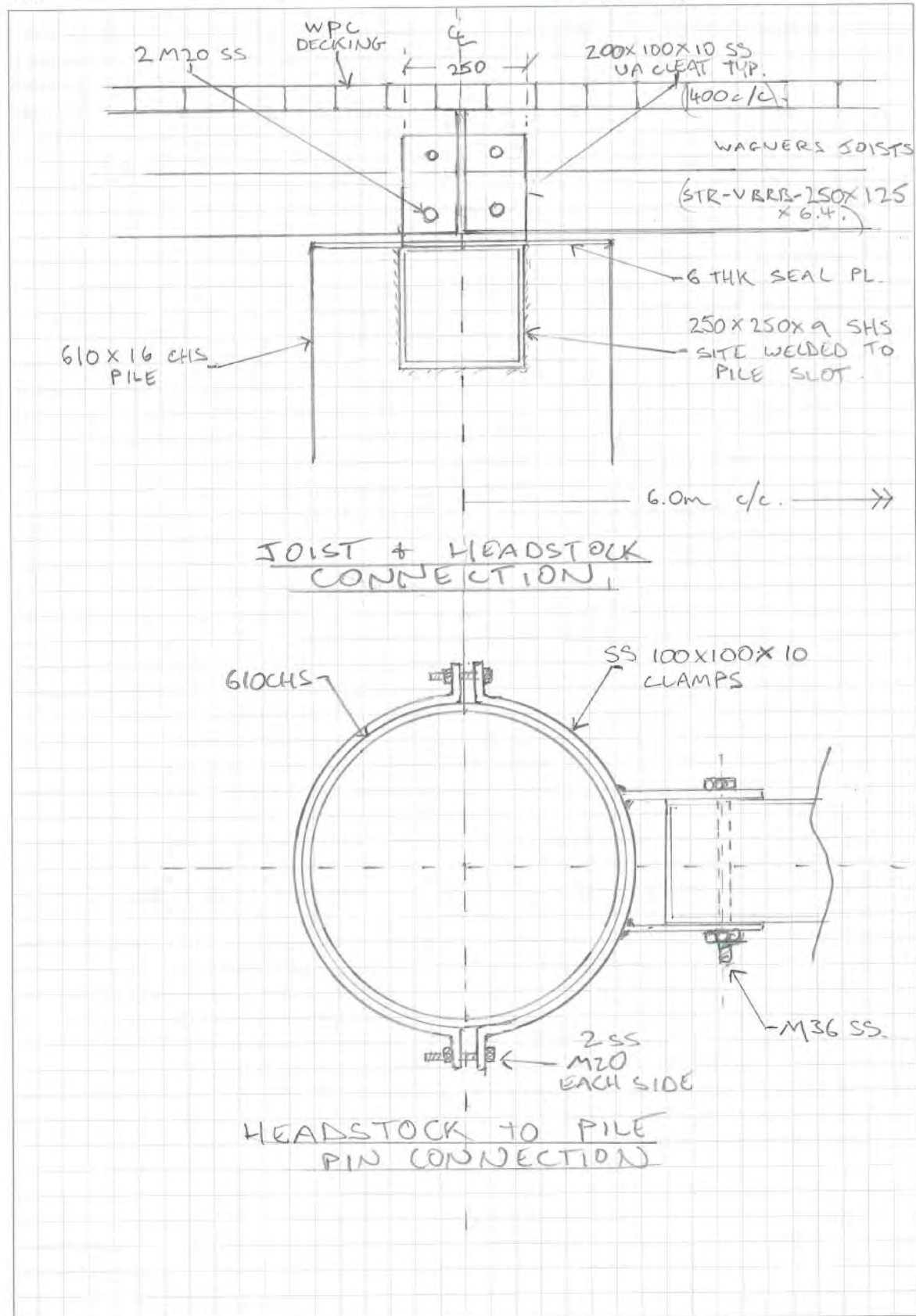
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Page 2 of 3





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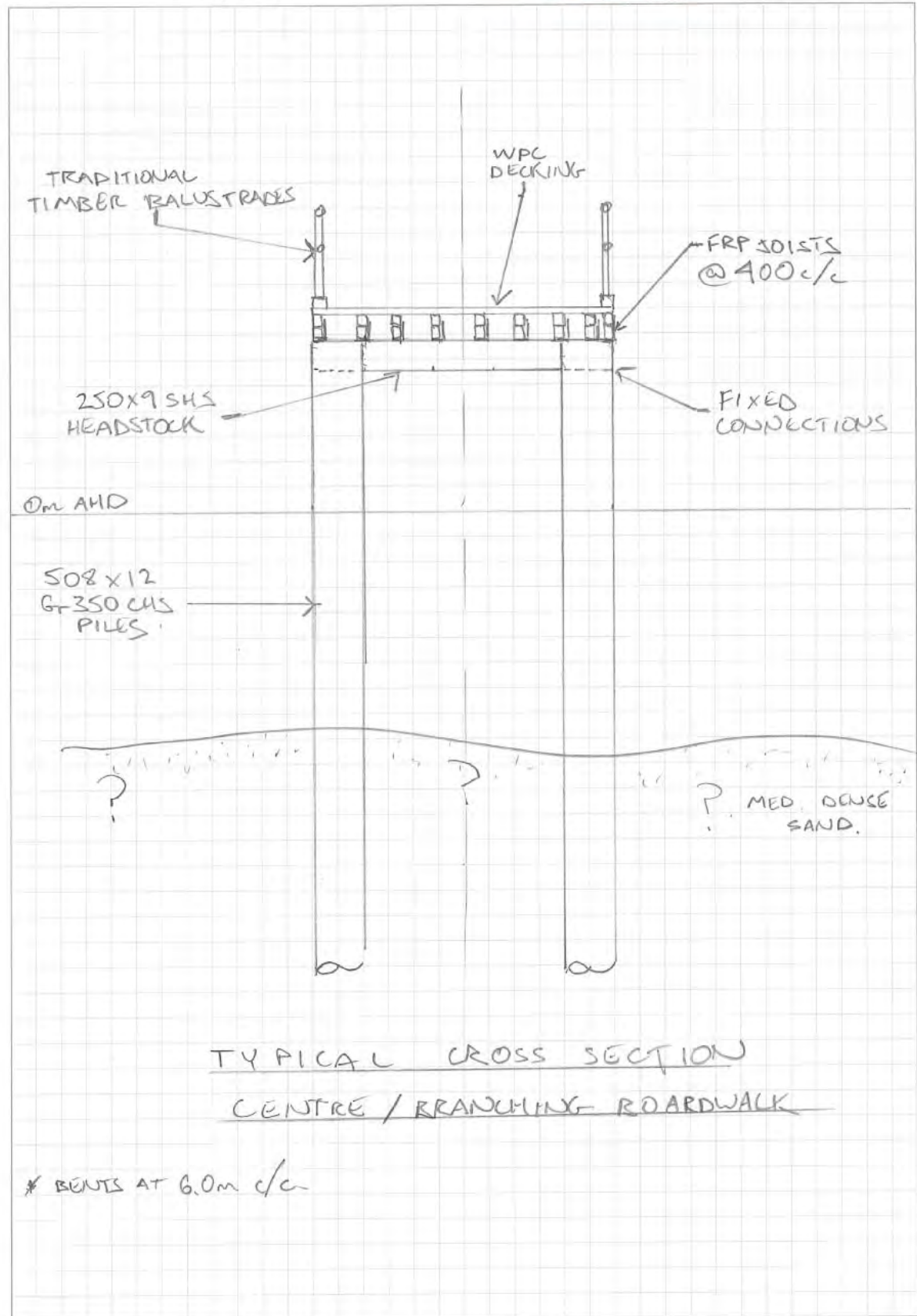
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Date

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Page 3 of 3



Project related



Appendix B Order of Cost Estimate for Construction by Muller Partnership

MULLER *partnership*

MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL REINSTATEMENT

ORDER OF COST ESTIMATE

Newcastle :: Sydney :: Melbourne
15 NOVEMBER 2018



15 November 2018

Royal HoskoningDHV Pty Ltd
Level 14, 56 Berry Street
NORTH SYDNEY NSW 2060

ATTENTION: GREG BRITTON

**RE: MANLY WEST ESPLANADE BOARDWALK AND
HARBOUR POOL REINSTATEMENT
ORDER OF COST ESTIMATE**

As per your request dated 16th October 2018, Muller Partnership have prepared an Order of Cost Estimate for the above project totalling **\$8,618,000 Excl GST** and enclose our report.

Please note the attached Order of Cost Estimate has been prepared based on the current preliminary information and should be updated if additional information becomes available. Please take note of our Assumptions (Item 3.0) and Exclusions (Item 4.0).

Should you wish to discuss any of the above please do not hesitate to contact either *Harley Gleeson* or the undersigned.

Yours faithfully
MULLER PARTNERSHIP



**CAMERON BEARD
DIRECTOR**

CB:HG 18373 Manly West Esplanade Boardwalk and Harbour Pool Reinstatement - Order of Cost Estimate

Muller Partnership ACN 079 195 681

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International Association South Africa-Quanticoost



Disclaimer

Muller Partnership have prepared this report in part on the basis of information supplied to it in the ordinary course of business by Greg Britton of Royal HaskoningDHV.

Whilst all reasonable professional care and skill have been exercised to validate its accuracy and authenticity, Muller Partnership is unable to provide any Guarantee in that regard, and will not be liable to any party for any loss arising as a result of any such information subsequently being found to be inaccurate, lacking authenticity or having been withheld.

This report is only intended for use by HaskoningDHV and Muller Partnership accepts no responsibility to other parties who use opinions or information contained herein. They do so at their own risk.

In acting as Quantity Surveyor for HaskoningDHV, Muller Partnership's liability is limited to the scope of services and value limit, as defined in their Professional indemnity insurance cover. A copy is available on request.

This report covers only the items as contained in this report. Should HaskoningDHV require additional items or areas of assessment, these should be specifically requested and will be actioned as agreed between the parties.

Document history & status

| Revision | Date | Description | By | Review | Approved |
|----------|------------|------------------------|----|--------|----------|
| 1 | 15/11/2018 | Order of Cost Estimate | HG | CB | CB |

MANLY WEST ESPLANADE BOARDWALK AND
HARBOUR POOL REINSTATEMENT
ORDER OF COST ESTIMATE
15 NOVEMBER 2018

Page 3

CONTENTS

| | | |
|-----|---|----|
| 1.0 | Executive Summary..... | 5 |
| 2.0 | Schedule Of Information | 7 |
| 3.0 | Assumptions..... | 8 |
| 4.0 | Exclusions | 9 |
| | Appendix A – ORDER OF COST ESTIMATE | 10 |

Glossary of Key Terms

Construction Contingency

The Construction Contingency is a contingency allowance made for unknowns that may occur during construction due to latent conditions or issues with the documentation.

Design Development Allowance

The Design Development Allowance is a contingency included within our estimate to allow for the unknown costs associated with progressing the development from the initial concept through until the 'For Construction'. At the time of For Construction documentation this contingency should be 0% as all of the project will have been designed and costed accordingly.

Preliminaries & Margin

The Preliminaries and Margin Allowance is an allowance for the builder margin and their establishment and management of the site. This item will therefore include for items such as site fencing & amenities, site foreman, head office overheads, insurances, scaffolding & hoarding, craneage, site cleaning, OH&S management, QA, etc.

1.0 EXECUTIVE SUMMARY

Project Description

The project considered by this report is for the proposed reinstatement of the Manly West Esplanade Boardwalk and Harbour Pool located at Manly Cove, Manly. The scope of works is generally as follows:

- Removal of existing shark netting and timber piles;
- Construction of a 260m main boardwalk comprising 2 level boardwalk constructed using CHS steel piles, structural steel headstocks and pile clamps, FRP RHS joists and Wood Plastic Composite decking;
- Construction of a 30m centre boardwalk and 52m viewing platforms constructed using CHS steel piles, structural steel headstocks and pile clamps, FRP RHS joists and Wood Plastic Composite decking;
- Traditional timber handrails to boardwalks;
- Supply and installation of 15m long aluminium truss gangway;
- Central Pontoon [10m x 4m];
- Pontoon Playground [6m x 4m];
- Ladders and life buoys;
- Shark netting;
- Boardwalk lighting;

Cost Overview

A summary of the Order of Cost Estimate is as follows:

| Order of Cost Estimate Cost Summary | | |
|-------------------------------------|------------------------------|--------------------|
| Ref | Description | \$ Excl GST |
| 1.0 | Demolition | \$28,400 |
| 2.0 | Piles | \$2,971,125 |
| 3.0 | Metalwork | \$573,610 |
| 4.0 | Decking | \$1,007,540 |
| 5.0 | Wharf Furniture & Equipment | \$647,000 |
| 6.0 | Services | \$230,000 |
| 7.0 | Design Development Allowance | \$273,000 |
| 8.0 | Preliminaries and Margin | \$1,375,325 |
| 9.0 | SUBTOTAL [EXCL GST] | \$7,106,000 |
| 10.0 | Identified Risk Items | \$75,000 |
| 11.0 | Construction Contingency | \$1,437,000 |
| 12.0 | TOTAL [EXCL GST] | \$8,618,000 |

We note the attached estimates are for construction costs only and do not allow for items such as property acquisition, finance costs, escalation, design & documentation or planning & authority fees & charges or Client Side Project Management. Please refer to the Qualification, Assumptions and Exclusions sections of this report for further details.

2.0 SCHEDULE OF INFORMATION

Muller Partnership has used the following information in compiling our Order of Cost Estimate:

1. Royal HaskoningDHV Pty Ltd Memo document titled 'West Esplanade Boardwalk and Harbour Pool Reinstatement – Concept Design' dated 25 October 2018, received 02 November 2018 [Ref: PA1893NT01];
2. Materials Take Off Sheet provided by Harry Gibbs of Royal HaskoningDHV dated 02 November 2018, received 02 November 2018;
3. Email and telephone correspondence with Harry Gibbs of Royal HaskoningDHV in relation to scope (numerous);

All rates used within our Order of Cost Estimate have been gathered from our in-house databases as well as being constructed from first principles namely labour, materials and waste to reflect current market and project specific value.

3.0 ASSUMPTIONS

We have made the following assumptions in the preparation of our Order of Cost Estimate:-

1. The works will be competitively tendered to a number of suitable qualified contractors on a lump sum basis;
2. A design development allowance of 5% has been included for all estimates;
3. A construction contingency of 20% has been included for all estimates;
4. The Contractor will have clear uninterrupted access to the site;
5. A provisional allowance of \$18,000 *Excl GST* has been included for the disconnection and remove of the existing shark nets;
6. A provisional allowance of \$10,400 *Excl GST* has been included for the extraction and disposal of timber shark net piles;
7. It is assumed the pile removal will occur at when the piling rig is established onsite;
8. A mobilisation and demobilisation allowance of \$180,000 *Excl GST* has been included for the piling rig and jack up barge;
9. 6mm steel pile caps have been assumed to the top of all piles;
10. A provisional allowance of \$80,000 *Excl GST* has been included for the aluminium gangway;
11. A provisional allowance of \$273,000 *Excl GST* has been included for traditional timber handrails;
12. A provisional number of 12 no. Ladders have been included;
13. A provisional number of 12 no. life buoys have been included;
14. A provisional allowance of \$72,000 *Excl GST* has been included for the Central Pontoon;
15. A provisional allowance of \$45,000 *Excl GST* has been included for the Pontoon Playground;
16. A provisional allowance of \$230,000 *Excl GST* has been included for the lighting to the boardwalk [Assumed 15m spacings];
17. An identified risk item of \$75,000 *Excl GST* has been included for a silt curtain to the extent of the works area;

4.0 EXCLUSIONS

Within the following Order of Cost Estimate the acronym 'EXCL' means work that has **not** been included in our estimate. We specifically note the following exclusions from the estimated cost:

1. GST;
2. Escalation;
3. Authority's fees and charges & legal fees;
4. Client Side Project Management;
5. Delay costs including latent conditions;
6. Design Consultant costs;
7. Works outside the specified site area;
8. Finance costs;
9. Works outside normal hours;
10. Land/ Property Acquisition;
11. Contamination allowances [NB: Unless Otherwise Noted];
12. Treatment/ disposal of unsuitable material [NB: Unless Otherwise Noted];
13. Aboriginal and Heritage impacts;
14. Delays resulting from approvals such as Environmental/ Authorities;
15. Consideration or delays caused by Ferry movements;
16. Restrictions imposed by RMS;
17. Communications services;
18. Cathodic protection;
19. Other scope identified in the masterplan drawing (i.e. Dedicated bike path, Outdoor art, outdoor sculptures, new sustainable art gallery, seagrass-friendly moorings, artificial reef, access ramp, little penguins area, seagrass/ eco sanctuary, underwater discoveries, Rehab/eco pool)
20. Play equipment;
21. Works to nearby structures;



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APPENDIX A – ORDER OF COST ESTIMATE

MANLY WEST ESPLANADE BOARDWALK AND
HARBOUR POOL REINSTATEMENT
ORDER OF COST ESTIMATE
15 NOVEMBER 2018

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MULLER partnership

**MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL
REINSTATEMENT
ORDER OF COST ESTIMATE
NOVEMBER 2018**

MAIN COST SUMMARY

| <i>Ref</i> | <i>Description</i> | <i>%</i> | <i>Cost/ m2</i> | <i>Sub Total</i> | <i>Total</i> |
|------------|-----------------------------------|---------------|-----------------|------------------|------------------|
| 1.0 | DEMOLITION | 0.33 | | 28,400 | 28,400 |
| 2.0 | PILES | 34.48 | | 2,971,125 | 2,971,125 |
| 3.0 | METALWORK | 6.66 | | 573,610 | 573,610 |
| 4.0 | DECKING | 11.69 | | 1,007,540 | 1,007,540 |
| 5.0 | WHARF FURNITURE & EQUIPMENT | 7.51 | | 647,000 | 647,000 |
| 6.0 | SERVICES | 2.67 | | 230,000 | 230,000 |
| 7.0 | DESIGN DEVELOPMENT ALLOWANCE [5%] | 3.17 | | 273,000 | 273,000 |
| 8.0 | PRELIMINARIES AND MARGIN | 15.96 | | 1,375,325 | 1,375,325 |
| 9.0 | SUBTOTAL [EXCL GST] | | | | 7,106,000 |
| 10.0 | IDENTIFIED RISK ITEMS | 0.87 | | 75,000 | 75,000 |
| 11.0 | CONSTRUCTION CONTINGENCY [20%] | 16.67 | | 1,437,000 | 1,437,000 |
| 12.0 | TOTAL [EXCL GST] | 100.00 | | 8,618,000 | 8,618,000 |

MULLER partnership

**MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL
REINSTATEMENT
ORDER OF COST ESTIMATE
NOVEMBER 2018**

ESTIMATE DETAILS

| Ref | Description | Quantity | Unit | Rate | Amount |
|-----------------------|---|----------|------|----------------|------------------|
| 1.0 DEMOLITION | | | | | |
| | <u>Demolition of existing water based items</u> | | | | |
| 1 | Allowance to disconnect and remove existing shark net [Provisional] | 200.00 | m | 90.00 | 18,000.00 |
| 2 | Allowance to extract and dispose of existing timber pile for shark nets [Provisional] | 13.00 | No | 800.00 | 10,400.00 |
| | | | | Total : | 28,400.00 |
| 2.0 PILES | | | | | |
| | <u>Site Mobilisation/Demobilisation</u> | | | | |
| 1 | Allowance for mobilisation & demobilisation of piling rig and jack up barge | 1.00 | Item | 180,000.00 | 180,000.00 |
| | <u>355 dia CHS Piles</u> | | | | |
| | <u>Supply CHS Piles</u> | | | | |
| 2 | Supply 355 dia x 9.5 thick wall x 12m long steel piles | 13.00 | No | 1,950.00 | 25,350.00 |
| | <u>Install CHS piles from barge</u> | | | | |
| 3 | Install 355 dia x 9.5 thick wall x 12m long steel piles driven into seabed | 13.00 | No | 6,600.00 | 85,800.00 |
| | <u>508 dia CHS Piles</u> | | | | |
| | <u>Supply CHS Piles</u> | | | | |
| 4 | Supply 508 dia x 12 thick wall x 17m long steel piles | 12.00 | No | 4,975.00 | 59,700.00 |
| 5 | Supply 508 dia x 12 thick wall x 18m long steel piles | 2.00 | No | 5,265.00 | 10,530.00 |
| | <u>Install CHS piles from barge</u> | | | | |
| 6 | Install 508 dia x 12 thick wall x 17m long steel piles driven into seabed | 12.00 | No | 12,750.00 | 153,000.00 |
| 7 | Install 508 dia x 12 thick wall x 18m long steel piles driven into seabed | 2.00 | No | 13,500.00 | 27,000.00 |
| | <u>610 dia CHS Piles</u> | | | | |
| | <u>Supply CHS Piles</u> | | | | |
| 8 | Supply 610 dia x 16 thick wall x 17m long steel piles | 88.00 | No | 7,990.00 | 703,120.00 |
| 9 | Supply 610 dia x 16 thick wall x 18m long steel piles | 2.00 | No | 8,460.00 | 16,920.00 |
| | <u>Install CHS piles from barge</u> | | | | |
| 10 | Install 610 dia x 16 thick wall x 17m long steel piles driven into seabed | 88.00 | No | 14,450.00 | 1,271,600.00 |
| 11 | Install 610 dia x 16 thick wall x 18m long steel piles driven into seabed | 2.00 | No | 15,300.00 | 30,600.00 |
| | <u>Miscellaneous CHS Pile Works</u> | | | | |
| | <u>Pile Trimming</u> | | | | |
| 12 | Cut back 355 dia piles following driving | 13.00 | No | 325.00 | 4,225.00 |
| 13 | Cut back 508 dia piles following driving | 14.00 | No | 350.00 | 4,900.00 |

MULLER partnership

**MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL
REINSTATEMENT
ORDER OF COST ESTIMATE
NOVEMBER 2018**

ESTIMATE DETAILS

| Ref | Description | Quantity | Unit | Rate | Amount |
|----------------------|--|----------|------|----------------|---------------------|
| 2.0 PILES | | | | | (Continued) |
| 14 | Cut back 610 dia piles following driving | 90.00 | No | 400.00 | 36,000.00 |
| | Pile caps | | | | |
| 15 | Allowance to supply, fabricate and install 6mm x 355 dia pile cap | 13.00 | No | 270.00 | 3,510.00 |
| 16 | Allowance to supply, fabricate and install 6mm x 508 dia pile cap | 14.00 | No | 355.00 | 4,970.00 |
| 17 | Allowance to supply, fabricate and install 6mm x 610 dia pile cap | 90.00 | No | 430.00 | 38,700.00 |
| | Pile Surface Treatment | | | | |
| 18 | Allowance for epoxy coating steel pile | 50.00 | m2 | 120.00 | 6,000.00 |
| 19 | Denso wrap to steel pile | 800.00 | m2 | 370.00 | 296,000.00 |
| | Stainless Steel Wearing Plate | | | | |
| 20 | Allowance to supply and install 3mm stainless steel circumferential plate 3,000 long to 508 dia pile [Provisional] | 2.00 | No | 3,100.00 | 6,200.00 |
| 21 | Allowance to supply and install 3mm stainless steel circumferential plate 3,000 long to 610 dia pile [Provisional] | 2.00 | No | 3,500.00 | 7,000.00 |
| | | | | Total : | 2,971,125.00 |
| 3.0 METALWORK | | | | | |
| | Headstock | | | | |
| 1 | Allowance to fabricate and supply 250 x 250 x 9 SHS | 14.00 | t | 5,000.00 | 70,000.00 |
| 2 | Extra over allowance for 250 long x 200 x 100 x 10 SS UA Cleat to last at 400 cts | 738.00 | No | 175.00 | 129,150.00 |
| | Headstock Connections | | | | |
| 3 | Allowance for headstock connections to piles comprising cutting piles to allow for headstocks to be slotted into and welded in place [Provisional] | 188.00 | No | 1,100.00 | 206,800.00 |
| 4 | Allowance to fabricate and supply 10mm thick plate Pile Clamps to 610 OD x 16 steel tube pile [Provisional] | 44.00 | No | 830.00 | 36,520.00 |
| 5 | Install pile clamps to 610 OD steel pile including 4M20 SS bolts each side and 1 M36 to headstock | 44.00 | No | 935.00 | 41,140.00 |
| | Gangway | | | | |
| 6 | Allowance to supply and install 15,000 long x 1,800 wide Aluminium truss gangway [Provisional] | 1.00 | No | 80,000.00 | 80,000.00 |
| | Signage | | | | |
| 7 | Allowance for signage to boardwalks [provisional] | 1.00 | Item | 10,000.00 | 10,000.00 |
| | | | | Total : | 573,610.00 |
| 4.0 DECKING | | | | | |

MULLER partnership

**MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL
REINSTATEMENT
ORDER OF COST ESTIMATE
NOVEMBER 2018**

ESTIMATE DETAILS

| Ref | Description | Quantity | Unit | Rate | Amount |
|--|--|----------|------|-----------|---------------------|
| 4.0 DECKING | | | | | |
| | <u>Joists</u> | | | | |
| 1 | Allowance to supply and install 250 x 125 x 6.4 FRP RHS joists [STR-VBRB-250x125x6.4 by Wagners] | 4,430.00 | m | 160.00 | 708,800.00 |
| | <u>Decking</u> | | | | |
| 2 | Allowance to supply and install Wood Plastic Composite (WPC) decking | 1,546.00 | m2 | 190.00 | 293,740.00 |
| | <u>Connections</u> | | | | |
| 3 | Allowance for tie into existing wharf structures [Provisional] | 2.00 | No | 2,500.00 | 5,000.00 |
| Total : | | | | | 1,007,540.00 |
| 5.0 WHARF FURNITURE & EQUIPMENT | | | | | |
| | <u>Handrails</u> | | | | |
| 1 | Allowance to supply and install traditional timber balustrades [Provisional] | 780.00 | m | 350.00 | 273,000.00 |
| | <u>Ladders</u> | | | | |
| 2 | Supply and install waterside wharf access ladders [Provisional] | 12.00 | No | 20,000.00 | 240,000.00 |
| | <u>Miscellaneous</u> | | | | |
| 3 | Lifebouy including stand | 12.00 | No | 600.00 | 7,200.00 |
| | <u>Shark Net</u> | | | | |
| 4 | Allowance to supply and install shark Braided PE net fixed to new boardwalk structure | 280.00 | m | 35.00 | 9,800.00 |
| | <u>Pontoons</u> | | | | |
| 5 | Allowance to supply and install Central Pontoon comprising 10m x 4m pontoon platform [Provisional] | 1.00 | Item | 72,000.00 | 72,000.00 |
| 6 | Ditto Pontoon Playground comprising 6m x 4m pontoon platform [Provisional] | 1.00 | Item | 45,000.00 | 45,000.00 |
| Total : | | | | | 647,000.00 |
| 6.0 SERVICES | | | | | |
| | <u>Lighting</u> | | | | |
| 1 | Allowance for light poles every 15m along boardwalks including connection to shore based power | 23.00 | No | 10,000.00 | 230,000.00 |
| | <u>Power</u> | | | | |
| 2 | Allowance for electrical services to boardwalk [Provisional] | | m | | EXCL |
| | <u>Comms</u> | | | | |
| 3 | Allowance for comms services to boardwalk [Provisional] | | m | | EXCL |
| | <u>Water</u> | | | | |

MULLER partnership

**MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL
REINSTATEMENT
ORDER OF COST ESTIMATE
NOVEMBER 2018**

ESTIMATE DETAILS

| Ref | Description | Quantity | Unit | Rate | Amount |
|--|--|----------|------|--------|-------------------|
| 6.0 SERVICES | | | | | (Continued) |
| 4 | Allowance for water services to boardwalk [Provisional] | | m | | EXCL |
| Total : | | | | | 230,000.00 |
| 7.0 DESIGN DEVELOPMENT ALLOWANCE [5%] | | | | | |
| Total : | | | | | |
| 8.0 PRELIMINARIES AND MARGIN | | | | | |
| 1 | | | | | |
| Total : | | | | | |
| 9.0 SUBTOTAL [EXCL GST] | | | | | |
| 1 | | | | | |
| Total : | | | | | |
| 10.0 IDENTIFIED RISK ITEMS | | | | | |
| 1 | Allowance for silt curtain to perimeter of works [Provisional] | 250.00 | m | 300.00 | 75,000.00 |
| 2 | Amplification of electrical services | | Item | | EXCL |
| 3 | Heritage Works to adjoining wharfs | | Item | | EXCL |
| 4 | Cathodic Protection | | Item | | EXCL |
| Total : | | | | | 75,000.00 |
| 11.0 CONSTRUCTION CONTINGENCY [20%] | | | | | |
| Total : | | | | | |
| 12.0 TOTAL [EXCL GST] | | | | | |
| 1 | | | | | |
| Total : | | | | | |

Project related



Appendix C Whole of Life Cost Model by Muller Partnership

MULLER *partnership*

MANLY WEST ESPLANADE BOARDWALK AND HARBOUR POOL REINSTATEMENT

WHOLE OF LIFE MODEL

Newcastle :: Sydney :: Melbourne
19 MARCH 2019



19 March 2019

Royal HaskoningDHV Pty Ltd
Level 14, 56 Berry Street
NORTH SYDNEY NSW 2060

ATTENTION: GREG BRITTON

**RE: MANLY WEST ESPLANADE BOARDWALK AND
HARBOUR POOL REINSTATEMENT
WHOLE OF LIFE MODEL**

As per your request dated 1st March 2019, Muller Partnership have prepared the Whole of Life Model for the above project and enclose our report.

Please note the attached Whole of Life Model has been prepared based on the provided information and should be updated if/when additional information becomes available. Please take note of our Assumptions (Item 3.0) and Exclusions (Item 4.0).

Should you wish to discuss any of the above please do not hesitate to contact either *Harley Gleeson* or the undersigned.

Yours faithfully

MULLER PARTNERSHIP



**CAMERON BEARD
DIRECTOR**

CB:HG 18373 Manly West Esplanade Boardwalk and Harbour Pool Reinstatement Whole of Life Model

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Disclaimer

Muller Partnership have prepared this report in part on the basis of information supplied to it in the ordinary course of business by Mr Greg Britton of Royal HaskoningDHV.

Whilst all reasonable professional care and skill have been exercised to validate its accuracy and authenticity, Muller Partnership is unable to provide any Guarantee in that regard, and will not be liable to any party for any loss arising as a result of any such information subsequently being found to be inaccurate, lacking authenticity or having been withheld.

This report is only intended for use by Royal HaskoningDHV and Muller Partnership accepts no responsibility to other parties who use opinions or information contained herein. They do so at their own risk.

In acting as Quantity Surveyor for Royal HaskoningDHV, Muller Partnership's liability is limited to the scope of services and value limit, as defined in their Professional indemnity insurance cover. A copy is available on request.

This report covers only the items as contained in this report. Should Royal HaskoningDHV require additional items or areas of assessment, these should be specifically requested and will be actioned as agreed between the parties.

The construction costs are current as at the date of this assessment only. The values assessed herein may change significantly and unexpectedly over a relatively short period (including as a result of general market movements or factors specific to the particular property). We do not accept liability for losses arising from such subsequent changes in values.

Document history & status

| Revision | Date | Description | By | Review | Approved |
|----------|------------|---|----|--------|----------|
| 1 | 18/03/2019 | Whole of Life Model | HG | CB | CB |
| 2 | 19/03/2019 | Whole of Life Model – Assumption Update | HG | CB | CB |

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1.0 EXECUTIVE SUMMARY

Muller Partnership has been engaged by Royal Haskoning DHV to prepare a Whole of Life Model for the Manly West Esplanade Boardwalk project.

Scope

Generally, the scope included within the attached report comprises assessment of the Whole of Life costs over a 50 year period for the entire project scope including piles, metalwork, decking, wharf furniture and equipment and services. The Whole of Life Model generally considers Capital Costs, Operating Costs and Maintenance Costs to determine the Net Present Value.

Cost Summary

| Item | Total NPV |
|--------------------------------------|---------------------|
| Total Capital Cost (50yr) | \$7,106,000 |
| Total Operating Cost (50yr) | \$15,796,397 |
| Total Maintenance Cost (50yr) | \$704,505 |
| Overall Total | \$23,606,902 |

2.0 SCHEDULE OF INFORMATION

Muller Partnership has used the following information in compiling our Whole of Life Model:

- Muller Partnership Report titled "Manly West Esplanade Boardwalk and Harbour Pool Reinstatement - Order of Cost Estimate" dated 15 November 2018;
- Council provided spreadsheet titled "Manly West Esplanade Annual Operational Cost Estimates per annum" dated 6 March 2019, received 8 March 2019;
- Royal Haskoning spreadsheet titled "Manly West Esplanade Maintenance Tasks" dated 11 March 2019, received 11 March 2019;
- Email and telephone correspondence with Greg Britton and Harry Gibbs of Royal HaskoningDHV in relation to scope (numerous);

All rates used within our Whole of Life Model have been gathered from our in-house databases as well as being constructed from first principles namely labour, materials and waste to reflect current market and project specific value.

3.0 ASSUMPTIONS

We have made the following assumptions in the preparation of our Whole of Life Model:-

1. A discount rate of 7% has been utilised to calculate the Net Present Value as requested by Greg Britton of Royal Haskoning DHV;
2. The Capital Cost has been included as per the Muller Partnership Order of Cost Estimate dated 15 November 2018 (excluding contingencies);
3. All costs provided by Council have been included as provided and extended out to 50 years (as per the requested of Royal Haskoning DHV).
4. It is assumed the Council listed Safety Equipment item includes for maintenance to light poles, life buoys and signage. No allowance has been made for these separately within the WOL model;
5. The Maintenance list provided by Royal Haskoning DHV has been adopted, with costs for each maintenance item being included at the specified frequency;
6. Royal HaskoningDHV nominated Shark Net maintenance and expected life replacement costs have been excluded from the maintenance costs as these have been included in the operational costs provided by Council.

4.0 EXCLUSIONS

Within the following Whole of Life Model the acronym 'EXCL' means work that has **not** been included in our estimate. We specifically note the following exclusions from the estimated cost:

1. GST;
2. Due Diligence of Council of Royal Hoskoning numbers;
3. Works after 50 years are excluded [NB: Assumed end of life];
4. Make good from vandalism;
5. Acts of God and other insurable events;
6. Play Equipment;
7. Income;



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APPENDIX A – WHOLE OF LIFE MODEL

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| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2423 | 2424 | 2425 | 2426 | 2427 | 2428 | 2429 | 2430 | 2431 | 2432 | 2433 | 2434 | 2435 | 2436 | 2437 | 2438 | 2439 | 2440 | 2441 | 2442 | 2443 | 2444 | 2445 | 2446 | 2447 | 2448 | 2449 | 2450 | 2451 | 2452 | 2453 | 2454 | 2455 | 2456 | 2457 | 2458 | 2459 | 2460 | 2461 | 2462 | 2463 | 2464 | 2465 | 2466 | 2467 | 2468 | 2469 | 2470 | 2471 | 2472 | 2473 | 2474 | 2475 | 2476 | 2477 | 2478 | 2479 | 2480 | 2481 | 2482 | 2483 | 2484 | 2485 | 2486 | 2487 | 2488 | 2489 | 2490 | 2491 | 2492 | 2493 | 2494 | 2495 | 2496 | 2497 | 2498 | 2499 | 2500 | 2501 | 2502 | 2503 | 2504 | 2505 | 2506 | 2507 | 2508 | 2509 | 2510 | 2511 | 2512 | 2513 | 2514 | 2515 | 2516 | 2517 | 2518 | 2519 | 2520 | 2521 | 2522 | 2523 | 2524 | 2525 | 2526 | 2527 | 2528 | 2529 | 2530 | 2531 | 2532 | 2533 | 2534 | 2535 | 2536 | 2537 | 2538 | 2539 | 2540 | 2541 | 2542 | 2543 | 2544 | 2545 | 2546 | 2547 | 2548 | 2549 | 2550 | 2551 | 2552 | 2553 | 2554 | 2555 | 2556 | 2557 | 2558 | 2559 | 2560 | 2561 | 2562 | 2563 | 2564 | 2565 | 2566 | 2567 | 2568 | 2569 | 2570 | 2571 | 2572 | 2573 | 2574 | 2575 | 2576 | 2577 | 2578 | 2579 | 2580 | 2581 | 2582 | 2583 | 2584 | 2585 | 2586 | 2587 | 2588 | 2589 | 2590 | 2591 | 2592 | 2593 | 2594 | 2595 | 2596 | 2597 | 2598 | 2599 | 2600 | 2601 | 2602 | 2603 | 2604 | 2605 | 2606 | 2607 | 2608 | 2609 | 2610 | 2611 | 2612 | 2613 | 2614 | 2615 | 2616 | 2617 | 2618 | 2619 | 2620 | 2621 | 2622 | 2623 | 2624 | 2625 | 2626 | 2627 | 2628 | 2629 | 2630 | 2631 | 2632 | 2633 | 2634 | 2635 | 2636 | 2637 | 2638 | 2639 | 2640 | 2641 | 2642 | 2643 | 2644 | 2645 | 2646 | 2647 | 2648 | 2649 | 2650 | 2651 | 2652 | 2653 | 2654 | 2655 | 2656 | 2657 | 2658 | 2659 | 2660 | 2661 | 2662 | 2663 | 2664 | 2665 | 2666 | 2667 | 2668 | 2669 | 2670 | 2671 | 2672 | 2673 | 2674 | 2675 | 2676 | 2677 | 2678 | 2679 | 2680 | 2681 | 2682 | 2683 | 2684 | 2685 | 2686 | 2687 | 2688 | 2689 | 2690 | 2691 | 2692 | 2693 | 2694 | 2695 | 2696 | 2697 | 2698 | 2699 | 2700 | 2701 | 2702 | 2703 | 2704 | 2705 | 2706 | 2707 | 2708 | 2709 | 2710 | 2711 | 2712 | 2713 | 2714 | 2715 | 2716 | 2717 | 2718 | 2719 | 2720 | 2721 | 2722 | 2723 | 2724 | 2725 | 2726 | 2727 | 2728 | 2729 | 2730 | 2731 | 2732 | 2733 | 2734 | 2735 | 2736 | 2737 | 2738 | 2739 | 2740 | 2741 | 2742 | 2743 | 2744 | 2745 | 2746 | 2747 | 2748 | 2749 | 2750 | 2751 | 2752 | 2753 | 2754 | 2755 | 2756 | 2757 | 2758 | 2759 | 2760 | 2761 | 2762 | 2763 | 2764 | 2765 | 2766 | 2767 | 2768 | 2769 | 2770 | 2771 | 2772 | 2773 | 2774 | 2775 | 2776 | 2777 | 2778 | 2779 | 2780 | 2781 | 2782 | 2783 | 2784 | 2785 | 2786 | 2787 | 2788 | 2789 | 2790 | 2791 | 2792 | 2793 | 2794 | 2795 | 2796 | 2797 | 2798 | 2799 | 2800 | 2801 | 2802 | 2803 | 2804 | 2805 | 2806 | 2807 | 2808 | 2809 | 2810 | 2811 | 2812 | 2813 | 2814 | 2815 | 2816 | 2817 | 2818 | 2819 | 2820 | 2821 | 2822 | 2823 | 2824 | 2825 | 2826 | 2827 | 2828 | 2829 | 2830 | 2831 | 2832 | 2833 | 2834 | 2835 | 2836 | 2837 | 2838 | 2839 | 2840 | 2841 | 2842 | 2843 | 2844 | 2845 | 2846 | 2847 | 2848 | 2849 | 2850 | 2851 | 2852 | 2853 | 2854 | 2855 | 2856 | 2857 | 2858 | 2859 | 2860 | 2861 | 2862 | 2863 | 2864 | 2865 | 2866 | 2867 | 2868 | 2869 | 2870 | 2871 | 2872 | 2873 | 2874 | 2875 | 2876 | 2877 | 2878 | 2879 | 2880 | 2881 | 2882 | 2883 | 2884 | 2885 | 2886 | 2887 | 2888 | 2889 | 2890 | 2891 | 2892 | 2893 | 2894 | 2895 | 2896 | 2897 | 2898 | 2899 | 2900 | 2901 | 2902 | 2903 | 2904 | 2905 | 2906 | 2907 | 2908 | 2909 | 2910 | 2911 | 2912 | 2913 | 2914 | 2915 | 2916 | 2917 | 2918 | 2919 | 2920 | 2921 | 2922 | 2923 | 2924 | 2925 | 2926 | 2927 | 2928 | 2929 | 2930 | 2931 | 2932 | 2933 | 2934 | 2935 | 2936 | 2937 | 2938 | 2939 | 2940 | 2941 | 2942 | 2943 | 2944 | 2945 | 2946 | 2947 | 2948 | 2949 | 2950 | 2951 | 2952 | 2953 | 2954 | 2955 | 2956 | 2957 | 2958 | 2959 | 2960 | 2961 | 2962 | 2963 | 2964 | 2965 | 2966 | 2967 | 2968 | 2969 | 2970 | 2971 | 2972 | 2973 | 2974 | 2975 | 2976 | 2977 | 2978 | 2979 | 2980 | 2981 | 2982 | 2983 | 2984 | 2985 | 2986 | 2987 | 2988 | 2989 | 2990 | 2991 | 2992 | 2993 | 2994 | 2995 | 2996 | 2997 | 2998 | 2999 | 3000 | 3001 | 3002 | 3003 | 3004 | 3005 | 3006 | 3007 | 3008 | 3009 | 3010 | 3011 | 3012 | 3013 | 3014 | 3015 | 3016 | 3017 | 3018 | 3019 | 3020 | 3021 | 3022 | 3023 | 3024 | 3025 | 3026 | 3027 | 3028 | 3029 | 3030 | 3031 | 3032 | 3033 | 3034 | 3035 | 3036 | 3037 | 3038 | 3039 | 3040 | 3041 | 3042 | 3043 | 3044 | 3045 | 3046 | 3047 | 3048 | 3049 | 3050 | 3051 | 3052 | 3053 | 3054 | 3055 | 3056 | 3057 | 3058 | 3059 | 3060 | 3061 | 3062 | 3063 | 3064 | 3065 | 3066 | 3067 | 3068 | 3069 | 3070 | 3071 | 3072 | 3073 | 3074 | 3075 | 3076 | 3077 | 3078 | 3079 | 3080 | 3081 | 3082 | 3083 | 3084 | 3085 | 3086 | 3087 | 3088 | 3089 | 3090 | 3091 | 3092 | 3093 | 3094 | 3095 | 3096 | 3097 | 3098 | 3099 | 3100 | 3101 | 3102 | 3103 | 3104 | 3105 | 3106 | 3107 | 3108 | 3109 | 3110 | 3111 | 3112 | 3113 | 3114 | 3115 | 3116 | 3117 | 3118 | 3119 | 3120 | 3121 | 3122 | 3123 | 3124 | 3125 | 3126 | 3127 | 3128 | 3129 | 3130 | 3131 | 3132 | 3133 | 3134 | 3135 | 3136 | 3137 | 3138 | 3139 | 3140 | 3141 | 3142 | 3143 | 3144 | 3145 | 3146 | 3147 | 3148 | 3149 | 3150 | 3151 | 3152 | 3153 | 3154 | 3155 | 3156 | 3157 | 3158 | 3159 | 3160 | 3161 | 3162 | 3163 | 3164 | 3165 | 3166 | 3167 | 3168 | 3169 | 3170 | 3171 | 3172 | 3173 | 3174 | 3175 | 3176 | 3177 | 3178 | 3179 | 3180 | 3181 | 3182 | 3183 | 3184 | 3185 | 3186 | 3187 | 3188 | 3189 | 3190 | 3191 | 3192 | 3193 | 3194 | 3195 | 3196 | 3197 | 3198 | 3199 | 3200 | 3201 | 3202 | 3203 | 3204 | 3205 | 3206 | 3207 | 3208 | 3209 | 3210 | 3211 | 3212 | 3213 | 3214 | 3215 | 3216 | 3217 | 3218 | 3219 | 3220 | 3221 | 3222 | 3223 | 3224 | 3225 | 3226 | 3227 | 3228 | 3229 | 3230 | 3231 | 3232 | 3233 | 3234 | 3235 | 3236 | 3237 | 3238 | 3239 | 3240 | 3241 | 3242 | 3243 | 3244 | 3245 | 3246 | 3247 | 3248 | 3249 | 3250 | 3251 | 3252 | 3253 | 3254 | 3255 | 3256 | 3257 | 3258 | 3259 | 3260 | 3261 | 3262 | 3263 | 3264 | 3265 | 3266 | 3267 | 3268 | 3269 | 3270 | 3271 | 3272 | 3273 | 3274 | 3275 | 3276 | 3277 | 3278 | 3279 | 3280 | 3281 | 3282 | 3283 | 3284 | 3285 | 3286 | 3287 | 3288 | 3289 | 3290 | 3291 | 3292 | 3293 | 3294 | 3295 | 3296 | 3297 | 3298 | 3299 | 3300 | 3301 | 3302 | 3303 | 3304 | 3305 | 3306 | 3307 | 3308 | 3309 | 3310 | 3311 | 3312 | 3313 | 3314 | 3315 | 3316 | 3317 | 3318 | 3319 | 3320 | 3321 | 3322 | 3323 | 3324 | 3325 | 3326 | 3327 | 3328 | 3329 | 3330 | 3331 | 3332 | 3333 | 3334 | 3335 | 3336 | 3337 | 3338 | 3339 | 3340 | 3341 | 3342 | 3343 | 3344 | 3345 | 3346 | 3347 | 3348 | 3349 | 3350 | 3351 | 3352 | 3353 | 3354 | 3355 | 3356 | 3357 | 3358 | 3359 | 3360 | 3361 | 3362 | 3363 | 3364 | 3365 | 3366 | 3367 | 336 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----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[illegible]



MULLER partnership

APPENDIX B – SUPPORTING DOCUMENTS

MANLY WEST ESPLANADE BOARDWALK AND
HARBOUR POOL REINSTATEMENT
WHOLE OF LIFE MODEL
19 MARCH 2019

Page 10

Council provided spreadsheet dated 5/03/2019 received 8 March 2019.

| Manly West Esplanade Annual Operational Cost Estimates per annum | | | | | | | | | | | |
|--|-----------|----------|-----------|----------|-----------|-----------|-----------|----------|-----------|-----------|----------|
| Staffing | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | |
| Education Staffing x 2 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| Events Activations | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Marketing | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Education Programs Aboriginal Heritage and Enviro | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| Beach services | | | | | | | | | | | |
| Operations Life Guards x 5 @ 60 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 |
| Equipment/ Play | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Safety Equipment | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Shark Netting maintenance | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| Beach cleansing | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Shark Netting replacement 5 years | | | | | | 150,000 | | | | | 150,000 |
| Environmental | | | | | | | | | | | |
| Seahorse audits 2 per year | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Marine Condition reports 2 per year | 8,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Penguin protection | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| Operations | | | | | | | | | | | |
| Cleansing/ Bins/ Pressure cleaning | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Water | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| Electricity | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Maintenance/ paint/ replacement etc. | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Income | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 | -100,000 |
| | 1,040,000 | 986,000 | 1,036,000 | 986,000 | 1,036,000 | 1,136,000 | 1,036,000 | 986,000 | 1,036,000 | 1,136,000 | |

Project No. PA1893
Project Name Manly West Esplanade
Date 11-Mar-19
Prepared by H Gibbs



| Ref | ASSET | MAINTENANCE REQUIREMENT | DESCRIPTION | MAINTENANCE FREQUENCY (YEARS) | EXPECTED LIFE TO REPLACEMENT (YEARS) |
|-----|-----------------------------|-------------------------|---|-------------------------------|--------------------------------------|
| 0.0 | GENERAL | | | | |
| 0.1 | | ENGINEERING INSPECTION | CONDITION ASSESSMENT BY QUALIFIED ENGINEER BY LAND/ DECK AND BY BOAT | 2 | |
| 1.0 | DEMOLITION | | | | |
| 2.0 | PILES | | | | |
| 2.1 | ALL PILES | DIVE INSPECTION | PILE INSPECTIONS BY DIVERS (ALLOW ONE WEEK FOR DIVE TEAM) | 5 | 50 |
| 2.2 | SUPPORT PILES | REPLACE WRAPPING | REPLACE WITH DENSOL SEASHEILD SYSTEM. REVIEW OF ENVIRONMENTAL FACTORS NECESSARY | 25 | 50 |
| 2.3 | PONTOON RESTRAINT PILES | REPLACE WEAR PLATES | | 25 | 50 |
| 3.0 | METALWORK | | | | |
| 3.1 | HEADSTOCKS | REPAINT | BLAST CLEAN, PRIME, RECOAT, ASSUME WORKING FROM BARGE. | 20 | 50 |
| 3.2 | GANGWAY | GENERAL MAINTENANCE | GREASING, BEARINGS, FLOORING, OTHER MINOR REPAIRS | 5 | 50 |
| 4.0 | DECKING | | | | |
| 4.1 | JOISTS | MISC MINOR REPAIRS | | 5 | 50 |
| 4.2 | DECKING | REPLACE DAMAGED BOARDS | REPLACE DEFECTIVE BOARDS (SAY 10% EVERY 5 YEARS) | 5 | 25 |
| 4.3 | ALL BOLTS | | | | 25 |
| 5.0 | WHARF FURNITURE & EQUIPMENT | | | | |
| 5.1 | HANDRAILS | REPAINT | REPAINT HANDRAILS | 10 | 25 |
| 5.2 | LADDERS | - | | | 50 |
| 5.3 | SHARK NETS | MAINTAIN | CLEAN, INSPECT, REPAIR TEARS | 1 | 5 |
| 5.4 | TWO PONTOONS | GENERAL MAINTENANCE | TIGHTEN BOLTS, REPLACE WORN PILE GUIDES, ETC, REPLACE TIMBER WALES | 10 | 25 |
| 6.0 | | | | | |
| 6.1 | ALL | REPAIRS AS REQUIRED | | 1 | 50 |

Project related



Appendix D Copy of RHDHV Presentation at Workshop on 21 November 2018

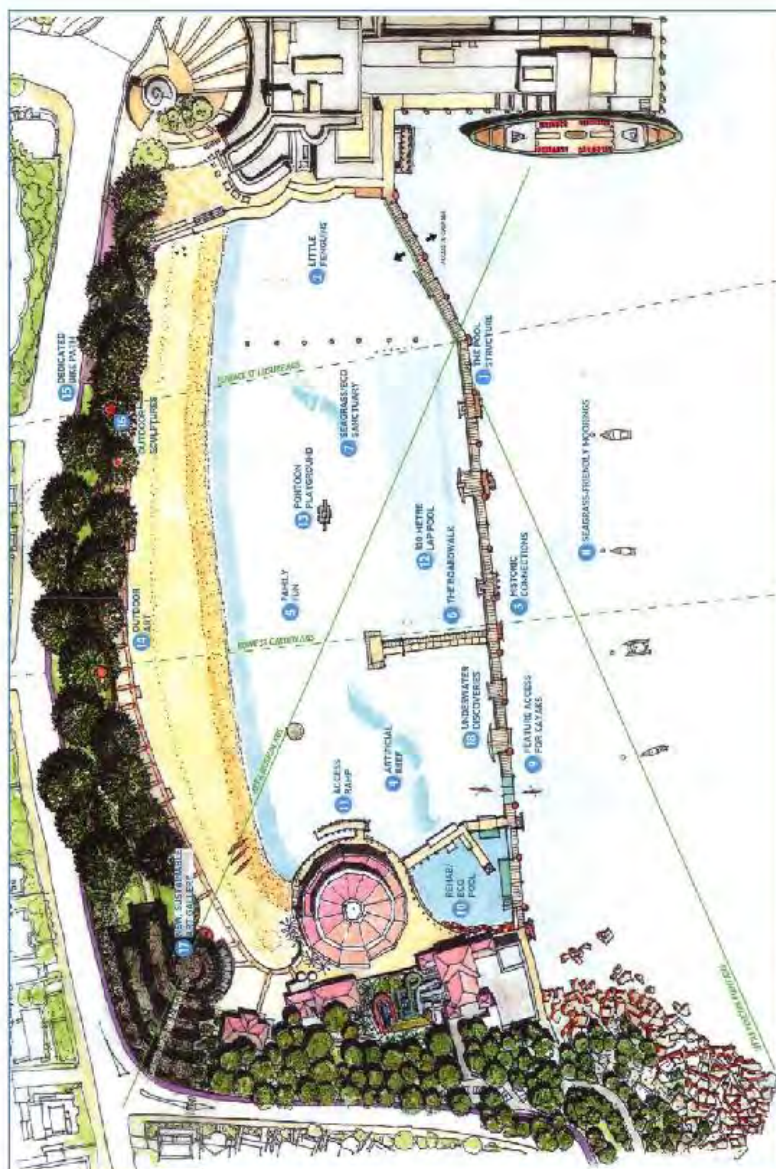


Manly West Esplanade Precinct

Masterplan

Workshop
Wednesday 21 November 2018

Proposed Boardwalk



Manly West Esplanade Boardwalk Masterplan

Work to date:

- site visit / inception meeting
- memo 16 July 2018 setting out:
 - list of suggested main studies to assess feasibility of reinstating boardwalk and harbour pool (13 off)
 - brief comments on scope of work for studies
 - preliminary program
- meeting with RMS 19 July 2018
- concept design sketch
- order of cost estimate (capital)

3 21 November 2018

Concept design:

- 'sympathetic replication'
- modern materials to achieve required design life and durability
- width of boardwalk – two levels, each 2.5m wide
- balustrade – traditional timber
- preferred decking – recycled wood plastic composite (WPC)

Order of cost estimate (capital):

- \$11.2M (provisional)
- includes:
 - construction contingency (25%)
 - environmental studies, approvals, design and documentation
 - client side project management
- major component – piling (approx. 40%)

List of main studies:

- hydrographic and land survey
- geotechnical investigation
- condition assessment of existing structures
- coastal processes
- aquatic ecology
- landscape character and visual impact assessment
- heritage study

List of main studies:

- ecological engineering opportunities
- navigation impact assessment
- safety in design
- concept design
- capital cost estimates and whole of life assessment
- planning strategy / approvals pathway



Manly West Esplanade Safety Strategy Report for Northern Beaches Council

Prepared by UTS team:

| | |
|------------------|----------|
| Catherine Jia | 13114590 |
| Christeena Smyth | 13367901 |
| Nayanraj Umathe | 12797763 |





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Executive Summary

This document has been prepared by students of UTS to advise Northern Beaches Council (Council) on strategies to improve the safety of Manly West Esplanade, as part of their Heritage Activation Plan. Currently, West Esplanade is at risk of becoming an extension of its eastern neighbour, "The Office", a popular place where backpackers and young people gather to drink in the evening. Council are looking to ensure that the area does not lead to further crime activity or anti-social behaviour, but upon further investigation the subject of safety has been extended to include the day to day wellbeing of users. Furthermore, it should be noted that the purpose of this document is not to instruct how to implement the proposed recommendations or the methods of funding the project.

A mixed approach was used to collect data and information to evaluate the safety of West Esplanade. Initial approaches to assess the safety conditions included site visits and attending the community drop-in session. To develop further understandings, UTS collected crime statistics from the Bureau of Crime Statistics and Research (BOSCR). The statistics found that 1063.9 incidents of disorderly conducts and 780.6 incidents of liquor offences occurred in Manly 2018, indicating that Manly has the highest crime rate amongst beachside suburbs in Sydney and therefore, validates the community's negative perception of the precinct's safety. UTS explored strategies and practices from various government documents to advise Council on recommendations. It was found that a well-designed, attractive and interactive area increases usage and creates a safer environment but also minimises the opportunity for crime activity and anti-social behaviour, which West Esplanade fails to provide for children and families and therefore, demonstrates the integral need to improve the safety of the precinct.

Following an assessment of the area and the key findings, the below is a summary of the overall recommendations provided for Council's consideration in developing its Safety Plan:

- *Recommendation 1:* Install consistent levels of lighting with minimal glare, increase the number of surveillance cameras and maintain landscape to enhance night time visibility and security to all activity areas and walkways.
- *Recommendation 2:* Upgrade park furniture and existing spaces with attractive, secure, well designed, and interactive design elements to encourage community participation and reactivation of isolated areas. Ensure that these new and existing elements comply with Australian building standards and regulations to prevent injury incidents.
- *Recommendation 3:* Provide effective emergency response and compliant outdoor swimming facilities and pool types to reduce impacts of drowning amongst children and foreigners using the Tidal Pool. Also, ensure that the reinstated boardwalk comply with the Australian Standards and Austroad.
- *Recommendation 4:* Display a variety of interactive public art installations that is integrated with the environment and can light up at night to illuminate and encourage usage of dimly-lit areas and walkways, and minimise the occurrence of graffiti and vandalism.

However, there are challenges with implementing these recommendations such as planning controls, scope of works and guidelines prepared by the State Government. To successfully overcome these limitations and implement the recommendations, UTS advises Council to seek professional advice and conduct further investigations. The risks involved in the non-implementation of the recommendations is that the community's negative perception of safety



will remain unchanged which could affect Council's reputation. Also, West Esplanade will continue to support opportunities for crime activity and anti-social behaviour, and contribute to the risk of injury and possibly fatalities of its users, particularly among children and families.

Lastly, all recommendations have been informed by current issues, statistics and Australian building standards and regulations, however their relevance may alter with further investigation or changes to the main focus of the Heritage Activation Plan.

1. Scope

Northern Beaches Council has enlisted UTS to aid in revitalising the Manly West Esplanade area as part of their Heritage Activation Plan. Currently, the area is at risk of becoming an extension of its eastern neighbour, "The Office", a place where backpackers and young people gather to drink in the evening and is particularly popular over the weekend.

The recommendations within this report have been designed to highlight the unique and rich history of the area while ensuring the safety of the general public, particularly families and children. Council and the local community are looking to ensure that the area does not lead to further crime or anti-social behaviour. Despite Council having expressed that the crime levels of the beachside suburb are of particular concern, upon further investigation the subject of safety has been extended to include the day to day wellbeing of all residents and visitors to increase the precinct's usage. To reach the conclusions presented in this report, the UTS team have conducted extensive research and investigation of the precinct.

West Esplanade is located on the west side of Manly Wharf and extends along the shorefront to Federation Point (Figure 1.1). Council, Crown and Roads and Maritime Services (RMS) take ownership of the multiple heritage sites and open spaces that are enjoyed by residents and over 2 million visitors each year. The UTS team have broken down the precinct into 5 areas of focus (listed below) to consider, as they are integral to improving the overall look, feel and safety of West Esplanade:

- Promenade (Shared Path and Park)
- Tidal Pool and Proposed Boardwalk
- Pavilion Walkway
- Art Gallery & Museum Surrounding Area
- Surf 'N Slide Adjacent Area

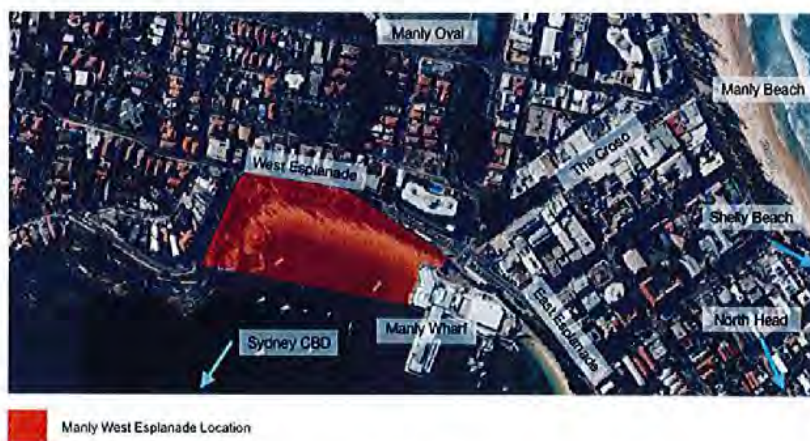


Figure 1.1: Manly West Esplanade Location Map

It should be noted that the purpose of this document is not to instruct how to implement the proposed recommendations or the methods of funding the project.



2. Methodology

A mixed approach was used to collect data and information to evaluate the safety of West Esplanade.

The initial site visit was conducted at daytime on the 1st of April with the project sponsor and project manager. This site visit provided UTS with a better understanding of the safety problems. A second site visit was conducted at evening on the 11th of April to assess the safety conditions in the darkness. Both inspections were focused around the following questions:

- Does the public feel safe using the precinct?
- What does the public not like about the precinct in regards to safety?
- How does the public interact with the area and how often do they visit?
- What are the heritage elements and land ownership of the area?
- Are there any particular areas that need safety improvements?

Further detail about the site visits can be found in Appendix 1.

Also, UTS attended a community drop-in session coordinated by Council on the 6th of April at the precinct. This session provided insights into the community's negative perception of safety at West Esplanade.

After primary research, UTS analysed empirical data sources to support findings. Crime statistics were collected from the BOCSR, a credible agency within the NSW Government Department of Justice. The statistics found that in 2018 crime incidents of disorderly conduct and alcohol offences were the highest amongst beachside suburbs in Sydney. These statistics validate the community's negative perception of the precinct's safety.

UTS explored strategies and practices from various materials, such as the *Safer by Design for Victoria* by the VIC Department of Sustainability and Environment Crime Prevention and the *Crime prevention and the assessment of development applications* by the NSW Department of Urban Affairs and Planning, to advise Council on safety recommendations. It was found that a well-designed, attractive and interactive area minimises the opportunity for crime activity and anti-social behaviour and creates a safer environment, which West Esplanade fails to provide for children and families and therefore, demonstrates the need to improve the safety of the precinct.

3. Key Findings

Key finding 1: In 2018, crime incidents relating to disorderly conduct and liquor offences were highest at Manly amongst beachside suburbs in Sydney.

According to BOSCR, 1063.9 incidents of disorderly conduct in 2018 occurred in Manly. Additionally, 780.6 incidents of liquor offences occurred in Manly. Based on the figures presented, it's apparent that West Esplanade is located in one Sydney's most unsafest beachside suburbs. The crime incidents are shown below in Figure 3.1. The crime counts can be found in Appendix 2.

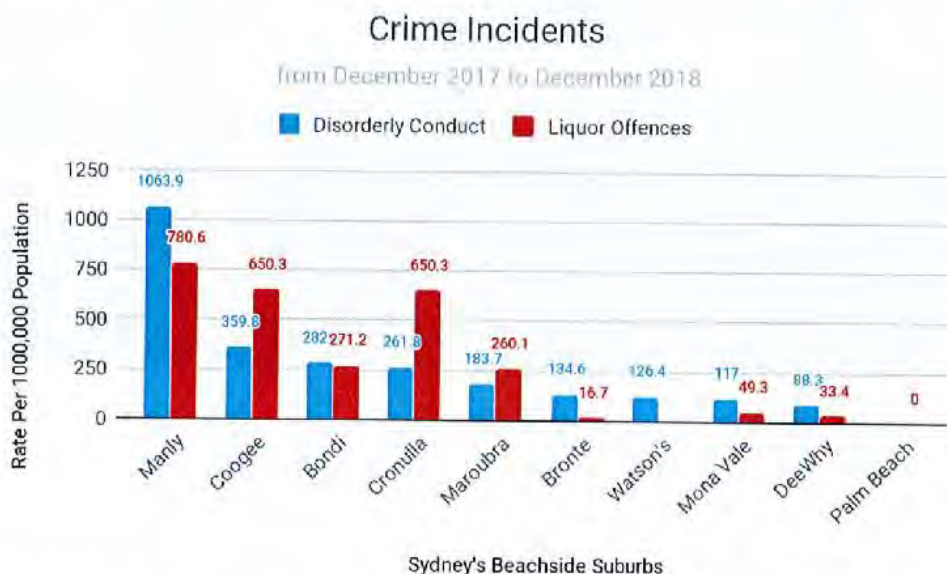


Figure 3.1: Crime incidents of Sydney's beachside suburbs from December 2017 to December 2018 (BOSCAR 2018).

Key Finding 2: West Esplanade neglects good design because the environment is unattractive, hazardous and non-interactive for families and children to use discouraging community usage and increasing opportunities for crime and anti-social behaviour.

Based on the research material, these are the precinct's safety urban design issues:

- Ineffective alcohol prohibition
- Dimly lit pathways and spaces are avoided at night
- Dense tree foliage and planting
- Outdated and vandalised furniture
- Interrupted flow of traffic and the fall height of the promenade
- Lack of formal surveillance
- Absence of adequate beach safety

4. Recommendations

Based on research, UTS has selected various areas around West Esplanade and recommended strategies and practices to improve safety, indicated below in Figure 4.1.

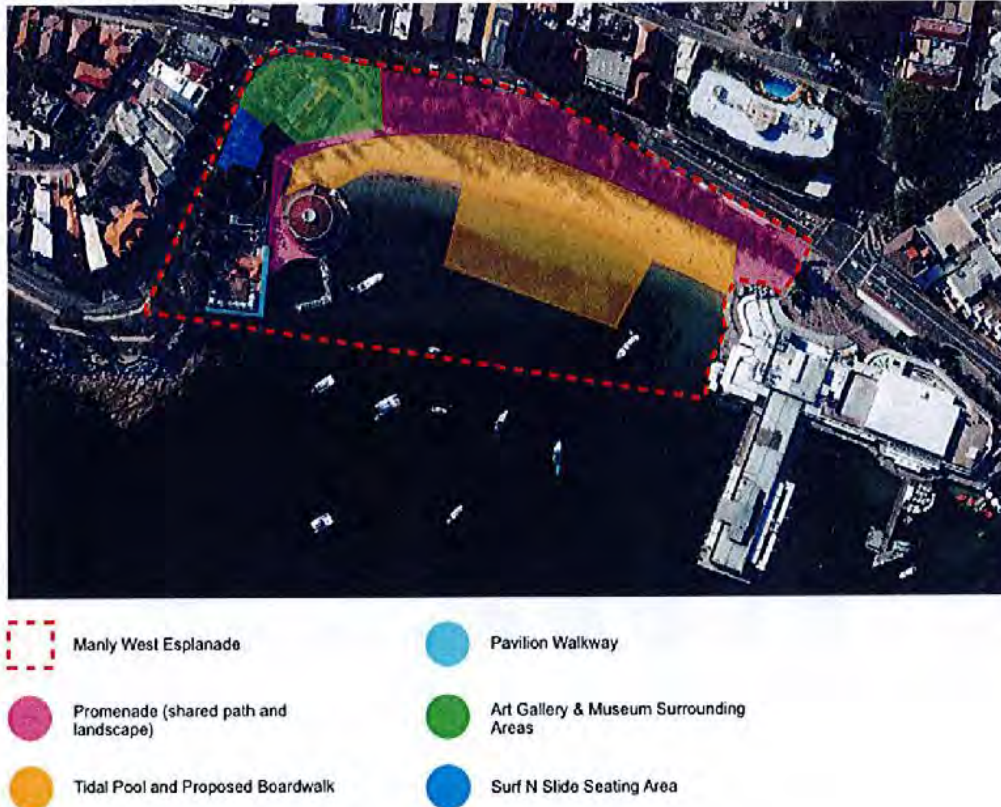


Figure 4.1: Areas of focus.

4.1 Promenade (Shared Path and Park)

- Install illuminated alcohol prohibition signs located at entrances and near centres of activity that will assist people to interpret the anti-drinking policies enforced (Figure 4.1.1)
- Place a low profile balustrade along the promenade edge for fall prevention - quick and easy to install, and allows Olympics plaques to be retained (Figure 4.1.2).
- Ensure that the shared path complies with *Austroad's Guide to Road Design Part 6A: Pedestrian and Cyclist Paths*.
- Relocate The Governor Philip Monument to adjacent alcove - improves the flow of traffic (Figure 4.1.3).
- Install surveillance cameras at entrances and near centres of activity facing towards the Tidal Pool (Figure 4.1.4).



- Install attractive furniture that is well designed and encourages social interaction (Figure 4.1.5).
- Ensure bicycle parking facilities comply with *Australian Standards 2890.3:2015*
- Display illuminated public art that can be integrated with the environment (Figure 4.1.6).



*Alcohol Prohibition sign located at Bondi Beach Entrance
(Erwin Chlanda 2012)*



*Illuminated park signage for nighttime visibility
(EGD 2015)*

Figure 4.1.1: Signs located at entrances and illuminated for nighttime visibility.



*Low profile steel balustrade placed along La Promenade des Anglais in France
(Wikimedia)*



Waters Edge Promenade and Boardwalk in Toronto (Waterfront Toronto)

Figure 4.1.2: Low profile balustrades along the promenade edge.



Figure 4.1.3: Relocation of the monument to the adjacent alcove diagram.






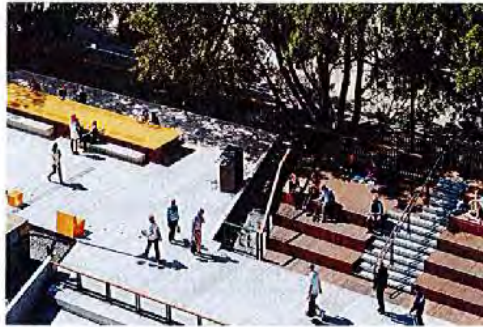
-  Site Location: Manly West Esplanade
-  Surveillance Cameras
-  Surveillance Camera Orientation

Figure 4.1.4: Indicative map of the potential locations and orientations of the surveillance cameras along the promenade.



Goods Line Precinct in Sydney designed by Chrofi (Chrofi 2011)



Daugava Waterfront Promenade in Latvia designed by A Plus Architects (A Plus Architects 2013)

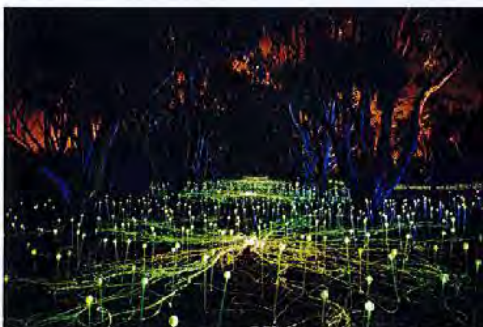


Waterfront Promenade in Aalborg, Denmark designed by CF Møller Landscape (CF Møller Landscape 2013)



Pirrama Park in Sydney designed by Aspect Studios (Aspect Studios 2010)

Figure 4.1.5: Attractive modern furniture that encourages social interaction.



Field of Light in Western Australia public art piece by Bruce Munro (Munro 2018)

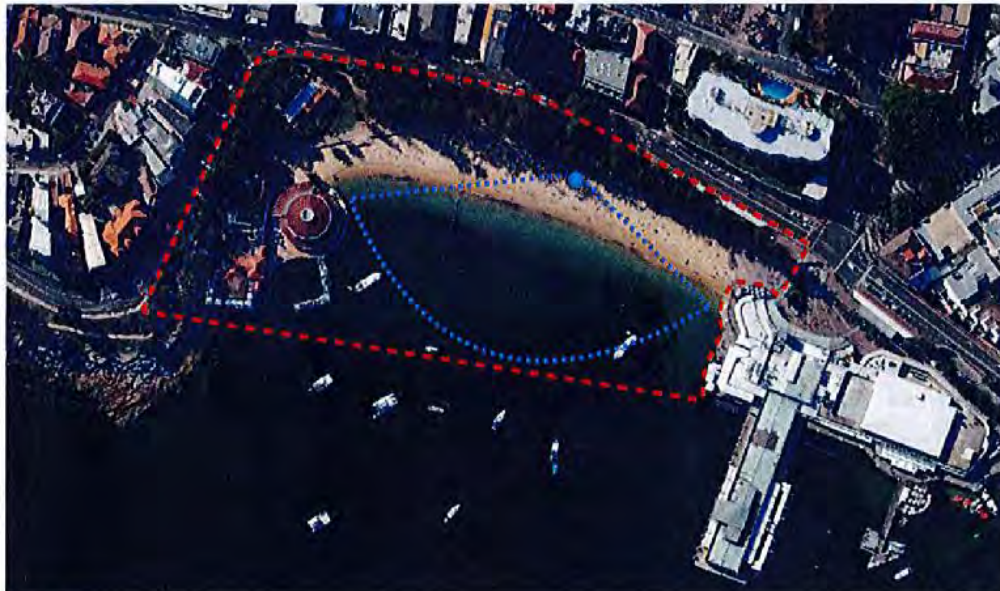


Helix Garden at Texas Tech University in Texas public art piece by Elizabeth Billings and Andrea Wasserman (Billings and Wasserman 2015)

Figure 4.1.6: Public art installations integrated with the environment.

4.2 Tidal Pool and Proposed Boardwalk

- Place lifeguard towers and lifeguards at the centre of the cove's backshore to allow lifeguards to have an overview of the pool (Figure 4.2.1) - Patrolling hours: 7 days a week from 8am to 6pm during peak seasons. The lifeguard tower should be equipped with rescue equipment, have rescue procedures in place and technology to monitor swimming conditions.
- Install ERB (Figure 4.2.2) - appropriate technology for unpatrolled beaches like West Esplanade during off-peak seasons.
- Provide a variety of pool functions e.g. children's pool, lap pool, diving pool (Figure 4.2.3).
- Ensure that the reinstated boardwalk comply with AS 1428.1, 5100, 2156.1 & .2 and *Austrad Guide to Road Design Part 6A – Pedestrian & Cycle Path*
- Provide compliant outdoor swimming facilities (e.g. piers, buoys, playgrounds, pontoons) to enhance user experience (Figure 4.2.4).






-  Site Location: Manly West Esplanade
-  Lifeguard Tower
-  Lifeguard's Orientation

Figure 4.2.1: Indicative map of lifeguard tower location and viewing orientation of the pool.



Figure 4.2.2: ERB installed at an unpatrolled beach in NSW (Surf Life Saving 2018).



Northbridge Baths in Sydney, NSW,
Australia
(Tripadvisor, n.d.)



Aarhus Harbour Bath in Aarhus,
Denmark designed by Bjarke Ingels Group
(Bjarke Ingels Group 2018)

Figure 4.2.3: Ocean pools offering a variety of functions.



Copenhagen Harbour Bath in Denmark
designed by Bjarke Ingels Group (Bjarke
Ingels Group 2003)



Redleaf Pool in Sydney, Australia
(Woollahra Council)



Kastrup Sea Bath in Kastrup, Denmark
designed by White Arkitekter (White
Arkitekter 2004)

Figure 4.2.4: Ocean pools that provide safe outdoor swimming facilities.

4.4 Art Gallery & Museum Surrounding Areas

- Install surveillance cameras on the north west and western facade of the block as an added level of formal security (Figure 4.4.1).
- Ensure foliage is regularly maintained in the areas surrounding the Art Gallery and toilet block, especially in those bordering the walkways, to increase visibility and natural surveillance. Maintenance should be in accordance with standards including heights below 600mm for shrub and ground covering plants while native tree foliage and branches should be above 2500mm (Figure 4.4.2).
- Solar powered sensor lights attached to the north west and western facades of the building. The lights should provide adequate illumination to the area while minimising glare.
- Display illuminated public art that can be integrated with the environment, including buildings (Figure 4.4.3).
- Ensure that the drainage grates are in accordance with the *Australian Standards 3996.2006* to reduce slippage and objects falling through the gaps.
- Install a fence between the art gallery & museum building and toilet block, and Commonwealth Parade to prevent unauthorised access and use (Figure 4.4.4).

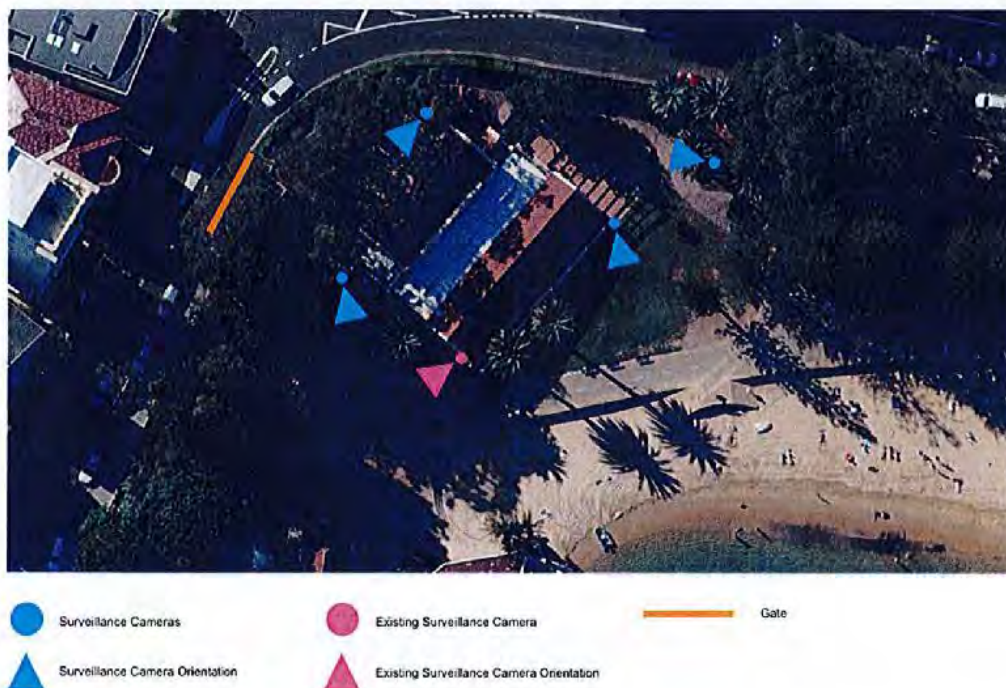


Figure 4.4.1: Indicative map of the position and orientation of surveillance cameras and proposed location of gate on Commonwealth Parade.



Figure 4.4.2: Foliage maintenance Recommendations (Department of Sustainability and Environment Crime Prevention Victoria 2005)



Vivid in Sydney (Destination NSW 2016)



Mural on Building in South London (Paul Kerley 2017)



Royal Botanical Gardens Green Wall (Horan 2019)

Figure 4.4.3: Public art installations integrated with the environment



Figure 4.4.4: Proposed location of gate between Art Gallery and toilet block

4.5 Surf 'N Slide Adjacent Area

- Provide illuminated signage at the entrance of this area to assist in way-finding and to interpret this as a gathering space.
- Install attractive furniture that is well designed and encourages social interaction (Figure 4.5.1).
- Install surveillance cameras that provides an overview of the area (Figure 4.5.1).
- Offer a communal space to encourage community participation (Figure 4.5.2)
- Ensure that trees in the vicinity of the Surf 'N Slide adjacent area are regularly maintained in accordance to the standards as previously mentioned in the Manly Art Gallery & Museum recommendations.
- Display illuminated public art installations as previously mentioned.



Ping Pong table at Darling Harbour, Sydney
(Darling Quarter 2019)



Seating Benches in New York (Johnson 2016)

Figure 4.5.1: Modern, attractive furniture that encourages social interaction.



-  Surveillance Cameras
-  Surveillance Camera Orientation

Figure 4.5.1: Indicative map of the potential locations and orientations of the surveillance cameras around the Surf 'N Slide adjacent area.



*The Coffee Spot Nashville Food Trucks
Roaming Hunger (Cepy 2018)*



*Community Garden at the Waverton Coal
Loader, Sydney (Blogspot 2018)*



*Market stalls at Glebe Markets, Sydney
(Glebe Markets 2019)*



Kids outdoor puppet show (123 RF 2016)

Figure 4.5.2: Community initiatives to encourage community participation.

5. Next Steps

5.1 Limitations

The project challenges to be considered:

- **Planning Controls** - The precinct is subject to the Statutory curtilage of the Harbour Foreshores heritage listing and so any future works will require examination under the Manly Environmental Plan 2013, Manly Development Control Plan 2014, and Heritage Act (NSW) 1977 (Northpoint Heritage 2019).
- **Scope of Works** - These include:
 - The duration of the proposed works will impact park users and revenue of local businesses located within a 500 m radius.
 - Accessibility and parking for construction works.
 - Stakeholders accepting the proposed works will impact the project's commencement date.
- **Guidelines prepared by the State Government to reduce crime through better design** - *Section 79C of the Environmental Planning and Assessment Act 1979* outlines basic crime prevention through environmental design principles. It aims to influence the design of buildings and places to minimise opportunities for crime when assessing development proposals.

5.2 Further Action

To successfully overcome the limitations and implement the proposed recommendations for improving the safety of West Esplanade, UTS advises Council to seek professional advice by consulting with:

- NSW Police Service *Safer By Design* Team
- Austroad
- Architects specialising in landscape and urban design/planning
- Heritage Architects
- Structural Engineers
- Australian Water Safety Council
- Surf Life Saving NSW and Manly lifeguards

Additionally, Council should conduct further investigations on whether the recommendations will be:

- Economically feasible
- Constructed concurrently or in stages to determine length of construction as this will affect the usage of West Esplanade and surrounding areas
- Accepted by stakeholders (Figure 5.2.1), especially the local community - Council to continue executing community engagement works to provide project progress and receive feedback.

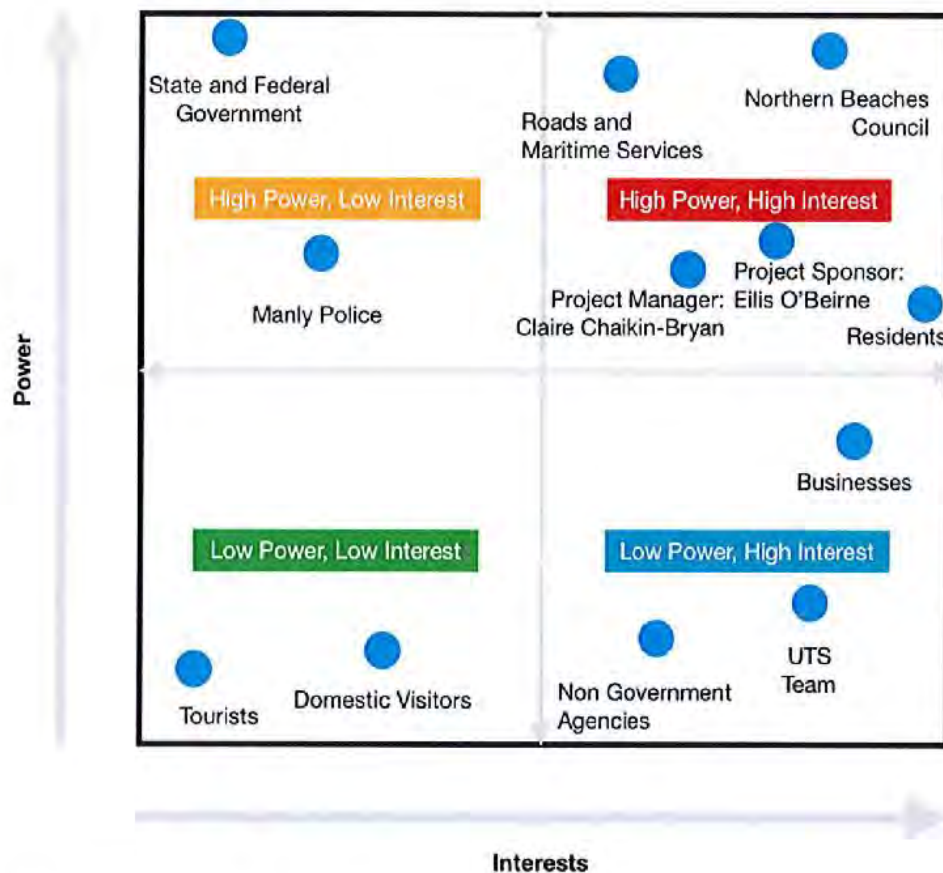


Figure 5.2.1: Stakeholder Analysis

5.3 Risks

Risks involved in the non-implementation of the proposed recommendations:

- Community's negative perception of safety will remain unchanged which could affect Council's reputation.
- The isolated areas (Art gallery & Museum, Pavilion Walkway and Surf N Slide) and lack of formal surveillance will continue to support opportunities for crime and anti-social behaviour to occur at any time and discourage night usage.
- Higher risks of drowning among children under five, foreigners and those from culturally diverse backgrounds using the tidal pool.
- Public spaces and furniture will remain unattractive which prevents social interaction and encourages misuse and neglect.
- Promenade will remain poorly designed and dangerous which increases risks of injury.



6. Conclusion

This report has detailed recommendations for the Manly West Esplanade area to be implemented as part of the Heritage Activation Plan spearheaded by the Northern Beaches Council. All recommendations have been made on the notion that crime prevention and community safety are the main concerns in the precinct. Each has been informed by current issues, statistics and Australian building standards and regulations, however their relevance may alter with further investigation or changes to the main focus of the Heritage Activation Plan.

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8. Appendices

Appendix 1: Daytime and Nighttime Site Inspection

Site inspections were conducted in both daytime and nighttime periods to assess the safety of West Esplanade. The sections below provide a summary of the existing conditions.

Daytime Site Visit

A summary of the existing conditions during the daytime period is shown below:



Image 1: Promenade looking North-West from Many Wharf

Council has expressed concerns about the height of the promenade edge to the sand. Currently, there is no barrier to protect people from injuring themselves as a result of falling onto the surface below. This fall can be potentially dangerous for young children and cyclists.



Image 2: Shared path on Manly Promenade looking West

Along the shared path is the Captain Arthur Phillip monument. The location of the monument causes traffic congestion between cyclists and pedestrians because its location causes the path to become narrow. The narrowness of the path at this point can be seen as a safety issue particularly for people walking or cycling near the promenade edge.

Additionally, a clearly visible sign indicates that the shared path has a speed limit of 10 km/hr for cyclists to abide by. This speed limit helps to reduce accidents and collisions along the shared path.



Image 3: Prohibition of alcohol sign

The precinct is an alcohol free zone at all times, as indicated by the sign on the lamp post. However, domestic young adults and backpackers still consume alcohol at the precinct which suggests that the sign is not effective in prohibiting the consumption of alcohol.

The alcohol prohibition signs located on site are not effective because they are:

- located randomly
- placed outside the viewer's orientation
- hard to read due to small font
- Not clearly visible at night because they are not properly illuminated



Image 5: Outdated and broken park furniture

The precinct's park furniture is outdated, worn out, forgotten and not aesthetically pleasing which discourages people from using the furniture and leads to mistreatment such as vandalism and graffiti.

Image 4: Landscaping of the promenade

The promenade's landscaping is bare due to the removal of planting and soft landscaping. This bareness may cause people to walk through this area and injure themselves as a result of falling off the retaining wall. The desolate landscaping also discourages people from positively interacting with the designated seating areas. It could lead to people misusing and mistreating the space through anti-social behaviours such as vandalism and drinking.



Image 6: Precinct entrance from behind Manly Art Gallery and Museum

This entrance lacks clear visibility and hinders natural surveillance from occurring due to the height of the planting. This lack of visibility and security has created a sense of fear among the local community, because people are afraid of walking through this pathway alone. A decrease of traffic volume may potentially attract crime activity to this area.



Image 7: Surveillance camera located on the facade of the Manly Art Gallery and Museum building

There are only two surveillance cameras located around the precinct. There is potential to increase the number of surveillance cameras to improve the overall safety and security, and protect people and infrastructure from crime activity.



Image 8: Hidden area between the toilet block and Manly Art Gallery

This hidden area between the toilet block and Manly Art Gallery is unsafe due to various reasons. Firstly, this area is out of sight and hidden well. It also has a deep well-like structure covered by a metal mesh that is not securely fastened. This lack of safety is dangerous to unsupervised children as they can fall inside the well or scrape themselves against the edges of the metal mesh. Additionally, behind the storage room (located behind the bins), there is a hidden medium-sized space. This hidden space encourages crime activity and anti-social behaviour such as smoking as it doesn't allow of natural surveillance because it is out of sight. Furthermore, behind the toilet block there is a large drop into a dark and dangerous bushland area. This is unsafe because people can accidentally fall into the drop because there is no barrier.



Image 9: Adjacent sitting area to the Surf n Slide



Image 10: Forecourt in front of Manly Pavilion.

This area is need of reactivation because it lacks interaction from the community due to outdated furniture and lacks engaging 'bits'. This lack of interaction increases the likelihood of antisocial behaviour and crime activity occurring in this area.

This forecourt is tucked behind the vacant building which once accomodated the Aquarium. The vacant building also reduces the forecourts usage because there is no need for people to interact with this space as people only use it as a pathway.



Image 11: Boardwalk along Manly Pavilion

The boardwalk design needs to be evaluated to ensure that it is safe for its users. It has high volumes of traffic on weekends as it is part of the Manly to Spit walking route. Safety issues to be considered include height and design of balustrade, surveillance and security.



Image 12: Manly Pavilion walkway

The graffiti on the balustrade post indicates that the precinct is prone to vandalism and graffiti which contributes to perception that West Esplanade in unsafe.

Furthermore, the safety of the walkway can be improved regarding the balustrade height and design, surveillance and security.

Map of the locations of the daytime images are shown below:



Nighttime Site Visit

A summary of the existing conditions during the nighttime period is shown below:



Image 13: Backpackers consuming alcohol on Manly Promenade

A group of young backpackers are consuming alcohol on the promenade. Local residents are frustrated with the backpacker's anti-social behaviour because it makes the precinct unsafe particularly for families and children to use and visit at night.



Image 14: Manly Cove Tidal Pool

At night the tidal pool is poorly lit and unsupervised which can be seen as a risk to young children, intoxicated people and foreigners. These particular groups of people are more susceptible to beach drowning due to lack of coordination and unfamiliarity with swimming. At the centre of the beach, there is only a small red box that holds a rescue tube. Besides from that, there is no other rescue equipment or emergency response procedures in place.



Image 15: Precinct entrance from behind Manly Art Gallery and Museum

At night, the visibility of the entrance worsens because light from art gallery cannot permeate through the dense planting which causes a dark pathway. This dark pathway discourages natural surveillance from occurring, so people tend to avoid using this entrance at night.



Image 16: Hidden area between the toilet block and Manly Art Gallery

This area is barely visible at night so it presents an opportunity for crime activity especially behind the storage room. The storage room is out of sight and is rarely used by people making it a very dangerous spot at night.



Image 17: Adjacent sitting area to the Surf n Slide

This area also presents an opportunity for crime activity to occur because it is poorly lit and lacks usage. Reactivation strategies need to be implemented to encourage people to engage with this space at night.



Image 18: Broken fence of the wharf behind the Aquarium building

There is a wharf located behind the Aquarium building. It is fenced off to prevent people from accessing it and using the wharf to jump into the water. As seen above, the picket on the right side of the fence has been removed allowing people to access the wharf at all times which increases the risk of people injuring themselves or drowning as a result of jumping off the wharf.



Image 19: The promenade at night

At night, the promenade is well lit by the warm light of the evenly spaced lamp posts. This clear visibility leads to high levels of natural surveillance which limits the opportunity for crime activity as there is clear visibility along the promenade.



Image 20: Boardwalk along Manly Pavilion

This boardwalk is well lit in the evenings which prevents the opportunity for crime activity. However, there is a concern for the safety of people walking along the boardwalk in terms of balustrade height and design, wayfinding signs, security and surveillance to monitor activity.

Map of the locations of the images are shown below:



Appendix 2: Crime Counts

Table 1: Incidents of Disorderly conduct from December 2017 to December 2018 (BOCSR 2019).

| Suburbs (ranked highest to lowest) | Count | Rate (people per 100,000) |
|------------------------------------|-------|---------------------------|
| Manly | 184 | 1063.9 |
| Coogee | 80 | 359.8 |
| Bondi | 100 | 282.5 |
| Cronulla | 79 | 261.8 |
| Maroubra | 67 | 183.7 |
| Bronte | 15 | 134.6 |
| Watson's Bay | 19 | 126.4 |
| Mona Vale | 14 | 117 |
| Dee Why | 37 | 88.3 |
| Palm Beach | 4 | Not calculated |

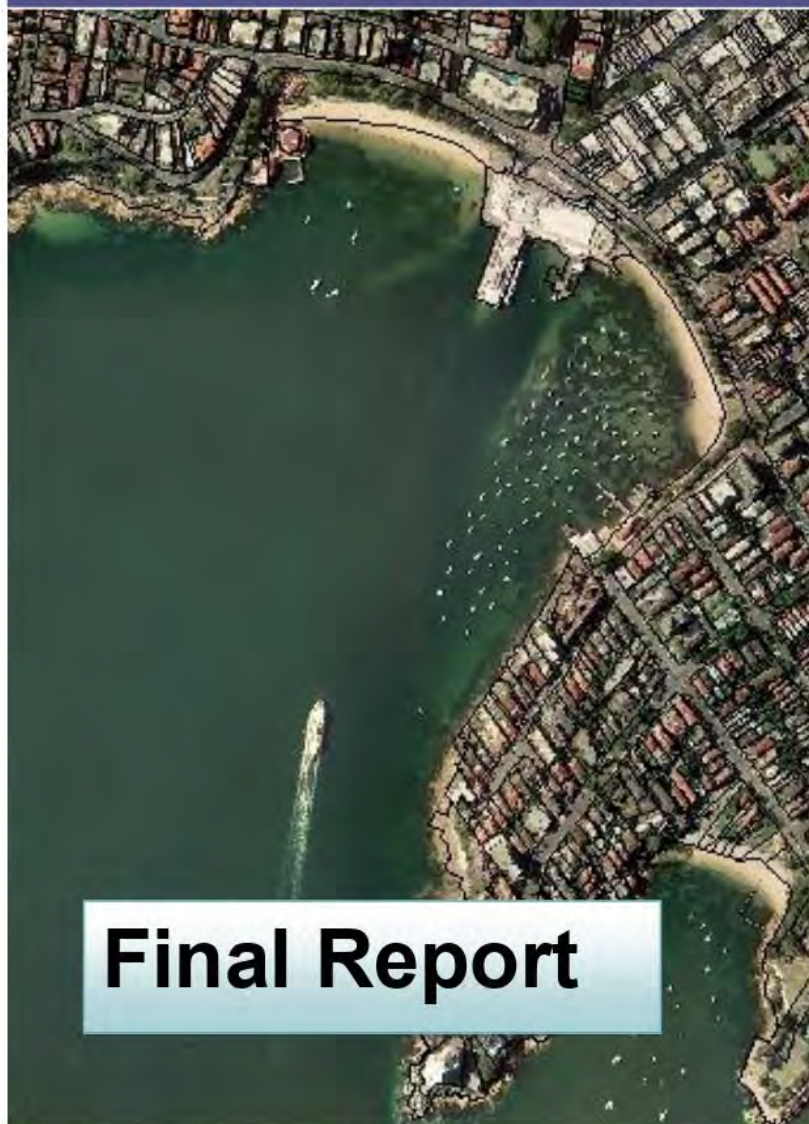
Table 2: Incidents of Liquor offences from January 2018 to December 2018 (BOCSR 2019).

| Suburbs (ranked highest to lowest) | Count | Rate (people per 100,000) |
|------------------------------------|-------|---------------------------|
| Manly | 135 | 780.6 |
| Cronulla | 129 | 650.3 |
| Coogee | 127 | 571.2 |
| Bondi | 96 | 271.2 |
| Maroubra | 29 | 260.1 |
| Mona Vale | 18 | 49.3 |
| Dee Why | 14 | 33.4 |
| Bronte | 2 | 16.7 |
| Palm Beach | 0 | 0 |
| Vaucluse | 5 | Not calculated |





Manly Cove Coastal Zone Management Plan



November 2011



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

Harbour Foreshores & Coastline Management Committee

After the Local Government election in September 2008, Manly Council established the Manly Harbour Foreshores & Coastline Management Committee in early 2009 to guide the preparation of a number of plans including the Manly Cove Coastal Zone Management Plan (CZMP). The first meeting of the Committee was held on 14 April 2009. Members of the Committee are:

| Group | Representing Organisation | Name |
|------------------|--|-----------------------------|
| Councillors | Manly Council | Dr. Peter Macdonald (Chair) |
| | Manly Council | Adele Heasman |
| | Manly Council | Jean Hay, AM (Mayor) |
| Community | | Katie Harris |
| | | Sylvia Bell |
| | | Rod Childs |
| | | Ross Thymir |
| | | Richard Hewitt |
| | | Ray Mathieson |
| | | Carlo Bongarzone |
| Surf Clubs | Queenscliff SLSC | - |
| | North Steyne SLSC | Jo Cooper |
| | Manly SLSC | Ben Wotton |
| State Government | Office of Environment & Heritage (OEH) | Mark Moratti |
| | National Parks & Wildlife Services (OEH) | Peter Hay |
| | NSW Department of Primary Industries - Fisheries | Paul Schuettrumpf |
| | NSW Department of Primary Industries - Aquatic Protected | Rodney James |
| | NSW Maritime | Drew Jones |
| Council Staff | Manly Council | Rafiqul Islam |

Coastal Focus Group

In order to support the Committee and to obtain expert contribution in the formulation of the CZMP, an informal in-house Coastal Focus Group consisting of relevant key staff was also formed. Members of this Group are:

| Name | Position | Name | Position |
|------------------|--|------------------|--|
| Ted Williams | Senior Manager, Land Use & Sustainability | Judy Reizes | Community Projects Officer, Manly Environmental Centre |
| Eduard McPeake | Manager, Natural Resources and Environmental Partnership & Programs Branch | Zoran Popovic | Heritage Planner |
| Terry Jones | Manager, Rangers | Anna Nikolov | Social Planner |
| Tony Pavlovic | Manager, Urban Services | Emma Lynch | Waste Minimization & Education Officer |
| Jennie Minifie | Manager Environmental Health | Monique Needham | Team Leader, Sustainability |
| Fenton Beatty | Manager, Strategic Land Use Planning | Michael Galloway | Water Cycle Management Team Leader |
| Chris Kraus | Parks & Bushland Manager | Christina Femia | Catchments Project Officer |
| Paul Christmas | Bushland Management Coordinator | Janneke Lade | Environment Officer |
| Michael Biddulph | Planning & Strategy Coordinator | Rafiqul Islam | Estuary Management Officer |
| | Architect | | |

Lead Contributor: Rafiqul Islam

Contributions of the Harbour Foreshore and Coastline Management Committee and internal 'Coastal Focus Group' are highly acknowledged. Laura Fraser, Dalene Amm, Andrew Read (OEH), also contributed in reviewing the document and their contributions are also acknowledged. Eco Divers contributed information and photograph of *Caulerpa taxifolia* in Manly Cove.

Preparation of this Plan is financed from the Environment Levy of Manly Council



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

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MANLY COVE COASTAL ZONE MANAGEMENT PLAN

i. EXECUTIVE SUMMARY

The Manly Cove Coastal Zone Management Plan (CZMP) was adopted by the Council at its Planning & Strategy Committee meeting on 7 November 2011. Prior to this, public exhibition of the Plan occurred during 20 June to 16 September 2011 and a final endorsement of the Plan by the Harbour Foreshores & Coastline Management Committee on 11 October 2011.

Supporting documents related to the Manly Cove CZMP include:

- Manly Cove Coastline Management Study, Manly Council, October 2009
- Davis Marina to Manly Point Coastline Hazard Definition Study, Patterson, Britton & Partners, 2004
- Natural Environment Assessment and Recommendations for the Coastline Management Plan: Manly Cove, GIS Environmental Consultants, March 2004
- Foreshore Safety and Beach Rehabilitation Manly Cove East, May 2003
- East Manly Cove Beach Management Options: Scoping Study, June 2002

About the Plan

This Plan is prepared through the process outlined in the NSW Coastline Management Manual (1990)¹. Extensive community consultation was conducted through mechanisms including, display panels, information sharing through Precinct newsletters and Council's webpage, formal questionnaire surveys and community Field Days.

This Plan addresses area that lies immediately to the north-west of the entrance to Sydney Harbour, bounded to the west by Federation Point and to the southeast by Manly Point. Manly Cove management area extends both seaward and landward from the shoreline and includes rocky intertidal platforms, sandy beaches, grassed recreational areas, a netted swimming enclosure, bushland as well as commercial, retail and residential areas. The study area covers 51 hectares and takes in the suburbs of Manly and Fairlight and also the local Precinct Community Forum areas of Fairlight, the Corso and Little Manly. The entire study area is covered within the Sydney Harbour Foreshores and Waterways Area and also within the Sydney Metropolitan Catchment Area.

The Plan has been developed in response to legislative requirements and community issues in accordance with current best practices for the management of estuaries and its catchment. The development of this Coastal Zone Management Plan is identified in Manly Plan 2010-2013 and Sustainability Strategy 2006.

Preparation of this CZMP is an action C1.3.1 (*develop and implement comprehensive Coastline Management Plans (CMPs) for all areas of foreshore in Manly*) of the Manly Sustainability Strategy 2006 (MC 2006). It supports strategy 'E2.1: Improve health of waterways, coasts and estuaries' of the draft North East Subregional Strategy (DoP 2007).

The Plan addresses the following ten broad based key issues, derived from community consultations:

- Aquatic/Inter-tidal Habitat Conservation & Management
- Boating, Maritime Operations & Facilities
- Enhancement of Public Facilities, Infrastructure & Signage
- Water Quality
- Terrestrial Ecosystem
- Climate Change & Coastal Hazards
- Waste Management
- Access & Traffic Management
- Geodiversity
- Heritage Conservation & Management

¹ The new 'Guidelines for Preparing Coastal Zone Management Plan' was gazetted on 31 December 2010. These Guidelines replaces Coastline Management Manual (NSW Government 1990) and Estuary Management Manual (NSW Government 1992). Preparation of Manly Cove CZMP started in 2005 and hence, continued to use processes described in Coastline Management Manual.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

This Coastal Zone Management Plan is a strategic plan with a long-term time frame of 15- 20 years and firmed up implementation program of 5 years. This plan will be reviewed and revised every 5 years and a new implementation program will be adopted in line with priorities of the period.

This Coastal Zone Management Plan has evolved through incorporation of strategic directions from a number of Council's management documents and land use planning instruments. In order to embed coastal zone management as part of Council's core business, the adopted Plan will link into documents such as: Manly Management Plan, Community Strategic Plan and Integrated Planning & Reporting Framework, other Coastal Zone Management Plans, Manly Local Environmental Plan, Development Control Plans (DCPs), and Plans of Management.

Strategic Framework & Management Strategy

A series of goals and objectives for the future management of the Manly Cove area were developed on the basis of information received through community and stakeholder consultation. For each management issue a goal has been defined, along with a range of management objectives that have been further translated into management options. The Plan follows the four basic principles of Ecologically Sustainable Development (ESD) and also considers the State Plan 2010, state-wide targets set by the Natural Resources Commission and regional targets set by the Sydney Metropolitan Catchment Management Authority (SMCMA).

This Plan sets 10 Goals and 25 Objectives to be addressed through 66 Management Options (**Table A**). Only 34 of these are new activities. Of these 34, seven management options are proposed for immediate implementation, 15 within 2 years, 10 within 3-4 years and only two at later years. Overall, 32 management options have been rated to have high priority, 29 as medium priority and five as low priority.

Strategic Management Options

Strategic management options cover a wide range of structural and non-structural solutions. These are briefly summarised here addressing each of the 10 key management issues.

Options addressing Aquatic/Intertidal Habitat Conservation & Management

A total of nine management options are proposed (Table A and detailed in Section 4.1) addressing three different objectives and relate to community involvement in the conservation of marine ecology, areas of ecological significance are managed in an integrated and sustainable manner and activities are carried out in a manner that improves the ecological condition of marine habitats.

Four management options have been rated as of high priority and relate to the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass, extension of the boundary of North Harbour Aquatic Reserve and assisting the OEH (former DECCW) with preparation, implementation of North Harbour Aquatic Reserve Management Plan and placement of seahorse habitat friendly net at Manly Cove. The remaining five management options have medium priority.

Four management options are already on-going activities. Two management options have been proposed for immediate implementation and relate to the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass and extension of the boundary of North Harbour Aquatic Reserve.

Options addressing Boating, Maritime Operations & Facilities

A total of eight management options are proposed (Table A and detailed in Section 4.2) addressing three different objectives and relate to improve the sustainability of boating activities, boating activities are conducted through positive interactions with other user groups and supporting recreational (and commercial) boating activities.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

Five management options have been rated as of high priority and relate to Manly Council Rangers are aware of oil & chemical spill response procedures, enhanced compliance of boating regulations, access and use the Manly Cove embayment, a wharf facility for public use in Manly Cove and ensure skiff rigging and storage activities accommodate other users of East Esplanade Reserve. The remaining three management options have medium priority.

Two management options are already on-going activities of Council. Two management options are proposed for immediate implementation and relate to a wharf facility for public use in Manly Cove and developing a long-term maritime infrastructure facilities plan for Manly LGA emphasizing boat storage and other infrastructures.

Options addressing Enhancement of Public Facilities, Infrastructures & Signage

A total of seven management options are proposed (Table A and detailed in Section 4.3) addressing three different objectives and relate to provision of well maintained and safe facilities and infrastructure, provision of up-to-date regulation and interpretive signage and reduction of the features that detract the visual quality of Manly Cove.

Four management options have been rated as of high priority and relate to upgrading of seating and picnic facilities within East and West Esplanade Reserves, providing freshwater bubblers within East and West Esplanade Reserves, replacement of damaged and/or missing signage and to ensure that new development complies with the landscape provisions of the Development Control Plan for Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005. The remaining two management options have medium priority and one low priority.

Two management options are already on-going activities of Council. No management option is proposed for immediate implementation.

Options addressing Water Quality

A total of eight management options are proposed (Table A and detailed in Section 4.4) addressing three different objectives and are related to a structured programme for water quality improvement, reduction of effluent discharge/ exfiltration from sewerage infrastructure and sustainable groundwater extraction practices.

Six management options have been rated as high priority and relate to formulation of a comprehensive Stormwater Management Plan, identifying opportunities for stormwater treatment, harvesting and reuse, feasibility of installing a new GPT, continuation of Manly Council Dry Weather Sewer Leak Investigation and Rectification Program, identifying recharge volume and extraction rates from aquifer and monitoring council bores for salinity and other parameters. The remaining two management options have medium priority.

Three management options are already on-going activities. One option is proposed for immediate implementation and relates to reviewing cleaning routine of existing GPTs within Manly Cove and feasibility of installing a new GPT.

Options addressing Terrestrial Ecosystem

A total of six management options are proposed (Table A and detailed in Section 4.5) addressing two different objectives: improving the ecological condition of terrestrial habitats and species and encouraging community participation.

Four management options have been rated as of high priority and relate to enhancement of remnant vegetation at Manly Point and Federation Point, planting of appropriate native species, managing Little Penguin Critical Habitat and provision of community education. The remaining two management options have medium priority. All management options are already on-going activities of Council.

Options addressing Climate Change & Coastal Hazards

A total of 14 management options are proposed (Table A and detailed in Section 4.6) to address five objectives: risk reduction to property and infrastructure resulting from Sea Level Rise, promoting understanding of the likely impacts of climate change, risk reduction from beach erosion and shoreline recession, risk reduction to slope and cliff instability and measures to address risk from tsunami.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

Five high priority management options are related to appropriate development on land identified as 'coastal risk areas', work within the emergency management frameworks identified in Local Emergency Management systems, develop and implement a natural shoreline and shoreline structure monitoring program, reissue of notifications to private property owners of identified coastal hazards and identification of emergency measures including evacuation routes in tsunami risk areas. The remaining eight management options have medium priority and one low priority.

Eight management options are already on-going activities of Council. The only option proposed for immediate implementation is to establish 'coastal risk areas' using NSW's planning sea level rise benchmarks.

Options addressing Waste Management

A total of six management options are proposed (Table A and detailed in Section 4.7) to address two different objectives: reduce waste while maximising re-use and recycling and to minimise risk to beach users and marine fauna from beach and marine waste.

Three management options have been rated as of high priority and relate to implementing Council adopted strategies to reduce waste, adequate recycling facilities in public areas and support community and business education programs. The remaining two management options have medium priority and one low priority.

Four management options are already on-going activities of Council. No option is proposed for immediate implementation.

Options addressing Access & Traffic Management

A total of four management options are proposed (Table A and detailed in Section 4.8) addressing one objective and relates to improvement of access for pedestrians, cyclists and water based recreation.

Three management options have been rated as of medium priority and the remaining one as low priority.

One management option is already an on-going activity of Council. No option is proposed for immediate implementation.

Options addressing Geodiversity

A total of two management options are proposed (Table A and detailed in Section 4.9) addressing one objective and relates to protection and conservation of Manly's geodiversity.

One management option has been rated as of medium priority and the other one as low priority.

One management option is proposed for immediate implementation and relates to undertaking a comprehensive assessment of geoheritage values of Manly LGA.

Options addressing Heritage Conservation & Management

A total of two management options are proposed (Table A and detailed in Section 4.10) to address two objectives: protection of all sites of Aboriginal heritage significance and sites of natural and cultural heritage.

Of these, one management option has been rated as of high priority and the other one as medium priority. Both two of the management options are on-going activities of Council.

Table A: Summary of Proposed Management Options

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Capital (\$) | Estimated Cost Operational (\$) | Total | Time Frame | Priority | Remarks |
|--|---|---|--|--------------|---------------------------------|------------|----------------|----------|---------|
| (AH) AQUATIC/INTERTIDAL HABITAT CONSERVATION & MANAGEMENT Goal: Restore and maintain a healthy and diverse mix of aquatic and intertidal habitats that will maintain and improve biodiversity and ecological functions of Manly Cove. | | | | | | | | | |
| AH 1 To achieve community awareness of and involvement in the conservation of marine ecology through education and participation | | | | | | | | | |
| AH1.1. | Involve the community and user groups in the provision of marine focussed educational events | MC (MEC, EPP) | Education programs continued | - | 30,000 | 30,000 | On-going | Medium | |
| AH1.2. | Encourage the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass. | MC (EPP, NR) and NSW DPI | Survey & investigation completed; Participatory monitoring initiated | - | 20,000 | 20,000 | Immediate | High | |
| AH 2 Ensure all areas of ecological significance are managed in an integrated and sustainable manner | | | | | | | | | |
| AH2.1. | Pursue a submitted proposal seeking the extension of the boundary of North Harbour Aquatic Reserve to include Manly Cove (Little Manly and North Harbour). | MC (NR), NSW DPI | North Harbour Aquatic Reserve expanded | - | - | Staff time | Immediate | High | |
| AH2.2. | Assist NSW DPI with preparation and implementation of the North Harbour Aquatic Reserve Management Plan that also includes Manly Cove. | NSW DPI, NSW Maritime, Manly Council (NR) | Management Plan prepared & implemented | - | - | Staff time | Within 2 years | High | |
| AH2.3 | Protect and enhance marine/intertidal habitats within and adjacent to Manly Cove | NSW DPI, MC (NR) | Proposed intertidal areas declared as IPA | - | - | Staff time | Within 2 years | Medium | |
| AH2.4. | Continue to encourage NSW DPI to support conservation of seagrass beds in Manly Cove. | MC (NR), NSW DPI | Areas of seagrass beds conserved | - | - | Staff time | On-going | Medium | |
| AH2.5 | Replacement of the suspended netting currently used for the swimming enclosure at Manly Cove with seahorse habitat friendly net. | MC (NR) | Disturbance to seahorse habitat minimised | - | \$85,000 | \$85,000 | Within 2 years | High | |
| AH 3 To ensure the activities within Manly Cove are carried out in a manner that maintains or improves the ecological condition of marine habitats and species | | | | | | | | | |
| AH3.1. | Encourage recreational fishing but minimise the impact that recreational fishing activities have on the intertidal and marine ecology, through education and regulation | NSW DPI, MC (Rangers, EPP) | Education program implemented | - | - | Staff time | On-going | Medium | |
| AH3.2. | Minimise the impact of diver/snorkeler activities and routine maintenance upon the colony of seahorses known to colonise the Manly Cove netted swimming enclosure. | MC (MEC, EPP, NR) | Diving minimised | - | - | Staff time | On-going | Medium | |
| (BF) BOATING, MARITIME OPERATIONS & FACILITIES Goal: To achieve the highest level of environmental protection and safety for maritime operations within Manly Cove | | | | | | | | | |
| BF.1 To improve the sustainability of boating activities in Manly Cove | | | | | | | | | |
| BF.1.1 | To encourage boat user groups to play a role in educating the boating community on best practice | MC (EPP) | Education programme initiated | - | 25,000 | 25,000 | Within 2 years | Medium | |



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Estimated Cost Capital (\$) Operational (\$) | Total | Time Frame | Priority | Remarks |
|--|---|-------------------------------------|--|--|--------|---------------------------------|----------|---------|
| BF.1.2 | Ensure Manly Council Rangers are aware of Spill Response Procedures for both on-water and off-water incident | MC (EPP) | Education programme initiated | - | - | Staff time Within 2 years | High | |
| BF.2 To ensure boating activities are conducted through positive interactions with other user groups | | | | | | | | |
| BF.2.1 | Encourage compliance with NSW Maritime boating regulations | MC (EPP), NSW Rangers, NSW Maritime | Compliance regulations increased | - | - | Staff time On-going | High | |
| BF.2.2 | Sustainably manage the extent to which commercial operators access and use the Manly Cove embayment | NSW Maritime | Sustainable management of the area | - | - | Staff time Between 2-4 years | High | |
| BF.2.3 | Ensure skiff rigging and storage activities accommodate other users of East Esplanade Reserve | MC (CEC) | Acceptable sharing of the reserve ensured | - | - | Staff time On-going | High | |
| BF.3 To support recreational (and commercial) boating activity through the provision of safe, user friendly facilities | | | | | | | | |
| BF.3.1 | Work with NSW Maritime to modify and improve a wharf facility for public use in Manly Cove | NSW Maritime, MC (NR) | Public wharf identified, improved and used | - | 60,000 | 60,000 Immediate | High | |
| BF.3.2 | Encourage NSW Maritime, NSW DPI and boat owners to install seagrass friendly moorings throughout Manly Cove | NSW Maritime, NSW DPI and MC (NR) | Additional moorings installed | - | - | Staff time Between 3-4 years | Medium | |
| BF.3.3 | Develop a long-term maritime infrastructure facilities plan for Manly LGA emphasizing boat storage facilities and other infrastructures | MC (NR), NSW Maritime | Plan developed | - | - | Staff time Immediate | Medium | |
| (PF) PUBLIC FACILITIES, INFRASTRUCTURE & SIGNAGE | | | | | | | | |
| Goal: Public facilities, infrastructure and signage are upgraded and maintained to facilitate improved social amenity | | | | | | | | |
| PF.1 To provide well maintained and safe facilities and infrastructure on Manly Council owned and/or managed public lands | | | | | | | | |
| PF.1.1 | Prepare and implement an updated Landscape Masterplan for the Esplanade Reserve | MC (SLUP, Parks & Bushland and US) | Masterplan prepared, adopted and implemented | - | 36,000 | 36,000 Immediate | Medium | |
| PF.1.2 | Upgrade seating and picnicking facilities within East and West Esplanade Reserves | MC (US) | Facilities enhanced | - | 75,000 | 75,000 Within 2 years | High | |
| PF.1.3 | Community needs are facilitated in areas along the Esplanade Reserves | MC (US) | Facilities enhanced | - | 40,000 | 40,000 Within 2 years | High | |
| PF.1.4 | Provide freshwater bubblers within East and West Esplanade Reserves. | MC (UR) | New water bubblers installed | 20,000 | - | 20,000 Within 2 years | High | |



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Capital (\$) | Operational (\$) | Estimated Cost | Time Frame | Priority | Remarks |
|---|--------------------|--|--|--------------|------------------|----------------|----------------------|----------|---------|
| PF.2 Provide up-to-date regulation and interpretive signage appropriate for the locality and which meets Council's legislative requirements | | | | | | | | | |
| PF.2.1 Undertake review of existing compliance signage which meets Council's legislative requirements | | MC (SLUP) | Review completed | - | - | Staff time | On-going | Low | |
| PF.2.2 Replace damaged and/or missing signage in line with findings of signage audit and to reduce negative impacts upon visual character of Manly Cove through signage consolidation | | MC (US & NR) | Signage replaced with new ones | - | 40,000 | - | Between 3-4 years | High | |
| PF.3 Reduce the adverse impacts of features that detract from the visual quality of Manly Cove | | | | | | | | | |
| PF.3.1 Ensure all new development complies with the landscape provisions of the Development Control Plan for Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005. | | MC (DAU) | Features of the area maintained | - | - | Staff time | On-going | High | |
| Goal: To ensure water quality meets the community's expectations and falls within acceptable standards suitable for fishing and swimming | | | | | | | | | |
| WQ.1 Initiate and implement structured programme for water quality improvement | | | | | | | | | |
| WQ.1.1 Formulate a comprehensive Stormwater Management Plan for Manly LGA encompassing the study area | | MC (US-MCMT) | Management Plan completed | - | 70,000 | - | 5 th year | High | |
| WQ.1.2 Identify and implement opportunities for stormwater treatment, harvesting and reuse within Manly Cove | | MC (US-MCMT) | Stormwater is reused | - | 30,000 | - | Between 3-4 years | High | |
| WQ.1.3 Review cleaning routine of existing GPTs within Manly Cove and assess feasibility of installing a new GPT (Gross Pollutant Trap) | | MC (US-MCMT) | GPT installed | - | 60,000 | - | Immediate | High | |
| WQ.2 Encourage a reduction of effluent discharge/ exfiltration from sewerage infrastructure in the Manly Cove study area | | | | | | | | | |
| WQ.2.1 Continue to liaise with Sydney Water to ensure that all sewage overflows (and pumping stations) operate within established licensing requirements | | Sydney Water, MC (US-MCMT) | All overflow points and pumping stations operate within performance standard | - | - | Staff time | On-going | High | |
| WQ.2.2 Continue to Implement Manly Council Dry Weather Sewer Leak Investigation and Rectification Program in Manly, to identify sewer leaks from private or Sydney Water sewers where they enter Council's stormwater system | | MC (US-MCMT) | Program continued | - | 25,000 | - | On-going | High | |
| WQ.3 Ensure sustainable groundwater extraction practices to avoid negatively impacting upon aquifer recharge and quality | | | | | | | | | |
| WQ.3.1 Undertake a comprehensive study on the Manly Cove aquifer to identify recharge volumes and to ensure sustainable extraction rates | | MC (US-MCMT) & NSW Office of Water (DPI) | Study report completed | - | 40,000 | - | Between 3-4 years | Medium | |
| WQ.3.2 Monitor council bores for salinity and other parameters to ensure extraction does not lead to contamination | | MC (EH, US-MCMT, NR) | Salinity & other parameters monitored | - | 10,000 | - | Within 2 years | Medium | |



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Estimated Cost Capital (\$) Operational (\$) | Total Staff time | Time Frame | Priority | Remarks |
|--|---|-----------------------------|---|--|---------------------|------------|----------|---------|
| WQ.3.3 | Ensure Council staff working with or assessing groundwater issues are familiar with the SCCG Groundwater Management Handbook 2006 | MC (NR, EH, DAU) | SCCG Handbook is used | - | - | On-going | High | |
| (TE) TERRESTRIAL ECOSYSTEM | | | | | | | | |
| Goal: To conserve and enhance the integrity and diversity of indigenous terrestrial flora and fauna and their ecosystems | | | | | | | | |
| TE.1 To ensure the activities within Manly Cove are carried out in a manner that maintains or improves the ecological condition of terrestrial habitats and species | | | | | | | | |
| TE.1.1 | Maintain and enhance remnant vegetation at Manly Point and Federation Point to improve on the habitat for the Little penguin population | MC (Parks & Bushlands) | Remnant vegetation maintained | - | - | On-going | High | |
| TE.1.2 | Encourage planting of native flora species on private and public lands to provide improved potential foraging and nesting habitat for the Long-nosed Bandicoot | MC (Parks & Bushlands) | Native vegetation maintained & enhanced | 15,000 | 15,000 | On-going | Medium | |
| TE.1.3 | Ensure that Council's Street Tree Planting Program results in the planting of appropriate native species | MC (Parks & Bushlands) | Recommended list prepared and program continued | 50,000 | 50,000 | On-going | High | |
| TE.1.4 | Continue work with OEH to manage Little Penguin Critical Habitat, the Wildlife Protection Area at Federation Point and known nesting sites in line with the Manly Little Penguin Recovery Plan. | MC (NR, Precincts) | WPA maintained and continued | - | - | On-going | High | |
| TE.1.5 | Continue enhanced weeding program at high weed density areas on a priority basis. | MC (Parks & Bushlands) | Weed density lowered | 15,000 | 15,000 | On-going | Medium | |
| TE.2 To achieve community awareness of and involvement in the conservation of terrestrial ecology through education and participation | | | | | | | | |
| TE.2.1 | Continue to provide community education in line with actions identified in the Manly Little Penguin Recovery Plan and Draft Long-nosed Bandicoot Recovery Plan. | MC (EPP, Parks & Bushlands) | Recovery Plans are supported with increased community participation | - | - | On-going | High | |
| (CH) CLIMATE CHANGE & COASTAL HAZARDS | | | | | | | | |
| Goal: Assess, monitor and mitigate risks from coastline hazards and climate change | | | | | | | | |
| CH.1 To reduce to an acceptable level, the risk to property and infrastructure resulting from Sea Level Rise | | | | | | | | |
| CH.1.1 | Establish 'coastal risk areas' using NSW's planning sea level rise benchmarks | MC (NR, SLUP) | Coastal risk areas identified, mapped and adopted | 120,000 | 120,000 | Immediate | Medium | |
| CH.1.2 | Ensure appropriate development on land identified as 'coastal risk areas' | MC (SLUP, DAU, NR) | Appropriate development of coastal risk areas ensured | - | - | On-going | High | |
| CH.1.3 | Adopt an adaptive risk-based approach to managing climate change including sea level rise impacts | MC (NR, US, Precincts) | Positive measurable impacts achieved | 70,000 | 70,000 | On-going | Medium | |
| CH.1.4 | Work with regional, state and federal bodies to ensure consistent adaptation planning | SCCG, OEH, MC (NR, SLUP) | Improved and continued collaboration | - | - | On-going | Medium | |
| CH.1.5 | Work within the emergency management frameworks identified in Local | MC (US, NR), SES | Emergency Action Plan Updated | - | 10,000 | On-going | High | |



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Capital (\$) | Estimated Cost Operational (\$) | Total | Time Frame | Priority | Remarks |
|--|--|------------------------------|--|--------------|---------------------------------|------------|----------------------|----------|---------|
| | Emergency Management systems during times of floods and storms | | | | | | | | |
| | CH.2 Promote understanding of the likely environmental, social and economic impacts of climate change | | | | | | | | |
| CH.2.1 | Continue to provide updated information to the public about climate change including sea level rise and their impacts | MC (EPP, NR, MEC), Precincts | Booklet published and distributed | - | 15,000 | 15,000 | On-going | Medium | |
| CH.2.2 | Incorporate latest climate change information into management decisions | MC (NR, SLUP) | Climate change directions and requirements are publicised widely | - | - | Staff time | Within 2 years | Medium | |
| | CH.3 Reduce to an acceptable level, the risk of damage as a result of beach erosion and shoreline recession | | | | | | | | |
| CH.3.1 | Develop and implement a natural shoreline and structure monitoring program for Manly Cove East and West Beaches | MC (US & NR) | Regular inspection report | - | 50,000 | 50,000 | Within 2 years | High | |
| CH.3.2 | Consider beach nourishment to reduce the risk from beach erosion | MC (US & NR), SCCG | Beach nourishment programme initiated | TBD | TBD | TBD | 5 th year | Medium | |
| CH.3.3 | Should the risk of damage to the existing seawall due to the effects of beach erosion and recession in the future become unacceptable, evaluate and implement the available management options | MC (US & NR) | Regular inspection report | - | - | Staff Cost | On-going | Medium | |
| | CH.4 To reduce to an acceptable level, the risk to property and risk to life as a result of slope and cliff instability | | | | | | | | |
| CH.4.1 | Continue the staged remediation of cliff and slope instability on public lands based upon the level of risk posed to life and/or property and in line with recommendations of the Davis Marina to Manly Point CHDS | MC (US & NR) | Reduction of hazards from cliff & slope instability | - | 250,000 | 250,000 | On-going | Medium | |
| CH.4.2 | Reissue notifications to private property owners of identified coastal hazards potentially affecting their land and a reminder the information has been recorded on the properties S.149 Certificate | MC (Regulatory Compliance) | Reissuing of notification finalised | - | - | Staff time | On-going | High | |
| | CH.5 Undertake measures to address risk from tsunami | | | | | | | | |
| CH.5.1 | Map tsunami risk areas | SES | Tsunami map completed | - | 40,000 | 40,000 | Within 2 years | Low | |
| CH.5.2 | Identify, with SES, emergency measures including evacuation routes. | SES, MC (US) | Evacuation routes identified and agreed | - | 5,000 | 5,000 | Between 3-4 years | High | |
| Goal: Promote and facilitate sustainable waste management in Manly Cove | | | | | | | | | |
| | WM.1 To reduce waste while maximising re-use and recycling in the Manly Cove study area | | | | | | | | |
| WM.1.1 | Implement Council adopted strategies to reduce waste in Manly Cove | MC (WC) | Strategies are implemented | - | - | Staff time | On-going | High | |
| WM.1.2 | Ensure adequate recycling facilities are provided in public areas and encourage responsible disposal of litter within the study area | MC (WC) | Educational program intensified | - | - | Staff time | On-going | High | |
| WM.1.3 | Continue to conduct and support community and business education programs to avoid litter production at source | MC (WC, EPP) | Educational programs continued | - | 10,000 | 10,000 | On-going | High | |



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

| Objectives | Management Options | Responsible Agency (ies) | Performance target | Estimated Cost | Time Frame | Priority | Remarks |
|--|--|------------------------------------|--|----------------|------------------|------------|-----------------------------|
| | | | | Capital (\$) | Operational (\$) | Total | |
| WM.2 To minimise risk to beach users and marine fauna from beach and marine waste while maintaining natural ecosystems | | | | | | | |
| WM.2.1 | Continue to operate the existing beach raking regime and try hand picking as an alternative from Manly Cove beaches | MC (CS) | Knowledge gained and applied | - | 30,000 | 30,000 | Within 2 years Medium |
| WM.2.2 | Conduct litter audit to determine sources of rubbish to inform treatment and education programs | MC (CS) | Litter audit completed | - | 20,000 | 20,000 | 5th year Low |
| WM.2.3 | Encourage NSW Maritime to improve its water-based litter and debris cleaning regime | MC (CS), NSW Maritime | Increased collection efforts | - | - | Staff time | On-going Medium |
| (AM) ACCESS & TRAFFIC MANAGEMENT | | | | | | | |
| Goal: To provide an environment at Manly Cove that is accessible to all people | | | | | | | |
| AM.1 To improve and control access for pedestrians, cyclists, water based recreation and servicing vehicles, minimising conflicts and negative impacts | | | | | | | |
| AM.1.1 | Encourage NSW Maritime lessees to improve beach access and public amenity immediately east of the Manly Wharf development | MC (US), NSW Maritime, Manly Wharf | Improved beach access | - | - | Staff time | On-going Medium |
| AM.1.2 | Audit disability access of all parks and access ways within the study area | MC (SLUP) | Audit completed | - | 20,000 | 20,000 | Within 2 years Medium |
| AM.1.3 | Rebuild the ramp at the rear of the Manly Art Gallery that is wheelchair accessible | MC (US) | Redesigned ramp completed | 100,000 | - | 100,000 | Between 3-4 years Medium |
| AM.1.4 | Investigate the feasibility of constructing an underground pedestrian pathway to link Manly Wharf with the Corso | MC (US), RTA, Manly Wharf | Feasibility Study completed | - | 100,000 | 100,000 | Between 3-4 years Low |
| (GD) GEODIVERSITY | | | | | | | |
| Goal: Conserve the significant geodiversity elements of the area's coastline | | | | | | | |
| GD.1 To protect and conserve the important elements of Manly's geodiversity through raising awareness, considering its values in all planning and management and integrating with biodiversity and cultural heritage management | | | | | | | |
| GD.1.1 | Undertake a comprehensive assessment of geoheritage values of Manly LGA | MC (SLUP, NR) | Study completed | - | 20,000 | 20,000 | Immediate Low |
| GD.1.2 | Ensure that geoheritage issues are considered during development assessment processes | MC (SLUP, DAU) | DA assessments to consider geoheritage | - | - | Staff time | Between 3-4 years Medium |
| (HC) HERITAGE CONSERVATION & MANAGEMENT | | | | | | | |
| Goal: Ensure that all Aboriginal and European (cultural and natural) heritage sites are preserved and protected | | | | | | | |
| HC.1 Ensure that sites of Aboriginal heritage are protected and appropriately maintained | | | | | | | |
| HC.1.1 | Review Aboriginal Site Management Report for Manly Council (2006) and associated reports to prioritise management needs and develop a plan of implementation | AHO and MC (SLUP) | Prioritisation done | - | - | Staff time | On-going Medium |
| HC.2 Ensure that all sites of non-Indigenous heritage are protected under relevant legislations and in Council planning instruments. | | | | | | | |
| HC.2.1 | Ensure physical protection and maintenance of all heritage listed items. | MC (SLUP, Urban Services) | Maintained & protected | - | 60,000 | 60,000 | On-going High |

Funding Requirements

The total cost of implementing (including 1-5 years of operation and maintenance) the 66 management options addressing 10 key management issues is \$1,616,000 (**Table B**).

Table B: Summary of estimated cost

| Management Issues | Number of Management Options | Estimated Indicative Cost (\$) | | | |
|--------------------------|------------------------------|--------------------------------|-----------------|----------------|------------------|
| | | High priority | Medium Priority | Low priority | Total |
| Aquatic Habitat | 9 | 0 | 50,000 | 0 | 50,000 |
| Boating Facilities | 8 | 60,000 | 65,000 | 0 | 125,000 |
| Public Facilities | 7 | 115,000 | 56,000 | 0 | 171,000 |
| Water Quality | 8 | 185,000 | 50,000 | 0 | 235,000 |
| Terrestrial Ecology | 6 | 50,000 | 65,000 | 0 | 115,000 |
| Hazards & Climate Change | 14 | 65,000 | 455,000 | 40,000 | 560,000 |
| Waste Management | 6 | 10,000 | 30,000 | 20,000 | 60,000 |
| Access | 4 | 0 | 120,000 | 100,000 | 220,000 |
| Geodiversity | 2 | 0 | 0 | 20,000 | 20,000 |
| Heritage Conservation | 2 | 60,000 | 0 | 0 | 60,000 |
| | 66 | 545,000 | 891,000 | 180,000 | 1,616,000 |

Some actions require an on-going commitment from existing staff rather than the outlay of expenditure and this is noted as 'Time'. Some recommended actions require significant capital costs, especially where large-scale works are involved such as beach nourishment.

As indicated elsewhere, implementation responsibility of all proposed management options rests with a number of agencies including Manly Council. Hence, adoption of this CZMP does not commit Council to allocate immediate funding. Funding from different alternative sources will be pursued (**Appendix B**). These include but are not limited to:

- Council's Environment Levy (subject to a budget bid process);
- Council's General Revenue Budget (subject to a budget bid process);
- State Government's Coastal & Estuary Management Program (50% subsidy funding subject to a submission process);
- Other Commonwealth and State Government funded programs such as SSHAP, MIP, NRDGS, Greenspace, CMA Funding etc

Implementation Plan

Agencies involved: Manly Council (MC) is the principal implementation/management agency of the Manly Cove Coastal Zone Management Plan. Responsibility for implementing the options is spread across local government (planning, management and works staff), state government agencies and volunteer community groups. The following agencies will likely to be involved in implementation of one or more relevant management options either in the main or supporting roles.

- NSW Maritime;
- NSW Department of Primary Industries (NSW DPI);
- Office of Environment & Heritage (OEH);
- NSW Parks & Wildlife Services (NPWS – OEH)
- Office of Water
- State Emergency Services (SES);
- Roads & Transport Authority (RTA)
- Sydney Water;
- Sydney Ferries Corporation;
- Manly Wharf Management;
- Sydney Coastal Councils Group (SCCG); and



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- Aboriginal Heritage Office (AHO).

Implementation Time frame: Of 66 management options proposed in this CZMP, 32 options are on-going activities of the Council and/or other agencies. Among newly proposed 34 options, seven management options are proposed for immediate implementation, 15 within 2 years, 10 within 3-4 years and only two at later years.

Seven management options proposed for immediate implementation are:

- AH.1.2 Encourage the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass.
- AH.2.1 Pursue a submitted proposal seeking the extension of the boundary of North Harbour Aquatic Reserve to include Manly Cove (Little Manly and North Harbour).
- BF.3.1 Work with NSW Maritime to modify and improve a wharf facility for public use in Manly Cove
- BF.3.3 Develop a long-term maritime infrastructure facilities plan for Manly LGA emphasizing boat storage facilities and other infrastructures
- WQ.1.3 Review cleaning routine of existing GPTs within Manly Cove and assess feasibility of installing a new GPT (Gross Pollutant Trap)
- CH.1.1 Establish 'coastal risk areas' using NSW's planning sea level rise benchmarks
- GD.1.1 Undertake a comprehensive assessment of geoheritage values of Manly LGA

Management options, BF3.3, CH1.1 and GD1.1 are already being implemented in November 2011.

Mainstreamed into the Council's Integrated Plans (incorporating the Community Strategic Plan Beyond 2021, Resourcing Strategy and Four Year Delivery Program 2011-2015 and One Year Operational Plan 2011-2012): The management options proposed in this Coastal Zone Management Plan will gradually be mainstreamed in to the rolling four year Manly Council Delivery Program and Operational Plan. The Manly Council's Integrated Plans will be the key planning documents driving the operations of Council during the next ten years and beyond. Efforts will be made to incorporate priority options in to the next Manly Delivery Program 2011 – 2015 and subsequent Plans.

Collaborative Partnership with other agencies and neighbouring Councils: Manly Council, as being the main implementer of the CZMP, plans to conclude collaborative partnership agreements with other relevant agencies and neighbouring Councils either specifically for this CZMP or for overall LGA.

Manly Harbour Foreshores & Coastline Management Committee to coordinate: Manly Harbour Foreshores & Coastline Management Committee will co-ordinate strategic implementation of the CZMP. The Committee, will be serviced by the Coastal Management Team of Council

Opportunities for community involvement: Many of the management strategies adopted for Manly Cove CZMP offer opportunities for community involvement particularly activities such as bush regeneration projects, participatory monitoring programs and environmental education, as well as general monitoring of plan implementation and effectiveness.

Reporting through three mechanisms: Reporting on implementation of the CZMP will be achieved through three mechanisms: regular Harbour Foreshore and Coastline Management Committee meetings, reporting to the community and other formal and informal reporting processes, such as Annual Report, Regional SoE Report, Council website.

CZMP to be reviewed every 5 years: The Manly Cove Coastal Zone Management Plan will be reviewed every 5 years to accommodate priorities of the period, requirements of new/amended legislations and Council's policies and guidelines. However, It is likely that this revision will happen earlier to prepare revised CZMPs based on new NSW Government guideline and a consolidation of a number of CZMPs. During the process, there will be a mechanism to identify new issues and conflicts concerning the coastal zone management and ensure their incorporation into a revised plan. A program for the following 5 years will be developed by

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designating priority to any new actions and reassigning priority to the remaining actions. These programs should be fed back into and form the revised CZMP for the next 5 years.

Monitoring, Evaluation & Reporting

Monitoring & evaluation is a key component of any coastal zone management plan. At present, Council has no structured & written monitoring plan to assess environmental health of coast & estuary. However, the SHOROC State of the Environment Report, prepared annually in collaboration with other regional Councils, provides numerical data on a comprehensive range of indicators. Long-term water quality monitoring data is, however, available at present from the 'Harbour Watch Program' and 'Beach Watch Program' of the Office of Environment & Heritage (OEH). The National NRM Monitoring and Evaluation Framework (NM&EF) has identified a total of 19 nationally agreed indicators to measure the effect of the stressors on ecosystem condition (physical/chemical and biological) and habitat extent. Based on this, 25 indicators have been proposed to monitor Manly's Estuarine, Coastal & Marine Habitat Integrity.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

ii. ABBREVIATIONS

| | |
|--------|--|
| ABS | Australian Bureau of Statistics |
| AHD | Australian Height Datum |
| AHO | Aboriginal Heritage Office |
| CAP | Catchment Action Plan |
| CCM | Care, Control & Management |
| CCP | Cities for Climate Protection |
| CMA | Catchment Management Authority |
| CMP | Coastline Management Plan |
| CSIRO | Australia's Commonwealth Scientific and Industrial Research Organisation |
| CZMP | Coastal Zone Management Plan |
| DCP | Development Control Plan |
| DECCW | The former NSW Department of Environment and Climate Change and Water (at present OEH) |
| DPI | NSW Department of Primary Industries |
| DWE | NSW Department of Water & Energy |
| EPBC | Environment Protection & Biodiversity Conservation (Act) |
| EPI | Environmental Planning Instrument (includes LEP, REP and SEPP) |
| ESD | Ecologically Sustainable Development |
| GIS | Geographic Information System |
| GPT | Gross Pollution Trap |
| GSE | Graduate School of Environment, Macquarie University |
| ICZM | Integrated Coastal Zone Management |
| IPA | Intertidal Protected Area |
| IPCC | Inter-Governmental Panel for Climate Change |
| LEP | Local Environmental Plan |
| LG | Local Government |
| LGA | Local Government Area |
| MC | Manly Council |
| MEC | Manly Environment Centre |
| MIP | Marine Infrastructure Projects |
| MLALC | Metropolitan Local Aboriginal Land Council |
| MSL | Mean Sea Level |
| MSW | Manly Scenic Walkway |
| MSS | Manly Sustainability Strategy |
| NH | North Harbour |
| NHR | North Harbour Reserve |
| NRC | Natural Resources Commission |
| NSW | New South Wales |
| OEH | Office of Environment & Heritage (formerly DECCW) |
| PoM | Plan of Management |
| REP | Regional Environmental Plan |
| SCCG | Sydney Coastal Council Group |
| SEPP | State Environmental Planning Policy |
| SES | State Emergency Services |
| SHOROC | Shore Regional Organisation of Councils |
| SLR | Sea Level Rise |
| SMCMA | Sydney Metropolitan Catchment Management Authority |
| SREP | Sydney Regional Environmental Plan |
| SSHAP | Sharing Sydney Harbour Access Program |
| TSC | Threatened Species Conservation (Act) |
| WPA | Wetland Protection Area |



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MANLY COVE COASTAL ZONE MANAGEMENT PLAN

1. ABOUT THE PLAN

1.1 TITLE

This plan is the *Manly Cove Coastal Zone Management Plan*.

1.2 MANAGEMENT AREA

The Manly Cove study area lies immediately to the north-west of the entrance to Sydney Harbour, bounded to the west by Federation Point and to the southeast by Manly Point (see **Figure 1.2**). The study area covers 51 hectares and takes in the suburbs of Manly and Fairlight and also the local Precinct Community Forum areas of Fairlight, the Corso and Little Manly.

It extends both seaward and landward from the shoreline and includes rocky intertidal platforms, sandy beaches, grassed recreational areas, a netted swimming enclosure, bushland as well as commercial, retail and residential areas. The study area covers twelve sub-catchments.

The study area includes Manly Cove West Beach and Manly Cove East Beach, the seawalls backing these beaches, sandstone cliff faces and wave cut intertidal platforms as well as a number of water based development including Manly Wharf and various boating facilities lining the eastern foreshore.

The study area consists primarily of semi-natural, landscaped and built areas. It is characterized by natural and cut sandstone cliffs and escarpments with fringing native bushland pockets and landscaped areas along the Esplanade Reserves.

Manly Cove is a popular location for both visitors and locals alike. The Manly Scenic Walkway, a 10km scenic harbour walking track extending from the Spit Bridge to Manly, directs large numbers of walkers along the length of the study area. Manly Wharf also forms a vital transport link between the Northern Beaches and Sydney CBD.

Land and aquatic areas outside the study area boundaries, which impact on the biophysical or social environment within the boundary, have also been considered in development of the CZMP in order to establish holistic management strategies.

North Harbour Aquatic Reserve lies very close to the study area. A new proposal to extend the North Harbour Aquatic Reserve to include the entire water side of the study area is now being considered by the Department of Primary Industries (DPI).

The study area of Manly Cove extends to areas beyond the care and control of Manly Council. This is to provide a comprehensive approach to the identification and resolution of issues affecting the study area, including those that relate to the land-water interface. It will also provide an opportunity to bring together the various government agencies involved and through a whole of government approach identify strategies and actions for the future management of the area.

The study area borders areas covered by Little Manly and North Harbour Coastline Management Plans.

The entire study area is within the Sydney Harbour Foreshores and Waterways Area and Sydney Metropolitan Catchment Management Area.



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Figure 1.2 Aerial view of the Manly Cove study area.



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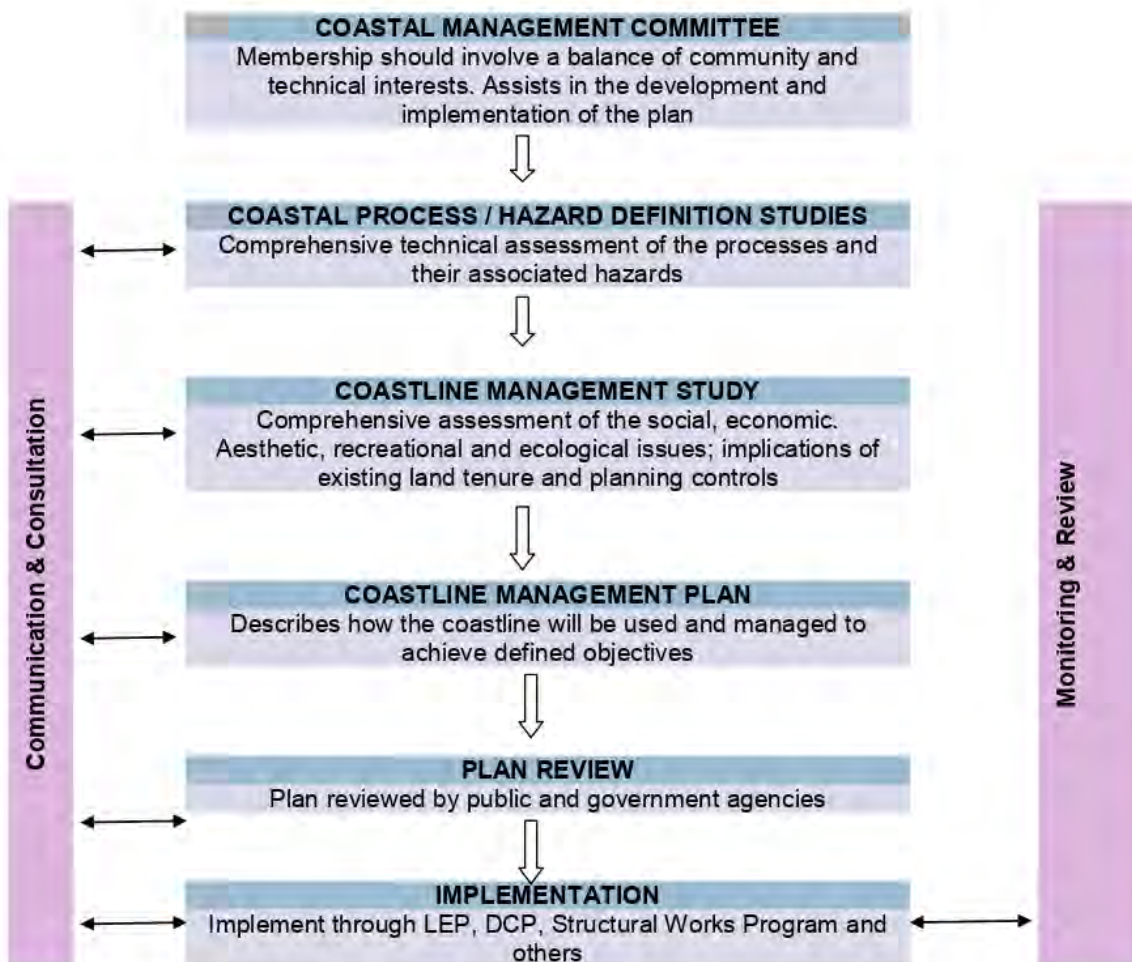
1.3 PLANNING FRAMEWORK & PURPOSE OF PLAN

The Office of Environment & Heritage (OEH) within the Department of Premier & Cabinet works closely with local councils, catchment management authorities and communities across the state to ensure the long-term protection, conservation and restoration of coastal, estuarine and floodplain environments.

The OEH's Coastal Management Program aims to identify and manage the risks from coastal hazards, including predicted sea level rise. This program provides funding support and technical advice to assist councils to prepare coastline management plans and associated studies. In 2011–12, OEH offered \$0.614 million in grants to 12 councils for 16 projects under this program (OEH 2011).

The OEH provides strategic guidance (**Figure 1.3**) for the development of Coastal Zone Management Plans in NSW, through its 'Coastline Management Manual'².

Figure 1.3 Elements of the Coastline Management System



² The new 'Guidelines for Preparing Coastal Zone Management Plan' was gazetted on 31 December 2010. These Guidelines replaces Coastline Management Manual (NSW Government 1990) and Estuary Management Manual (NSW Government 1992). Preparation of Manly Cove CZMP started in 2005 and hence, continued to use processes described in Coastline Management Manual.



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1.3.1 Manly Harbour Foreshores & Coastline Management Committee

The Manly Harbour Foreshores & Coastline Management Committee, under the stewardship of Manly Council was established in early 2009 to guide the preparation of a number of plans including the Manly Cove Coastal Zone Management Plan (CZMP).

The Committee has representations from Manly Council, Community Precincts, State Government Agencies and community. The relevant government departments include:

- Office of Environment & Heritage (OEH);
- NSW Maritime; and
- Department of Primary Industries NSW (DPI).

The first meeting of the Committee was held on 14 April 2009. The Committee meets on a bi-monthly basis.

In order to support the Committee and to obtain expert contribution in the CZMP, an internal 'Coastal Focus group' consisting of 20 key staff members from a range of fields was also formed (details on page 2). The Group was extensively consulted throughout the CZMP development process.

1.3.2 Community Consultation

A vital part in the coastline management planning process is community involvement and action. Hence, an extensive promotional and consultation campaign was undertaken through the development of the Manly Cove Coastal Zone Management Plan.

Advertisements: Advertisements were placed within in the Manly Daily to seek community submissions on 8 October 2005 and temporary display set up in the library foyer explaining the CZMP process and encouraging community feedback.

Webpage: A webpage, created on Manly Council's website (<http://www.manly.nsw.gov.au/Manly-Cove.html>) allowed easy access to information relevant to the plan.

Precinct Newsletters: Articles were regularly sent to Precincts for inclusion in monthly newsletters.

Survey: Structured survey forms were prepared and distributed to obtain community responses on importance, key issues and specific suggestions for inclusion in the Coastal Zone Management Plan. The survey forms were distributed through various means, and also emailed or posted to people upon request. A total of 89 survey forms were returned. Among them, 79 were from Manly residents who visit the Manly Cove area regularly.

Field Days: Two separate opportunities were utilised for consultation including:

- Hill to Harbour Community Walk Tania Park to Manly Cove (3 September 2005), and;
- 'Boats and Beasties' Marine Environment Workshop East Esplanade (17 September 2005)

1.3.3 Coastline Hazard Definition Study

External consulting engineers Patterson Britton & Partners (2004) were commissioned by Council to complete a Coastline Hazard Definition Study for all foreshore areas within the section of shoreline from the Davis Marina to Manly Point including North Harbour Reserve, Fairlight Beach, Delwood Beach and Manly Cove. This study provides an in-depth understanding of the coastal processes and their associated hazards.

The report includes assessment of beach erosion, shoreline recession, sand drift, coastal inundation, stormwater erosion, slope and cliff instability, climate change and determines the stability of the existing



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seawalls. This study identifies specific hazards threatening the area and quantified these by applying a risk management approach which determined the level of risk based upon the likelihood and consequence of it occurring.

1.3.4 Coastline Management Study

The Coastline Management Study, completed in December 2009, builds upon the information provided in the Coastline Hazard Definition Study along with information sourced from available data and study results. The purpose of a coastline management study, according to the Coastline Management Manual (NSW 1990), is to identify options relevant to the environmental planning and management of the coastal area. In addition, the study should comprehensively assess the social, economic, aesthetic, recreational and ecological issues associated with land use along the coastline, including implications of existing land tenure and planning controls, the creation of new jobs, the preservation of areas of aesthetic or ecological significance, the protection or enhancement of recreational amenity, exploitation and management of tourism opportunities.

The Study has:

- identified the planning framework detailing institutional and policy environment;
- assessed land use, tenure and management;
- identified coastal processes and coastline hazards;
- assessed climate change impacts, ecological and socio-economic environment;
- recorded community perceptions
- developed and evaluated management goals and objectives; and
- developed and evaluated management options that will achieve the objectives.

1.3.5 Coastal Zone Management Plan

The Hazard Definition and Management studies provided the factual basis for the formulation of this Coastal Zone Management Plan (CZMP) considering information contributed during community and stakeholder consultation. The Plan has considered and incorporated feedback from the Harbour Foreshores & Coastline Management, Access and Manly Scenic Walkway Committees. The Harbour Foreshores & Coastline Management Committee contributed in prioritisation of management options.

The Outline and the First Draft

An outline of the CZMP was presented and discussed at the meeting of the Harbour Foreshores & Coastline Management Committee on 20 April 2010.

The first draft of the CZMP was circulated and discussed at the Harbour Foreshores & Coastline Management, Access and Manly Scenic Walkway Committees during June- July 2010. The first draft was circulated to members of the Council's internal 'Coastal Focus Group' on 18 June 2010 for critical review and feedback.

Review of the Final Draft

This Final Draft has been prepared based on the received feedback and contributions. The draft of the CZMP was again circulated and discussed at the Harbour Foreshores & Coastline Management, Access and Manly Scenic Walkway Committees during August-September 2010. The Harbour Foreshores & Coastline Management Committee, at its meeting dated 14 December 2010, endorsed the draft for presentation to P&S Committee to allow public exhibition.

Members of the Committee were requested to fill in 'Endorsement and Prioritisation Form' scrutinizing each management options individually. On the basis of received responses, all management options were modified and prioritised.

The final draft was again circulated to members of the Council's internal 'Coastal Focus Group' in May 2011 for critical review and feedback.

Public Exhibition: The Final draft of the Coastline Management Plan was placed on public exhibition from 20 June to 16 September 2011. The community was also invited to attend a community information day on 23 July 2011 to facilitate stakeholder and community input and comment on the CZMP.



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A total of five submissions were received.

The 'Harbour Foreshores & Coastline Management Committee', at its meeting on 11 October 2011, has reviewed all submissions, endorsed and recommended the Final Draft to Council for adoption.

Adoption and Implementation: This final Coastline Management Plan was presented to the Council for consideration. The report was formally adopted at the Council meeting on 7 November 2011.

1.3.6 Purpose of the Plan

In many ways, formulation of the plan is the most important part of the coastal zone management planning process because it translates the understanding developed in previous stages into practical actions directed squarely at improving the wellbeing of the coastline. It is clear from the simple aim specified in the Coastline Management Manual (NSW 1990) "...a coastline management plan describes how the coastline will be used and managed to achieve defined objectives. The primary objectives are to ensure compatibility with hazards, to reduce the impact of hazards on individual owners and occupiers, to reduce private and public losses from hazard damage, to protect and enhance the recreational amenity of beaches, and to ensure an appropriate long term balance in the utilisation and conservation of the coastline". A coastal zone management plan should have the knowledge and support of the whole community.

1.4 STATUS OF PLAN

Development of the Manly Cove Coastal Zone Management Plan (CZMP) has been undertaken in line with the NSW Coastal Policy 1997, ongoing advances in coastal management and amendments made in 2002 and 2010 to the *Coastal Protection Act 1979*. This is an integrated planning approach that incorporates the management of coastal hazards and risk with social economic, aesthetic, recreational and ecological factors.

The Manly Cove Coastal Zone Management Plan has been prepared under the NSW Government's Coastal Management Program, following its 'Coastline Management Manual'³. The Program is designed to fulfil the requirements of the NSW Coastal Policy 1997. However, as the Manly Cove study area comes under the purview of Sydney Harbour catchment, the most important guiding document is the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 under the *Environmental Planning & Assessment Act 1979*.

Development of the Manly Cove Coastline Management Plan (CMP) fulfils a number of commitments provided in different documents. Key initiatives identified in Council's Manly Management Plan 2010-2013 (MC 2010) include:

- Coastline and Estuary Management Planning for Manly LGA complete; with finalisation of Manly Cove Coastline Management Plan and significant implementation underway.

It is action C1.3.1 (develop and implement comprehensive Coastline Management Plans (CMPs) for all areas of foreshore in Manly) of the Manly Sustainability Strategy 2006 (MC 2006). It supports strategy 'E2.1: Improve health of waterways, coasts and estuaries' of the draft North East Subregional Strategy (DoP 2007).

Development of the Manly Cove Coastal Zone Management Plan (CZMP) also complements an action under Sydney Metropolitan Catchment Management Action Plan to contribute to management target, MTECMC 2.5: By 2016 the Sydney Coastline is covered by a Coastline Management Plan.

³ This manual is now replaced by the new 'Guidelines for Preparing Coastal Zone Management Plan' which was gazetted on 31 December 2010. Preparation of Manly Cove CZMP started in 2005 and hence, continued to use processes described in Coastline Management Manual. This Plan has to be revised eventually to using the new Guidelines.



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1.5 STRATEGIC VISION

Setting the future vision is an important element in any planning process and ensures strategic long term thinking and avoids focus on daily issues.

Wider community participation in this vision development is not only important but crucial. Manly Council has, as a matter of process, for the last two decades, involved community in setting vision through programs like myManly, Futures Forum, Surfing the Future and recently through the Community Strategic Plan Beyond 2021 (MC 2011). The following vision statement has been adopted:

"Where natural environment and heritage sustain and complement a vibrant cosmopolitan and community lifestyle. In addition, we will work in partnership to deliver enhanced safety, cleanliness, accessibility, connectedness, and sustainability in Manly for current and future generations".

The Community Strategic Plan (MC 2011) also described community values for Manly, considered important during the next ten years to support the community vision for the future of Manly. The Manly area will benefit by working towards the following:

- A sustainable environment and economy
- Affordable housing
- Accessible places
- Connected & involved local community that is culturally vibrant
- A clean environment
- Protecting its natural and built environment
- A place for both residents and visitors to enjoy
- Managing its population growth
- Well managed and accountable local government
- Clearly defined plans.

The same vision statement and community values have been adopted in preparation of this Manly Cove Coastal Zone Management Planning process.

In addition, the State Plan, state-wide targets by the Natural Resources Commission and the vision of the Sydney Metropolitan Catchment Management Authority (SMCMA) have been considered.

1.6 KEY MANAGEMENT ISSUES & GOALS

A long list of management issues was identified through completed community survey forms and during two community consultation field days. These issues were presented and discussed at the Manly Harbour Foreshore Management Committee and are summarised under 10 key broad based management issues (with 2-letter code shown within bracket). These headings have been retained throughout this report. For each management issue, a goal has been set (Table 1.6).

Table 1.6: Key management issues and goals set

| Key Management Issues | Goals |
|---|---|
| Aquatic/Intertidal Habitat Conservation & Management (AH) | 1.0 Restore and maintain a healthy and diverse mix of aquatic and intertidal habitats that will maintain and improve biodiversity and ecological functions of Manly Cove. |
| Boating, Maritime Operations & facilities (BF) | 2.0 To achieve the highest level of environmental protection and safety for maritime operations within Manly Cove. |
| Enhancement of Public Facilities, infrastructure & signage (PF) | 3.0 Public facilities, infrastructure and signage are upgraded and maintained to facilitate improved social amenity. |



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| Key Management Issues | Goals |
|---|--|
| Water Quality (WQ) | 4.0 To ensure water quality meets the community's expectations and falls within acceptable standards suitable for fishing and swimming |
| Terrestrial Ecosystem (TE) | 5.0 To conserve and enhance the integrity and diversity of native terrestrial flora and fauna, and their ecosystems |
| Climate Change & Coastal Hazards (CH) | 6.0 Assess, monitor and mitigate risks from coastline hazards and climate change |
| Waste Management (WM) | 7.0 Promote and facilitate sustainable waste management in Manly Cove |
| Access & Traffic Management (AM) | 8.0 To provide an environment at Manly Cove that is accessible to all people |
| Geodiversity (GD) | 9.0 Conserve the significant geodiversity elements of the area's coastline |
| Heritage Conservation and Management (HC) | 10.0 Ensure that all Aboriginal and European (cultural and natural) heritage areas in the study area are preserved and protected. |

In general, set goals and objectives relate to the general goal of the NSW Coastal Policy 1997, *Coastal Protection Act 1979*, *Water Management Act 2000* and management principles described in relevant regional plans (Sydney Regional Environmental Plan – Sydney Harbour Catchment 2005, Draft Subregional Strategy: North East Subregion, July 2007, Sydney Metropolitan Catchment Management Action Plan 2008 and also Manly Local Environmental Plans and different strategy documents.

1.7 DURATION OF PLAN

The Coastline Management Plan is a strategic plan with a visionary long-term time frame of 15- 20 years with firmed up implementation program of 5 years. Though the plan is usually reviewed and revised every 5 years, it is expected that this Plan may be reviewed earlier to make it aligned with the newly released 'Guidelines for Preparing Coastal Zone Management Plan' (January 2011).

1.8 MANAGEMENT AGENCIES

Manly Council (MC) is the principal management agency of this plan. Council has for many years undertaken remedial and maintenance works to enhance the coastal environment. In recent years the emphasis has been on understanding the functioning of the coastal and estuary catchments as an integrated ecosystem. The completion of the coastline management study and preparation of coastline management plan are significant steps in the move towards holistic management.

The following agencies/organisations have been / will be involved in the implementation of the Manly Cove Coastal Zone Management Plan. Agencies have been identified against each management options:

- NSW Maritime;
- Department of Primary Industries (DPI);
- Office of Environment & Heritage (OEH)
- NSW Parks & Wildlife Services (NPWS – OEH)
- State Emergency Services (SES);
- Roads & Transport Authority (RTA)
- Sydney Water;
- Sydney Coastal Councils Group (SCCG); and
- Aboriginal Heritage Office (AHO).



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Further description of these agencies is presented in **Appendix A**.

1.9 RELATIONSHIP TO OTHER PLANS

This Coastal Zone Management Plan has evolved through incorporation of strategic directions from a number of Council's management documents and land use planning instruments (**Table 1.9a**), specially including Development Control Plan for Manly Cove. The adopted Coastal Zone Management Plan will eventually be mainstreamed in to these documents in order to embed coastline management as part of Council's core business.

Table 1.9a Outline of key Council documents with relationship to Manly Cove CZMP

| Management Documents | Relationship to the document |
|--|---|
| Manly Community Strategic Plan Beyond 2021 | <p>Manly Council is required under the <i>Local Government Act 1993</i> to establish and implement a Community Strategic Plan that engages the community via a strategy based on social justice principles and identifies the community's main priorities and aspirations for the future.</p> <p>Manly Community Strategic Plan Beyond 2021 represents the aspirations of the people who live, visit and work in the Manly area. It is a 10 year plus strategy that has been developed as a collaborative effort between the community and Council. The Plan defines a sustainable direction for the Manly LGA area and sets out strategic direction in achieving the needs of the community. It addresses a broad range of issues that are relevant to the whole community.</p> <p>Manly Community Strategic Plan Beyond 2021 is a three-part document consisting of:</p> <ul style="list-style-type: none"> Part 1 Community Strategic Plan Part 2 Resourcing Strategy and Part 3 Four Year Delivery Program 2011-2015 and One Year Operational Plan 2011-2012. <p>'Preserving Manly's natural heritage and beaches' is one of the four most important priorities emerged from the community engagement for the next 10 years. This strategic direction is translated into the following goals:</p> <p>A sustainable, protected and well managed natural and built Manly by</p> <ul style="list-style-type: none"> • Natural heritage, bushlands and biodiversity is protected and preserved for future generations • Create liveable neighbourhoods and more affordable housing choices by better managing population growth • Reduced green house gas emissions in the manly area • A clean Manly with zero waste <p>The Goal 'Natural heritage, bushlands and biodiversity is protected and preserved for future generations' is again translated into three strategies:</p> <ul style="list-style-type: none"> • Promoting the protection of the environment as the key to a sustainable future • Delivery and enhance environmental regulation services to protect natural environment • Undertake projects in partnership with community stakeholders that protect, preserve and manage Manly's bushlands, biodiversity, geodiversity, coastal, estuary and water-cycles to benefit future generations. |



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| Management Documents | Relationship to the document |
|--|---|
| <p>Manly Council Delivery Program 2011-2015 & Operational Plan 2011-12</p> | <p>These Program and Plan addresses the full range of Council's operations and provides actions or projects with performance indicators to measure progress. Each action or project is undertaken with a view to contributing towards achieving a strategic direction and outcome that was seen as important to the community in the Community Strategic Plan. The Progress on these actions is reported to the Council on a quarterly basis and to the community through the annual report.</p> <p>The following actions/projects, related to coastal zone program, are planned under the Delivery Program 2011-2015:</p> <ul style="list-style-type: none"> • <i>Implementation of adopted Coastline & Estuary Management Plans</i> • <i>Consolidation and revisions of existing Coastal & Estuary Management Plans into Coastal Zone Management Plans following recent NSW Government Guidelines</i> • <i>Undertake measures for coastal protection and implement Emergency action plans</i> • <i>Aquatic Reserve Management Plan preparation and implementation</i> • <i>Landscape Masterplan for reserves in coastal foreshores</i> • <i>Assess and plan water access facilities and infrastructures</i> • <i>Establish and manage coastal erosion risk areas</i> |
| <p>Manly 2015</p> | <p>MANLY2015 is a strategic, forward thinking and sustainable Masterplan for the Manly CBD. The Masterplan aims to improve, renew and capitalise on Manly as a local town centre and international destination for our current and future community. The plan is essentially a vision for improvements to the public domain and streetscape as well as a reconfiguration of traffic – all with the aim to renew the Manly town centre for the coming decades with long-term infrastructure benefits for the local environment, economy and community.</p> <p>Manly2015:</p> <ul style="list-style-type: none"> ▪ Brings our laneways and streets surrounding The Corso back to life; ▪ Is pedestrian and bicycle friendly; ▪ Incorporates sustainable, energy efficient buildings and streetscape design; ▪ Makes shopping and socialising more enjoyable for locals and visitors; ▪ Is laid out so cars don't rule the environment – yet parking is easy! ▪ Enhances the character and heritage of Manly; ▪ Creates a sense of the Ocean Beach Promenade merging seamlessly with Manly's built form and heritage; ▪ Encourages an atmosphere where business and the local community aspirations thrive harmoniously together. |
| <p>Manly Sustainability Strategy 2006</p> | <p>In December 2006 the <i>Manly Sustainability Strategy – For Today and Future Generations</i> http://www.manly.nsw.gov.au/Sustainability-Strategy.html was adopted. The Strategy recognises that for the Manly community to be an enjoyable and liveable community in the future it is important for Council to address social, economic and environmental issues. Council's success in implementing the Strategy is reported annually within Council's Annual Plan.</p> <p>It is a 10 year strategy and addresses the vision through the six principles and 10 broad programs. The Manly Cove Coastal Zone Management Plan (CZMP) contributes to the MSS program: Coastline and Estuary Management Program to achieve the principle C: A Natural and Sustainable Manly'. The objective of the</p> |



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| Management Documents | Relationship to the document | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------------------------------------|-------------------------------------|--|--|-----------------------------------|--------------------------------|------------------------------------|---------------------------------|----------------------|-----------------------------------|---|---|------------------------------------|-------------------------------------|---|-----------------------------------|---|---|---|---|---|-------------------------------------|--------------------------------------|------------------------------------|--|--|----------------------------|---------------------------------------|-----------------------------|---|------------------------------|--|----------------------------|--|
| | <p>Coastline and Estuary Management Program is to manage the terrestrial and marine environment interface to balance environmental conservation and the enjoyment of the area by user groups and ensure that Manly's coastlines are recognised for their important natural and cultural heritage.</p> <p>Preparation of this CZMP relates to Action C1.3.1 of Manly Sustainability Strategy 2006. Further, this CZMP addresses following actions of Manly Sustainability Strategy:</p> <table border="1"> <tr> <td>B1.4.2 (walking trails in open space)</td><td>C1.3.8 (incorporate CC information)</td></tr> <tr> <td>B1.4.4 (access to all recreational facilities)</td><td>C1.3.10 (monitor identified coastal hazards)</td></tr> <tr> <td>C1.1.6 (water quality monitoring)</td><td>C1.3.11 (interpretive signage)</td></tr> <tr> <td>C1.2.1 (map aquatic flora & fauna)</td><td>C1.3.12 (participate with SCCG)</td></tr> <tr> <td>C1.2.3 (Review CMPs)</td><td>C1.3.13 (work closely with SMCMA)</td></tr> <tr> <td>C1.2.6 (Involvement of local residents)</td><td>C1.3.16 (promote community involvement)</td></tr> <tr> <td>C1.2.8 (conserve marine resources)</td><td>C1.3.18 (cyclic evaluation of CMPs)</td></tr> <tr> <td>C1.2.10 (control of <i>Caulerpa taxifolia</i>)</td><td>C1.4.1 (map geodiversity element)</td></tr> <tr> <td>C1.2.12 (police breaches of bag limits)</td><td>C1.4.3 (geodiversity conservation strategy)</td></tr> <tr> <td>C1.2.14 (extend boundary of NH Aquatic Reserve)</td><td>C1.5.6 (Recommendations of Flora & Fauna Study)</td></tr> <tr> <td>C1.2.15 (no anchoring and eco-friendly mooring buoys)</td><td>C1.6.11 (Little Penguin monitoring)</td></tr> <tr> <td>C1.2.16 (seagrass friendly moorings)</td><td>C1.7.4 (linking habitat corridors)</td></tr> <tr> <td>C1.2.17 (enforce Penguin critical habitat)</td><td>C1.7.12 (protection of threatened species)</td></tr> <tr> <td>C1.3.2 (seawall stability)</td><td>C2.4.1 (risk management through CMPs)</td></tr> <tr> <td>C1.3.3 (hazard information)</td><td>C2.4.3 (understanding of natural hazards)</td></tr> <tr> <td>C1.3.5 (prioritised actions)</td><td>D2.2.5 (management plan for Aboriginal heritage)</td></tr> <tr> <td>C1.3.7 (beach nourishment)</td><td>D2.2.9 (Increased community awareness)</td></tr> </table> <p>Key priority and funded objectives and actions listed in the Sustainability Strategy are integrated into the actions of the Management Plan document and will continue to be addressed as part of the new Integrated Strategic Planning framework to commence in 2011. Integrated planning is the best method to imbed sustainable principles across all activities of Council.</p> | B1.4.2 (walking trails in open space) | C1.3.8 (incorporate CC information) | B1.4.4 (access to all recreational facilities) | C1.3.10 (monitor identified coastal hazards) | C1.1.6 (water quality monitoring) | C1.3.11 (interpretive signage) | C1.2.1 (map aquatic flora & fauna) | C1.3.12 (participate with SCCG) | C1.2.3 (Review CMPs) | C1.3.13 (work closely with SMCMA) | C1.2.6 (Involvement of local residents) | C1.3.16 (promote community involvement) | C1.2.8 (conserve marine resources) | C1.3.18 (cyclic evaluation of CMPs) | C1.2.10 (control of <i>Caulerpa taxifolia</i>) | C1.4.1 (map geodiversity element) | C1.2.12 (police breaches of bag limits) | C1.4.3 (geodiversity conservation strategy) | C1.2.14 (extend boundary of NH Aquatic Reserve) | C1.5.6 (Recommendations of Flora & Fauna Study) | C1.2.15 (no anchoring and eco-friendly mooring buoys) | C1.6.11 (Little Penguin monitoring) | C1.2.16 (seagrass friendly moorings) | C1.7.4 (linking habitat corridors) | C1.2.17 (enforce Penguin critical habitat) | C1.7.12 (protection of threatened species) | C1.3.2 (seawall stability) | C2.4.1 (risk management through CMPs) | C1.3.3 (hazard information) | C2.4.3 (understanding of natural hazards) | C1.3.5 (prioritised actions) | D2.2.5 (management plan for Aboriginal heritage) | C1.3.7 (beach nourishment) | D2.2.9 (Increased community awareness) |
| B1.4.2 (walking trails in open space) | C1.3.8 (incorporate CC information) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B1.4.4 (access to all recreational facilities) | C1.3.10 (monitor identified coastal hazards) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.1.6 (water quality monitoring) | C1.3.11 (interpretive signage) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.1 (map aquatic flora & fauna) | C1.3.12 (participate with SCCG) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.3 (Review CMPs) | C1.3.13 (work closely with SMCMA) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.6 (Involvement of local residents) | C1.3.16 (promote community involvement) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.8 (conserve marine resources) | C1.3.18 (cyclic evaluation of CMPs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.10 (control of <i>Caulerpa taxifolia</i>) | C1.4.1 (map geodiversity element) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.12 (police breaches of bag limits) | C1.4.3 (geodiversity conservation strategy) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.14 (extend boundary of NH Aquatic Reserve) | C1.5.6 (Recommendations of Flora & Fauna Study) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.15 (no anchoring and eco-friendly mooring buoys) | C1.6.11 (Little Penguin monitoring) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.16 (seagrass friendly moorings) | C1.7.4 (linking habitat corridors) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.17 (enforce Penguin critical habitat) | C1.7.12 (protection of threatened species) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.3.2 (seawall stability) | C2.4.1 (risk management through CMPs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.3.3 (hazard information) | C2.4.3 (understanding of natural hazards) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.3.5 (prioritised actions) | D2.2.5 (management plan for Aboriginal heritage) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1.3.7 (beach nourishment) | D2.2.9 (Increased community awareness) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Council Policies | Policies should be updated or where necessary, created to reflect Council's position on important coastal and catchment management issues. This makes the position explicit and more likely to be reflected in how the whole of Council operates. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coastal Zone Management Plans (CZMPs) | <p>The Manly Cove Management Plan considers issues and actions addressed in the following plans:</p> <ul style="list-style-type: none"> • Cabbage Tree Bay Management Plan • Forty Baskets Coastline Management Plan • Little Manly Coastline Management Plan • Manly Ocean Beach Coastline Management Plan • Clontarf/ Bantry Bay Estuary Management Plan • North Harbour Coastline Management Plan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manly Local Environmental Plan 1988 | The Manly Local Environment Plan (LEP) details the zoning of land within the Manly Council area. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



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| (under revision) | <p>The LEP also identifies Items of Environmental Heritage, Environmentally Sensitive Areas, Foreshore Scenic Protection Areas and Potential Acid Sulphate Soils and provides planning controls for the on-going appropriate management of each of these items and areas.</p> <p>This LEP is now being reviewed and updated in accordance with the NSW Planning Reforms and amended Planning legislation.</p> <p>The adopted Coastal Zone Management Plan will eventually be mainstreamed in to the Manly LEP in order to embed coastline management as part of Council's core business.</p> |
| Development Control Plans (DCP) (under revision) | <p>DCP's are plans that control development activity in the Council. Engineering Guidelines for development and Water Sensitive Urban Design are both examples of Guidelines that have been turned into DCP's. Where robust management of development is required to protect the coastline, Council's Coastal Management Team should work with planners to revise/modify DCP's that aid the long-term management of the coastlines & foreshores.</p> <p>A separate DCP for Manly Cove was adopted by Council in 1996.</p> |
| Manly Development Control Plans (DCP) for Manly Cove September 1996 | <p>This policy applies to land above and below high water mark between Commonwealth Parade, West Esplanade and East Esplanade and a line drawn from the south western end of East Esplanade Reserve to the southernmost point of Commonwealth Parade</p> <p>This policy applies to all land based and land/water interface development. Aims & Objectives of the Policy are:</p> <ol style="list-style-type: none"> 1. To provide detailed controls for the guidance of developers in order to achieve the aims, objectives, etc of Sydney Regional Environmental Plan No. 23 in relation to development in Manly Cove. 2. To preserve and enhance the amenity of Manly Cove including public places and areas visible from public places or from the navigable waters of Sydney and North Harbours. 3. To provide for maximum public visual and scenic quality to the harbour front and to avoid as much as possible private, exclusive use. 4. To provide and enhance efficient transport facilities while recognising that the wharf and its connection to The Corso act as a gateway to Manly so that all development must be of a high visual quality and have regard to its visual impact on the shoreline and adjacent reserves. 5. To ensure that all development in Manly Cove is complementary to and does not detract from the shoreline and adjacent reserves in Manly Cove. 6. To retain all of the existing beach frontage for aquatic and recreational activities. 7. To make optimum use of the Manly Pavilion precinct while still retaining its existing character. 8. To retain the existing character of the boat club precinct at the south western end of Manly Cove while seeking to increase public usage. 9. To conserve and enhance the environmental heritage of Manly Cove and its foreshores. |
| Plans of Management | Individual plans of management are very useful for describing Council's vision for managing public land. These are used to manage significant catchment habitats, |



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| | recreation on the estuary and general foreshore management. This Manly Cove Coastal Zone Management Plan has been developed to address all requirements for community land management under the <i>NSW Local Government Act 1993</i> and <i>NSW Crown Lands Act 1989</i> and acts as a Plan of Management for community lands of the study area. |
| Climate Change Risk Assessment and Adaptation Action Plan | Council has completed a "Manly LGA Climate Change Risk and Adaptation Action Plan" Project under the Commonwealth Department of Climate Change and Energy Efficiency's Local Adaptation Pathways Program (LAPP). Council is building on the outcomes of this project in order to develop a more comprehensive Adaptation Action Plan for Manly LGA which will provide a strategic approach to climate change risk management and adaptation for Manly Council and the community. It will incorporate elements of the Cardno (2008) report titled ' <i>Climate Change Actions for Manly LGA 2008 > 2038</i> ' and also build upon knowledge and outcomes of the Sydney Coastal Council Group's ' <i>Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises</i> ' (2008). Statewide Mutual has been engaged to assist with this process. |
| Carbon Emissions Reduction Plan (being prepared) | Council has commenced a Carbon Emissions Reduction Project to meet Council's target of 25% emission reduction from the 2008/09 level by 2020. Council is determined to achieve further reductions if possible. This involves calculation of Council's carbon footprint (independently verified), development of a Corporate Carbon Reduction Strategy and Action Plan which identifies measures/actions in order for Council to meet its emissions reduction target and the development of a carbon management tool to monitor, track and report on progress towards the emissions target. Council is also undertaking a similar community component in consultation with the community involves calculation of the community carbon footprint, development of a Manly Community Carbon Reduction Strategy and Action Plan and community carbon management tool. The Corporate and Community Carbon Reduction Strategy and Action Plans will replace the 2001 Manly Local Air Quality and Greenhouse Action Plan and Council's previous mitigation response through the Cities for Climate Protection Plus Program. |

This Coastal Zone Management Plan has evolved through incorporation of strategic directions from a number of documents of external stakeholders (**Table 1.9b**). Consideration should be given to linking these documents to ensure that coastline management responsibilities are carried through to their core business as well.

Table 1.9b Outline of key external documents with relationship to Manly Cove CZMP

| Management Documents | Relationship to the document |
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| Sydney Metropolitan Catchment Action Plan | <p>The Sydney Metropolitan CMA works to implement its Catchment Action Plan (CAP) which is a strategic planning tool that identifies the key natural resource features the Sydney community wants to protect and improve. The CAP outlines specific targets to be achieved to 2016. The CAP reflects the needs of the region and a wide array of partners will help deliver these targets.</p> <p>The plan applies to a catchment area of 1860 square sq. km. (the area extends offshore to include state waters to the three nautical mile limit) accommodating 39 Local Government Areas including Manly. The catchment is divided into eight sub-catchments. The study area belongs to sub-catchment 'Middle Harbour'. Activities of catchment management relates to four themes including 'Water & Coast'.</p> |



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| | <p>The catchment target for the 'Water & Coast' sub-theme, among others, is</p> <p><i>'By 2016, there is improvement in the condition of coastal and marine ecosystems'.</i></p> <p>This target has further been translated into management targets as:</p> <ul style="list-style-type: none"> • MTECM2.1: By 2016 all vegetation in dune areas on public land is rehabilitated to reduce weed cover by 20% from June 2007 baseline. • MTECM2.2: By 2016 institutional and technical processes are in place to achieve environmentally sustainable management of beach environs. • MTECM2.3: By 2016 active management will protect or improve key estuarine and marine habitat areas in partnership with relevant authorities and user groups. • MTECM2.4: By 2016 there is an increase in the extent of Marine Protected areas. • MTECM2.5: By 2016, the Sydney coastline is covered by a Coastline Management Plan. |
| <p>Sydney Regional Environmental Plan - Sydney Harbour Catchments 2005: the Harbour REP</p> | <p>The Harbour REP covers the entire area of Sydney Harbour including Manly Cove. This is the most important planning document relevant for the Manly Cove CZMP study area. It establishes planning principles for land within the Foreshores and Waterways Area as follows:</p> <ul style="list-style-type: none"> (a) development should protect, maintain and enhance the natural assets and unique environmental qualities of Sydney Harbour and its islands and foreshores, (b) public access to and along the foreshore should be increased, maintained and improved, while minimising its impact on watercourses, wetlands, riparian lands and remnant vegetation, (c) access to and from the waterways should be increased, maintained and improved for public recreational purposes (such as swimming, fishing and boating), while minimising its impact on watercourses, wetlands, riparian lands and remnant vegetation, (d) development along the foreshore and waterways should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands and foreshores, (e) adequate provision should be made for the retention of foreshore land to meet existing and future demand for working harbour uses, (f) public access along foreshore land should be provided on land used for industrial or commercial maritime purposes where such access does not interfere with the use of the land for those purposes, (g) the use of foreshore land adjacent to land used for industrial or commercial maritime purposes should be compatible with those purposes, (h) water-based public transport (such as ferries) should be encouraged to link with land-based public transport (such as buses and trains) at appropriate public spaces along the waterfront, (i) the provision and use of public boating facilities along the waterfront should be encouraged. <p>The study area is located totally in W2 (Environment Protection) zone, one of the nine zones covered in Harbour REP.</p> <p>The objectives of this zone are as follows:</p> |



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| | <p>(a) to protect the natural and cultural values of waters in this zone, (b) to prevent damage or the possibility of longer term detrimental impacts to the natural and cultural values of waters in this zone and adjoining foreshores, (c) to give preference to enhancing and rehabilitating the natural and cultural values of waters in this zone and adjoining foreshores, (d) to provide for the long-term management of the natural and cultural values of waters in this zone and adjoining foreshores.</p> |
| <p>Sydney Harbour Foreshores and Waterways Area – Development Control Plan 2005</p> | <p>This document compliments the Harbour Regional Environmental Plan. The DCP provides detailed design guidelines for development and criteria for natural resource protection for the locations identified as Foreshores and Waterways Area.</p> <p>In this DCP, different landscape character types in and around Sydney Harbour are recognised. These landscape character types provide a statement of character and intent and sets out performance criteria that are to meet for development within each landscape character types. Landscape character type 8 exists in Manly Cove CZMP study area.</p> <p>Further, and as part of the DCP of this Harbour REP, Office of Environment & Heritage (OEH) has mapped Ecological Communities and Landscape Characteristics. Within the foreshores and waterways area boundary a number of aquatic and terrestrial ecological communities have been identified within Manly Cove CZMP study area including seagrass beds, mixed rocky intertidal and sand, urban development with scattered trees, grass bed and sandy beaches.</p> |
| <p>Metropolitan Plan for Sydney 2036 December 2010</p> | <p>The Metropolitan Plan is an integrated, long-term planning framework that will sustainably manage Sydney's growth to 2036 while enhancing Sydney's unique lifestyle and environment. It builds on the 2005 Metropolitan Strategy's 'city of cities' approach and will transform Sydney from a single centred city to a more connected city with many centres and improved accessibility.</p> <p>The Plan recognises a number of challenges facing Sydney: a growing population, a changing population, more suitable and affordable housing, more jobs closer to home, more efficient transport, more efficient infrastructure delivery, a more sustainable Sydney, tackling climate change and maintaining our global competitiveness.</p> <p>The Metropolitan Plan will address the challenges facing Sydney through an integrated, long-term planning framework based on the strategic directions and key policy settings.</p> <p>The most relevant strategic direction and policy settings relevant to this Manly Cove CZMP is</p> <p><u>Tackling climate change and protecting Sydney's natural environment</u></p> <ul style="list-style-type: none"> • Reduce greenhouse gas emissions from the manufacturing and commercial sectors • Review the scope and stringency of BASIX • Prepare a climate change adaptation strategy for Sydney • Integrate environmental targets into land use and infrastructure decisions • Implement water, air and biodiversity plans for Sydney <p>The objective G4 of this Plan is 'to improve the health of waterways, coasts and estuaries' supported by action G4.3 'Promote coastal protection and foreshore</p> |



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| Draft Subregional Strategy: North East Subregion, July 2007 | <p>access through implementation of relevant policies and guidelines'.</p> <p>More detailed planning follows via regional strategies and subregional strategies. There will be 10 sub-regional plans. The LGAs of Manly, Pittwater and Warringah Councils constitute the North East Sub-region. Sub-regional strategies remain a key planning tool for Sydney councils to help implement the Metropolitan Plan.</p> <p>The North East Subregion is well known for its natural environment including coastline, waterways and national parks. Growing sustainability requires managing the environmental impact of development and reducing consumption of natural resources as well as safeguarding assets from natural hazards, which are expected to increase over time with climate change. The strategy includes, among others, actions to: improve the health of waterways, coasts and estuaries; protect the loss of biodiversity; conserve and manage Aboriginal and other cultural heritage; and respond to the risk of climate change and sea level rise.</p> <p>The draft Strategy was exhibited between 17 July to 18 September 2007. Submissions were received from a range of stakeholders including the community, Government agencies, development industry and local Councils. These submissions are currently being reviewed and the draft North East Subregional Strategy is now being finalised, following the release of the Metropolitan Plan for Sydney 2036.</p> <p>When finalised, the draft North East Subregional Strategy will continue to guide land-use planning until 2036 in the Manly, Pittwater and Warringah local government areas.</p> |
| SHOROC's regional Strategy: <i>Shaping Our Future</i> September 2010 | <p>Adopted in September 2010, the <i>Shaping Our Future</i> strategy has been developed by Manly, Mosman, Pittwater and Warringah Councils. The strategy calls for investment from the state and commonwealth government to fix transport and health systems and enable councils to ensure growth is sustainable in the region.</p> <p>Climate change and its predicted impacts on sea levels, coastal erosion and weather patterns and resultant displacement of housing and other coastal and low lying land and impacts on bushland is identified as one of the key challenges of the region.</p> <p>Based on '<i>Shaping Our Future</i>', SHOROC is now developing Regional Sustainability Strategy. Once finalised, it is envisaged the strategy will focus on areas such as energy, climate change, transport, waste, water, biodiversity and skills and capacity building, with projects identifying areas where the councils can work together more effectively or efficiently on a regional basis to improve the sustainability of the region.</p> |
| Sharing Sydney Harbour Access Plan, August 2003 | <p>The Access Plan has been jointly prepared by the NSW Department of Planning and the NSW Maritime. An integrated approach has been taken by looking at both land and water access issues. A catchment-wide network of access ways will link metropolitan parklands with urban waterfronts and connect to water access points. Improved boating facilities will provide better public access for recreational craft such as dinghies, canoes, kayaks and sailing boats.</p> <p>The Access Plan identifies opportunities to improve access to the foreshores and</p> |



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| | <p>waterways for a range of recreational users including pedestrians, cyclists and recreational boaters.</p> <p>The Access Plan identifies strategic projects that may be developed in the longer term, i.e. over the next 20 years. Implementation of the Access Plan is assisted via the Sharing Sydney Harbour Access Program.</p> <p>The Program has been extended to provide \$6.75 million until 2013. Each year up to \$1.35 million is distributed on a dollar-for-dollar basis for specific capital works projects such as walking tracks, cycle paths, new public waterfront parks, jetties, pontoons and boat launching facilities. With matching funds from applicants, the program is expected to lead to at least \$30 million worth of access improvements.</p> |
| Sydney Regional Coastal Management Strategy 2010-2014 | <p>This strategy was prepared by the Sydney Coastal Councils Group, represented by 15 Local Councils including Manly, to coordinate and integrate relevant coastal planning and management activities, and the responsible organisations, to improve coastal management in Sydney. This strategy applies to the coastal areas between Pittwater and Sutherland local government areas, including all areas that were previously excluded from the NSW Coastal Zone.</p> <p>The purpose of the Sydney Coastal Councils Group Strategic Plan is to guide integrated coastal zone management in the coastal and estuarine environments of Sydney. The Strategic Plan provides the SCCG and its Member Councils with principles and an action plan to apply in all their coastal management activities.</p> |
| The Northern Sydney Aboriginal Social Plan (NSASP) 2007-2011 | <p>The Northern Sydney Aboriginal Social Plan is a document compiled by ten Councils in Northern Sydney Region, including Manly, to address the needs of Aboriginal and Torres Strait Islander people in the area. The aims of the Social Plan are to:</p> <ul style="list-style-type: none"> • Improve outcomes for the Aboriginal community living in Northern Sydney • Improve coordination and relationships with government on Aboriginal issues • Increase sharing and co-operation between individuals, groups, and agencies across Northern Sydney <p>The NSASP identifies 6 key areas of need; collaboration and cooperation, health and wellbeing, education and training, housing, employment and culture and heritage. The first Aboriginal Social Plan (a five year plan) was adopted in 2000.</p> |
| The NSW Sea Level Rise Policy Statement (November 2009) | <p>This policy statement outlines the Government's objectives and commitments in regards to sea level rise adaptation. It outlines the support that the Government will provide to coastal communities and local councils to prepare and adapt to rising sea levels.</p> <p>The NSW Government has adopted sea level rise planning benchmarks: an increase above 1990 mean sea levels of 40cm by 2050 and 90cm by 2100. The primary purpose of the benchmarks is to provide guidance supporting consistent considerations of sea level rise impacts, within applicable decision-making frameworks. This includes strategic planning and development assessment under the EP&A Act and infrastructure planning and renewal.</p> <p>The use of the benchmarks is required when undertaking coastal and flood hazard assessments in accordance with the Coastline Management and Floodplain Development Manuals. It is already a statutory requirement that the preparation of</p> |



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| | <p>Local Environmental Plans gives effect to and be consistent with these manuals.</p> <p>The sea level rise planning benchmarks can be used for purposes such as:</p> <ul style="list-style-type: none"> • incorporating the projected impacts of sea level rise on predicted flood risks and coastal hazards • designing and upgrading of public and private assets in low-lying coastal areas where appropriate, taking into account the design life of the asset and the projected sea level rise over this period • assessing the influence of sea level rise on new development • considering the impact of sea level rise on coastal and estuarine habitats (such as salt marshes) and identifying valuable habitats at most risk from sea level rise • assessing the impact of changed salinity levels in estuaries, including implications for access to fresh water. |
| <p>NSW Coastal Planning Guideline – Adapting to Sea Level Rise</p> <p>August 2010</p> | <p>The Guideline adopts the sea level rise planning benchmarks in the NSW Sea Level Rise Policy Statement. The Sea Level Rise Policy Statement identifies sea level rise projections of up to 40 cm to 2050, and 90 cm to 2100, for the NSW coastline.</p> <p>The Guideline outlines an approach to assist councils, State agencies, planners and development proponents when addressing sea level rise in land-use planning and development assessment</p> <p>It applies to all coastal areas of NSW, including the NSW Coastal Zone, as well as Sydney Harbour and Botany Bay. The term 'coastal areas' is used broadly to include the coastline, beaches, coastal lakes, estuaries, as well as the tidal reaches of coastal rivers. It also includes other low-lying land surrounding these areas that may be subject to coastal processes in the future as a consequence of sea level rise.</p> <p>The Guideline adopts the following six coastal planning principles for sea level rise adaptation:</p> <ol style="list-style-type: none"> 1. Assess and evaluate coastal risks taking into account the NSW sea level rise planning benchmarks. 2. Advise the public of coastal risks to ensure that informed land use planning and development decision-making can occur. 3. Avoid intensifying land use in coastal risk areas through appropriate strategic and land-use planning. 4. Consider options to reduce land use intensity in coastal risk areas where feasible. 5. Minimise the exposure to coastal risks from proposed development in coastal areas. 6. Implement appropriate management responses and adaptation strategies, with consideration for the environmental, social and economic impacts of each option. <p>This Guideline is structured around the implementation of the above six coastal planning principles for the consideration of sea level rise and has three key sections:</p> <p>SECTION 2 – IDENTIFYING COASTAL RISK AREAS outlines how sea level rise should be incorporated into coastal risk assessment.</p> <p>SECTION 3 – STRATEGIC AND STATUTORY LAND USE PLANNING provides information on how sea level rise impacts can be factored into strategic and</p> |



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| | <p>statutory land use planning.</p> <p>SECTION 4 – DEVELOPMENT ASSESSMENT outlines the process for considering sea level rise in the preparation and assessment of development applications in coastal areas.</p> <p>To support the Guidelines, NSW Government has released the following documents:</p> <ul style="list-style-type: none"> • <i>Coastal Risk Management Guide: Incorporating sea level rise benchmarks in coastal risk assessments</i> • <i>Flood Risk Management Guide: Incorporating sea level rise benchmarks in flood risk assessments</i> |
| <p><i>The Coastal Protection and Other Legislation Amendment Act 2010</i></p> <p>Commenced January 2011</p> | <p>The <i>Coastal Protection Act 1979</i> is the principal legislation relating to coastal management in New South Wales. Key provisions of the Act include requirements relating to Ministerial concurrences for certain developments in the coastal zone, and requirements relating to preparing coastal zone management plans. It also includes order powers relating to unlawful dumping of material on beaches.</p> <p>In 2010 the Act was amended by the Coastal Protection and Other Legislation Amendment Act 2010. Amendments to the <i>Coastal Protection Act</i> commenced on 1 January 2011. These amendments and related amendments to the <i>Local Government Act 1993</i>:</p> <ul style="list-style-type: none"> ▪ allow landowners in specific locations to place sand or sandbags on the beach under strict conditions as emergency coastal protection works to reduce the impact of coastal erosion on their property. If the bags cause erosion they are to be removed; ▪ require consent authorities assessing development applications for long-term coastal protection works, such as seawalls, to be satisfied that appropriate arrangements are in place to restore beaches if they are eroded by the works; ▪ allow local councils to levy a coastal protection service charge on land where the current or past landowners have voluntarily constructed coastal protection works. This charge covers council costs for maintaining the works and restoring the beach if the works cause erosion; ▪ establish a NSW Coastal Panel to provide expert advice to the Minister and councils on coastal management issues. Under related amendments to the Infrastructure State Environmental Planning Policy (SEPP), the Panel is the consent authority for long-term coastal protection works where the council does not have a coastal zone management plan in place; ▪ improve the arrangements for coastal zone management planning, including coastal climate change adaptation; ▪ strengthen the powers of authorised officers and order powers relating to illegal dumping on beaches, and increasing penalties; and ▪ enhance the statutory exemptions from liability for councils and State agencies when their coastal management activities are carried out in good faith. <p>The amendments to these Acts are supported by a series of statutory and non-statutory guidelines</p> |
| Guidelines for preparing Coastal | These statutory Minister's guidelines specify the requirements for councils preparing coastal zone management plans under the Coastal Protection Act. This is a |



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| <p>Zone Management Plans</p> <p>December 2010</p> | <p>framework document which also includes key strategic considerations for preparing these plans. It also provides guidance on preparing coastal erosion emergency action subplans. These guidelines replace the 1990 Coastline Management Manual and the 1992 draft Estuary Management manual. The Minister for Climate Change and the Environment notified his adoption of these guidelines for the purposes of the Coastal Protection Act 1979 in the Government Gazette on 31 December 2010. The guidelines will be supported by a series of coastal management guide notes, which will provide further detailed information to support preparation of coastal zone management plans.</p> |
| <p>Coastal Protection Regulation 2011</p> <p>3 March 2011</p> | <p>The primary objective of the Coastal Protection Regulation 2011 which commenced on 3 March 2011 is to support the amendments to the <i>Coastal Protection Act</i>. The main provisions of the Regulation are:</p> <ul style="list-style-type: none"> ▪ requirements relating to emergency coastal protection works by landowners, specified in a Code of Practice under the Regulation and also explained in a guide to these requirements ▪ requirements relating to Ministerial concurrences which must be obtained before carrying out certain off-shore development activities, similar to the requirements in the Coastal Protection Regulation 2004 ▪ defining the arrangements for categorising land according to its vulnerability to coastal hazards, based on information in council coastal zone management plans. ▪ The Regulation requires that Ministerial concurrences under Part 3 of the Coastal Protection Act are required for certain offshore developments. These requirements do not apply to developments: ▪ under Part 3A and Part 4 of the Environmental Planning and Assessment Act 1979 or exempt development under that Act ▪ carried out in accordance with a coastal zone management plan. <p>Ministerial concurrences apply to that part of the coastal zone below the mean high water mark, excluding any estuary, lake or artificial harbour. For the purposes of the Regulation, 'estuary' includes any part of a river where the water level is affected (including intermittently) by coastal tides as well as any partially enclosed body of water that is intermittently open to the sea.</p> <p>To ensure that concurrence is only required where there is a potential for the development to present a high risk to the coastal zone, the concurrence of the Minister is not required if the development consists of, or the use and occupation of land is for the purpose of, any of the following:</p> <ul style="list-style-type: none"> ▪ the dredging of sediments from the seabed, when the dredging occurs in water depths greater than 30 metres below mean sea level and the volume of sediments removed is less than 100 cubic metres per year ▪ the placement of sediment on the seabed where the water depth following the placement would be greater than 30 metres below mean sea level and the volume of sediments placed is less than 10,000 cubic metres per year ▪ the placement of any solid object on the seabed where the top of the object, when placed, would be at a depth of more than 30 metres below mean sea level ▪ the temporary disturbance of the seabed associated with the carrying out the temporary disturbance of the seabed associated with the carrying out of development under the seabed is less than 30 days at any location. |



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In addition, NSW Maritime did develop Framework Plans for both Manly Cove East (September 2005) and Manly Cove West. The Plans were not statutory but designed to present key information in a simple and graphic manner. These Framework Plans ceased to have effect from 3 August 2007.

1.10 SUPPORTING DOCUMENTS

Key supporting documents in relation to this Plan are:

- Manly Cove Coastline Management Study, Manly Council, October 2009
- Davis Marina to Manly Point Coastline Hazard Definition Study, Patterson, Britton & Partners, 2004
- Natural Environment Assessment and Recommendations for the Coastline Management Plan: Manly Cove, GIS Environmental Consultants, March 2004
- Foreshore Safety and Beach Rehabilitation Manly Cove East, May 2003
- East Manly Cove Beach Management Options: Scoping Study, June 2002



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2. THE MANAGEMENT AREA

2.1 LOCATION & SETTING

The Manly Cove study area lies immediately to the north-west of the entrance to Sydney Harbour, bounded to the west by Federation Point and to the southeast by Manly Point and extends both seaward and landward from the shoreline between Federation Point and Manly Point (**Figure 1.2**). The study area covers 51 hectares and takes in the suburbs of Manly and Fairlight and also the local Precinct Community Forum areas of Fairlight, the Corso and Little Manly.

The study area includes Manly Cove West Beach and Manly Cove East Beach, the seawalls backing these beaches, sandstone cliff faces and wave cut intertidal platforms as well as a number of water based development including Manly Wharf and various boating facilities lining the eastern foreshore. The study area consists primarily of semi-natural, landscaped and built areas. It is characterized by natural and cut sandstone cliffs and escarpments with fringing native bushland, pockets and landscaped areas along the Esplanade Reserves.

Manly Cove is a popular location for both visitors and locals alike. The Manly Scenic Walkway, a 10km scenic harbour walking track extending from the Spit Bridge to Manly, directs large numbers of walkers along the length of the study area. Manly Wharf also forms a vital transport link between the Northern Beaches and Sydney CBD.

North Harbour Aquatic Reserve lies very close to the study area. A new proposal to extend the North Harbour Aquatic Reserve to include the entire water side of the Manly Cove area is being considered by the Department of Primary Industries (DPI).

The entire study area is within the Sydney Harbour Foreshores and Waterways Area and Sydney Metropolitan Catchment Management Area.

Ownership and management responsibilities for the land and seabed within the study area are shared by a number of government agencies and Manly Council. In general, land of Manly Cove CZMP study area consists of private, crown, Manly Council, NSW Maritime, Sydney Water, Department of Primary Industries and NSW Land and Housing Corporation owned and administered land, with Crown Land representing by far the major public land holding. As the study area is located with the Sydney Harbour, NSW Maritime is responsible for the management of both seabed and waterways.

2.2 HISTORY

The study area has a rich history, beginning with extensive Aboriginal occupation, which is evidenced through the many middens that are still present. It is believed that two clans of the Guringai people; the Kay-e-my and the Cannalgal, occupied what is now part of the Manly Municipality Council. In particular the Cannalgal are believed to occupy their clan estate that is known in part as Manly Point. More recently, Metropolitan Local Aboriginal Land Council has recognised Bob Waterer as a traditional owner of Guringai country. The oldest Aboriginal site known in the Manly LGA is dated to about 4100 years before present. There are 5 recorded Aboriginal sites within the study area: burial site, open middens, shelter and rock engraving.

Following a rich history of Aboriginal occupation, Manly was visited and named by Captain Arthur Phillip and a small exploratory party between 21st and 23rd January, 1788 after they encountered a group of Aboriginal men. Phillip later reported *"their confidence and manly behaviour made me give the name of Manly to this place"*.

Manly remained isolated for many years. Henry Gilbert Smith founded the village in 1853 after acquiring 100 acres of land. Soon a very small population grew which was able to eke out a living from fishing or farming. In June 1855, Smith wrote to his brother in England:



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"...the amusement I derive in making my improvements in Manly is, no doubt, the cause of my greater enjoyment, in fact I never feel a dull day while there. I should long ere this have been with you if it had not been for this hobby of mine, in thinking I am doing good in forming a village or watering place for the inhabitant of Sydney".

He purchased large tracts of land with the vision of Manly, with its splendid ocean beach and sheltered sandy coves, becoming 'the favourite resort of the Colonists'. In 1855 Smith built the first pier at Manly Cove and laid out his plans for the Manly Village. He built the first hotel opposite his pier, and lay out and cleared the route of the Corso, thus establishing a growth and recreation pattern for the area. **Table 2.2.1** provides a summary of historical events relevant to the Manly Cove study area post European settlement.

Table 2.2.1 - Summary of historic events within the Manly Cove study area 1788-2010.

| Year | Event |
|------|---|
| 1788 | Manly visited by Captain Arthur Phillip and small exploratory party |
| 1853 | Henry Gilbert Smith buys John Thompson's 100 acres; Smith leases Katherine Darley's 130 acres |
| 1855 | Smith's <i>Ellensville</i> Plan drawn up; First Manly Wharf constructed; Pier Hotel constructed; Sunday ferry service begins; Corso Widened |
| 1857 | Brighton Baths bathing house constructed |
| 1860 | Brighton Temperance House (later known as Temperance Hotel), cnr Corso & East Esplanade; (Dec) |
| 1868 | Ferry wharf extended |
| 1870 | Manly Pavilion constructed |
| 1877 | Jan 6 – proclamation of Municipal District of Manly; Feb 13 – first Council elections May 27 – fire in West Esplanade leads to formation of Manly Fire Brigade |
| 1879 | Colonial Government grants £300 for tree planting; Nov - Foreshore reserves dedicated |
| 1880 | Men's Baths opened; |
| 1881 | July 1 – Port Jackson Steamship Co Ltd formed; October - Smallpox epidemic cases at Quarantine Station |
| 1885 | Women's Baths built; Corso Gas lamp; |
| 1886 | Aquarium on Corso opened 23 December |
| 1902 | July – Steamer <i>Manly</i> goes aground, all saved; William Gocher makes daylight swim (date uncertain); |
| 1903 | Feb – Steam tram to Manly Lagoon; 2 Nov – Council changes bathing by-law to permit all-day bathing; Manly wharf remodelled |
| 1916 | 14 Oct – War Memorial, Corso, unveiled; |
| 1924 | Demolition of Pier Hotel |
| 1930 | 13 June - Manly Art Gallery & Museum established |
| 1931 | Harbour Pool and boardwalk constructed, Manly Cove |
| 1933 | Opening of Manly Harbour Swimming Pool Pavilion |
| 1939 | Aug - Fire at Manly Wharf; |
| 1942 | Remodelling of Manly Wharf |
| 1974 | May - Severe storm damage results in demolition of Harbour baths; Ferry service becomes State-owned; Ferry <i>South Steyne</i> burnt out in a fire |
| 1979 | Corso pedestrianised |
| 1988 | Spit to Manly walkway opened; |
| 1989 | Redevelopment of Manly Wharf |
| 1990 | State owned JetCats enter service; Manly Wharf upgrade; |
| 2005 | Corso and Wharf 150 th Anniversary |
| 2008 | Corso Upgrade completed |
| 2009 | State owned JetCats ceased; Privately operated Fast Ferry service introduced |
| 2010 | Second privately operated Sydney Ferry started operation |



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2.3 NATURAL PROCESSES & ENVIRONMENT

2.3.1 Coastal Processes, Water Quality & Foreshore Structures

The study area is characterized by natural and cut sandstone cliffs and escarpments with fringing native bushland pockets and landscaped areas along the Esplanade Reserves. The study area has gradual rise to an altitude of 36m with a rapid rise between 20m to 26m.

Storms play an important role in determining the rate and magnitude of shoreline change. The most devastating storms to strike the NSW coastline since records began, in terms of erosion damage, is likely to be the May - June 1974 storms.

The wave climates at Manly Cove East and West beaches are composed of a combination of wind and boat generated waves and swell penetrating from the ocean. Manly Cove is generally fairly exposed to wind generated waves from the south-south west with the length of water measured at 6.5kms. Average annual wave height is established at 1m, 1.3m with 1 in 10 yr return period and 1.5m with 1 in 50 yr return period.

Boat wakes are generated by vessels sailing or steaming across the harbour and bay. The predominant vessel wave action experienced along the Manly Cove foreshore is considered to be derived from the Manly JetCats, recently replaced by privately operated, FastFerry and Sydney Ferry. At its closest point, the JetCats route is approximately 200m from the Manly Cove beaches. The vessel generated wave height would not be expected to exceed 0.8m. A 4 knot speed limit zone is in place north from Manly Point.

The wash created by vessels berthing and leaving the western side of Manly Wharf has been found to increase strain on the south-eastern portion of the netted swimming enclosure which has the potential to result in structural damage to this structure.

Water quality is crucial in overall coastal processes and to protect the health of the Manly Cove embayment. The total load of pollutants in stormwater, based on the modelling exercise undertaken for a normal rainfall year, is estimated to be approximately 750 kg/year of total Nitrogen; 100 kg/year of total Phosphorus; 50 kg/year of Copper; 70 kg/year of Lead; 150 kg/year of Zinc, and 41 tonnes/year of sediment. Roads and residential land-uses deliver the highest loads of almost all pollutants.

The Office of Environment and Heritage (OEH) under the Department of Premier & Cabinet (DPC) routinely measures the two major indicators of bacterial contamination in coastal water, *faecal coliforms* and *enterococci*, adjacent to the Manly Cove netted swimming enclosure. Faecal coliform levels complied with swimming guidelines 100% of the time over the years between 2003/04 and 2006-07. With the exception of one season, enterococci levels complied 100% of the time over the same period. There are 4 known sewer overflow locations and 2 sewage pumping stations within the study area.

The Department of Primary Industries (DPI) NSW has placed a ban on all commercial fishing within Sydney Harbour, stating the presence of elevated levels of dioxins in fish and crustaceans. Recreational fishing is still permitted, although dietary advice has been issued, stating that limits should be placed on the amount of Harbour caught fish that are consumed.

There are numerous foreshore structures within the study area including Manly Wharf development, the eastern boating precinct and a number of seawalls. The seawall along the back of Manly Cove West Beach, constructed around 1900, runs for approximately 230 m between Oceanworld to the west and Manly Wharf to the east. The seawall along the beach of Manly Cove East Beach, constructed during the late 1800's is approximately 270 m in length.

A number of boating facilities exist within a "Boat Club Precinct" located between the eastern end of Esplanade Reserve and Stuart Street including the Manly Yacht Club, Manly Rowing and Sailing Club, the Manly 16 Foot Skiff Club and the Manly Cove Launch Club.

Manly Cove is a popular boating area with 96 existing moorings, nine of which are for commercial use. All moorings in Manly Cove are positioned within 150 metres of the mean high water mark and are consequently



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located within important seagrass beds. Recently, a total of 30 seagrass friendly moorings have been installed replacing traditional moorings.

The newly renovated Manly Wharf, currently leased to private operators by NSW Maritime, encompasses a range of diverse uses providing waterfront restaurants, shopping and entertainment for the enjoyment of tourists and local day-trippers as well as Manly locals. However, this popularity has resulted in a range of management issues which must be addressed through collaboration between NSW Maritime, Wharf Management and Council.

2.3.2 Coastline Hazards

Beach erosion (or storm demand) is measured in terms of the volume of sand transported offshore and is usually expressed in terms of cubic metres per metre run of beach (m^3/m), as measured above Mean Sea Level (MSL) or Australian Height Datum (AHD). Beach erosion hazard value of $20 m^3/m$ and 20 to $30 m^3/m$ for a 100 year Average Recurrence Interval (ARI) storm event is considered reasonable for both Manly Cove East Beach and Manly Cove West Beach respectively.

Excluding the effects of sea level rise, the total loss of sand from Manly Cove West Beach between 1951 and 2001 was $5.4 m^3/m$. Therefore, a total volume of some $920 m^3$ of sand was eroded from Manly Cove West Beach over the 50 year period or about $0.11 m^3/m$ per year. If the average height of sand on the back beach is taken to be about 2.0 AHD (based on photogrammetric data) this would correspond to a landward shoreline movement of about 0.05 m/year (volume/(height x length x no. years)). In summary Manly Cove West Beach has undergone relatively minor longer term sand loss.

Manly Cove East Beach underwent accretion over the period 1974 to 2001. The total gain of sand on Manly Cove East Beach was $3.3 m^3/m$ between 1974 and 2001 or $1.9 m^3/m$ between 1986 and 2001 (based on profiles 1 to 10 total length of beach 180m). Therefore, there was a total sand volume gain of some $342 m^3$ between 1986 and 2001. This overall accretion can generally be accounted for by artificial beach nourishment that took place after in 1989, 1991 and 1992.

A review of hydrographic surveys dating back to 1895 suggests that the beach profile has not changed significantly over the past 100 years. For Manly Cove East Beach the predicted loss of beach width over the next 20 to 50 years due to sediment loss in severe storms and sea level rise is, conservatively, in the order of 5 to 10 metres. The current width of the beach, measured at mean sea level, is zero to approximately 15 metres.

At present, the hazard posed by drifting sand is not considered significant for Manly Cove Beaches due to the presence of seawalls which prevent the loss of any significant volumes of sand by aeolian processes.

Debris on the foreshore west of Manly Wharf following the 1974 storms showed that wave overtopping of the Manly Cove West seawall occurs in extreme events. The Manly Cove West seawall crest level varies between 3.4 and 3.7 AHD and is below the limit of wave run-up in severe storms.

This overtopping in combination with scour effects at the toe of the seawall could potentially act to destabilise the seawall in an extreme event. Any raise to the seawall is, however, considered both impractical and undesirable from an aesthetic point of view. The potential for wave overtopping does need to be taken into consideration in the design of drainage systems behind the seawall.

During major stormwater runoff events, stormwater collected from back beach areas and discharging into coastal waters can cause significant erosion to the beach berm. There are three stormwater outlets which discharge through the seawall onto Manly Cove East Beach. These outlets scour channels through the beach sand as the stormwater flows across the beach into the harbour. In particular, the eastern two outlets currently create significant channels due to the high beach sand levels relative to the outlet level at this end of the beach.

The discharge velocities associated with these stormwater flows are insufficient to entrain and transport this sand-sized material any significant distance offshore. The delta formed by these sand deposits is redistributed along the beach by wave action and currents.



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During high intensity rainfall events, significant overland flows occur across the paved area between Manly Art Gallery and Oceanworld. Investigations highlight that the drainage system is under capacity in this location with the grate regularly blown open during high intensity rainfall events. This flow contributes to regular scouring of the beach sand to the far west of Manly Cove West beach.

A total of 17 sites with potential cliff and slope instability hazards have been identified. Remediation works at two sites have already been completed. The slope and cliff instability hazards relating to private properties may restrict future development of the site. The remediation of hazards identified on public land is the responsibility of Council who has gained external funding to conduct further geotechnical assessments as recommended within the original CHDS. Once completed the additional geotechnical assessments will enable Council to prioritise remediation based on the level of risk posed to both life and property by individual hazards.

2.3.3 Climate Change & Adaptations

Most of the Sydney region has a warm temperate climate. Average annual rainfall in greater Sydney is slightly less than 950 mm, ranging from more than 1200 mm near the coast to slightly less than 800 mm in the west. Rainfall throughout the region is greatest in summer and autumn, with a slightly higher proportion of winter rainfall on the coast than inland. Expected regional climatic changes to 2050 (DECCW 2010):

- Temperatures are virtually certain to rise in all seasons: The magnitude of projected increases ranges from 1.5–3°C.
- Rainfall is likely to increase in all seasons except winter: summer rainfall is likely to increase 20-50%, with smaller increases likely in autumn (non significant) and spring (10-20%). Winter rainfall is likely to decrease (10-20%).
- Increased evaporation is likely in spring and summer: Evaporation is likely to increase 10-20% in spring and summer. There is no clear pattern in projections for autumn and winter.
- The impact of the El Niño–Southern Oscillation is likely to become more extreme: Current scientific literature indicates that the pattern of climate variability associated with ENSO will continue under enhanced greenhouse conditions. This assessment assumes that ENSO years will continue to be drier than average but also become hotter, leading to more extreme impacts. La Niña years are likely to continue to be wetter than average but will also become warmer. In El Niño events, water stress is likely to be more intense because of higher temperatures.

The climate changes described above and physical responses are expected to result in the following relevant key impacts on land, settlements and natural ecosystems (DECCW 2010).

Impacts on land

- Rising sea level is virtually certain to increase coastal recession: sea level rise and storms are virtually certain to increase coastal inundation and erosion, causing the erodible coastline to recede, typically by 20–40 m by 2050 and 45–90 m by 2100. Shoreline retreat is very likely to be higher in estuaries and on beaches with lower gradients, particularly where the ocean breaks through or washes over coastal dunes. Where beaches are backed by seawalls and promenades, there is very likely to be a narrowing and potential loss of sandy recreational areas unless beach replenishment programs are put in place.
- Salt water from sea level rise is likely to affect soils on coastal plains.
- Higher rainfall is likely to increase the risk of mass movement of soils in vulnerable areas.
- Organic matter in soils is likely to increase in most areas, but decline in coastal swamps.
- Sea level rise and flooding are likely to affect Aboriginal cultural heritage values.

Impacts on settlements

- Sea level rise is virtually certain to affect many settlements near estuaries and beaches: residential and commercial beachfront development in the region is virtually certain to be threatened by either ocean inundation or coastline recession. Dwellings, tower blocks, commercial premises, registered clubs, caravan parks, surf clubs, beachfront roads and associated infrastructure will be potentially at risk by 2050.
- Infrastructure at risk includes major ports, airports and sewerage works: Low-lying settlements have a wide range of vulnerable built assets. Many public boat ramps, recreation jetties and wharves are likely to be affected by sea level rise, as well as local roads, parks and reserves. Low-lying sewerage infrastructure is at risk, posing potential risks to water quality and public health.



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- Most property boundaries referenced to the high water mark will change. An important consequence of sea level rise is that beachfront or waterfront property boundaries referenced to the mean high water mark are virtually certain to move inland over time. About 50,000 properties are likely to be affected state-wide, but regional figures are not available.
- Existing coastal protection structures are likely to be affected. For much of the region, infrastructure is already protected by seawalls and revetments, which are likely to require ongoing maintenance as sea levels rise. Sea walls and revetments protect beaches such as Cronulla, Maroubra, Coogee, Bondi, Manly, Curl Curl, Dee Why and Terrigal.
- The frequency, intensity and extent of flooding are likely to increase.
- Urban streams are likely to flood more frequently. Increases in rainfall intensities, particularly in short duration storms, are likely to cause additional flooding from local streams. Floodwaters are likely to rise more rapidly, potentially increasing the danger of these local floods to the community.
- Settlements on estuaries and coastal lakes are vulnerable.
- Water supplies are likely to be affected by hydrological changes.

Impacts on ecosystems

- Sea level rise is likely to threaten coastal ecosystems. Rising watertable and saltwater intrusion are likely to affect lowland ecosystems in the coastal zone. Salt water is likely to approach or reach the surface in lower parts of the landscape, converting freshwater ecosystems into types adapted to more saline conditions.
- Sea level rise is likely to threaten some estuarine communities. Sea level rise and shoreline retreat are likely to induce a large-scale modification or loss of intertidal and sub tidal ecosystems as water depth, turbidity, sedimentation, pH, temperature and salinity change. Mangroves are also likely to be displaced but new mangrove habitat should form in other places.
- Climate change is likely to reduce migratory shorebird habitat and populations. Rock platforms, sand spits, mudflats and salt marshes provide important foraging and nesting areas for a suite of shorebirds, including some species that migrate seasonally along the East Asian–Australasian Flyway. Many migratory shorebird populations have already declined because of habitat modification along migratory routes, and climate change is likely to exacerbate this trend.

The Sydney Coastal Councils Group has assessed the vulnerability of the SCCG region and its' member Councils to climate change. Manly Council possesses a moderate degree of vulnerability to climate change relative to other Councils. However, due to its coastlines and coastal development, vulnerability to sea-level rise and coastal hazards was assessed to be particularly high. In addition, stormwater management may become a challenge in the future due to development and projected increases in rainfall. The vulnerability of the coastline and the paucity of natural landscapes suggest the Council's natural ecosystems have a low resilience to the effects of climate change.

Council has completed a "Manly LGA Climate Change Risk and Adaptation Action Plan" Project under the Commonwealth Department of Climate Change's Local Adaptation Pathways Program (LAPP). Council is building on the outcomes of this project in order to develop a more comprehensive Adaptation Action Plan for Manly LGA which will provide a strategic approach to climate change risk management and adaptation for Manly Council and the community. It will incorporate elements of the Cardno (2008) report titled '*Climate Change Actions for Manly LGA 2008 > 2038*' and also build upon knowledge and outcomes of the Sydney Coastal Council Group's '*Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises*' (2008). Statewide Mutual has been engaged to assist with this process.

2.3.4 Ecological Environment

The Manly Cove marine environment exhibits a diversity of habitats with a wide range of substrata, vegetation, depths, exposures and their combinations with aquatic plant communities being among the most abundant and conspicuous habitats of sub-tidal reefs in Sydney Harbour.

Sydney Harbour is subject to a variety of stresses from human activities that have the potential to decrease species diversity and abundance. The marine environment within the study area ranges from rocky intertidal zone to seagrass beds. Three predominant aquatic communities along the foreshore of the study area are



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'mixed rocky intertidal & sand', 'sandy beaches' and 'seagrass beds'. The conservation status of these three ecological units is 'high', 'medium' and 'high', respectively.

Seagrass beds within the study area provide important foraging grounds for Manly's endangered population of Little Penguins (*Eudyptula minor*). In 2003 *Caulerpa taxifolia* was identified in the waters of Sydney Harbour including a number of locations within North Harbour. This has now been recorded in Manly Cove, as contributed by EcoDivers:

'We first noticed it in Manly cove west in the area behind the pool while conducting seagrass survey around Oct / Nov 2009 . it was in a number of locations and by the end of that summer was rampant throughout the cove. It was probably there in small quantities prior but went unnoticed until then when it became more obvious due the increased spread by fragmentation by constant anchoring in the area.'

'The entire pool area was manually cleared and several outbreaks were removed from outside the pool and the areas marked for monitoring, this very time consuming method of removal was found to be effective. The caulerpa being carefully removed by hand and double bagged, dried and burnt approximately 8 sqm of caulerpa was removed much of which was initially isolated plants.'



Source: Eco Divers

The intertidal area within the study area has a range of habitats including rocky reefs and platforms, sandy beaches and artificial habitat including seawalls, jetties, pontoons and a netted swimming enclosure. Significant habitat value is exhibited by the existence of the west Manly Cove netted-swimming enclosure. The enclosure is popular with divers and snorkelers wanting to observe the large colony of protected seahorses known to live amongst the marine growth which grows on the net.

North Harbour Aquatic Reserve lies between an imaginary line from the headlands at North Head and Grotto Point and another line joining Little Manly Point, Manly Point and Forty Baskets Beach. The reserve extends from the seabed at these outer boundaries up to the mean high water mark between them and covers an area



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of approximately 260 hectares. There is a proposal to extend this Aquatic Reserve to include total water area of the Manly Cove study area.

The study area houses a high diversity of marine species due to the close proximity to the ocean and resultant mixing of warm tropical waters from the north and cooler temperate waters from the south meet. A number of populations of protected, endangered and vulnerable marine fauna species are found in the vicinity of the Manly Cove study area.

There is an endangered colony of Little Penguins known to utilise the study area for nesting and foraging. Critical habitat has been declared in the south eastern foreshore of Manly Cove and a Wildlife Protected Area at Federation Point. Little Penguins are also nested under the Manly Wharf.

The terrestrial environment within the study area has seen the largest change. Bushland reserves are scattered throughout the study area with Gilbert Park, Tower Hill Park, West Esplanade Park and East Esplanade Park being the largest in area. Smaller patches of bushland on both public and private land do exist throughout, and in some places provide corridors between the reserves. There are four specific vegetation communities present within and/or adjacent to the study area.

Fragmentation, clearance and degradation of native vegetation in the Manly Cove study area have reduced habitat value for native fauna. Small pockets of remnant bushland do exist between Oceanworld and Federation Point and on Manly Point, providing important habitat for the endangered colony of Little Penguins (*Eudyptula minor*). Grassed areas within the study area are also known to provide nesting and foraging habitat for the endangered North Head population of long-nosed Bandicoots (*Perameles nasuta*).

While fauna surveys of natural bushland did not extend to these pockets a total of 22 bird species (2 introduced), 9 mammals (5 introduced) and 4 species of native reptiles were recorded in adjacent bushland reserves. Grey-headed Flying Fox (*Pteropus poliocephalus*) is the only threatened species recorded.

2.4 CURRENT CONDITION

2.4.1 Human Interventions

Human activities have altered and modified the natural systems of the study area. Foreshore development has been extensive. From the early 1820s scattered settlement began in the Manly Cove area. Henry Gilbert Smith bought John Thompson's 100 acres in 1853. In 1855, Smith's Ellensville Plan was drawn up. During this year, Manly Wharf and Pier Hotel were constructed; Corso widened and Sunday ferry service commenced. Manly Pavilion was constructed in 1870. Manly Cove Harbour Pool and Boardwalk was constructed in 1931 but completely damaged during 1974 storm. Seawalls, both public and private, exist throughout the study area. Two prominent seawalls are Manly Cove West Beach Seawall & the Manly Cove East Seawall. The Manly Cove West Beach seawall was constructed around 1900 and extends approximately 230m between Oceanworld to the west and Manly Wharf to the east. The Manly Cove East seawall, originally constructed in the late 1800's, is approximately 270 metres long extending between Manly Wharf and the eastern end of the beach. A number of boating facilities exist within a "Boat Club Precinct" located between the eastern end of Esplanade Reserve and Stuart Street including the Manly Yacht Club, Manly Rowing and Sailing Club, the Manly 16 Foot Skiff Club and the Manly Cove Launch Club. Public access to foreshore is available at several points. There is no public pontoon/jetty in the study area. The five most important activities carried out by residents in Manly Cove are walking/jogging, swimming, passive recreation, picnic/BBQ and commuting. Other activities are boating, sailing, dog walking, snorkelling/scuba diving and recreational fishing. These alterations have all impacted the natural environment.

2.4.2 Processes & Impacts

With most parts of the Manly Cove CZMP study area being highly urbanised, there is significant pressure placed on environmental health.

Water quality is crucial in overall coastal processes and to protect the health of the Manly Cove embayment. The total load of pollutants in stormwater, based on the modelling exercise undertaken for a normal rainfall year, is estimated to be approximately 750 kg/year of total Nitrogen; 100 kg/year of total Phosphorus; 50



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kg/year of Copper, 70 kg/year of Lead, 150 kg/year of Zinc, and 41 tonnes/year of sediment. Roads and residential land-uses deliver the highest loads of almost all pollutants. Two end-of-pipe GPTs presently exist in East Esplanade within the Manly Cove CZMP study area. The Department of Primary Industries (DPI) NSW has placed a ban on all commercial fishing within Sydney Harbour including the study area, because of the presence of elevated levels of dioxins in fish and crustaceans. There are four known sewer overflow locations within the study area, all of which have the potential to significantly impact upon local water quality and the sensitive marine environs of Manly Cove and the North Harbour Aquatic Reserve.

Boating is an extremely popular recreational activity within the study area, but it can have detrimental impacts on the marine environment. Anchors, moorings, propellers and hulls can all damage the seafloor and associated seagrass beds. Also, boating contributes to water pollution which also degrades the marine environment.

An ecosystem health card has also been developed for the study area.

The study area will experience many of the impacts of climate change. These impacts are likely to include: sea level rise; inundations, blocked storm water outlets, and more frequent and more severe storm events.

2.5 CURRENT UTILISATION

The current land uses within the Manly Cove study area are predominantly residential development (55.1%), followed by road surfaces (28.97%), open space and parkland (8.11%), commercial (7.26%) and special uses (0.67%). Long stretches of parkland (Esplanade Park) separate residential and commercial blocks from Manly Cove beaches, except the area from Stuart Street south to Manly Point where residential properties border shoreline. Esplanade Park and a small Oyama Street Reserve occur in the Manly Cove area providing space for many passive activities. Manly Scenic Walkway runs through the study area.

The Manly Cove study area is locally significant providing a range of important uses, services and linkages for the Manly LGA. Manly Wharf, the beaches, harbour and East Esplanade Park are central to many activities.

The numerous festivals, markets, sporting and social events held in the Manly CBD as well as commercial tourism operations within the study area are popular for both tourists and locals alike. It is this popularity which highlights the need to effectively manage Manly Cove to ensure environmental protection while enhancing opportunities for recreation.

The attraction of Manly Cove is enhanced by its generally good water quality. This results in numerous primary and secondary contact recreational pursuits, including swimming, sailing, kayaking, diving, sail boarding, and boat and shore fishing, which are immense value to locals and visitors alike. For these reasons, recreational visitation and use of the waterway is extremely high with significant "flow on" effects for the local and regional economies.

The Manly Cove study area houses a number of key waterside facilities which provide for water based recreation, particularly sailing activities. The Boating Precinct located on the eastern foreshore of Manly Cove was first established by early European settlers during the 1870s, growing with Manly's popularity as a seaside resort. Today the club precinct remains relatively unchanged and creates distinct characteristics which the community has recognised as being important to retain into the future.

The study area is zoned under both the *Manly Local Environment Plan 1988* and the *Sydney Regional Environmental Plan - Sydney Harbour Catchments 2005* or simply the Harbour REP. The Manly LEP establishes land use zones within the study area as zone 2 – Residential, 3 – Business Zone, 5 – Special Uses Zone and 6 – Open Space. The foreshores and waterways of the study area are designated as W2 (Environment Protection) zone under the Sydney Harbour Regional Environmental Plan.

**MANLY COVE COASTAL ZONE MANAGEMENT PLAN****2.6 PLANS OF MANAGEMENT FOR COMMUNITY LANDS**

Under the *NSW Local Government Act 1993*, Council is required to prepare Plans of Management (PoMs) for Public Land classified as 'Community Land'. There are three separate parcels of community land within the study area. These include:

- A 209 m² parcel of land described as Tower Hill Park (DP 60402). This parcel is currently used as a Public Reserve.
- The 177 m² parcel of land which makes up a portion of the Town Hall forecourt (DP 1121113); and
- The 650 m² parcel of land at the southernmost tip of Manly Point (DP 2/564246) which is designated as Public Reserve.

Each of these parcels is zoned as 'open space'. These lands are used either as reserve or pedestrian pathway.

In 1996 Manly Council prepared a generic Plan of Management for all community lands. This Plan sufficiently meets the requirements for Tower Hill Park (DP 60402) and the parcel of land which makes up a portion of the Town Hall forecourt (DP 1121113).

However, due to the designation of Manly Point as Critical Habitat for the Manly Little penguin population, a specific Plan of Management is required for the public space in front of 'Kilburn Towers' on Manly Point. A Plan of Management, known as the *Plan of Management for Manly Peace Park* (2004) was developed as part of the Little Manly Coastline Management Plan. This PoM includes the land identified as DP 2/564246.



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3. STRATEGIC FRAMEWORK & MANAGEMENT STRATEGY

3.1 GENERAL

The Coastal Zone Management Plan (CZMP) is a tool for integrating the needs and values of the environment within the development-based planning framework of local and state government. Therefore, the focus of the Plan is on addressing environmental concerns through a series of actions that are both effective and easy to implement.

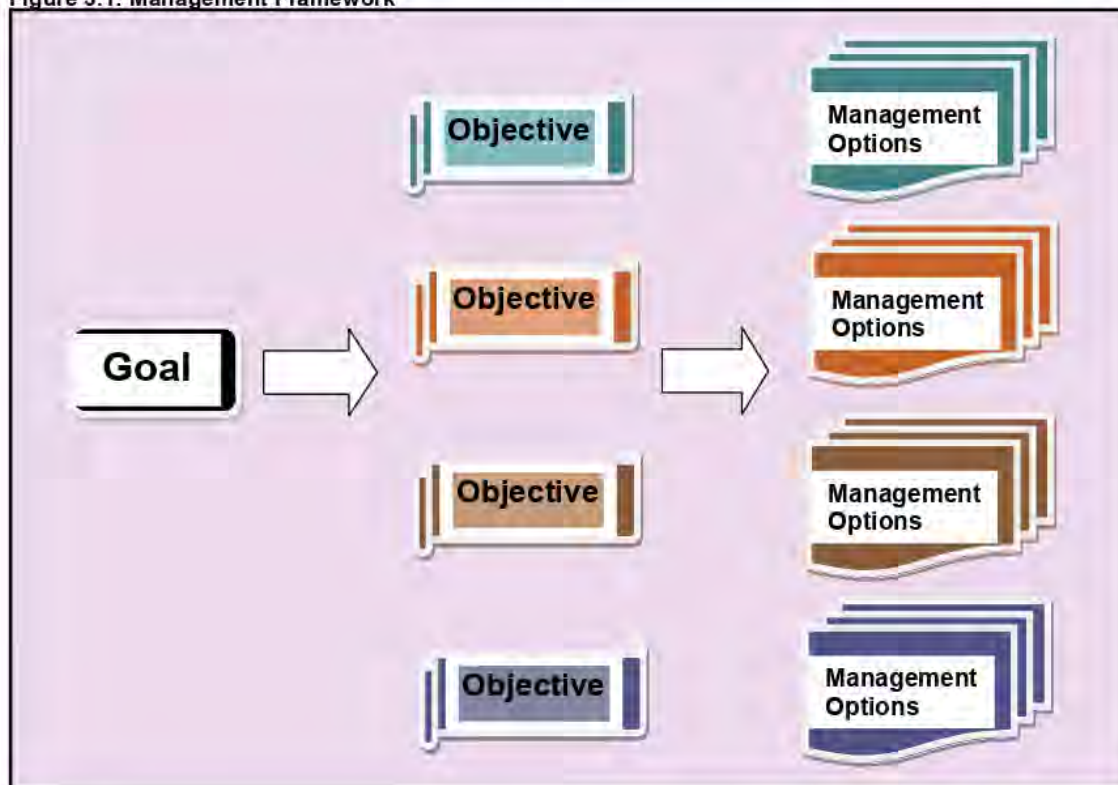
A series of goals and objectives for the future management of the Manly Cove were developed on the basis of information received through the community and stakeholder consultations, input from the the Harbour Foreshores & Coastline Management Committee and a sound appreciation of coastal processes and human interactions.

Key management issues and goals have already been described in section 1.6.

Management Objectives provide the 'goal posts' towards which future management of the Manly Cove should be directed. In short, the objectives aim to rectify the problems or issues faced by the study area, whilst preserving and enhancing its inherent values.

For each management issue a goal has been defined, along with a range of management objectives that have been further partitioned into management options (**Figure 3.1**).

Figure 3.1: Management Framework





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3.2 MANAGEMENT PRINCIPLES

The basis for the Coastal Zone Management Plan needs to be Ecologically Sustainable Development (ESD). ESD is development that aims to meet the needs of the present, while conserving our ecosystems for the benefit of future generations. By following the principles of ESD, we should be able to reduce the likelihood of serious environmental impacts arising from our present day economic activities.

There are four basic principles of Ecologically Sustainable Development (ESD):

1. Conservation of biological diversity and ecological integrity;
2. Social equity, including inter-generational equity;
3. Improved valuation, pricing and incentive mechanisms; and
4. The precautionary principle.

Further, the Guidelines for Preparing Coastal Zone Management Plan (NSW Government & DECCW 2010) describe the following ten principles that should be considered in evaluating potential coastal management actions:

1. Consider the objects of the *Coastal Protection Act 1979* and the goals, objectives and principles of the NSW Coastal Policy 1997 and the NSW Sea Level Rise Policy Statement 2009
2. Optimise links between plans relating to the management of the coastal zone
3. Involve the community in decision-making and make coastal information publicly available
4. Base decisions on the best available information and reasonable practice; acknowledge the interrelationship between catchment, estuarine and coastal processes; adopt a continuous improvement management approach
5. The priority for public expenditure is public benefit; public expenditure should cost-effectively achieve the best practical long-term outcomes
6. Adopt a risk management approach to managing risks to public safety and assets; adopt a risk management hierarchy involving avoiding risks where feasible and mitigation where risks cannot be reasonably avoided; adopt interim actions to manage high risks while long-term options are implemented
7. Adopt an adaptive risk management approach if risks are expected to increase over time, or to accommodate uncertainty in risk predictions
8. Maintain the condition of high value coastal ecosystems; rehabilitate priority degraded coastal ecosystems
9. Maintain and improve safe public access to beaches and headlands consistent with the goals of the NSW Coastal Policy
10. Support recreational activities consistent with the goals of the NSW Coastal Policy

These principles form the basis of matters to be considered in deciding potential coastal management actions.

3.3 STATE & OTHER TARGETS

NSW Government has released, in March 2010, the NSW State Plan 2010. The State Plan is a long term plan to deliver the best possible services to the people of NSW. The challenge is to balance competing demands in an environment of change, high expectations and limited resources. The State Plan is an open and clear response to that challenge, setting clear priorities to guide Government decision making and resource allocation. One of the seven visions set in the State Plan 2010 is "Our energy is clean, our natural environment is protected and we are leaders in tackling climate change". The State will continue to deliver better environmental outcomes for native vegetation, biodiversity and our land, rivers and coastal waterways. One of the Priorities of the NSW State Plan 2010 is:

"Protect our native vegetation, biodiversity, land, rivers and coastal waterways"

specifying the target as "Meet our state-wide targets for natural resource management to improve biodiversity and native vegetation, sensitive riverine and coastal ecosystems, soil condition and socio-economic wellbeing.



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The Natural Resources Commission (NRC) has established the state-wide natural resource management targets (**Box A**).

| Box A | State-wide targets for natural resource management |
|-------|---|
| | <p style="text-align: center;">Biodiversity</p> <ol style="list-style-type: none"> 1. By 2015 there is an increase in native vegetation and an improvement in native vegetation condition. 2. By 2015 there is an increase in the number of sustainable populations of a range of native fauna species. 3. By 2015 there is an increase in the recovery of threatened species, populations and ecological communities. 4. By 2015 there is a reduction in the impact of invasive species. <p style="text-align: center;">Water and Coast</p> <ol style="list-style-type: none"> 5. By 2015 there is an improvement in the condition of riverine ecosystems 6. By 2015 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses 7. By 2015 there is no decline in the condition of marine waters and ecosystems 8. By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained 9. By 2015 there is an improvement in the condition of estuaries and coastal lake ecosystems <p style="text-align: center;">Land</p> <ol style="list-style-type: none"> 10. By 2015 there is an improvement in soil condition 11. By 2015 there is an increase in the area of land that is managed within its capability <p style="text-align: center;">Community</p> <ol style="list-style-type: none"> 12. Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being 13. There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management |

At regional level, the Sydney Metropolitan Catchment Management Authority (SMCMA) is working to meet community expectations by delivering natural resource management across Sydney. Natural resources include land, rivers, estuaries and coastal systems. The SMCMA meets its government and legislative expectations by implementing the Sydney Metropolitan Catchment Action Plan. This is a strategic planning tool that identifies the key natural resource features the Sydney community wants to protect and improve and has the following vision:

"Community growth reconciled with nature: An urban community that thrives within a valued natural landscape."

The SMCMA has completed its Catchment Action Plan (CAP). The CAP will guide the activities of the SMCMA while forming the basis for partnerships with the community, business, industry and government. The CAP will assist the SMCMA in ensuring that natural resource management projects are undertaken in priority areas within the catchment, and that these projects lead to the best outcomes for the environment and the community. There are four themes: biodiversity, water, land and community. Under each of these, there are Catchment Targets (**Box B**), Management Targets and Key Actions & Partners.



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Box B

SMCMA Catchment Targets

Biodiversity

Enhance ecological resilience and connectivity of bushland and aquatic habitats

- CTB1 By 2016 the extent and condition of terrestrial native vegetation in all landscapes is maintained or improved.
- CTB3 By 2016 there is an increase in the connectivity of terrestrial native vegetation.
- CTB4 By 2016 aquatic and terrestrial threatened species and Endangered Ecological Communities (EECs) and endangered populations are better conserved by implementing actions identified in the Priorities Action Statement.
- CTB5 By 2016 the impact of terrestrial and aquatic invasive species on biodiversity is reduced by decreasing the number, distribution and impact of invasive weeds, pest animals and pathogens.

Water

Enhance the positive connectivity of aquatic processes

- CTW1 By 2016 there is a net improvement in the health of modified waterways and riparian corridors and conservation of natural waterways.
- CTW2 By 2016 there is an improvement in the condition and extent of wetlands.
- CTW3 By 2016 there is measurable progress towards achieving the Water Quality and River Flow Objectives adopted for each waterway.
- CTW4 By 2016 there is an improvement in the quality and sustainable use of groundwater systems so that they are able to support groundwater dependent ecosystems and designated beneficial uses.
- CTECM1 By 2016 there is an improvement in the condition of estuaries and coastal lakes.
- CTECM2 By 2016 there is an improvement in the condition of coastal and marine ecosystems.

Land

Reduce the negative edge effects of urban expansion

- CTLD1 By 2016 there is an increase in the amount of land managed within its capability.
- CTLD2 By 2016 implement actions under the Sydney Metropolitan Strategy that recognise, protect and improve key natural resources.
- CTLD 3 By 2016 Indigenous cultural landscape values are identified, acknowledged and incorporated into all natural resource management activities and land use planning.

Community

Improve community and institutional connections between natural resources, strong communities and robust economy

- CTC1 By 2016 more people, communities and organisations have increased capacity to engage in practices that contribute to improved natural resource management.
- CTC2 By 2016 there is improved focus and collaboration between organisations that act in or influence natural resource management.
- CTC3 By 2016 there is a framework for monitoring, evaluating and reporting natural resource indicators.
- CTC4 By 2016 there is improved recognition across the community of the contribution of healthy natural resources to valued social and economic activities in the region.



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4. STRATEGIC MANAGEMENT OPTIONS

Strategic management options were formulated covering a wide range of structural and non-structural solutions. Responsibility for implementing the options is spread across local government (planning, management and works staff), state government agencies and volunteer community groups.

This Plan sets 10 Goals and 25 Objectives to be addressed through 66 Management Options (**Table 4.0**). Only 34 of these are new activities. Of these 34, seven management options are proposed for immediate implementation, 15 within 2 years, 10 within 3-4 years and only two at later years. Overall, 32 management options have been rated to have high priority, 29 as medium priority and five as low priority.

Table 4.0 Facts & Figures about proposed management options

| Management Issue | Objectives set | Options proposed | Priorities | | | Activity Type | | Implementation Time Frame of new activities | | | |
|--------------------------|----------------|------------------|------------|-----------|----------|---------------|-----------|---|----------------|------------------|-----------------------------|
| | | | High | Medium | Low | On-going | New | Immediate | Within 2 years | Within 3-4 years | On 5 th or later |
| Aquatic Habitat | 3 | 9 | 4 | 5 | 0 | 4 | 5 | 2 | 3 | 0 | 0 |
| Boating Facilities | 3 | 8 | 5 | 3 | 0 | 2 | 6 | 2 | 2 | 2 | 0 |
| Public Facilities | 3 | 7 | 4 | 2 | 1 | 2 | 5 | 0 | 4 | 1 | 0 |
| Water Quality | 3 | 8 | 6 | 2 | 0 | 3 | 5 | 1 | 1 | 2 | 1 |
| Terrestrial Ecology | 2 | 6 | 4 | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Hazards & Climate Change | 5 | 14 | 5 | 8 | 1 | 8 | 6 | 1 | 3 | 1 | 1 |
| Waste Management | 2 | 6 | 3 | 2 | 1 | 4 | 2 | 0 | 1 | 1 | 0 |
| Access | 1 | 4 | 0 | 3 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Geodiversity | 1 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 |
| Heritage Conservation | 2 | 2 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Total | 25 | 66 | 32 | 29 | 5 | 32 | 34 | 7 | 15 | 10 | 2 |



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4.1 OPTIONS ADDRESSING AQUATIC/INTERTIDAL HABITAT CONSERVATION & MANAGEMENT

The key habitat management priority for the study area is to protect habitats of high ecological and coastal value. It is more cost effective to protect these areas now than to rehabilitate them in the future if habitats are allowed to deteriorate.

A total of nine management options are proposed addressing three different objectives. Of these, four management options have been rated as of high priority and the remaining five as medium priority. Two management options have been proposed for immediate implementation. Four management options are already on-going activities.

Goal

Restore and maintain a healthy and diverse mix of aquatic and intertidal habitats that will maintain and improve biodiversity and ecological functions of Manly Cove.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|--|---------------------------|--------------------|---------|
| | | | Individual | Overall |
| AH.1 To achieve community awareness of and involvement in the conservation of marine ecology through education and participation | AH.1.1 Involve the community and user groups in the provision of marine focussed educational events | On-going | H(2), M(4), L(1) | Medium |
| | AH.1.2 Encourage the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass. | Immediate | Council determined | High |
| AH.2 Ensure all areas of ecological significance are managed in an integrated and sustainable manner | AH.2.1 Pursue a submitted proposal seeking the extension of the boundary of North Harbour Aquatic Reserve to include Manly Cove (Little Manly and North Harbour). | Immediate | H(4), M(1), L(2) | High |
| | AH.2.2 Assist NSW DPI with preparation and implementation of the North Harbour Aquatic Reserve Management Plan that also includes Manly Cove. | Within 2 years | H(4), M(1), L(2) | High |
| | AH.2.3 Protect and enhance marine/intertidal habitats within and adjacent to Manly Cove | Within 2 years | H(3), M(4), L(0) | Medium |
| | AH.2.4 Continue to encourage NSW DPI to support conservation of seagrass beds in Manly Cove. | On-going | H(2), M(5), L(0) | Medium |
| | AH.2.5 Replacement of the suspended netting currently used for the swimming enclosure at Manly Cove with seahorse habitat friendly net. | Within 2 years | - | High |
| AH.3 To ensure the activities within | AH.3.1 Encourage recreational fishing but minimise the impact that recreational | On-going | H(3), M(3), L(0) | Medium |



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| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|------------------|---------|
| | | | Individual | Overall |
| Manly Cove are carried out in a manner that maintains or improves the ecological condition of marine habitats and species. | fishing activities have on the intertidal and marine ecology, through education and regulation | | | |
| | AH.3.2 Minimise the impact of diver/snorkeler activities and routine maintenance upon the colony of seahorses known to colonise the Manly Cove netted swimming enclosure. | On-going | H(3), M(2), L(3) | Medium |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

AH 1 To achieve community awareness of and involvement in the conservation of marine ecology through education and participation.

AH.1.1 Involve the community and user groups in the provision of marine focussed educational events

Context: Targeted community events and education programs contribute to better understanding and importance of marine ecosystem. The management and protection of aquatic habitats was identified through the community consultation process as a significant issue. The vast majority of submissions identified that the protection of native marine and threatened species, the creation and maintenance of marine reserves and the control of introduced species are all important factors in achieving improved management of aquatic resources. This confirms that the local community is aware of the many issues and pressures faced by our marine environment.

Manly Environment Centre regularly organises marine focussed educational events catering to the needs of various age and user groups. Ocean Care Day, A Day in the Bay are some of regular community events.

Manly Daily can be used to share and disseminate information to the community.

Actions: This option involves regular organisation of education events with increased community participation.

Objectives addressed: AH1

Addressing SMCMA catchment targets: CTC1 – increased capacity to people, communities and organisations

Addressing actions under Manly Council's MSS 2006: C1.3.16 – Encourage community involvement

Performance Target: Education programs continued

Indicative Cost: \$30,000

Time Frame: On-going

Responsible Agency: Manly Council – MEC, EPP

Priority: Medium

AH.1.2 Encourage the establishment of a community-based seagrass monitoring program following a baseline survey on distribution and health of seagrass in Manly Cove and investigation of the infiltration of non-native seagrass.



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Context: Extensive stands of seagrass, kelp and various algae exist across the Manly Cove sea bed. These habitats form fragile ecosystems which can be easily destroyed by a number of anthropogenic activities including reclamation, dredging, the construction of jetties, pontoons, wharves and ramps, water pollution and increased turbidity, poor land management and some recreational activities. I&I NSW map seagrass beds all over NSW every 4-5 years. A lot of changes happen in between. Since March 2010, *Posidonia australis* (Strapweed) seagrass beds in Sydney Harbour (and other places) has been listed as an Endangered Population in NSW. Further *Caulerpa taxifolia* is known to be present in the area. A baseline survey, with assistance from NSW DPI, has become important. Community can then be encouraged to take active role in monitoring seagrass beds. There exists Seagrass-Watch, a community based monitoring program in Queensland. Seagrass-Watch collects data about the condition and trend of near-shore seagrasses and provides an early warning of major changes in seagrass abundance, distribution and species composition.

Actions:

- Encourage and pursue NSW DPI to conduct a baseline survey and mapping at Manly Cove.
- Conduct an investigation on the infiltration of non-native seagrass at Manly Cove
- Assess interest in the community and willingness to volunteer for the work.
- Discuss with NSW DPI about an initiative of a structured community based seagrass monitoring program.
- Establish and agree on a modality including monitoring sites and reporting format.
- Encourage community participation in result analysis and interpretation under a professional direction and liaison with NSW DPI.

Objectives addressed: AH1

Addressing actions under Manly Council's MSS 2006: C1.2.6 – local residents involved in seagrass monitoring; C1.3.16 – Encourage community involvement

Performance Target: Survey & investigation completed; Participatory monitoring initiated

Indicative Cost: \$20,000

Time Frame: Immediate

Responsible Agency: Manly Council- NR, EPP; NSW DPI

Priority: High

Objective

AH 2 Ensure all areas of ecological significance are managed in an integrated and sustainable manner.

AH2.1. Pursue a submitted proposal to DPI to extend the boundary of North Harbour Aquatic Reserve to include Manly Cove (Little Manly and North Harbour).

Context: North (Sydney) Harbour Aquatic Reserve lies between an imaginary line from the headlands at North Head and Grotto Point and another line joining Little Manly Point, Manly Point and Forty Baskets Beach. The reserve extends from the seabed at these outer boundaries up to the mean high water mark between them and covers an area of approximately 260 hectares.

At the Ordinary Meeting of 17 March 2008, Manly Council moved a resolution to extend the boundaries of North Harbour Aquatic Reserve to include Little Manly, Manly Cove and North Harbour.

Letters of support were sought and received from community user groups, NGOs, research organisations, relevant agencies and Precincts. Based on Council resolution, a proposal has been formally submitted to DECC (responsibility now shifted to NSW DPI) for its approval.

Council has received the following response from DECC in a letter dated 7 May 2009:

"The Department is currently analysing adequacy of the existing system of marine protected areas in NSW, and this analysis will inform any decision regarding the declaration of new, or the expansion of existing, marine protected areas including within the Hawkesbury Shelf marine bioregion."



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Action:

- Pursue the submission with NSW DPI

Advantages: Area under aquatic reserve will increase. Biodiversity of the area will be enhanced through expanded regulation and improved management. This will be achieved through a collaborative approach to management, education and compliance.

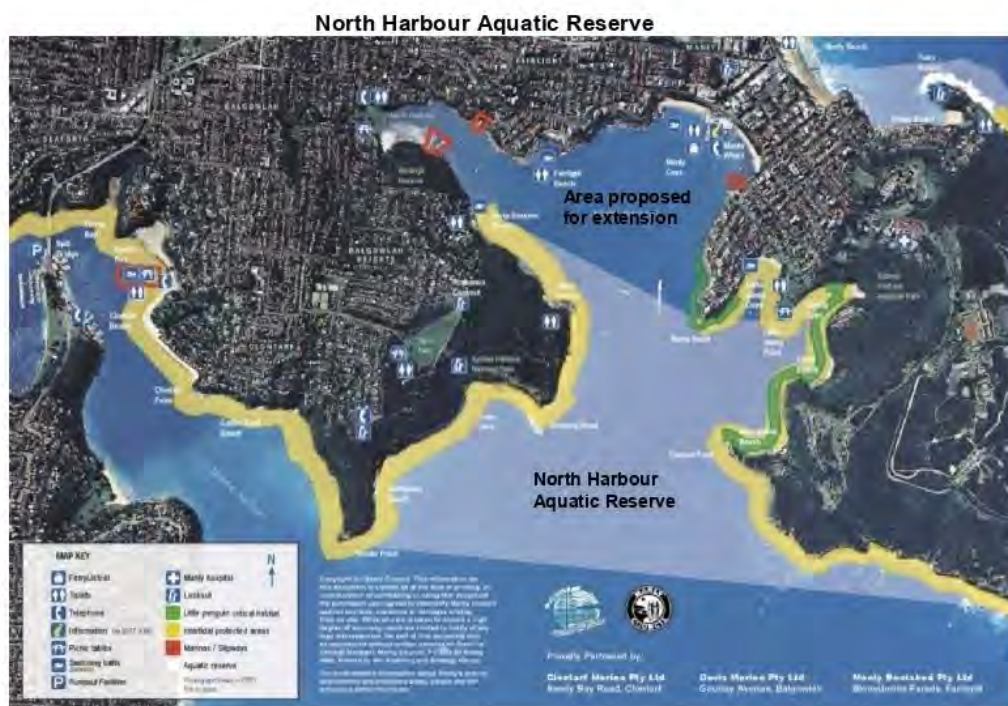
Disadvantages: Lack of ability for State Government to enable compliance activity

Objectives addressed: AH2

Addressing actions under Manly Council's MSS 2006: C1.2.8 – partnership with NSW DPI and NSW Maritime to conserve marine resources; C1.2.14 – lobby to extend boundary of the Aquatic Reserve in North Harbour

Addressing SMCMA catchment targets: CTECM2 – improvement in the condition of coastal and marine ecosystems

Addressing NRC targets (State Plan 2010): 7 – marine water and ecosystems



The expansion of the Aquatic Reserve does not mean 'no take' for recreational fishing.

Performance Target: *North Harbour Aquatic Reserve expanded*

Indicative Cost: Staff Cost

Time Frame: Immediate

Responsible Agency: Manly Council – NR

Priority: High

AH 2.2 Assist NSW DPI with preparation and implementation of the North Harbour Aquatic Reserve Management Plan, that also includes Manly Cove.



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Context: The NSW Department of Primary Industries (NSW DPI) is currently responsible for the administration and management of NSW Aquatic Reserves. NSW Aquatic Reserves are managed under the Fisheries Management Act 1994 and the Fisheries Management (Aquatic Reserves) Regulation 2002. Under s197.A of the Fisheries Management Act 1994 the Minister for Environment may make arrangements for the preparation of a Management Plan for an Aquatic Reserve.

The OEH (formerly DECCW), under an Operational Agreement with Manly Council, has already agreed in principle to prepare the North Harbour Aquatic Reserve Management Plan.

The OEH has also prepared, for Cabbage Tree Bay Aquatic Reserve, a draft Fisheries Management (Aquatic Reserve) Regulation 2009 and Implementation Strategy. Similar Regulation is necessary also for the North Harbour Aquatic Reserve.

Community involvement is critical in the management of aquatic reserves. Through public involvement in management planning processes and in implementation, the Government and Council seek to achieve community partnership, providing ongoing protection for the future.

Actions:

- Establish a multi-stakeholder Working Group ensuring wider community representations.
- Assess the current health of the reserve and take appropriate measures
- Carry out User's Survey
- Conduct community consultation and seek input in identifying management options
- Identify management options in consultation with the Working Group
- Prepare and adopt Regulation and Implementation Strategy
- Implement the Management Plan and encourage community monitoring during implementation
- Review the plan periodically as factors like overfishing and climate change has accelerated the impacts marine habitats.

Advantages: This will guide measures to protect biodiversity and varied marine life and habitats of the North Harbour Aquatic Reserve.

Disadvantages: Restrict all types of fishing in all or part of the reserve

Objectives addressed: AH1, AH 2, AH3, HR3 and HR4

Addressing actions under Manly Council's MSS 2006: C1.2.8 – partnership with NSW DPI and NSW Maritime to conserve marine resources

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved; CTECM2 – improvement in the condition of coastal and marine ecosystems; CTC1 – community engagement in improved NRM

Addressing NRC targets (State Plan 2010): 7 – marine water and ecosystems

Performance Target: Strategy prepared and implemented

Indicative Cost: Staff Time

Time Frame: Within 2 years

Responsible Agency: NSW DPI, NSW Maritime and Manly Council – NR

Priority: High

AH2.3. Protect and enhance marine/inter-tidal habitats within and adjacent to Manly Cove.

Context: Foreshores of Sydney Harbour and all its tributaries are protected under Intertidal Protected Area (IPA) excluding foreshores of Manly Cove (see map under AH 2.1). Excluded areas are foreshores north of a line from Manly Point to the south end of Forty Baskets beach.

There are currently nine IPAs in NSW. These are temporary fishing enclosures and complement the NSW marine protected area system by protecting rocky shore intertidal invertebrates. IPAs extend from the mean high water mark to 10 meters seaward from the mean low water mark. IPAs are declared



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under the Fisheries Management Act 1994 and are managed by NSW DPI. The aim of these IPAs is to minimize threats and to ensure the sustainability of rocky shore animals and plants.

Inter-tidal habitats within and adjacent to Manly Cove (including North Harbour) will be protected through obtaining Intertidal Protected Area (IPA) status of the area.

Actions:

- Prepare a background paper and proposal for declaring rocky foreshores of North Harbour as IPA.
- Collect and collate letter of support from relevant agencies and Precincts
- Submit the proposal to I&I NSW and pursue for its approval

Advantages: Area under IPA will increase. Biodiversity of the area will be protected.

Disadvantages: There are no apparent disadvantages

Objectives addressed:

Addressing actions under Manly Council's MSS 2006: C1.2.8 – partnership with NSW DPI and NSW Maritime to conserve marine resources

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved; CTW2 – improvement in condition and extent of wetlands; CTECM2 – improvement in the condition of coastal and marine ecosystems

Addressing NRC targets (State Plan 2010): 7 – marine water and ecosystems; 8 – improvement and maintenance of wetlands

Performance Target: Proposed intertidal areas declared as IPA.

Indicative Cost: Staff time

Time Frame: Within 2 years

Responsible Agency: NSW DPI, Manly Council – NR

Priority: Medium

AH 2.4. Continue to encourage NSW DPI to support conservation of seagrass beds in Manly Cove.

Context: Seagrass beds exist on both sides of the Manly Wharf. Seagrass beds provide extremely important aquatic habitat by providing food and shelter for a variety of juvenile fish and invertebrate species. Many such species are of considerable value to recreational and commercial fishing industries. Hence, it is important to conserve existing beds. These areas are identified as Wetlands Protected Area under the Sydney Regional Environmental Plan (Sydney Harbour Catchment), 2005.

Actions:

- Request NSW DPI to undertake accurate mapping of seagrass in Manly Cove
- Liaise with NSW DPI regularly regarding updated information on seagrass mapping, threats and management
- Periodic updates of macrophyte distribution map within the study area.
- Facilitate measures to remove/ reduce threats to seagrass so as to foster natural re-establishment.
- Study impacts of Fast Ferries on sedimentation and seagrass beds.
- Conserve seagrass beds through community education and compliance monitoring.
- Ensure water based development does not negatively impact on marine vegetation.
- Request NSW Maritime to enforce NSW DPI advice that anchoring off the swimming enclosure over the seagrass area in western area of Manly Cove will be prohibited

Advantages: Continued conservation of these ecologically valuable habitats.

Disadvantages: The boating activity will be severely restricted if the updated map identifies new and expanded areas with seagrass beds

Objectives addressed: AH2



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Addressing actions under Manly Council's MSS 2006: C1.2.6 – local residents involved in seagrass monitoring; C1.2.8 – partnership with NSW DPI and NSW Maritime to conserve marine resources

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved; CTECM2 – improvement in the condition of coastal and marine ecosystems

Addressing NRC targets (State Plan 2010): 1 – improvement in native vegetation condition; 7 – marine water and ecosystems; 8 – improvement and maintenance of wetlands

Performance Target: Areas of seagrass beds conserved.

Indicative Cost: Staff time

Time Frame: on-going

Responsible Agency: Manly Council – NR, NSW DPI

Priority: Medium

AH.2.5 Replacement of the suspended netting currently used for the swimming enclosure at Manly Cove with seahorse habitat friendly net.

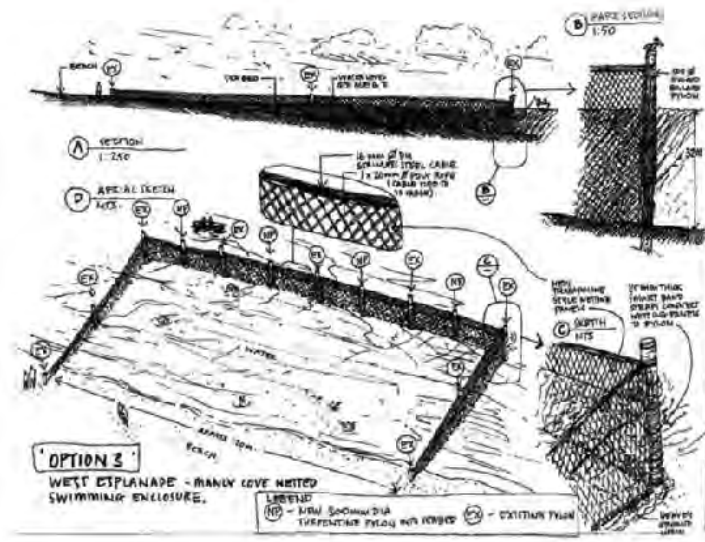
Context: The Big-belly seahorse *Hippocampus abdominalis* and White's seahorse *Hippocampus whitei* are known to occur on the netted swimming enclosure waters of Manly Cove. The colony of seahorse population is impacted when the nets are maintained and replaced.

Council, at its meetings dated 14 March 2011 and 6 June 2011, has resolved to implement both short and long-term options. The options are:

| | |
|-------------------------|--|
| Short Term | Cut existing net to 1.5m and rehang from seabed to this height |
| Long-term (option 3) | Remove entire current net; install 4 new pylons along outer edge at intervals between existing pylons. Install trampoline style netting in 8 sections along the outer edge (15m wide) and along the sides (each 30m wide). |



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The long-term option has many benefits including ease of seahorse monitoring, a single layer of net to maintain, clean, repair etc. in future, improved aesthetic appeal and a long life expectancy.

Actions: The option involves,

- Pursue implementation through budget bidding and detailed design.

Objectives addressed: AH3

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved;
CTECM2 – improvement in the condition of coastal and marine ecosystems

Performance Target: Disturbance to seahorse habitat minimised

Indicative Cost: Staff time & contract (\$85,000)

Time Frame: Within 2 years

Responsible Agency: Manly Council –NR

Priority:

Objective

AH 3 To ensure the activities within Manly Cove are carried out in a manner that maintains or improves the ecological condition of marine habitats and species.

AH.3.1 Encourage recreational fishing but minimise the impact that recreational fishing activities have on the intertidal and marine ecology, through education and regulation

Context: Recreational fishing is one of the most common activities undertaken within the study area. A total of 17% of the NSW population participate in recreational fishing. This is almost 24% of the NSW male and 10% of female population. Almost half the State's recreational fishers live in Sydney. Manly Council has recently registered itself as Fish Friendly Council.



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Various bag and size limits apply to recreational fishers for most common fish species. A number of changes to size limits, bag limits and fishing methods were introduced in September 2007. However, not everyone adheres to these regulations. These often impacts on intertidal and marine ecology of the area. Regular educational program is important.

Actions: The option involves working with NSW DPI to improve recreational fishing practices through educational programs. Fish care Volunteers talk to anglers about fishing rules and responsible fishing and help in a range of activities, such as fishing clinics, catch surveys and community fishing events. Policing is an important component of facilitating recreational fishing. Efforts should be made to raise awareness of recreational fishers about the diversity and importance of flora and fauna of the area.

Advantages: This will also raise awareness of the importance of conservation of these areas and the diversity of fauna and flora in the community.

Disadvantages: -

Objectives addressed: AH3

Addressing actions under Manly Council's MSS 2006: C1.2.12 – police breaches of bag limits; C1.2.13 – foster behaviour change amongst marine recreational users

Addressing SMCMA catchment targets: CTC1 – people and communities have increased capacity to engage in improved natural resource management; CTC4 – community recognising the contribution of healthy natural resources

Performance Target: Education program implemented

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: NSW DPI and Manly Council – Rangers, EPP

Priority: Medium

AH.3.2 Minimise the impact of diver/snorkeler activities and routine maintenance upon the colony of seahorses known to colonise the Manly Cove netted swimming enclosure.

Context: The Big-belly seahorse *Hippocampus abdominalis* and White's seahorse *Hippocampus whitei* are known to occur in the waters of Manly Cove, with a large population of seahorses colonising artificial structures within the study area, particularly the netted swimming enclosure as well as substructures of Manly Wharf, Ocean World and the various boating facilities along the eastern boundary of the study area. The population is estimated to be around 400.

The enclosure is popular with divers and snorkelers wanting to observe the large colony of protected seahorses known to live amongst the marine growth which grows on the net. A number of general concerns have been expressed regarding diver use of the area

Actions: The option involves,

- In consultation with divers and snorkelers, minimise diving to seahorse colony.
- Consider constructing a permanent habitat structure for seahorses on the swimming enclosure net
- Consider developing a 'Code of Conduct' for divers and snorkelers.

Objectives addressed: AH3

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved; CTECM2 – improvement in the condition of coastal and marine ecosystems.

Performance Target: Diving minimised

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: Manly Council – MEC, EPP, NR

Priority: Medium



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4.2 OPTIONS ADDRESSING BOATING, MARITIME OPERATIONS & FACILITIES

The embayment of Manly Cove offers a diverse range of opportunities for recreational and commercial boat and watercraft use. The study area is also used as a temporary and permanent anchorage and mooring site. Wind surfing, canoeing, dragon boating, kayaking, outriggering and a variety of sailing activity is conducted in the vicinity of the Manly Cove study area. There are a number of safety and environmental issues associated with boating and maritime operations

Goal

To achieve the highest level of environmental protection and safety for maritime operations within Manly Cove.

A total of eight management options are proposed addressing three different objectives. Of these, five management options have been rated as of high priority and the remaining three as medium priority. Two management options are proposed for immediate implementation. Two management options are already on-going activities of Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|--------------------|---------|
| | | | Individual | Overall |
| BF.1 To improve the sustainability of boating activities in Manly Cove | BF.1.1 To encourage boat user groups to play a role in educating the boating community on best practice | Within 2 years | H(3), M(3), L(2) | Medium |
| | BF.1.2 Ensure Manly Council Rangers are aware of Spill Response Procedures for both on-water and off-water incident | Within 2 years | H(7), M(1), L(0) | High |
| BF.2 To ensure boating activities are conducted through positive interactions with other user groups | BF.2.1 Encourage compliance with NSW Maritime boating regulations | On-going | H(7), M(1), L(0) | High |
| | BF.2.2 Sustainably manage the extent to which commercial operators access and use the Manly Cove embayment | Between 3-4 years | H(5), M(2), L(1) | High |
| | BF.2.3 Ensure skiff rigging and storage activities accommodate other users of East Esplanade Reserve | On-going | Council determined | High |
| BF.3 To support recreational (and commercial) boating activities through the provision of safe, user friendly facilities | BF.3.1 Work with NSW Maritime to modify and improve a wharf facility for public use in Manly Cove | Immediate | H(5), M(2), L(0) | High |
| | BF.3.2 Encourage NSW Maritime, NSW DPI and boat owners to install seagrass friendly moorings throughout Manly Cove | Between 3-4 years | H(1), M(4), L(0) | Medium |
| | BF.3.3 Develop a long-term maritime infrastructure facilities plan for Manly LGA emphasizing boat storage and other infrastructures | Immediate | H(3), M(4), L(1) | Medium |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

BF 1 To improve the sustainability of boating activities in Manly Cove.



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BF.1.1 To encourage boat user groups to play a role in educating the boating community on best practice

Context: The social acceptability and community ownership of waterway usage could be improved by increasing the knowledge base of all boat users in relation to acceptable and safe forms of boating. It is important to educate recreational boat users (RBU's), industry and the general community about ways to interact with the marine environment in a sustainable way. NSW Maritime, as the principal body charged with the management of boating activity in NSW waters provide a range of educational brochures which aim to minimise the impact of activities such as engine maintenance, boat cleaning, fuelling, sewage effluent management, water conservation, anchoring and boat wakes on the marine environment. Environmental knowledge is also now incorporated into the NSW Boat Licence content.

Manly's marine environment is highly diverse and supports many delicate ecosystems and an abundance of life, including 16 protected, vulnerable, or endangered species, such as the Little Penguin. Boat user Groups may be encouraged to educate people about the preservation of this marine environment to ensure its survival for future generations to enjoy.

Actions: The option involves:

- Encourage boat user groups to initiate educational programs.
- Assess a draft proposal 'Manly Cove - Community Boatshed & Access and Ability Centre' prepared in 2005.

Objectives addressed: BF1

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Addressing SMCMA catchment targets: CTC 2 – collaboration between organisations to influence natural resource management

Performance Target: Education program initiated

Indicative Cost: \$25,000

Time Frame: within 2 years

Responsible Agency: Manly Council – EPP

Priority: Medium

BF.1.2 Ensure Manly Council Rangers are aware of Spill Response Procedures for both on-water and off-water incident

Context: Given the volumes of oil that are transported worldwide on a daily basis, a realistic strategy must recognise that a major spillage could occur at any time or place in our estuarine or coastal waters. In fact, Sydney Harbour has experienced a number of oil spills over the last decade. On 3 August 1999 the Laura D'Amato, an Italian registered oil tanker, pumped an estimated 250 to 300 tonnes of oil into Sydney Harbour. This was the largest ship sourced oil spill in Sydney Harbour.

Australia has a national strategy for dealing with pollution from ships called the National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances, commonly referred to as the National Plan. NSW Maritime is responsible for ensuring the National Plan obligations are implemented in NSW. The arrangements for how NSW will respond to and manage the cleanup of marine oil and chemical spills from shipping incidents are set out in the NSW State Waters Marine Oil and Chemical Spill Contingency Plan. The plan is also a sub-plan of the NSW Disaster Plan.

Manly Cove study area is shown to have moderate to high levels of sensitivity to an oil spill. Hence it is important that Council prepares itself for emergency responses to oil spills.



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NSW Maritime conducts several training courses in various locations along the NSW coast. Personnel from NSW Maritime are also available to make presentations at other forums. NSW Maritime also exercises the NSW oil and chemical spill response arrangements regularly to ensure personnel are familiar with contingency planning.

While spills may be infrequent, if or when they do occur, then the level and speed of response can be critical in minimising environmental damages.

Action: The option involves training Council Rangers on response procedures to oil spill.

Objectives addressed: BF1

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Addressing SMCMA catchment targets: CTC1 – increased capacity to engage in practices to contribute improved natural resource management

Performance Target: Education program initiated

Indicative Cost: Staff time

Time Frame: Within 2 years

Responsible Agency: Manly Council – EPP

Priority: High

Objective

BF.2 To ensure boating activities are conducted through positive interactions with other user groups.

BF.2.1 Encourage compliance with NSW Maritime boating regulations

Context: While Manly Cove serves as a major transport and commuter access point, the study area also provides opportunities for a wide range of water and land-based recreational activities. Community consultation survey results highlighted that 80% of people surveyed considered the ability to undertake recreational activities as being of importance to them. The impact of recreational activities upon the environment is exacerbated through the high visitor numbers observed within Manly Cove.

A small portion of the Manly Cove embayment is subject to speed controls for boating. A four (4) knot speed limit exists from the foreshore between Stuart Street south to Manly Point and extending 100 metres offshore from the MHW. This speed zone also lies adjacent to the area designated as Critical Habitat for Manly's Little Penguin Population. Assigned by NSW Maritime the designated 4-knot zones assist with the protection of seagrass beds and address safety concerns of passive foreshore user groups.

The NSW Maritime's Boating Handbook provides essential boating information for operating on NSW waters. There are regulations concerning safety of boats in water. Compliance of regulations is a major concern. NSW Maritime does not have adequate boating officers to always monitor compliance. Hence boating community can assist NSW Maritime to monitor compliance. Boating Clubs do organise regular training nights on boating regulations to assist members.

Action: The option involves boating community to assist NSW Maritime to monitor compliance and report any non-compliance.

Objectives addressed: BF2

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being



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Addressing SMCMA catchment targets: CTC 2 – collaboration between organisations to influence natural resource management

Performance Target: Compliance of regulations increased
Indicative Cost: Staff time
Time Frame: on-going
Responsible Agency: Manly Council – EPP, Rangers, NSW Maritime
Priority: High

BF.2.2 Sustainably manage the extent to which commercial operators' access and use the Manly Cove embayment

Context: The embayment of Manly Cove offers a diverse range of opportunities for recreational and commercial boat and watercraft use including kayak hire facilities. The study area is also used as a temporary and permanent anchorage and mooring site. There are a number of safety and environmental issues associated with boating and maritime operations within Sydney Harbour. Issues such as incident (including spills) management, water traffic safety and ballast water and marine pest management are controlled by a range of state and federal government agencies, with Manly Council supporting through education.

Stakeholders and community have identified the regular movement of regular and fast Ferries as having significant impact on the day-to-day activities conducted on the eastern foreshores. The wake generated by these vessels is found to create considerable wave heights resulting in increased noise and wash and unsafe conditions for passive recreational users, particularly during high tidal conditions. The impacts are particularly evident for Saleability activities. Fast ferries may have impact on penguin's path to their foraging and breeding grounds.

Action: The access to commercial operators should be considered retaining interest of the passive and recreational users of Manly Cove. Study impacts of Fast Ferries on penguin's path to their foraging and breeding grounds.

Objectives addressed: BF2

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Performance Target: Sustainable management of the area
Indicative Cost: Staff time
Time Frame: Between 2-4 years
Responsible Agency: NSW Maritime
Priority: High

BF.2.3 Ensure skiff rigging and storage activities accommodate other users of East Esplanade Reserve

Context: Skiff sailboat rigging activities have been identified as impacting upon the general use of East Esplanade Reserve. While this activity has been ongoing for many years and contributes to the historic use of Manly Cove, rigging during weekend competition often results in East Esplanade Reserve being dominated by one use and undesirable for other uses, particularly during summer weekends.

Action: The option involves continued historic use of the reserve for skiff rigging but stakeholder's dialogue to be initiated to devise mutually acceptable sharing of the reserve.

Objectives addressed: BF2

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Performance Target: acceptable sharing of the reserve ensured



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| | |
|----------------------------|---------------------|
| Indicative Cost: | Staff time |
| Time Frame: | On-going |
| Responsible Agency: | Manly Council – CEC |
| Priority: | High |

Objective

BF.3 To support recreational (and commercial) boating activity through the provision of safe, user friendly facilities.

BF.3.1 Work with NSW Maritime to modify and improve a wharf facility for public use in Manly Cove

Context: There is currently a lack of public wharf facilities within North Harbour including Manly Cove. Prior to the current lease agreement, recreational vessels were able to use Manly Wharf for transfer of passengers and goods in a safe user-friendly location. However, vessels are now charged at premium rates to utilize Manly Wharf regardless of the time they are berthed. This issue has been raised by numerous groups and individuals during the consultation process, including the Little Manly and Fairlight Precincts. One of the three facilities can be improved and/or modified for public use.

1. *Manly Fun Pier Wharf. (The wharf extending out from the Wharf Hotel, currently used by the private fast ferry company and other commercial users with money paid to Wharf lease holder) This wharf requires no development to be suitable for public use but requires NSW Maritime to remove the wharf from the lease provided to current lease holder of Manly Wharf.*
2. *Oceanworld wharf extending out from Oceanworld (West Esplanade) and/or Pavilion Restaurant. This wharf requires renovation to be suitable for public use. Existing lease could be an issue.*
3. *Little Manly Point, southern end adjacent to the BBQ and picnic areas. There was a wharf in place while they were building the Northside Storage Tunnel (Sydney Water). This area is very suitable for safe access etc but is further from the Manly CBD.*

NSW Maritime's, now provoked Framework Plan for Manly Cove East, also recommended 'Assess potential locations for a public wharf within the Club Precinct (NSW Maritime 2005).

Actions:

- Pursue NSW Maritime to consider any or one of the three proposed locations as a public wharf
- NSW Maritime reconsiders use of Manly Wharf as a pick up and set down point for recreational boats
- Develop and design a modification on the selected site
- Ensure that any public wharf facility is wheelchair accessible
- Encourage NSW Maritime to build/improve/modify the wharf for public use.

Objectives addressed: BF3

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Addressing SMCMA catchment targets: CTC 2 – collaboration between organisations to influence natural resource management

Performance Target: Public wharf identified, improved and used

Indicative Cost: \$60,000

Time Frame: Immediate

Responsible Agency: NSW Maritime, Manly Council – NR

Priority: High



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BF.3.2 Encourage NSW Maritime, NSW DPI and boat owners to install seagrass friendly moorings throughout Manly Cove

Context: The total number of moorings within Manly Cove is capped at the existing number of 96 moorings, 86 for private use and nine for commercial.

The NSW DPI has, with NSW Maritime, SMCMA and Manly Council, as part of federally funded project, has installed 30 seagrass friendly moorings in Manly Cove, Manly in 2009.

The system uses a single point screwed into place mooring post as the anchor point. Attached to the mooring post just below the sea bed is a set of load spreaders to stabilize the post. This is then attached to shock absorber to the swivel head and run a hawser rope from the shock absorber to a surface buoy.

Actions: The option involves working with NSW DPI and NSW Maritime to install more seagrass friendly moorings. However, analyse the benefits and problems associated with already installed seagrass friendly moorings in the area.

Objectives addressed: BF3

Addressing actions under Manly Council's MSS 2006: C1.2.15 – lobby for eco-friendly mooring buoys to replenish sea grasses; C1.2.16 – upgrade all moorings to seagrass friendly moorings

Addressing SMCMA catchment targets: CTB4 – aquatic threatened species are better conserved; CTECM2 – improvement in the condition of coastal and marine ecosystems; CTC 2 – collaboration between organisations to influence natural resource management

Addressing NRC targets (State Plan 2010): 4 – reduction in the impact of invasive species;



Photo source: <http://www.abc.net.au/tv/newinventors/txt/s1940114.htm>

Performance Target: Additional moorings installed

Indicative Cost: Staff time

Time Frame: Between 3-4 years

Responsible Agency: NSW Maritime, NSW DPI and Manly Council-NR

Priority: Medium

BF.3.3 Develop a long-term maritime infrastructure facilities plan for Manly LGA emphasising boat storage facilities and other infrastructures

Context: Council has at present 118 dinghy and 27 kayak storage spaces at Little Manly and Forty Baskets. However, there is long waiting list for 130 dinghy and 90 kayak storage spaces. Council will be



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developing soon a boat storage facility at Sandy Bay. The demand is much higher at different locations. There are also demands for public wharves, jetties, pontoons, boat ramps.

It is time to carry out a comprehensive study and develop a plan on need and possible locations to establish maritime infrastructure, such as boat storage, pontoons, public wharf, boat ramps over the whole LGA basis.

Once the plan is developed, implement this plan in a structured manner. This plan will also allow Council to seek external assistance, especially from NSW Maritime.

Actions:

- *Identify demand for different types of maritime infrastructure for short, medium and long term time frame through a comprehensive study*
- *Identify locations for different maritime infrastructures considering areas at risks due to sea level rise*
- *Develop a comprehensive plan in line with NSW Maritime's long-term plans and an implementation strategy*
- *Seek financial support to implement the plan.*

Objectives addressed: BF3

Addressing NRC targets (State Plan 2010): 12 – natural resources decisions to improve economic sustainability and social well-being

Performance Target: Plan developed

Indicative Cost: Staff time

Time Frame: Immediate

Responsible Agency: Manly Council – Natural Resources, NSW Maritime

Priority Medium



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4.3 OPTIONS ADDRESSING ENHANCEMENT OF PUBLIC FACILITIES, INFRASTRUCTURES & SIGNAGE

Infrastructure provision, more specifically social infrastructure provision are important to people. The presence of these kinds of infrastructure has a direct impact on living conditions, health and potential for economic development. Social infrastructures are usually considered services, such as public toilets, neighbourhood centres, informative signage, parks, and open space etc.

Goal

Public facilities, infrastructure and signage are upgraded and maintained to facilitate improved social amenity.

A total of seven management options are proposed addressing three different objectives. Of these, four management options have been rated as of high priority, two as of medium priority and the remaining one as having low priority. Two management options are already on-going activities.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|--------------------|---------|
| | | | Individual | Overall |
| PF.1 To provide well maintained and safe facilities and infrastructure on Manly Council owned and/or managed public lands | PF.1.1 Prepare and implement an updated Landscape Masterplan for the Esplanade Reserve | Within 2 years | H(1), M(4), L(3) | Medium |
| | PF.1.2 Upgrade seating and picnicking facilities within East and West Esplanade Reserves | Within 2 years | H(4), M(2), L(2) | High |
| | PF.1.3 Community needs are facilitated in areas along the Esplanade Reserves | Within 2 years | - | Medium |
| | PF.1.4 Provide freshwater bubblers within East and West Esplanade Reserves. | Within 2 years | Council determined | High |
| PF.2 Provide up-to-date regulation and interpretive signage appropriate for the locality and which meets Councils legislative requirements | PF.2.1 Undertake review of existing compliance signage which meets Councils legislative requirements | On-going | H(1), M(2), L(5) | Low |
| | PF.2.2 Replace damaged and/or missing signage in line with findings of signage audit and to reduce negative impacts upon visual character of Manly Cove through signage consolidation | Between 3-4 years | H(4), M(2), L(1) | High |
| PF.3 Reduce the adverse impacts of features that detract from the visual quality of Manly Cove | PF.3.1 Ensure all new development complies with the landscape provisions of the Development Control Plan for Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005. | On-going | H(5), M(2), L(1) | High |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS



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Objective

PF.1 To provide well maintained and safe facilities and infrastructure on Manly Council owned and/or managed public lands.

PF.1.1 Prepare and implement an updated Landscape Masterplan for the Esplanade Reserve

Context: East and West Esplanade Reserves are the most frequently used recreational and resting spots by residents and visitors. Main features include harbour views and Norfolk Island pines, scenic walkway with tiles featuring "Manly Pathway of Olympians and Paraolympians" along the seawall, access to beach with swimming enclosure, and picnic facilities. Access to Manly Visitor Information Centre at the Wharf, Manly Art Gallery & Museum, Oceanworld, and Waterworks at the western end. The provision of lighting within the study area enhances the heritage feel of the area by emulating original lighting for Manly Cove. The rounded lighting, often referred to as a "ring of pearls" by visitors, incorporates Council emblems while providing safety and an attraction to the promenade area at night.

The existing picnic and seating facilities were last upgraded during the major landscaping works in 1988. Community consultation and visual inspection identified the fact that the picnic facilities are often extremely dirty and unhygienic and that many chairs have been vandalised. Opportunities to improve water and energy conservation measures also exist.

With the increasing use of the Reserve, it has become necessary to prepare a detailed Landscape Masterplan. The Masterplan should seek to distribute appropriately the various functions of the reserve and to maximise the opportunities presented by the foreshore setting and by the arrangement of the elements within it. Principles, to prepare the Masterplan, are:

- recognition of value of the existing open spaces and landscape;
- reinforcement of the existing native and indigenous planting and bushland;
- further establishment of safe, quiet and planted seating and picnic areas around the edges;
- recognition of existing play area with upgraded play equipments;
- consideration of noise issue
- protection of little penguin area; and
- emphasis of the historic past with signage and other interpretative and informative features.

The Plan should review of the lighting in east and West Esplanade reserve. There are many dangerous dark spots.

Actions:

- Commission a Landscape Masterplan preparation of East & West Esplanade Reserves including site survey
- Consult Precincts and community after plan preparation through public exhibition of the Plan.
- Implement the adopted Masterplan gradually.

Advantages: A planned improvement of East & West Esplanade Reserves will satisfy user needs

Disadvantages: -

Objectives addressed:

Addressing actions under Manly Council's MSS 2006: B1.4.2 walking trails in open spaces; B1.4.4 – Access to all recreational facilities

Addressing SMCMA catchment targets: CTLD1 – increase in the amount of land managed within its capability

Performance Target: Masterplan prepared, adopted and implemented

Indicative Cost: \$36,000 for masterplan only

Time Frame: Within 2 years



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Responsible Agency: Manly Council-SLUP, Parks & Bushland, Urban Services
Priority: Medium

PF.1.2 Upgrade seating and picnicking facilities within East and West Esplanade Reserves

Context: East and West Esplanade Reserves on both sides of the Manly Wharf are popular places for both local and visiting families. The existing picnic and seating facilities were last upgraded during the major landscaping works in 1988. Community consultation and visual inspection identified the fact that the picnic facilities are often extremely dirty and unhygienic and that many chairs have been vandalised.

Actions: The option involves auditing of existing facilities, and undertakes a replacement program.

Objectives addressed: PF1

Addressing actions under Manly Council's MSS 2006: D1.5.2 – ensure livable neighbourhoods

Performance Target: Facilities enhanced
Indicative Cost: \$75,000
Time Frame: within 2 years
Responsible Agency: Manly Council – Urban Services
Priority: High

PF.1.3 Community needs are facilitated in areas along the Esplanade Reserves

Context: Fairlight Precinct has proposed a number of facilities/actions that require attention and implementation including:

- Additional video surveillance in the area near Oceanworld
- Needle bins in the toilets near Oceanworld
- Relocation of shower at Manly Wharf to make it accessible in the evenings when penguin protection barriers are in place
- Investigation into accessibility compliance of the access ramp at Manly Wharf area and implement needed modifications, if any.
- Noise management from late night venues
- Community safety and residential parking

Actions: The option involves investigation into these issues and undertakes required activities subject to availability of funds.

Objectives addressed: PF1

Performance Target: Facilities enhanced
Indicative Cost: \$40,000
Time Frame: Within 2 years
Responsible Agency: Manly Council – Urban Services
Priority: High

PF.1.4 Provide freshwater bubblers within East and West Esplanade Reserves.

Context: To reduce bottled water's impact on our environment and help combat climate change Manly Council has installed six wheelchair accessible filtered bubblers on Manly Corso and on Manly beachfront. These have proven to be so successful that Manly Council is now adding at least 14 more. The bubblers provide Manly visitors with free filtered water – a much better alternative to purchasing bottled water. The Filtered Bubbler Project aims to combat climate change and decrease our impact on the environment by reducing the consumption of bottled water and associated waste.



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Natural resources are further wasted with a large proportion of the bottles ending up in landfill rather than being reused and recycled.

Actions: The option involves installation of water bubblers at least at two locations within the East & West Esplanade Reserves.

Objectives addressed: PF1

Performance Target: New water bubblers installed
Indicative Cost: \$20,000
Time Frame: within 2 years
Responsible Agency: Manly Council – Urban Services
Priority: High



Objective

PF.2 Provide up-to-date regulation and interpretive signage appropriate for the locality and which meets Councils legislative requirements.

PF.2.1 Undertake review of existing compliance signage which meets Councils legislative requirements

Context: Signage within the study area is diverse and comprehensive and has been developed over many years of visitation. Signs have been strategically and prominently placed throughout the study area. Signs play an important role in the management of natural areas. This communication tool provides an important link between the various management authorities and the public. Signs can be used to orientate visitors (directional), inform them about their surroundings (interpretive), or influence their behavior (managerial). Sizing and design are important encourage their reading and user compliance, while reducing aesthetic impact. In this regard, Fairlight Precinct suggests that signage relating to Little Penguin be lowered to a level where it is visible to and readable by passing users. Council should periodically review signage present in the study area. The main aim of this review should be:

- Identify existing signs within the area;
- Evaluate the information they provide;
- Investigate the feasibility of consolidating information onto fewer signs in a format consistent with Council's updated signage specifications;
- Identify signage for removal; and
- Identify signage gaps.

Actions: The option involves a) periodic review of all signage and b) develop recommendations.

Objectives addressed: PF2

Addressing actions under Manly Council's MSS 2006: C1.3.11 – Interpretive signage at high profile recreational areas

Performance Target: Review completed
Indicative Cost: Staff time
Time Frame: On-going
Responsible Agency: Manly Council – SLUP
Priority: Low

PF.2.2 Replace damaged and/or missing signage in line with findings of signage audit and to reduce negative impacts upon visual character of Manly Cove through signage consolidation



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Context: The improper, damaged, inconsistent or excessive use of signs weakens their value as a means of communication and adversely affects the scenic amenity of the area and the quality of visitor experiences. Based on the review, undertake a program to replace damaged and/or missing signage. Uniform sign design including appearance, construction and placement contributes to a recognisable identity for the management authority.

Actions: This option involves replacement of such signage with signage more sympathetic to the area.

Advantages: Reduction of many signage in any particular locations. Replaced signage should be simpler and easy to understand

Disadvantages: Important information/warnings may be lost with replaced signage.

Objectives addressed: PF2

Addressing actions under Manly Council's MSS 2006: C1.3.11 – Interpretive signage at high profile recreational areas

Performance Target: Signage replaced with new ones

Indicative Cost: \$40,000

Time Frame: Between 3-4 years

Responsible Agency: Manly Council – US, NR

Priority: High

Objective

PF.3 Reduce the adverse impacts of features that detract from the visual quality of Manly Cove

PF.3.1 Ensure all new development complies with the landscape provisions of Development Control Plan for Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

Context: The Development Control Plan (DCP) of the Sydney Regional Environmental Plan - Sydney Harbour Catchments (2005) sets out in detail Council's town planning controls and guidelines on key development factors. In this DCP, different landscape character types in and around Sydney Harbour are recognised. These landscape character types provide a statement of character and intent and sets out performance criteria that are to be met for development within each landscape character types. Landscape character type 8 exists in the Manly Cove CZMP study area.

Type 8 areas have a high level of built form with waterside commercial, industrial and residential uses. The commercial and industrial uses play an important role in terms of tourism and maritime services which support water-based activities. There are special features in these areas that contribute to the visual character of the area that should be maintained.

Actions: The option involves maintenance of special features of Manly Cove.

Objectives addressed: PF3

Addressing actions under Manly Council's MSS 2006: D1.5.2 – ensure livable neighborhoods

Performance Target: Features of the area maintained

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: Manly Council –DAU

Priority: High



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4.4 OPTIONS ADDRESSING WATER QUALITY

Water quality in Manly Cove is generally of high standard due to the close proximity to the open ocean and resultant regular tidal flushing of the adjacent waters. However, during periods of heavy rain, water quality is known to be impacted by stormwater delivered from the surrounding sub-catchments. Stormwater transports pollutants settled on roads and building surfaces including organic material, litter, sediments, oil, heavy metals and nutrients. These pollutants are piped into Sydney Harbour and diluted by tidal movements and wave action.

Goal

To ensure water quality meets the community's expectations and falls within acceptable standards suitable for fishing and swimming.

A total of eight management options are proposed addressing three different objectives. Of these, six management options have been rated as of high priority and the remaining two as medium priority. One option is proposed for immediate implementation. Three management options are already on-going activities.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|--|---------------------------|------------------|---------|
| | | | Individual | Overall |
| WQ.1 Initiate and implement structured programme for water quality improvement | WQ.1.1 Formulate a comprehensive Stormwater Management Plan for Manly LGA encompassing the study area | 5 th year | H(7), M(0), L(1) | High |
| | WQ.1.2 Identify and implement opportunities for stormwater treatment, harvesting and reuse within Manly Cove | Between 3-4 years | H(5), M(2), L(1) | High |
| | WQ.1.3 Review cleaning routine of existing GPTs within Manly Cove and assess feasibility of installing a new GPT (Gross Pollutant Trap) | Immediate | H(7), M(1), L(0) | High |
| WQ.2 Encourage a reduction of effluent discharge/ exfiltration from sewerage infrastructure in the Manly Cove study area | WQ.2.1 Continue to liaise with Sydney Water to ensure that all sewage overflows (and pumping stations) operate within established licensing requirements | On-going | H(7), M(1), L(0) | High |
| | WQ.2.2 Continue to Implement Manly Council Dry Weather Sewer Leak Investigation and Rectification Program in Manly, to identify sewer leaks from private or Sydney Water sewers where they enter Council's stormwater system | On-going | H(7), M(1), L(0) | High |
| WQ.3 Ensure sustainable groundwater extraction practices | WQ.3.1 Undertake a comprehensive study on the Manly Cove aquifer to identify recharge volumes and to ensure sustainable extraction rates | Between 3-4 years | H(3), M(2), L(3) | Medium |



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| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|---|--|---------------------------|------------------|---------|
| | | | Individual | Overall |
| to avoid negatively impacting upon aquifer recharge and quality | WQ.3.2 Monitor council bores for salinity and other parameters to ensure extraction does not lead to contamination | Within 2 years | H(2), M(4), L(2) | Medium |
| | WQ.3.3 Ensure Council staff working with or assessing groundwater issues are familiar with the SCCG Groundwater Management Handbook 2006 | On-going | H(5), M(2), L(1) | High |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

WQ.1 Initiate and implement structured programme for water quality improvement.

WQ.1.1 Formulate a comprehensive Stormwater Management Plan for Manly LGA encompassing the study area

Context: This option involves formulation of a comprehensive Stormwater Management Plan for the Manly LGA. The Plan should contain detailed information on existing catchment conditions, stormwater management objectives, existing stormwater management, potential stormwater management options, evaluation of management options, adopted management plan and implementation. Community consultation is an important requirement in developing this plan.

Recommendations from Middle Harbour Catchment Stormwater Management Plan (Willing & Partners 1999) and Northern Beaches Stormwater Management Plan (Patterson Britton & Partners 1999) will be reviewed.

In the comprehensive plan, among others, emphasis should be placed to amend Council's planning instruments and policies to ensure that water sensitive urban design principles are incorporated into the design of all development proposals and works programs within the catchment

Actions:

- Review earlier Management Plans & recent modelling study
- Carry out a community consultation program
- Rerun the model with latest available data
- Liaise with the Sydney Water
- Formulation of the Report

Advantages: Provides a holistic approach to stormwater management of the area. The report will provide more structured and prioritized actions considering all options. The Plan contributes to cost savings for piecemeal efforts.

Disadvantages: Plan preparation is time consuming and costly. Value of the Plan is lost if not implemented readily. Funding may not be available for implementation of priority actions.

Objectives addressed:

Addressing NRC targets (State Plan 2010): 9 – improvement in estuaries ecosystems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality; CTECM1 – improvement in the condition of estuaries

Performance Target: Management plan completed

Indicative Cost: \$ 70,000



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Time Frame: 5th year
Responsible Agency: Manly Council – NR (Water Cycle Management Team)
Priority: High

WQ.1.2 Identify and implement opportunities for stormwater treatment, harvesting and reuse within Manly Cove

Context: Stormwater harvesting involves the collection and reuse of rainwater entering the stormwater drainage system, which would otherwise end up in the ocean. In urban areas, rain that falls on the roof of the house, or collects on paved areas like driveways, roads and footpaths is carried away through a system of pipes that is separate from the sewerage system. This complements other urban local or household management practices such as greywater reuse systems, water recycling and the use of rainwater tanks.

DECCW (now OEH) has developed a guideline 'Managing urban stormwater: harvesting and reuse'. This presents an overview of stormwater harvesting and its potential benefits and limitations. It also provides guidance on the planning and design aspects of stormwater harvesting projects, taking into account statutory and regulatory requirements.

Actions:

- Identify opportunities through new and existing programs
- Seek for external funding
- Implement

Advantages: The main benefits from a successful stormwater reuse scheme are reductions in:

- demand for mains water
- stormwater volumes, flows and the frequency of run-off
- stormwater pollution loads to downstream waterways.

Disadvantages:-

Objectives addressed: WQ1

Addressing NRC targets (State Plan 2010): 9 – improvement in estuaries ecosystems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality; CTECM1 – improvement in the condition of estuaries

Performance Target: Stormwater is reused

Indicative Cost: \$ 30,000 (for identification and concept design). Project implementation: Subject to detailed design.

Time Frame: To be implemented between 3-4 years

Responsible Agency: Manly Council – Natural Resources (Water Cycle Management Team)

Priority: High

WQ.1.3 Review cleaning routine of existing GPTs within Manly Cove and assess feasibility of installing a new GPT (Gross Pollutant Trap)

Context: Stormwater quality varies dramatically not only within different parts of the catchment but also in any given storm event. This high degree of variability makes stormwater treatment a challenge. The physical, chemical and biological processes of stormwater systems and their interactions with pollutants are complex. A number of pollutants are typically found in stormwater runoff generated from urbanised catchments. These pollutants originate from either point or non-point sources. Point sources are specific and identifiable locations where stormwater pollution can occur such as illegal discharges of trade wastes and sewer overflows.



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It usually takes a number of years for source control strategies to become effective and hence to prevent further degradation of the environment, source controls need to be combined with treatment devices such as gross pollutant traps, oil/grit separators, sediment traps and mini wetlands where suitable.

There are 14 GPTs installed throughout Manly LGA. There are two located within Manly Cove in East Esplanade Reserve opposite Ashburner Street and Osborne Road.

Installation of a third GPT is being discussed at the outfall of sub-catchment, MA12.

Actions:

- Review of the cleaning routine of existing GPTs.
- Ensure regular cleaning of existing GPTs.
- Identify location of a third GPT at the outfall of sub-catchment, MA12
- Seek for external funding
- Implement

Advantages: *Installing a new GPT within the catchment would reduce the catchment-based pollutant loads to the bay. As the study area is only a small part of the bay, benefits would be more localized. Improvements to the water quality could be expected. This would in turn improve the aquatic habitat, possibly resulting in more abundant or diverse aquatic fauna. Improved water quality would also increase the recreational amenity of the bay.*

Disadvantages: *Increased cost; both as large capital cost and on-going maintenance costs. Cannot be implemented if funding is not secured. If GPTs are not adequately maintained (cleaned) they can serve as pollutant sources.*

Objectives addressed: WQ1

Addressing NRC targets (State Plan 2010): 9 – improvement in estuaries ecosystems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality

Performance Target: GPT installed

Indicative Cost: \$ 60,000

Time Frame: Immediate

Responsible Agency: Manly Council – Natural Resources (Water Cycle Management Team)

Priority: High

Objective

WQ.2 Encourage a reduction of effluent discharge/ exfiltration from sewerage infrastructure in the Manly Cove study area.

WQ.2.1 Continue to liaise with Sydney Water to ensure that all sewage overflows (and pumping stations) operate within established licensing requirements

Context: *There are presently four sewerage overflow points within the Manly Cove study area, all of which have the potential to significantly impact upon local water quality and the sensitive marine environs of Manly Cove and the North Harbour Aquatic Reserve. The wet weather performances of the four overflows are given in Table 5.13.5. The results are based on a 10 year rainfall time series as identified in Sydney Waters Sewerage Catchment Asset Management Planning (SCAMP) - Needs Assessment Report (2002).*



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Table 5.13.5 - Wet weather performance of the four overflows within Manly Cove study area

| Overflow Id | Overflow Location | Overflow frequency (events/10 yrs) |
|-------------|--|------------------------------------|
| SMAS4OF01 | Directed overflow at corner of East Esplanade and Stuart Street | 48* |
| SP117OF01 | Directed overflow at corner of Cove and Stuart Street | 2 |
| SP306OF01 | Directed overflow at corner of East Esplanade and Ashburner Street | 0 |
| SNAS4OF01 | Directed overflow at corner of Cove and Stuart Street | 0 |

*With a new approach, Sydney Water determined overflow events as 17. This new figure is within the licensing parameters.

Two Sewage Pumping Stations exist within the Manly Cove study area, SP0117 located at 3 Oyama Avenue and SP0306 in East Esplanade Park opposite Ashburner Street. Sewerage Pumping Station 306 was identified as not providing sufficient emergency dry weather containment of overflow in the event of pumping station failure.

Sydney Water is required by OEH licence conditions to manage sewerage treatment systems efficiently. This is required to protect and minimise harm to the environment and public health from sewage treatment plant effluent and sewage overflows by minimising the frequency and volume of sewage treatment plant bypasses and sewage overflows.

Sydney Water is currently implementing detailed sewerage planning programs across Sydney, through the development of SCAMPs or Sewerage Catchment Asset Management Plans. This integrated sewerage system planning tool aims to enable Sydney Water to programme its capital expenditure to meet existing and future catchment performance standards as defined by the Environmental Protection Licences issued by the OEH.

Actions:

- Continue to liaise with Sydney Water.
- Council also collect water samples after rain and test for faecal pollution and enterococci
- Seek information on performances of overflow points and pumping stations
- Erect large warning signs alerting the public to the health hazards
- Discuss remedial measures, if needed.

Advantages: Continuous liaison with Sydney Water will ensure positive results for the study area. This could initiate works by Sydney Water that would result in a reduction of pollutant loads to the bay.

Disadvantages: There are no disadvantages identified

Objectives addressed: WQ2

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality

Performance Target: All overflow points and pumping stations operate within performance standard

Indicative Cost: Staff time

Time Frame: on-going

Responsible Agency: Sydney Water, Manly Council – Natural Resources (Water Cycle Management Team)

Priority: High

WQ.2.2 Continue to Implement Manly Council Dry Weather Sewer Leak Investigation and Rectification Program in Manly, to identify sewer leaks from private or Sydney Water sewers where they enter Council's stormwater system.



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Context: Dry weather leakages from both private sewer connections and Sydney Water sewers are important sources of pollution. Since 2008 Council has implemented a successful dry weather sewer leak investigation and rectification program across the LGA to identify these sources of pollution (Ref: Water Cycle Management Team). Given Council's stormwater networks are typically a key means of conveyance of dry weather sewer leaks to recreational waterways, the program focuses on stormwater assets rather than sewer assets.

Actions:

- Program undertaken in dry weather (min no rain in previous 24 hours, less than 5mm in previous 72 hours). Program preferably undertaken at times of peak sewer flow (e.g. 8.00 am on weekdays) and low tide.
- All stormwater pipes discharging to waterways visited and checked for dry weather flow. The rate and volume of water flow estimated and recorded.
- Where stormwater flow exists, field testing undertaken using colorimetric field test for Ammonia (note – provides detection limit of 0.1 mg/L; for Reference, raw sewage is between 12-45 mg/L ammonia; Metcalf and Eddy, 2003). This allows for detection of even trace amounts of dry weather sewage leaking into stormwater.
- Where ammonia is detected (i.e. >0.1 mg/L), water samples are collected, and tested by a NATA Accredited laboratory for faecal indicator bacteria (thermotolerant coliforms / *Escherichia coli*, or faecal streptococci / enterococci) for additional confirmation. Sample collection is undertaken using laboratory bacterial sampling bottles, samples stored immediately in the dark and on ice, and forwarded the same day to the laboratory for culture. (note – for Reference – raw sewage may contain 10^5 - 10^{10} E.Coli CFU /100mL and 10^6 – 10^7 intestinal enterococci CFU/100mL – ARMCANZ/ANZECC, 1997 and NRMMC/EPHC/AHMC, 2006; whilst guidelines define suitability of recreational waterways for primary contact, such as swimming, as median coliform (CFU) densities from 5 samples of at or below 150 CFU/100mL for thermotolerant coliforms / E.Coli, and 35 CFU/100mL for enterococci – NSW DECCW, 2009 Beachwatch).
- Elevated indicator bacterial levels from any stormwater discharge point, should direct allocation of additional investigatory resources. A cost-effective approach is source tracking and tracing up the stormwater network by Local Government officers in partnership with the sewer utility. This comprises a catchment walk, and sampling (in dry weather) from stormwater assets with a pipe network map, at junctions travelling up the network (typically sampling from manholes), with colorimetric ammonia testing and/or faecal indicator analysis, to isolate sewer leaks to a defined area.

Advantages: The program can realise substantial and ongoing benefits from successful sewer leak identifications and rectifications, given commonly low sewer asset failure rates. Substantial benefits available through a partnership between Local Government and the Sewer Utility, include potential cost sharing, and access to additional tools available to the sewer utility once an approximate sewer leak location is suspected (CCTV of sewers, fluorescent dye injection, smoke testing, sewer manhole entry) to pinpoint a fault to either private property or the utility's asset, for rectification.

Disadvantages: potentially labour intensive

Objectives addressed: WQ2

Addressing NRC targets (State Plan 2010): 6 – improvement in the ability of groundwater systems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality

Performance Target: Dry Weather Sewer Leak Investigation and rectification program ongoing

Indicative Cost: \$25,000 (\$5,000/yr)

Time Frame: Underway and ongoing

Responsible Agency: Manly Council- Natural Resources (Water Cycle Management Team)

Priority: High

Objective

WQ.3 Ensure sustainable groundwater extraction practices to avoid negatively impacting upon aquifer recharge and quality.

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WQ.3.1 Undertake a comprehensive study on the Manly Cove aquifer to identify recharge volumes and to ensure sustainable extraction rates

Context: Groundwater is an attractive and viable alternate water source for irrigation of public and private land. However, groundwater is not an endless resource, and care needs to be taken to ensure that extraction rates are sustainable. Manly Council drilled a number of test bores within the Manly Cove study area in attempt to identify sustainable sources of groundwater for irrigation purposes. Council constructed a water storage sump adjacent to the Manly Art Gallery in West Esplanade Reserve during 2006. The sump collects groundwater from a year round surface discharge point. This source, combined with rainwater from the Art Gallery roof collected in a rainwater tank, provides for the irrigation requirements for West Esplanade Reserve.



Following a thorough testing procedure, a bore was also drilled in East Esplanade Reserve during August 2005 for the purpose of irrigating the portion of the Reserve east of Manly Wharf to Manly 16 Foot Skiff Club. The bore intercepts the water table at a depth of 3.5 m and extracts ground water from a depth of 5.8 metres. The bore provides sufficient water for local irrigation usage.

As the groundwater is applied to parklands directly over the aquifer from which it was extracted, it also serves a recharge function. Groundwater testing since 2005 has shown that water quality is very good and well within the parameters set for irrigation requirements.

A comprehensive investigation will be undertaken, in conjunction with the NSW Office of Water, to measure total extraction and recharge rates of the aquifer at Manly Cove (and potentially other areas, if required), to determine if the current yields are sustainable.

Actions:

- Liaise with the NSW Office of Water.
- Carry out a comprehensive investigation to measure total extraction and recharge rates of the aquifer at Manly Cove (and potentially other areas, if required).
- Determine that the current yields are sustainable.

Advantages: Will provide valuable information on groundwater extraction and recharge. This will contribute to an understanding of sustainable groundwater use.

Disadvantages: There are no apparent disadvantages

Objectives addressed: WQ3

Addressing NRC targets (State Plan 2010): 6 – improvement in the ability of groundwater systems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality; CTW4 – improvement in the quality and sustainable use of groundwater

Addressing actions under Manly Council's MSS 2006: C1.1.24 – groundwater extraction and recharge monitoring



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Performance Target: Study report completed
Indicative Cost: \$40,000, it is likely that the study will be combined with a regional groundwater study for cost efficiency.
Time Frame: Between 3-4 years
Responsible Agency: Manly Council – Natural Resources (Water Cycle Management Team), Office of Water
Priority: Medium

WQ.3.2 Monitor council bores for salinity and other parameters to ensure extraction does not lead to contamination

Context: With recent droughts, groundwater has become an attractive and viable alternate water source for irrigation of public reserves. Excessive groundwater abstraction, from bores so close to the estuary, can lead to sea water intruding into the freshwater aquifer.

Actions:

- Monitor salinity levels fortnightly by measuring Electrical Conductivity (EC) in micro siemens per centimetre ($\mu\text{S}/\text{cm}$) using an ECScan Low meter. Salinity levels (EC) in freshwater range from 0 to 800 $\mu\text{S}/\text{cm}$ and brackish water ranges from 1600 to 4800 $\mu\text{S}/\text{cm}$. Truly saline waters have levels greater than 4800 $\mu\text{S}/\text{cm}$ and seawater is approximately 56000 $\mu\text{S}/\text{cm}$.
- Monitor other parameters as considered as appropriate.
- Analyse results for any sign of early contamination and to indicate a trend and/or seasonal variation
- Take necessary remedial measures if a trend of increasing salinity is detected.

Advantages: Will provide valuable information on early sign of groundwater salinity and indications of seawater intrusion in freshwater aquifer.

Disadvantages: There are no apparent disadvantages

Objectives addressed: WQ3

Addressing NRC targets (State Plan 2010): 6 – improvement in the ability of groundwater systems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality; CTW4 – improvement in the quality and sustainable use of groundwater

Addressing actions under Manly Council's MSS 2006: C1.1.24 – groundwater extraction and recharge monitoring

Performance Target: Salinity & other parameters monitored
Indicative Cost: \$ 10,000
Time Frame: To be implemented within 2 years
Responsible Agency: Manly Council – Natural Resources (Water Cycle Management Team)
Priority: Medium

WQ.3.3 Ensure Council staff working with or assessing groundwater issues are familiar with the SCCG Groundwater Management Handbook 2006

Context: In 2006, the Sydney Coastal Council Group has developed the Groundwater Management Handbook as a guide for Local Government. This document is intended as a guidance manual to assist Council staff and the community in understanding how groundwater occurs and the processes by which impacts upon it are managed. Many Development Applications have the potential to impact on groundwater, either through changes to flow patterns or quality, and this is often not apparent until after the project is completed. In certain cases, by not fully assessing groundwater impacts, there has been a substantial financial burden incurred to overcome the results of poor development practices. The Handbook:



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- provides background information on groundwater occurrence and behaviour
- describes groundwater environments within the SCCG region
- provides an assessment of current legislation in relation to groundwater management
- provides technical advice on the management of groundwater
- identifies the information available from the groundwater database maintained by the Office of Water (NSW Department of Primary Industries)

Actions:

- Copies of the Handbook are made available to relevant sections of the Council
- The Handbook is used as a guide during DA assessments.

Advantages: Will provide valuable information to assess groundwater impacts

Disadvantages: There are no apparent disadvantages

Objectives addressed: WQ3

Addressing NRC targets (State Plan 2010): 6 – improvement in the ability of groundwater systems

Addressing SMCMA catchment targets: CTW3 – progress towards achieving water quality; CTW4 – improvement in the quality and sustainable use of groundwater

Addressing actions under Manly Council's MSS 2006: C1.1.24 – groundwater extraction and recharge monitoring

Performance Target: SCCG Handbook is used

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: Manly Council – Natural Resources, Environmental Health, DAU

Priority: High



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4.5 OPTIONS ADDRESSING TERRESTRIAL ECOSYSTEM

Fragmentation, clearance and degradation of native vegetation in the Manly Cove study area have reduced habitat value for native fauna. Small pockets of remnant bushland do exist between Oceanworld and Federation Point and on Manly Point, providing important habitat for the endangered colony of Little Penguins (*Eudyptula minor*). Grassed areas within the study area are also known to provide nesting and foraging habitat for the endangered North Head population of Long-nosed Bandicoots (*Perameles nasuta*). There is need to protect and regenerate the areas of bushland still intact, in order to support the development of flora and fauna in these areas.

Goal

To conserve and enhance the integrity and diversity of native terrestrial flora and fauna, and their ecosystems.

A total of six management options are proposed addressing two different objectives. Of these, four management options have been rated as of high priority and the remaining two as medium priority. All management options are already on-going activities of Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|--|---------------------------|------------------|---------|
| | | | Individual | Overall |
| TE.1 To ensure the activities within Manly Cove are carried out in a manner that maintain or improve the ecological condition of terrestrial habitats and species and also support objectives of Biodiversity Strategy | TE.1.1 Maintain and enhance remnant vegetation at Manly Point and Federation Point to improve on the habitat for the Little penguin population | On-going | H(5), M(3), L(0) | High |
| | TE.1.2 Encourage planting of native flora species on private and public lands to provide improved potential foraging and nesting habitat for the Long-nosed Bandicoot | On-going | H(3), M(4), L(1) | Medium |
| | TE.1.3 Ensure that Council's Street Tree Planting Program results in the planting of appropriate native species | On-going | H(4), M(2), L(2) | High |
| | TE.1.4 Continue work with OEH to manage Little Penguin Critical Habitat, the Wildlife Protection Area at Federation Point and known nesting sites in line with the Manly Little Penguin Recovery Plan. | On-going | H(6), M(2), L(0) | High |
| | TE.1.5 Continue enhanced weeding program at high weed density areas on a priority basis. | On-going | - | Medium |
| TE.2 To achieve community awareness of and involvement in the conservation of terrestrial ecology through education and participation | TE.2.1 Continue to provide community education in line with actions identified in the Manly Little Penguin Recovery Plan and Draft Long-nosed Bandicoot Recovery Plan. | On-going | H(6), M(2), L(0) | High |

*After adoption of the CZMP



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DETAILS OF MANAGEMENT OPTIONS

Objective

TE.1 To ensure the activities within Manly Cove are carried out in a manner that maintain or improve the ecological condition of terrestrial habitats and species.

TE.1.1 Maintain and enhance remnant vegetation at Manly Point and Federation Point to improve on the habitat for the Little Penguin population

Context: Penguin Critical Habitat B exists around Manly Point extending from 11A Oyama Avenue to 26 Addison Road. Penguin nesting sites have also been identified in the area of foreshore between Federation Point and Oceanworld which was declared a Wildlife Protection Area.

Skelton et al. (2004) identified that there is little remnant bushland at and around Manly Point. The fragmentation of natural bushland areas in Manly has reduced the viability of habitat in many bushland reserves to support populations of native fauna. However, remnant vegetation on Manly Point forms part of the important Critical Habitat area for Manly's Little Penguin population with numerous burrows located at this location.

It was suggested during the consultation process that remnant bushlands are often damaged by nearby residents.

When undertaking bush regeneration within the study area, it is important to take into consideration the critical habitat declared for this area. Bush regeneration must be done gradually to ensure the impact on habitat is minimal, and must be done in accordance with OHE license requirements. This also applies to weed control undertaken on private property that occurs within critical habitat areas. Banning of rock fishing may be considered in the area.

Actions:

- Survey and map the remnant bushland at the Penguin Critical Habitat, Manly Point and Wildlife Protected Area at Federation Point.
- Undertake an educational Program for nearby residents on the value of remnant bushlands
- Undertake management practices as per Council's adopted approach
- Undertake cautionary approach in managing this remnant vegetation

Objectives addressed: TE1

Addressing actions under Manly Council's MSS 2006: C1.6.17 – actively police breaches of Tree Preservation Order

Addressing SMCMA catchment targets: CTB1 – extent and condition of terrestrial native vegetation is improved; CTB3 – increase in the connectivity of terrestrial native vegetation

Addressing NRC targets (State Plan 2010): 1 – improvement in native vegetation condition

Performance Target: Remnant vegetation maintained

Indicative Cost: Volunteer time

Time Frame: On-going

Responsible Agency: Manly Council-Parks & Bushlands

Priority: High

TE.1.2 Encourage planting of native flora species on private and public lands to provide improved potential foraging and nesting habitat for the Long-nosed Bandicoot

Context: The long-nosed Bandicoot nests and forages within the study area, where there is some suitable nesting (thickets of low dense vegetation) and foraging habitat (grassland, including lawns). The population of long-nosed Bandicoots (*Perameles nasuta*) at North Head is listed as endangered on Schedule 1 of the Threatened Species Conservation Act 1995 (TSC Act).



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Revegetation of parts of Manly Cove Reserve and Beach to create nesting habitat for the Long Nosed Bandicoots is proposed. Increasing the amount of nesting and foraging habitat for this species will allow for a potential increase in the size of the population.

Actions:

- Identify lands, both public and private, for potential foraging
- Encourage private land owners to participate in habitat restoration
- Undertake programs to plant low dense clumping native flora species and also flowering shrubs/bushy plants

Objectives addressed: TE1

Addressing SMCMA catchment targets: CTB1 – extent and condition of terrestrial native vegetation is improved; CTB3 – increase in the connectivity of terrestrial native vegetation

Addressing NRC targets (State Plan 2010): 1 – improvement in native vegetation condition

Performance Target: Native vegetation maintained and enhanced

Indicative Cost: \$15,000 (\$3,000 per year)

Time Frame: On-going

Responsible Agency: Manly Council-Parks & Bushlands

Priority: Medium

TE.1.3 Ensure that Council's Street Tree Planting Program results in the planting of appropriate native species

Context: Manly Council's policy is to maintain the attractiveness, appeal and amenity of the area by preserving healthy trees in recognition of the value and importance of trees held by the community. Trees play an important part in maintaining the health of our environment, they help to protect soil and water supplies, provide shade, provide habitat, food, shelter and protection for wildlife. Trees in urban areas act as extensions of and links between core bushland, also known as bushland corridors.

Consider not to use *Cyprus* spp. as they grow too tall. Always replace any tree with native trees.

The Manly Council Tree Preservation Order 2001 applies to all trees in the Manly LGA. It is illegal to remove or prune any trees on public land, parks, bushland reserves or foreshore areas.

Consider reviewing the landscape section of the 1986 Manly Heritage Study for background into any culturally significant tree plantings in the area; and conserve and enhance any existing listed street tree plantings.

Actions:

- Review the present program of tree plantation
- Develop a comprehensive list of site specific recommended and appropriate trees
- Accommodate view eminence by selecting suitable plant type. Consider not to use *Cyprus* spp. Consider trees that provide shade and attract birds.

Objectives addressed: TE1

Addressing actions under Manly Council's MSS 2006: C1.6.17 – actively police breaches of Tree Preservation Order

Addressing SMCMA catchment targets: CTB1 – extent and condition of terrestrial native vegetation is improved; CTB3 – increase in the connectivity of terrestrial native vegetation

Addressing NRC targets (State Plan 2010): 1 – improvement in native vegetation condition

Performance Target: Recommended list prepared & program continued

Indicative Cost: \$50,000 (\$10,000 per year)

Time Frame: On-going

Responsible Agency: Manly Council-Parks & Bushlands



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Priority: High
TE.1.4 Continue work with OEH to manage Little Penguin Critical Habitat, the Wildlife Protection Area at Federation Point and known nesting sites in line with the Manly Little Penguin Recovery Plan.

Context: A small colony of Little Penguin has nested at Federation Point east along the foreshore behind Manly Pier. For the conservation of Manly's endangered population of Little Penguins, Council designated the foreshore area of Federation Point a Wildlife Protection Area (WPA). Administered under the Companion Animals Act 1998, the designation of the WPA precludes dogs and cats from the foreshore. To coincide with the designation of the WPA the stairs and boardwalk/walkway around to Ocean World has been made a dog 'on leash area'. Recently, some areas have been designated as 'dog prohibited area'. Signage has also been installed. Recent renovations and changes in use of the Bather's Pavilion, as has been assessed, are likely to pose threats to wildlife and habitats in the area.

Penguin site at Federation Point is not shown on Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

Actions:

- support continuation of the WPA.
- support increased Penguin Wardens to patrol the area
- improve educational/interpretive signage: much bigger, penguin specific signage painted on the path at several points (e.g. at Federation Point & at start of WPA) – perhaps a penguin with a speech bubble.
- Indicate a contact number on signage that the public may ring if they discover injured or at risk penguin.
- Interact with DoP and OEH to update its maps to show Penguin habitat at Federation Point & the Wharf & to gain "critical habitat" protection.
- Protect Federation Point nesting sites by fencing to provide barrier to people, fisherman and dogs
- Install CCTV at Federation Point to monitor nesting sites

Advantages: Little Penguin habitat protected and population size increased.

Disadvantages:

Objectives addressed: TE1

Addressing actions under Manly Council's MSS 2006: C1.2.17 – enforce restrictions near Penguin Critical Habitat

Addressing SMCMA catchment targets: CTB4 – terrestrial threatened species are better conserved

Addressing NRC targets (State Plan 2010): 2 – native fauna species; 3 – threatened species, populations and ecological communities

Performance Target: WPA maintained and continued

Indicative Cost: Staff & Warden time

Time Frame: On-going

Responsible Agency: Manly Council – Natural Resources, Precincts

Priority: High

TH 1.5. Continue enhanced weeding program at high weed density areas on a priority basis.

Context: There are 139 weed species recorded within the study area. These species have reached bushland areas by escaping from gardens, illegal dumping of garden refuses, dispersion by fauna (e.g. - birds eating seeds) and illegal plantings. Asparagus fern and other invasive species are widespread in the area between the Art Gallery and Federation Point. Weed management will involve seasonally prioritised strategies.

Actions:



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- Control weeds using appropriate bush regeneration methods to minimise disturbance to the environment. Use methods that do not risk water contamination or harm to Penguins and their habitat
- Take steps to prevent dispersal of weeds
- Follow Weed Management Strategy 2007-11 for Sydney Metropolitan CMA.

Advantages: *Contributes in healthy native vegetation*

Disadvantages: *Labour intensive, must ensure sufficient maintenance*

Objectives addressed: TH1

Addressing actions under Manly Council's MSS 2006: C1.5.10 – implement weed control; C1.6.1 – implement Weed Management Strategy;

Addressing SMCMA catchment targets: CTB1 – extent and condition of terrestrial native vegetation is improved; CTB5 – impact of terrestrial invasive species is reduced

Addressing NRC targets (State Plan 2010): 4 – reduction in the impact of invasive species

Performance Target: *Weed density lowered*

Indicative Cost: *\$3,000 per year*

Time Frame: *On-going*

Responsible Agency: *Manly Council – Parks & Bushlands*

Priority: *-*

Objective

TE.2 To achieve community awareness of and involvement in the conservation of terrestrial ecology through education and participation.

TE.2.1 Continue to provide community education in line with actions identified in the Manly Little Penguin Recovery Plan and Draft Long-nosed Bandicoot Recovery Plan.

Context: *The Manly Little Penguin and draft Long-nosed Bandicoot Recovery Plans have identified actions for community education. The purpose is to encourage and maintain public awareness and participation in the recovery and management.*

Action: *The option involves encouraging wider community participation in implementing Recovery Plans:*

- *developing and implementing an education program for the residents to emphasise the significance of these populations occurring on or adjacent to their properties,*
- *ensuring that progress and information as a result of the implementation of these recovery plans are readily available to the community*
- *The community is informed of the management and is actively involved in implementing actions that directly improve the status of the population, and provide information to assist land managers in their knowledge and understanding of the population's management.*

Objectives addressed: TE2

Addressing actions under Manly Council's MSS 2006: C1.2.6 – residents involvement in voluntary ranger program

Addressing SMCMA catchment targets: CTB1 – extent and condition of terrestrial native vegetation is improved; CTC1 – communities engaged in improved natural resource management; CTC4 – community recognising the contribution of healthy natural resources

Addressing NRC targets (State Plan 2010): 1 – improvement in native vegetation condition; 4 – reduction in the impact of invasive species

Performance Target: *Recovery Plans are supported with increased community participation*

Indicative Cost: *Staff time*



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Time Frame: On-going
Responsible Agency: Manly Council- Environmental Partnerships & Programs, Parks & Bushlands
Priority: High

Goal

Assess, monitor and mitigate risks from coastline hazards and climate change.

4.6 OPTIONS ADDRESSING CLIMATE CHANGE & COASTAL HAZARDS

Manly Cove faces a number of coastline hazards including beach erosion, shoreline recession, sand drift, inundation, stormwater erosion and slope & cliff instability. Each of these hazard types has been assessed and a range of management responses identified.

Manly Cove is also expected to be affected from sea level rise impacts. The NSW Government has in 2009 released the Sea Level Rise Policy Statement which provides guidance on sea level projections through the adoption of benchmarks for a rise relative to 1990 mean sea levels of 40 cm by 2050 and 90 cm by 2100.

The primary objective of this Sea Level Rise Policy Statement is to minimise the social disruption, economic costs and environmental impacts resulting from long-term sea level rise. The NSW Government has also prepared guideline documents, legislative amendments to support the Policy Statement.

A total of 14 management options are proposed addressing five different objectives. Of these, five management options have been rated as of high priority; eight have medium priority and the remaining one as having low priority. One option is proposed for immediate implementation. Eight management options are already on-going activities of Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|-------------------|---------|
| | | | Individual | Overall |
| CH.1 To reduce to an acceptable level, the risk to property and infrastructure resulting from Sea Level Rise | CH.1.1 Establish 'coastal risk areas' using NSW's planning sea level rise benchmarks | Immediate | H(3), M(3), L (3) | Medium |
| | CH.1.2 Ensure appropriate development on land identified as 'coastal risk areas' | On-going | H(5), M(2), L (2) | High |
| | CH.1.3 Adopt an adaptive risk-based approach to managing climate change including sea level rise impacts | On-going | H(1), M(5), L (3) | Medium |
| | CH.1.4 Work with regional, state and federal bodies to ensure consistent adaptation planning | On-going | H(1), M(4), L (4) | Medium |
| | CH.1.5 Work within the emergency management frameworks identified in Local Emergency Management systems during times of floods and storms | On-going | H(7), M(1), L (1) | High |
| CH.2 Promote understanding of the likely environmental, | CH.2.1 Continue to provide updated information to the public about climate change including sea level rise and their impacts | On-going | H(1), M(4), L (2) | Medium |



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| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|---|--|---------------------------|-------------------|---------|
| | | | Individual | Overall |
| social and economic impacts of climate change | CH.2.2 Incorporate latest climate change information into management decisions | Within 2 years | H(3), M(4), L (2) | Medium |
| CH.3 Reduce to an acceptable level, the risk of damage as a result of beach erosion and shoreline recession | CH.3.1 Develop and implement a natural shoreline and shoreline structure monitoring program for Manly Cove East and West Beaches | Within 2 years | H(5), M(4), L (0) | High |
| | CH.3.2 Consider beach nourishment to reduce the risk from beach erosion | 5 th year | H(3), M(4), L (2) | Medium |
| | CH.3.3 Should the risk of damage to the existing seawall due to the effects of beach erosion and recession in the future become unacceptable, evaluate and implement the available management options | On-going | H(2), M(6), L (1) | Medium |
| CH.4 To reduce to an acceptable level, the risk to property and risk to life as a result of slope and cliff instability | CH.4.1 Continue the staged remediation of cliff and slope instability on public lands based upon the level of risk posed to life and /or property and in line with recommendations of the Davis Marina to Manly Point CHDS | On-going | H(3), M(4), L (2) | Medium |
| | CH.4.2 Reissue notifications to private property owners of identified coastal hazards potentially affecting their land and a reminder the information has been recorded on the properties S.149 Certificate | On-going | H(5), M(2), L (2) | High |
| CH.5 Undertake measures to address risk from tsunami | CH.5.1 Map tsunami risk areas | Within 2 years | H(3), M(2), L (4) | Low |
| | CH.5.2 Identify, with SES, emergency measures including evacuation routes in tsunami risk areas. | Between 3-4 years | H(5), M(2), L (2) | High |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

CH.1 To reduce to an acceptable level, the risk to property and infrastructure resulting from Sea Level Rise.

CH.1.1 Establish 'coastal risk areas' using NSW's planning sea level rise benchmarks



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Context: The NSW sea level rise planning benchmarks are an increase above 1990 mean sea levels of 40cm by 2050 and 90cm by 2100. Of all the impacts from climate change, the projected rise in mean sea level is one of the most significant concerns for integrated coastal zone management. In addition to higher projected storm surge and oceanic inundation levels, a rise in mean sea level will also result in complementary recession of unconsolidated (sandy) shorelines.

A 'sea level rise planning area' is to be defined in coastal hazard studies, for use in land use planning and development assessment. Future studies will therefore need to include 2100 hazard lines based on defining both a 'coastal hazard planning area' assuming no sea level rise and defining a 2100 hazard line incorporating sea level rise induced recession using the benchmarks. Both sets of lines are now required to be determined and can be defined as 'coastal risk area' for planning purposes. This will ensure consistent consideration of sea level rise in coastal hazard assessment for planning purposes.

Prior to the completion of new or revised studies, councils may adopt investigation areas (potential coastal risk areas) for the purpose of land use planning and development assessment. An investigation area can be used by a council as an interim guide to indicate land likely to be subject to coastal risks now or in the future as a consequence of sea level rise. The sea level rise planning benchmarks should be incorporated into council's calculation of the investigation areas.

Actions:

- Secure external funding to carry out risk assessments to sea level rise
- Establish and adopt sea level rise risk areas
- Make information available to public
- Procure instruments, data and software to carry out such analysis in-house, such as LiDAR data and an updated hydrodynamic model
- Make modelling results and identified risk areas public.

Objectives addressed: CH1

Addressing actions under Manly Council's MSS 2006: C2.4.1 – implement best-practice risk management

Performance Target: Coastal erosion risk areas are identified, mapped and adopted

Indicative Cost: \$120,000

Time Frame: Immediate

Responsible Agency: Manly Council – NR, SLUP

Priority: Medium

CH.1.2 Ensure appropriate development on land identified as 'coastal risk areas'.

Context: As new coastal risk areas are identified, these extended areas of risk will need to be taken into consideration when undertaking strategic planning.

Coastal Planning Principle 3 of the NSW Coastal Planning Guideline: Adapting to Sea level Rise discourages the intensification of development in coastal risk areas. For example, changing land use from rural to urban, or increasing the density of housing from low to medium or high density is strongly discouraged in high risk areas due to the potential future risk to life, property and the environment. New urban centres should be sited away from coastal risk areas.

Coastal Planning Principle 4 encourages the reduction of land use intensity in coastal risk areas where feasible. Reducing land use intensity may be difficult to achieve in areas like Manly that have already undergone significant urban development (e.g. established residential zones). Changing land use zoning from medium density housing to low density or prohibiting new urban development in general would affect the future development potential of a given area. This is particularly the case if the coastal risks are only minor and the future development potential of the land is not otherwise restricted by other environmental, social or economic constraints. Conversely, sea level rise may significantly affect the



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development potential of some areas in the future. Appropriate planning is needed to minimise the social and economic impacts of inappropriate development in the long term.

Actions:

- Establish and adopt sea level rise risk areas
- Assess and revise development potential of sea level rise risk areas
- Use new assessment in approving DA applications

Objectives addressed: CH1

Addressing actions under Manly Council's MSS 2006: C2.4.1 – implement best-practice risk management

Addressing SMCMA catchment targets: CTC5 – adaptive and mitigating strategies for climate change impacts on natural resource values

Performance Target: Appropriate development of coastal risk areas ensured

Indicative Cost: Staff time

Time Frame: on-going

Responsible Agency: Manly Council – SLUP, DAU, NR

Priority: High

CH.1.3 Adopt an adaptive risk-based approach to managing climate change including sea level rise impacts

Context: Manly Council has undertaken a Climate Change Risk Assessment and Adaptation Action Planning Process through the Federal Government's Local Adaptation Pathways Program. Council is building on the outcomes of this process in preparation of a Draft Climate Change Adaptation Strategy (incorporating the prioritised Adaptation Action Plan).

Council is also implementing a few adaptation measures including:

- Improving water-use efficiency, recycling and public education about water usage.
- Developing and gradually implementing coastal zone and estuary management plans.
- Maintaining green spaces (parks and bushland) in urban areas.

Actions:

- Completion of Manly LGA Climate Change Adaptation Strategy (incorporating Adaptation Action Plan).
- Implementation of identified priority adaptation actions
- Modify on-going adaptation measures based on periodic assessment and also accommodating new knowledge
- Identify opportunities to install water and energy efficient systems on public facilities throughout the study area.

Objectives addressed: CH1

Addressing actions under Manly Council's MSS 2006: C2.4.1 – implement best-practice risk management

Addressing SMCMA catchment targets: CTC5 – adaptive and mitigating strategies for climate change impacts on natural resource values

Performance Target: Positive measurable impacts achieved

Indicative Cost: \$70,000

Time Frame: On-going

Responsible Agency: Manly Council – NR, Urban Services, Precincts

Priority: Medium

CH.1.4 Work with regional, state and federal bodies to ensure consistent adaptation planning



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Context: Collaboration with all levels of Government is important to ensure consistent adaptation planning. Under the COAG National Climate Change Adaptation Framework, NSW is participating in an initiative to develop national priorities for adaptation research. This work is being co-ordinated by the Commonwealth's Department of Climate Change and the National Climate Change Adaptation Research Facility, hosted by Griffith University, Queensland.

Local Governments are responding in a number of ways to the problem of climate change. They are working to reduce greenhouse gas emissions by making necessary changes to their activities as well as using their planning powers, spending policies and community and business links to influence households and businesses. The Local Government and Shires Association (LGSA) has developed a Climate Change Action Pack to assist local government to mitigate and adapt to climate change.

Sydney Coastal Councils Group (SCCG) is supporting 15 coastal councils to adopt consistent adaptation planning.

Action: The option involves continuation of collaboration.

Objectives addressed: CH1

Addressing actions under Manly Council's MSS 2006: C2.4.7 – partnership with SCCG for best practice management responses to climate change

Addressing SMCMA catchment targets: CTC2 – improved focus and collaboration between organisations; CTC5 – adaptive and mitigating strategies for climate change impacts on natural resource values

Performance Target: Improved and continued collaboration

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: SCCG, OEH, Manly Council- NR, SLUP

Priority: Medium

CH.1.5 Work within the emergency management frameworks identified in Local Emergency Management systems during times of floods and storms

Context: The Manly Warringah Pittwater Local Emergency Management Committee (LEMC) co-ordinates a multi-agency response to local emergencies. The Committee has prepared a local disaster plan called, Manly Warringah Pittwater DISPLAN in August 2005.

The DISPLAN is the key document for identifying roles, responsibilities, control and co-ordination of emergency operations at the local level. This document links with District and State Level Disaster Plans should the scale of the disaster require resources not available within the local community. The DISPLAN can be activated by the Local Emergency Operations Controller (LEOCON). This is currently the Northern Beaches Area Commander of the NSW Police Service. The Committee is chaired by a senior representative of Council, the Local Emergency Management Officer (LEMO).

Actions:

- The DISPLAN is circulated widely.
- Work within the existing framework
- Emergency management framework during times of flood and storm is evaluated

Objectives addressed: CH1

Performance Target: Emergency Action Plan updated

Indicative Cost: \$10,000

Time Frame: on-going

Responsible Agency: Manly Council- Urban Services, Natural Resources, SES

Priority: High



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Objective

CH.2 Promote understanding of the likely environmental, social and economic impacts of climate change

CH.2.1 Continue to provide updated information to the public about climate change including sea level rise and their impacts

Context: Knowledge of possible impacts of climate change is always growing. The community is often confused with information reaching to them from the media. The community needs to receive relevant, accurate and structured information. Precincts can facilitate disseminating information to the community and increase community involvement.

Recently Precincts have been provided with information packages containing NSW Governments Sea Level Rise Policy Statement and NSW Coastal Planning Guidelines.

Actions:

- Prepare a booklet (fact sheet) on key climate change impacts on Manly LGA including information on on-going mitigation and adaptation measures (a combination of Cardno, SCCG and Risk/Mitigation Assessment reports)
- Publish and distribute the booklet through Precincts

Objectives addressed: CH2

Addressing actions under Manly Council's MSS 2006: C2.4.4 – implement climate change education and awareness program

Addressing SMCMA catchment targets: CTC1 – people, communities have increased capacity to engage in improved natural resource management; CTC5 – adaptive and mitigating strategies for climate change impacts on natural resource values

Performance Target: Booklet (fact sheet) published and distributed

Indicative Cost: \$15,000 + Staff time

Time Frame: On-going

Responsible Agency: Manly Council – EPP, NR, MEC, Precincts

Priority: Medium

CH.2.2 Incorporate latest climate change information into management decisions

Context: The NSW Government has last year announced the Coastal Erosion Reform Package and Policy Statement on Sea Level Rise. The Reform Package includes amendments to legislation, new guidelines, and additional support for councils to re-energise their coastal management planning processes. The Sea Level Rise Policy Statement, an element of the Reform package, identifies sea level rise projections of up to 40 cm to 2050, and 90 cm to 2100, for the NSW coastline.

As part of the Reform Package, the Coastal Protection and Other Legislation Amendment Act 2010 was passed by the NSW Parliament on 21 October 2010 and largely commenced on 1 January 2011. This Act amended the Coastal Protection Act, the Local Government Act and the Environmental Planning and Assessment Acts, and three regulations.

The Act is supported by a series of statutory and non-statutory guidelines as:

- Minister's Requirements under the Coastal Protection Act 1979
- Guidelines for preparing coastal zone management plans
- Coastal Protection Service Charge Guidelines



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- A Guide to the Statutory Requirements for Emergency Coastal Protection Works
- A guide for authorised officers under the Coastal Protection Act
- Guidelines for assessing the impacts of seawalls

The Coastal Protection Regulation 2011 and associated Code of Practice under the Act have now been enacted.

It is necessary that these latest climate change directions and requirements are incorporated into management decisions.

Actions:

- Climate change directions and requirements are incorporated into management decisions.
- These directions are publicised widely within the Council
- Public Forums are held to explain Government directions and requirements.

Objectives addressed: CH2

Addressing actions under Manly Council's MSS 2006: C2.4.4 – implement climate change education and awareness program

Addressing SMCMA catchment targets: CTC5 – adaptive and mitigating strategies for climate change impacts on natural resource values

Performance Target: Climate change directions and requirements are publicised widely within the Council

Indicative Cost: staff time

Time Frame: within 2 years

Responsible Agency: Manly Council – NR, SLUP

Priority: Medium

Objective

CH.3 Reduce to an acceptable level, the risk of damage as a result of beach erosion and shoreline recession.

CH.3.1 Develop and implement a natural shoreline and shoreline structure monitoring program for Manly Cove East and West Beaches

Context: Shoreline recession is the progressive landward shift of the average long term position of the coastline. The cause of shoreline recession is sediment loss. Recession of a sandy beach is the result of a long term and continuing net loss of sand from the beach system. According to the sediment budget concept, this occurs when more sand is leaving than entering the beach compartment. Recession tends to occur when, for example:

- The outgoing longshore transport from a beach compartment is greater than the incoming longshore transport;
- Offshore transport processes move sand to offshore "sinks" from which it does not return to the beach; and
- There is a landward loss of sediment by windborne transport.

While it is convenient to express shoreline recession due to sediment loss as a rate (metres per year) the process of recession is not uniform over time but is associated generally with storm activity (PBP, 2004).

Seawalls, boating facilities, Manly Wharf, Oceanworld, Manly Bathers Pavilion and boating clubs are some of the coastal structures located on the shoreline of Manly Cove.

Actions: Implement a regular structural monitoring program and report any signs of damage.



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Objectives addressed: CH3

Addressing SMCMA catchment targets: CTC3 – framework for monitoring, evaluating and reporting natural resource indicators

Addressing actions under Manly Council's MSS 2006: C1.3.2 - Monitoring seawall stability

Performance Target: Regular Inspection Report

Indicative Cost: \$ 50,000 (\$10,000 yearly)

Time Frame: Within 2 years

Responsible Agency: Manly Council- Urban Services & NR,

Priority: High

CH.3.2 Consider beach nourishment to reduce the risk from beach erosion

Context: Beach Nourishment is a popular alternative to harden shore protection systems. It involves deliberately enlarging the width and height of a beach through the application of dredged material without the addition of hard structures to the beach.

The current width of Manly Cove West Beach, measured at mean sea level, is approximately 20 m. This beach has shown a recession rate of about 0.05 m/yr which would mean that the beach would reduce in width by 2 to 4 m over a period of 20 to 50 years respectively. On the other hand, Manly Cove East Beach currently has a width, measured at mean sea level, of approximately 15 m. This beach has an increase in sand volumes over a limited study period, primarily due to artificial beach nourishment in 1989, 1991 and 1992. As these are popular beaches, it is necessary to monitor recession due both to storms and sea level rise.

The SCCG has supported a scoping study to develop the outline of a sand nourishment programme for Sydney beaches utilising suitable offshore sand deposits for amenity enhancement and to ameliorate increased hazard risk from sea level rise. The environmental, economic and social evaluations of the nourishment campaign demonstrate substantial positive benefits

The NSW Government have adopted a position prohibiting the commercial extraction of offshore marine sands. It is the intent of the SCCG to press Government to lift this prohibition to facilitate immediate and longer term demands for nourishment purposes in the Greater Metropolitan Region.

Actions:

- Work with the SCCG to facilitate a beach nourishment program
- Support SCCG in pressing Government to lift prohibition of the commercial extraction of offshore marine sands.

Objectives addressed: CH3

Addressing SMCMA catchment targets: CTLD2 – protect and improve key natural resources

Addressing actions under Manly Council's MSS 2006: C1.3.2 - Monitoring seawall stability

Performance Target: Beach nourishment program initiated

Indicative Cost: TBD (External grant will be needed)

Time Frame: 5th year

Responsible Agency: Manly Council- Urban Services & NR; SCCG

Priority: Medium

CH.3.3 Should the risk of damage to the existing seawall due to the effects of beach erosion and recession in the future become unacceptable, evaluate and implement the available management options



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Context: Based on findings of the monitoring program (option CH3.1), regular inspections should be carried out, especially after storms, to assess conditions of seawalls protecting public properties. Site inspections should include, but not necessarily be limited to a visual assessment of the condition of the walls and inspection pits to confirm foundation levels where necessary to determine soil properties of the foundation and backfill material. Appropriate geotechnical analysis will be required to determine the stability of the seawall's under design scour conditions.

Actions: This option involves regular inspection of seawalls, especially after storms.

Objectives addressed: CH3

Addressing actions under Manly Council's MSS 2006: C1.3.2 - Monitoring seawall stability

Performance Target: Regular Inspection Report

Indicative Cost: Staff cost

Time Frame: on-going

Responsible Agency: Manly Council- Urban Services & NR

Priority: Medium

Objective

CH.4 To reduce to an acceptable level, the risk to property and risk to life as a result of slope and cliff instability.

CH.4.1 Continue the staged remediation of cliff and slope instability on public lands based upon the level of risk posed to life and /or property and in line with recommendations of the Davis Marina to Manly Point CHDS

Context: A Hazard Definition Study was conducted in November 2003 for the section of foreshore between Delwood Beach and Manly Point. The purpose of the investigation was to identify, among others, potential slope and cliff instability hazards and the likely consequences should a hazard occur.

A total of 17 sites with potential cliff and slope instability hazards were identified. Remediation works at two publicly owned sites have already been completed.

The main potential geotechnical hazards identified within the study area can be summarised as follows:

- a) localised erosion of undercuts and overhangs with subsequent rock falls from parts of the cliffline;
- b) toppling (or forward rotation) of blocks/overhangs from the top part of the cliffline.

The remediation of hazards identified on public land is the responsibility of Council who seeks external funding to implement remediation measures and to conduct further geotechnical assessments as recommended within the original CHDS.

Actions:

- Continue to implement remediation measures on public lands in stages. Seek external funding.
- Ensure that all coastal hazards are addressed using appropriate methods (such as pillars, rock bolts etc), rather than relying on large areas of concreting or removal of rock features and respect sites of Aboriginal significance.

Objectives addressed: CH4

Performance Target: Reduction of hazards from cliff & slope instability

Indicative Cost: \$250,000 (\$50,000 per year)

Time Frame: on-going

Responsible Agency: Manly Council- Urban Services & NR

Priority: Medium



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CH.4.2 Reissue notifications to private property owners of identified coastal hazards potentially affecting their land and a reminder the information has been recorded on the properties S.149 Certificate

Context: A Hazard Definition Study was conducted in November 2003 for the section of foreshore between Delwood Beach and Manly Point. The purpose of the investigation was to identify, among others, potential slope and cliff instability hazards and the likely consequences should a hazard occur.

The slope and cliff instability hazards have also been identified on private properties. Council has formally notified a number of private property owners that their properties may be potentially affected by specific hazards identified through the CHDS process. This was done in the form of a letter to each owner notifying the nature of the hazard, the extent (if known), any recommendations from the CHDS and that a copy of the report is available upon request. Concurrently hazard information was also recorded on 149 Certificates for those properties affected.

Identified concerns should be reviewed for risk priorities and works completed. S149 certificates should not create unnecessary restrictions for property owners.

Actions: Reissue notifications to private property owners.

Objectives addressed: CH4

Performance Target: Reissuing of notification finalised

Indicative Cost: Staff cost

Time Frame: on-going

Responsible Agency: Manly Council- Regulatory Compliance

Priority: High

Objective

CH.5 Undertake measures to address risk from tsunami.

CH.5.1 Map tsunami risk areas

Context: Tsunami/storm is one of the hazards identified in the Manly, Warringah and Pittwater Council's Local Disaster Plan (DISPLAN). Its threat level probability is rated as remote but consequence as major.

The NSW coast has experienced some 40 tsunami since European colonisation, larger tsunamis were recorded in 1868, 1877 and 1960. During 1960 tsunami, Manly was affected: a strip 100 yards by 60 yards from Clontarf Reserve Point Park was swept away.

Sydney Coastal Councils Group has recently carried out a study to test a GIS tool assessing the vulnerability of buildings to tsunami flooding. The study assessed Manly as a case area under a worse case scenario. Findings are:

- A total of 169ha of low-lying area would be inundated
- Water depth could reach a maximum of 7 m in the area next to lagoon
- 1133 buildings would be flooded

Map of the tsunami risk area, under the study scenario, has been prepared.

Actions: Refine tsunami map under the revised DISPLAN.

Objectives addressed: CH5



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Performance Target: tsunami map completed
Indicative Cost: \$40,000
Time Frame: on-going
Responsible Agency: Ministry of Police & Emergency Services
Priority: Low

CH.5.2 Identify, with SES, emergency measures including evacuation routes.

Context: Sydney Coastal Councils Group has recently carried out a study to test a GIS tool assessing the vulnerability of buildings to tsunami flooding. The study assessed Manly as a case area under a worse case scenario. The study recommended two possible evacuation routes:

Block 1: people living in the buildings on Roseberry Street and Balgowlah Road are very close to the boundary of the inundation zone, so they should just walk towards the hill.

Block 2: evacuation of buildings located in Block 2 is much more complex because buildings located inland close to the area of Balgowlah Road, would be affected by an inundation depth up to 5-6 metres, while those closer to the beach would be affected by only 1-2 metres. Therefore, people living inland and closer to the hills should evacuate to the more elevated areas. People living closer to the lagoon would probably be too far from the hill to reach it safely. Also, the bridge connecting Manly to Warringah would not be available, because it would be flooded. As a consequence, the only safe points of evacuation for people living close to the lagoon would be the highest and least vulnerable buildings close to the beach and in the area behind it.

Actions: Discuss these study recommendations with the SES and identify possible evacuation routes.

Objectives addressed: CH5

Performance Target: evacuation routes identified and agreed
Indicative Cost: \$5,000
Time Frame: Between 3-4 years
Responsible Agency: Ministry of Police & Emergency Services, SES, Manly Council -US
Priority: High



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4.7 OPTIONS ADDRESSING WASTE MANAGEMENT

Despite the presence of a range of rubbish bins within the Manly Cove study area, litter, both from harbour and land based activities, presents a continuing issue for the management and aesthetic quality of the Manly Cove study area. The high level of human activity on the harbour and surrounding urban areas contributes to an undesirably large amount of litter accumulating on harbour beaches.

Goal

Promote and facilitate sustainable waste management in Manly Cove

A total of six management options are proposed addressing two different objectives. Of these, three management options have been rated as of high priority, two having medium and the remaining one as having low priority. No option is proposed for immediate implementation. Four management options are already on-going activities of Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|------------------|---------|
| | | | Individual | Overall |
| WM.1 To reduce waste while maximising re-use and recycling in the Manly Cove study area | WM.1.1 Implement Council adopted strategies to reduce waste in Manly Cove | On-going | H(5), M(2), L(1) | High |
| | WM.1.2 Ensure adequate recycling facilities are provided in public areas and encourage responsible disposal of litter within the study area | On-going | H(5), M(2), L(1) | High |
| | WM.1.3 Continue to conduct and support community and business education programs to avoid litter production at source | On-going | H(4), M(3), L(1) | High |
| WM.2 To minimise risk to beach users and marine fauna from beach and marine waste while maintaining natural ecosystems | WM.2.1 Continue to operate the existing beach raking regime and try hand picking as an alternative from Manly Cove beaches | Within 2 years | H(1), M(7), L(0) | Medium |
| | WM.2.2 Conduct litter audit to determine sources of rubbish to inform treatment and education programs | Between 3-4 years | H(2), M(2), L(4) | Low |
| | WM.2.3 Encourage NSW Maritime to improve its water-based litter and debris cleaning regime | On-going | H(4), M(1), L(3) | Medium |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

WM 1 To reduce waste while maximising re-use and recycling in the Manly Cove study area.

WM.1.1 Implement Council adopted strategies to reduce waste in Manly Cove

Context: Manly Council is committed to achieving ecological sustainability at the local level. Manly being iconic tourist area, Council is always concerned with waste management. Manly Council conducted a Litter Summit in August 2001. Members of the residential and business community attended a workshop with representatives from government agencies and Council to discuss issues relating to litter avoidance and management. The outcomes of the summit resulted in Council adopting Litter Avoidance Strategy in 2003. Further, Council adopted the Zero Waste Strategy in 2005. The



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target is to achieve Zero Waste within 10 years. This will require a concerted effort by all sectors of the Manly community and visitors alike.

Actions:

- Improved enforcement of littering laws in beach and harbour reserves
- Monitor actions proposed in these strategies are implemented.
- Monitor impact of implementing these strategies in reducing total waste in Manly

Objectives addressed: WM1

Performance Target: Strategies are implemented

Indicative Cost: Staff time

Time Frame: on-going

Responsible Agency: Manly Council – Waste & Cleansing

Priority: High

WM.1.2 Ensure adequate recycling facilities are provided in public areas and encourage responsible disposal of litter within the study area

Context: The Manly Cove DCP (1996) provides controls for waste management within the study area to achieve a number of objectives including the following:

All pedestrian areas shall be adequately provided with clearly labelled compartmented waste receptacles to allow for self sorting of recyclable waste products i.e. glass bottles, PET bottles, cans and biodegradable materials such as food waste.

A comprehensive study of the Public Bins at Manly Cove and elsewhere has been conducted in order to improve maintenance of facilities and reduce recycling contamination rates etc. Manly Cove already has a high concentration of public bins.

Sample Map: Bin Locations



Actions:

- Additional bins are provided in East Esplanade area to cater for high level of weekend use.
- Undertake educational program for responsible rubbish disposal
- Monitor that rubbish bins are frequently emptied

Objectives addressed: WM1

Performance Target: educational program intensified

Indicative Cost: Staff time

Time Frame: on-going

Responsible Agency: Manly Council – Waste & Cleansing

Priority: High



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WM.1.3 Continue to conduct and support community and business education programs to avoid litter production at source

Context: Council's Corporate Plan 2010/13 identifies the key outcomes of waste avoidance as:

- Reduce material entering the waste stream, including increases in diversion rates.
- Educate residents, schools, businesses, industry and visitors to avoid, reduce, reuse and recycle to assist Council in its commitment to waste minimisation.
- Manage recyclable products on the basis of the reduce/reuse/recycle principle to maximise the diversion of material from the waste stream.
- Extend the range of recyclable materials suitable for collection within Council services to continually improve both the volume of materials collected and the level of contamination of materials collected.

Manly Council will continue to support community and business groups through targeted educational program.

Actions:

- Promote waste issues, including waste avoidance and reduction to local businesses by the dissemination of a range of resources and using champions and case studies
- Provide a Zero Waste advisory service for local businesses

Advantages: The initiative will reduce litter production at source.

Disadvantages: -

Objectives addressed: WM1

Performance Target: Educational programs continued

Indicative Cost: \$10,000 + Staff time

Time Frame: on-going

Responsible Agency: Manly Council – Waste & Cleansing, EPP

Priority: High

Objective

WM 2 To minimise risk to beach users and marine fauna from beach and marine waste while maintaining natural ecosystems.

WM.2.1 Continue to operate the existing beach raking regime and try hand picking as an alternative from Manly Cove beaches

Context: Beach raking is currently carried out daily on Manly Cove beach. This captures gross pollutants not captured by street sweeping or other pollutant reduction measures. This activity is known to be detrimental to the ecology of the intertidal area. Marine debris such as seagrass wrack (not rubbish) washed up on the shore provides an important source of food and habitat for a diverse range of invertebrate species that live in the sand, which are an important part of the intertidal food chain.





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Raking of the beach removes this habitat and food source.

Mosman Council (2005) tried hand cleaning on Chinamans beach to minimise the impact on beach invertebrates. This can be tried at Manly Cove.

Actions:

- Continue beach raking at Manly Cove beaches, preferably during low tides.
- Review relevant literature including Mosman Council's report
- Trial hand cleaning on Manly Cove beach for 5-6 weeks and analyse results
- Consider providing needle bins at toilets near Oceanworld

Advantages: The gained knowledge will help in balancing between safe beach and eco-sensitive beach management. Beach raking is a routine practice in popular beaches.

Disadvantages: Alternative to beach raking is hand picking. Implementation of hand picking is laborious, expensive and time consuming and will fail to collect needles/glass under sand.

Objectives addressed: WM2

Addressing actions under Manly Council's MSS 2006: C1.2.11 – Review of beach raking

Performance Target: Knowledge gained and applied

Indicative Cost: \$30,000

Time Frame: Within 2 years

Responsible Agency: Manly Council – Civic Services

Priority: Medium

WM.2.2 Conduct litter audit to determine sources of rubbish to inform treatment and education programs

Context: Council has identified these sources of litter in Manly:

- Littering food/drink containers, cigarette butts, paper, plastic bags and similar deposited from cars, carelessly/intentionally deposited, left behind unawares;
- Illegal dumping in reserves, bushland and roadsides;
- Organic litter accumulating in roadside gutters;
- Advertising material and newspapers not delivered correctly;
- Posters on poles;
- Unsecured loads;
- Building sites without adequate litter controls;
- Full bins allowing litter to blow away; and
- Uncollected dog faeces.

To avoid litter and thereby reduce the impact on the natural and built environment, Manly Council has adopted 'Litter Avoidance Strategy' in 2003. According to this Strategy, Council will examine the feasibility of conducting litter audits. Future audits will then be used to provide an indicator of the effectiveness of the litter avoidance and management strategies.

Actions:

- Conduct Litter Audit throughout Manly LGA
- Analyse findings to carry out treatments
- Undertake educational programs to complement 'Litter Avoidance Strategy'
- Address discarded fishing line and tackle
- Address rubbish accumulation under Manly Wharf through increased cleaning, to be done in consultation with Penguin Wardens.

Advantages: The initiative will reduce litter production at source.



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Disadvantages: -

Objectives addressed: WM2

Performance Target: Litter Audit completed
Indicative Cost: \$20,000
Time Frame: periodically, every 5 years
Responsible Agency: Manly Council – Civic Services
Priority: Low

WM.2.3 Encourage NSW Maritime to improve its water-based litter and debris cleaning regime

Context: NSW Maritime has a number of statutory responsibilities with respect to improving safety and protecting the environment on the State's navigable waterways, including the removal of rubbish from Sydney Harbour. The service provided by NSW Maritime through its Environmental Services team is currently the only effective means of removing floating litter and waste from Sydney Harbour including storm water pollution, other visible debris and floating hazards to navigation.

On average more than 3,500 cubic meters of rubbish is collected per year, ranging from large objects such as trees and tyres to the debris washed into the harbour from harbour side suburbs and small items left behind on beaches and other foreshore locations by members of the public.

Garbage can be fatal for marine animals and can also be a risk for recreational boaters and the fishing industry. Rope and plastic material may get caught in propeller shafts or block water intakes causing major damage, expensive repairs and loss of income while vessels are repaired.

Under the Protection of the Environment Operations Act 1997 (POEO Act), it is an offence to pollute any waters in NSW unless permitted under an environment protection licence issued by the Environment Protection Authority. Garbage from vessels should be stored on board and disposed of responsibly once you are back on shore.

Actions:

- Liaise with NSW Maritime
- Organise increased collection effort in Manly Cove
- Assist NSW Maritime to undertake educational programs

Advantages: The initiative will reduce water based litter and garbage.

Disadvantages: -

Objectives addressed: WM2

Performance Target: Increased collection efforts
Indicative Cost: Staff time
Time Frame: on-going
Responsible Agency: Manly Council – Civic Services, NSW Maritime
Priority: Medium



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4.8 OPTIONS ADDRESSING ACCESS & TRAFFIC MANAGEMENT

With Manly Cove, and more specifically Manly Wharf, acting as a major tourist and commuter link, this section of the study area provides safe, well maintained and lit access for a variety of users. However, there are a number of areas which have been identified as requiring improvement in order to meet the standard set by the Access DCP and to meet community needs.

Goal
To provide an environment at Manly Cove that is accessible to all people

A total of four management options are proposed addressing one objective. Of these, three management options have been rated as of medium priority and the remaining one as low priority. One management option is already an on-going activity of Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|--|---------------------------|------------------|---------|
| | | | Individual | Overall |
| AM.1 To improve and control access for pedestrians, cyclists, water based recreation and servicing vehicles, minimising conflicts and negative impacts | AM.1.1 Encourage NSW Maritime lessees to improve beach access and public amenity immediately east of the Manly Wharf development | On-going | H(2), M(3), L(1) | Medium |
| | AM.1.2 Audit disability access of all parks and access ways within the study area | Within 2 years | H(3), M(2), L(3) | Medium |
| | AM.1.3 Rebuild the ramp located beside the Manly Art Gallery as wheelchair accessible | Between 3-4 years | H(3), M(1), L(3) | Medium |
| | AM.1.4 Investigate the feasibility of constructing an underground pedestrian pathway to link Manly Wharf with the Corso | Between 3-4 years | H(1), M(0), L(3) | Low |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

AM 1 To improve and control access for pedestrians, cyclists, water based recreation and servicing vehicles, minimising conflicts and negative impacts.

AM.1.1 Encourage NSW Maritime lessees to improve beach access and public amenity immediately east of the Manly Wharf development

Context: The newly renovated Manly Wharf (currently leased to private operators by NSW Maritime) encompasses a range of uses providing waterfront bars and restaurants, shopping and entertainment and water based recreation. These attractions are popular with tourists and local day-trippers as well as Manly locals. However, this popularity has resulted in a range of management issues, including:

- Fishing from Manly Wharf is currently prohibited, however the practice is often observed, particularly during early morning and evening when the location is not monitored by Wharf security.
- Noise pollution stemming from Manly Wharf is periodically an issue, particularly for neighbouring residents. Noise also significantly impact on wildlife such as Little Penguins who are known to nest underneath the Wharf structure.



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- *Anti-social behaviour, mostly as a result of alcohol consumption, is an ongoing problem in the areas surrounding Manly Wharf.*
- *Skateboarding in the forecourt area of Manly Wharf has been identified as posing safety concerns for users of the area, mostly from elderly residents and parents with prams who identify the risk of injury should a collision occur.*
- *Threats posed by people, noise and bright lights, particularly during the early morning and evening when Little Penguins are known to become mobile during feeding activity.*
- *Access to beach and water from the Manly Wharf is severely restricted. There is a need for the provision of improved beach access at the site identified as the curved set of stairs to the eastern side of Manly Wharf.*
- *Council has received ongoing complaints in relation to excessive litter, food waste, foul odours and feral bird problems as a result of through inadequate bin/table maintenance and the level of waste created by a number of retailer outlets. The responsibility of waste management at Manly Wharf lies with the lessee (via conditions set by NSW Maritime as owner) as they manage retail and commercial operations in this vicinity.*

The Access Committee has indicated that wheel chair is not accessible to ramp used by private fast ferry.

Action:

- *Encourage NSW Maritime, Wharf Management and Council to continue to discuss and improve on public facilities and access.*
- *Ensure clear paths of access through to Manly Wharf for wharf users*

Objectives addressed: AM1

Performance Target: *Improved beach access*

Indicative Cost: *Staff time*

Time Frame: *on-going*

Responsible Agency: *Manly Council – Urban Services, NSW Maritime, Wharf Management*

Priority: *Medium*

AM.1.2 Audit disability access of all parks and access ways within the study area

Context: *An audit is required to plan improving facilities for persons with disabilities and seniors through the provision of enhanced infrastructure and facilities. This will allow them easy access to reserves and where possible to water fronts. The need for an audit is in line with the federal Disability Discrimination Act and also Manly Council's Social Plan 2004. People with a disability and services identified problems with wheelchair access to theatres, libraries, parks, shops, doctors' surgeries and banks. This issue was also related to the problem of uneven footpath surfaces. People with a disability and service providers identified the supply of accessible transport services including taxis for the disabled, transport for medical appointments in an emergency, and wheelchair friendly public transport and public toilets as a high priority need for Manly residents. Accompanying this issue were the problems associated with infrastructure such as a lack of waterproof bus shelters and the short time phasing of lights at intersections.*

Actions:

- *Audit all public access ways to ensure that these are wheelchair accessible.*
- *Identify paths requiring disability access*
- *Implement disability access at priority locations.*

Objectives addressed: AM1

Performance Target: *Audit completed*



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Indicative Cost: \$ 20,000
Time Frame: Within 2 years
Responsible Agency: Manly Council – SLUP
Priority: Medium

AM.1.3 Rebuild the ramp located beside the Manly Art Gallery as wheelchair accessible

Context: The ramp beside the Manly Art Gallery is too steep and is not suitable for wheelchair access. The ramp is on the popular access way connecting Manly CBD to other areas. The Access Committee is the proponent of this option. There is also need for proper separation of bicycle and pedestrians in the area.

Actions:

- Assess and redesign the ramp.
- Seek funding from external and internal sources
- Rebuild the ramp.

Objectives addressed: AM1

Performance Target: Redesigned ramp completed
Indicative Cost: \$100,000
Time Frame: To be implemented within 3-4 years
Responsible Agency: Manly Council – Urban Services
Priority: Medium

AM.1.4 Investigate the feasibility of constructing an underground pedestrian pathway to link Manly Wharf with the Corso

Context: A high standard of access is provided in the areas adjacent to Manly Wharf including the bus interchange and toward Manly Corso. During community consultations, people rated the movement of pedestrians between Manly Corso and the Wharf interchange as poorly organised. The concept of an underground pathway to transfer pedestrians underneath East/West Esplanade was supported by a number of respondents during consultation.

There is demand for such an underground path considering increasing day trippers are flocking Manly during summer season.

Action: Initiate discussion with the RTA, state government, NSW Maritime (as owner of Manly Wharf) on underground pathway. If positive, initiate a feasibility study.

Advantages: This will facilitate safe and speedy movement of pedestrian.

Disadvantages: This could be fraught with problems such as safety, vandalism, aesthetic, cost and maintenance.

Objectives addressed: AM1

Performance Target: Feasibility study completed
Indicative Cost: 100,000 (feasibility study)
Time Frame: Between 3-4 years
Responsible Agency: Manly Council – US (Traffic), RTA, Manly Wharf
Priority: Low



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4.9 OPTIONS ADDRESSING GEODIVERSITY

Manly's geodiversity is an important element of our natural environment. This concept covers the whole range of natural earth materials and processes. It includes the rocks, landforms, streams, beaches, soils, sediments and groundwater features. It is important that this geodiversity is recognised and preserved.

Goal

Conserve the significant geodiversity elements of the area's coastline.

A total of two management options are proposed addressing one objective. Of these, one management option has been rated as of medium priority and the other as low priority. One option is proposed for immediate implementation. Both management options are newly proposed activities.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|---|--|---------------------------|------------------|---------|
| | | | Individual | Overall |
| GD.1 To protect and conserve the important elements of Manly's geodiversity through raising awareness, considering its values in all planning and management and integrating with biodiversity and cultural heritage management | GD.1.1 Undertake a comprehensive assessment of geoheritage values of Manly LGA | Immediate | H(0), M(1), L(6) | Low |
| | GD.1.2 Ensure that geoheritage issues are considered during development assessment processes | Between 3-4 years | H(1), M(3), L(3) | Medium |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

GD 1 To protect and conserve the important elements of Manly's geodiversity through raising awareness, considering its values in all planning and management and integrating with biodiversity and cultural heritage management.

GD1.1. Undertake a comprehensive assessment of geoheritage values of Manly LGA.

Context: While the principal rock outcropping in Manly is Hawkesbury Sandstone, it is by no means uniform, and a range of sedimentary structures in the rock can be seen in the cliffs along Marine Parade and at other localities. Some structures such as joints, faults and shear zones cut through the sandstone and guide landform development. While much of Manly has been modified, significant examples of large and small-scale landforms remain, all of which need to be identified and appropriately managed. Osborne (2008) has described geology of Manly and changes through geological time.

Actions:

- The option involves contracting a study on assessment of geodiversity and identification and description of geoheritage sites.
- Recognise and manage appropriately, the heritage value of the foreshore as a substantial part of the Manly LGA boundary.

Objectives addressed: GD1

Addressing SMCMA catchment targets: CTLD3 – Indigenous cultural landscape values are identified, and incorporated into natural resource management activities



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Performance Target: Study completed
Indicative Cost: \$20,000
Time Frame: Immediate
Responsible Agency: Manly Council – Strategic Landuse Planning & Natural Resources
Priority: Low

GD1.2. Ensure that geoheritage issues are considered during development assessment processes.

Context: Manly area shows a rich geodiversity, including sandstone cliffs, sandy beaches, rocky intertidal and remnants of the original stream (now piped). But these are being heavily modified through urban development. Much of this natural landscape provides important habitat for key flora and fauna, and thus supporting maintenance of biodiversity. It also contains significant aboriginal heritage value. As such it is essential to ensure that future development appropriately considers geoheritage values.

Action: Based on identification of geoheritage sites through the Assessment, conducted under GD1.1, an appropriate level of development should be implemented on those sites. Development assessments should consider geoheritage, once identified.

Objectives addressed: GD1

Addressing SMCMA catchment targets: CTLD3 – Indigenous cultural landscape values are identified, and incorporated into natural resource management activities

Performance Target: DA assessments to consider geoheritage
Indicative Cost: Staff time
Time Frame: Between 3-4 years
Responsible Agency: Manly Council – Strategic Landuse Planning, DA Unit
Priority: Medium



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4.10 OPTIONS ADDRESSING HERITAGE CONSERVATION & MANAGEMENT

Manly Cove is rich in its cultural heritage, including indigenous heritage, natural heritage, and the built heritage representing the historic development of the Manly Local Government Area. The community and Council seek to preserve items of heritage significance and encourage sensitive management and conservation of heritage items both within public and private ownership.

The natural environment of the Manly Cove study area would have been well suited to occupation by Aboriginal people. The area was rich in resources and the variety of plant and animal species, both terrestrial and aquatic would have been highly utilised by Aboriginal people.

The entire Manly Cove study area was used extensively by the Aboriginals, known locally as the Gayemal clan of the Guringai tribe, who spent much of their time on the foreshores of Sydney Harbour (Aboriginal Heritage Office, 2008). The oldest Aboriginal site known in the Manly LGA is dated to about 4100 years before present' although it is expected that older sites will be discovered. There are at least five known Aboriginal sites in the study area, consisting of burial sites, open middens, shelters and rock engravings. The area is considered to have high potential for further unrecorded sites. Based on landscapes or physical setting, the likely range of cultural evidence associated with the landscape and the landscape history, AHO & MC (2006) has identified the foreshore areas, including Esplanade Park as having high potential to find further Aboriginal sites.

However, the entire study area has been populated by Europeans soon after European settlement in 1788. Manly Cove study area houses a number of architectural, archaeological and landscape items, such as, Manly Cove Pavilion, Manly Wharf, Manly Rowing & Sailing Club, Remains of Manly Public Baths, Site of Manly Fun Pier, stone wall, stone kerbing, the foreshore, West and East Esplanade Reserves (**Appendix C**).

A total of two management options are proposed addressing two different objectives. Of these, one management option has been rated as of high priority and the other as medium priority. Both of these management options are on-going activities of the Council.

| Objectives | Strategic Management Options | Implementation timeframe* | Priority | |
|--|---|---------------------------|--------------------|---------|
| | | | Individual | Overall |
| HC 1 Ensure that sites of Aboriginal heritage are protected and appropriately maintained. | HC1.1. Review Aboriginal Site Management Report for Manly Council (2006) and associated reports to prioritise management needs and develop a plan of implementation. | On-going | H(0), M(3),L(3) | Medium |
| HC2 Ensure that all sites of non-indigenous heritage are protected under relevant legislations and in Council planning instruments. | HC2.1. Ensure physical protection and maintenance of all heritage listed items. | On-going | H(5), M(1),L(2) | High |

*After adoption of the CZMP

DETAILS OF MANAGEMENT OPTIONS

Objective

HC 1 Ensure that sites of Aboriginal heritage are protected and appropriately maintained.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

HC1.1. Review Aboriginal Site Management Report for Manly Council (2006) and associated reports to prioritise management needs and develop a plan of implementation.

Context: The Aboriginal Heritage office (AHO) has prepared the Aboriginal Site Management Report (2006) for Manly Council. This report has been reviewed. While many sites are in good to reasonable condition, others show signs of degrees of degradation because of exposure to a variety of uses including lack of understanding in the community. Two of the sites are located on the Manly Scenic Walkway. This report has been used to prioritise management needs.

Action:

- The option involves continuation of Aboriginal site management through formulation of Works program.
- Consult and maintain liaison and seek approval with the Metropolitan Aboriginal Lands Council and Aboriginal Heritage Office.
- Develop and install additional interpretive signage identifying and recognising the Aboriginal traditional owners of the Manly Cove area

Objectives addressed: HC1

Addressing actions under Manly Council's MSS 2006: D2.2.5 – implement the Management Plan for Aboriginal heritage

Addressing SMCMA catchment targets: CTLD3 – Indigenous cultural landscape values are identified, and incorporated into natural resource management activities

Performance Target: Prioritisation done

Indicative Cost: Staff time

Time Frame: On-going

Responsible Agency: AHO, Manly Council – Strategic Landuse Planning

Priority: Medium

Objective

HC2 Ensure that all sites of non-indigenous heritage are protected under relevant legislations and in Council planning instruments.

HC2.1. Ensure physical protection and maintenance of all heritage listed items.

Context: It is likely that many sites of historical significance (primarily European heritage) have become degraded with time. Some of these sites are still used on a regular basis (e.g. swimming enclosures and seawalls) and in some cases, may represent a public risk.

Action: This option involves Council carrying out repairs to these structures to ensure their integrity, or possibly restoring currently degraded structures / sites as show-pieces of former usage and activities.

Council would primarily be responsible for the repairs and restoration of historical items / structures under its control.

Improve interpretive signage and its positioning in relation to the Pathway of Olympians.

Objectives addressed: HC2

Addressing actions under Manly Council's MSS 2006: D2.1.7 – retention of heritage fabric

Performance Target: Maintained & protected

Indicative Cost: \$60,000

Time Frame: On-going

Responsible Agency: Manly Council – Strategic Landuse Planning, Urban Services

Priority: High



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5. IMPLEMENTATION PLAN

Council's Integrated Plans (incorporating the Community Strategic Plan Beyond 2021, Resourcing Strategy and Four Year Delivery Program and One Year Operational Plan) are the key planning documents that will drive the operations of Council. The Manly Council's Integrated Plans will be the key planning documents driving the operations of Council during the next ten years and beyond. Efforts will be made to incorporate priority options in to the next Manly Delivery Program 2011 – 2015 and subsequent Plans.

Each year, the Council allocates the organisation's annual expenditure to the five Principal Activities: governance, people & place, people services, infrastructure services and the environment, taking into account priorities identified in the various supporting Plans and Strategies and taking into account emerging issues, community feedback, advice from Manly Council's operational management, and progress towards the Manly Vision. Many program activities are on-going and are considered "core services" of Local Government. These operate on a continual improvement model and attract funding each year. Others are one-off initiatives which must compete competitively for funds based on merit. An exhaustive list of capital works programs are itemised as part of the budget section of the document.

The current plan is Four Year Delivery Program 2011-2015 and One Year Operational Plan 2011-2012.

5.1 FUNDING REQUIREMENTS

The total cost of implementing (including 1-5 years of operation and maintenance) the 66 management options addressing ten key management issues have been indicatively estimated as \$ **1,616,000**. Council expenditure is often supplemented by a variety of external grant sources derived from State and Federal Government, as well as industry. A summary of estimated indicative cost is presented in **Table 5.1**. However, cost of each management option is indicated with details for that individual option (Sections 4.1 -4.6).

Table 5.1 Summary of estimated cost

| Management Issues | Number of Management Options | Estimated Indicative Cost (\$) | | | |
|--------------------------|------------------------------|--------------------------------|-----------------|----------------|------------------|
| | | High priority | Medium Priority | Low priority | Total |
| Aquatic Habitat | 9 | 0 | 50,000 | 0 | 50,000 |
| Boating Facilities | 8 | 60,000 | 65,000 | 0 | 125,000 |
| Public Facilities | 7 | 115,000 | 56,000 | 0 | 171,000 |
| Water Quality | 8 | 185,000 | 50,000 | 0 | 235,000 |
| Terrestrial Ecology | 6 | 50,000 | 65,000 | 0 | 115,000 |
| Hazards & Climate Change | 14 | 65,000 | 455,000 | 40,000 | 560,000 |
| Waste Management | 6 | 10,000 | 30,000 | 20,000 | 60,000 |
| Access | 4 | 0 | 120,000 | 100,000 | 220,000 |
| Geodiversity | 2 | 0 | 0 | 20,000 | 20,000 |
| Heritage Conservation | 2 | 60,000 | 0 | 0 | 60,000 |
| | 66 | 545,000 | 891,000 | 180,000 | 1,616,000 |

Almost one-third of the total cost will be required to implement management options addressing hazards and climate change (**Fig 5.1**).

Funding schedule for the total estimated cost is:

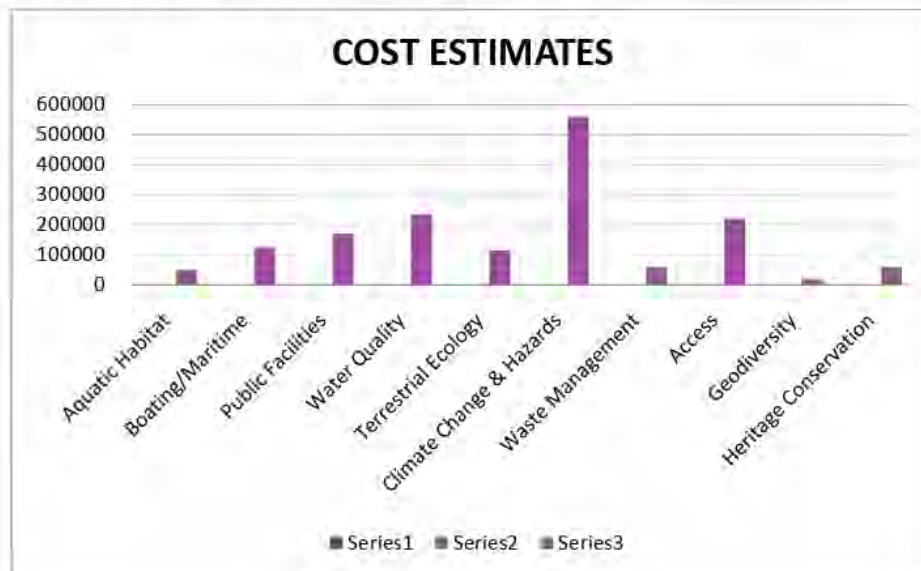
| Year | 1 | 2 | 3 | 4 | 5 | Total |
|------|---------|---------|---------|---------|---------|-----------|
| \$ | 459,000 | 375,000 | 239,000 | 354,000 | 189,000 | 1,616,000 |



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Some actions require an on-going commitment from existing staff rather than the outlay of expenditure and this is noted as 'Time'. Some recommended actions require significant capital costs, especially where large-scale works are involved such as beach nourishment.

Fig 5.1 Cost allocations to address key issues



As indicated elsewhere, implementation responsibility of all proposed management options rests with a number of agencies including Manly Council. Hence, adoption of this CZMP does not commit Council to allocate immediate funding.

5.2 FUNDING SOURCES

Funding from different alternative sources will be pursued (**Appendix B**). These include but are not limited to:

- Council's Environment Levy (subject to a budget bid process);
- Council's General Revenue Budget (subject to a budget bid process);
- State Government's Coastal & Estuary Management Program (50% subsidy funding subject to a submission process);
- Other Commonwealth and State Government funded programs such as SSHAP, MIP, NRDGS, Greenspace, CMA Funding etc.

5.3 COLLABORATIVE PARTNERSHIPS

A number of state and other agencies have institutional mandate to address a range of issues covered under different management options within this report. Agencies involved in the implementation of management options are identified in **Appendix A**. Manly Council, as the primary implementer of the CZMP, must seek to sustain collaborative partnership agreements with these agencies either specifically for this CZMP or for overall LGA.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

5.4 AGENCY RESPONSIBILITIES

Although Manly Council is the lead agency responsible for implementing the CZMP, there will be several state Government and other agencies responsible for implementing specific management options, as per mandate of their activities. Agencies will have the main role for some and supportive role for others, as indicated in **Table 5.4a**.

Table 5.4a: Roles of different agencies in implementation of proposed management options

| Agency | Management Options with Implementation Responsibilities | |
|---|---|---|
| | Main | Supportive |
| Manly Council* | AH1.1 [#] , AH1.2, AH2.1, AH2.4, AH3.2, BF1.1, BF1.2, BF2.1, BF2.4, BF3.3, PF1.1, PF1.2, PF1.3, PF1.4, PF2.1, PF2.2, PF3.1, WQ1.1, WQ1.2, WQ1.3, WQ2.2, WQ3.1, WQ3.2, WQ3.3, TE1.1, TE1.2, TE1.3, TE1.4, TE2.1, CH1.1, CH1.2, CH1.3, CH1.5, CH2.1, CH2.2, CH3.1, CH3.2, CH3.3, CH4.1, CH4.2, WM1.1, WM1.2, WM1.3, WM2.1, WM2.2, WM2.3, AM1.1, AM1.2, AM1.3, AM1.4, GD1.1, GD1.2, HC1.2 | AH2.2, AH2.3, AH3.1, BF3.1, BF3.2, WQ2.1, CH1.4, CH5.2, HC1.1 |
| NSW Maritime* | BF2.2, BF3.1, BF3.2, | AH2.2, BF2.1, BF2.3, BF3.3, WM2.3, AM1.1 |
| DPI NSW* | AH2.2, AH2.3, AH3.1, | AH1.2, AH2.1, AH2.2, AH2.4, BF3.2, PF1.3 |
| OEI (formerly DECCW)* | | WQ3.1, CH1.4 |
| Ministry of Police & Emergency Services | CH5.1, CH5.2 | |
| SES | | CH5.2, CH1.5 |
| Sydney Water | WQ2.1 | |
| Sydney Ferries | BF2.3 | |
| SCCG | CH1.4, | CH3.2 |
| AHO | HC1.1 | |
| Manly Wharf | | AM1.1, AM1.4 |
| RTA | | AM1.4 |

* Members of the Harbour Foreshores & Coastline Management Committee and participated in the development of the CZMP

[#] AH = Aquatic Habitat, BF = Boating Facilities, PF = Public Facilities, WQ = Water Quality, TE = Terrestrial Ecosystem, CH = Climate Change & Hazards, WM = Waste Management, AT = Access & Traffic, GD = Geodiversity and HC = Heritage Conservation

Within Manly Council, different Divisions/Branches of Council will share responsibilities for implementing specific management options. These responsibilities have also been identified (**Table 5.4b**).



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Table 5.4b: Roles of different Divisions/Branches within Manly Council in implementation of proposed management options

| Division | Branch | Management Options with Implementation Responsibilities | |
|----------------------------------|---|--|---|
| | | Main | Supportive |
| Landuse & Sustainability | Natural Resources & Environmental Partnerships & Programs | AH1.2#, AH2.1, AH2.2, AH2.3, AH2.4, WQ1.1, WQ1.2, WQ1.3, WQ2.1, WQ2.2, WQ3.1, BF1.1, BF2.1, BF3.1, BF3.2, BF3.3, WQ3.3, TE1.4, TE2.1, CH1.1, CH1.3, CH1.4, CH2.2, CH2.1, | AH1.1, AH1.2, AH3.1, AH3.2, PF1.3, PF2.2, WQ3.2, CH1.2, CH1.5, CH2.1, CH3.1, CH3.2, CH3.3, CH4.1, GD1.1, TE1.2, WM1.3 |
| | Manly Environment Centre (MEC) | AH1.1, AH3.2, | CH2.1, |
| | Strategic Landuse Unit | PF1.1, PF2.1, CH1.2, AM1.2, GD1.1, GD1.2, HC1.1, HC1.2 | CH2.2, CH1.4 |
| | Waste & Cleansing | WM1.1, WM1.2, WM1.3, | |
| | Regulatory Compliance | AH3.1, BF1.2, WQ3.2, CH4.2 | BF2.1, WQ3.3, |
| | Development Assessment | PF3.1 | WQ3.3, CH1.2, GD1.2 |
| People, Places & Infrastructures | Urban Services | PF1.2, PF1.3, PF1.4, PF2.2, CH1.5, CH3.1, CH3.2, CH3.3, CH4.1, CH5.2, AM1.1, AM1.3, AM1.4 | PF1.1, CH1.3, HC1.2 |
| | Civic Services | WM2.1, WM2.2, WM2.3 | |
| | Parks & Bushlands | TE1.1, TE1.2, TE1.3 | TE2.1, |
| Strategic Unit | Community Engagement & Consultation | BF2.4, | |

AH = Aquatic Habitat, BF = Boating Facilities, PF = Public Facilities, WQ = Water Quality, TE = Terrestrial Ecosystem, CH = Climate Change & Hazards, WM = Waste Management, AT = Access & Traffic, GD = Geodiversity and HC = Heritage Conservation

5.5 COORDINATION

Implementation of Manly Council's adopted Coastal Zone and Estuary Management Plans is coordinated by Council's Estuary Management Officer within Council's Natural Resources Branch. The Manly Harbour Foreshores & Coastline Management Committee assist with setting the strategic direction associated with development and implementation of such Plans.

5.6 COMMUNITY INVOLVEMENT

Many of the management options adopted for Manly Cove CZMP offer opportunities for community involvement particularly activities such as revegetation projects, monitoring programs and environmental education, as well as general monitoring of plan implementation and effectiveness. Local community groups are therefore



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encouraged to take active part in the management of Manly cove, to liaise regularly with the community representatives on the Harbour Foreshores & Coastline Management Committee, and seek out opportunities wherever possible for community participation in implementation of the options adopted.

5.7 REVIEW OF PLAN

This Coastal Zone Management Plan will be reviewed every 5 years. It is likely that a consolidation of a number of CZMPs will happen and preparing CZMPs based on new NSW Government guideline. During the process, there will be a mechanism established to identify new issues and conflicts concerning the coastline management and ensure their incorporation into a revised plan. A program for the following 5 years will be developed by designating priority to any new actions and reassigning priority to the remaining actions. These programs are fed back into and form the revised CZMP for the next 5 years.

The revised CZMP will recognise any new innovations, knowledge in general or on climate change and variability in particular, decision support tools for management of the Manly Cove that may not have been available at the time of the initial plan development.



MANLY COVE COASTAL ZONE MANAGEMENT PLAN

6. MONITORING, EVALUATION & REPORTING

Monitoring & evaluation is a key component of any coastline/estuary management plan. The NSW Government has endorsed a strategy for a 'monitoring, evaluation and reporting (MER)' system for natural resource management in NSW in 2006. The purpose of the MER Strategy is to refocus the resources of NSW natural resource and environment agencies and coordinate their efforts with CMAs, local governments, landholders and other natural resource managers to establish a system of monitoring, evaluation and reporting on natural resource condition.

The Natural Resources Commission (NRC) recognises that implementing MER for NRM is challenging and traditionally has not been done well.

When used for management purposes, monitoring provides an on-going picture of the health and response of the estuary & coast, e.g. water quality levels, species and numbers of fauna, area and productivity of seagrass beds etc. A monitoring program can be involved and quite expensive. Hence, it is important that the monitoring program is realistic, useful, implementable and affordable on a continual basis.

Understanding coast and estuary health will also contribute to effective adaptation to climate change impacts.

6.1 MONITORING

To manage its coastal beach and foreshore locations in a holistic and sustainable manner, Council has adopted a strategic approach to coastal zone management which aims to enhance the human experience whilst minimising environmental impact. Prior to the development of the Manly Cove CZMP, Manly Council has already prepared & adopted seven of eight estuary/coastal zone management plans to cover entire coast & foreshores. This plan is expected to be adopted by end 2011.

It is timely that a structured long-term monitoring program is established to continually assess environmental health of the estuary & coast.

6.1.1 Status of Monitoring within Manly Council

At present, Council has no structured & written monitoring plan to assess environmental health of coast & estuary. However, the SHOROC's Regional State of the Environment Report, prepared annually in collaboration with SHOROC member Councils, provided numerical data on a comprehensive range of indicators. Now, each Council will prepare its own SoE Report annually and Regional SoE will only be prepared once in four years.

A State of the Environment (SoE) Report is an important management tool for councils to determine the effect of management actions on environmental conditions in the local area. It provides a snapshot, among others, of the State (or condition) of the environment. i.e. the environmental quality and quantity of natural resources. The SoE also provides a document to report Manly's progress towards meeting the goals and objectives of the Manly Sustainability Strategy, and therefore towards our overall goals of sustainability. Comparing SoE reports from year to year enables Council to gauge improvements in different sectors of the environment, and also identify those areas that will need attention in the future. Indicators used in the SoE report along with data related to Manly LGA are presented in **Appendix D**.

Long-term water quality monitoring data is, however, available at present from the 'Harbour Watch Program' and 'Beach Watch Program' of the Department of Environment, Climate Change and Water (DECCW). Key concern of these programs is human health relating to the use of waters. Hence, DECCW used to monitor two major indicators of bacterial contamination, *faecal coliforms* and *enterococci*, at various harbour swimming locations. From now on, only data on *enterococci* will be measured. There are 11 sampling sites: 4 under Beach Watch and 7 under Harbour Watch Programs within Manly LGA area (**Table 6.1.1**).



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Table 6.1.1 Water Quality Sampling Sites within Manly LGA

| Harbour Watch Program (DECCW) (Bath/pool/swimming enclosures) | | Beach Watch Program (DECCW) | | Recreational WQ Monitoring Program (Manly Council 2008) | |
|--|-----------------|-----------------------------|--------------------|--|-----------------|
| 1 | Little Manly | 1 | Queenscliff beach | S1 | Queenscliff |
| 2 | Manly Cove | 2 | North Steyne beach | S2 | North Steyne |
| 3 | Fairlight | 3 | South Steyne beach | S3 | South Steyne |
| 4 | Forty Baskets | 4 | Shelly beach | S4 | Shelly beach |
| 5 | Clontarf | | | S5 | Little Manly |
| 6 | Sangrado | | | S6 | Manly Cove |
| 7 | Garney Crescent | | | S7 | Fairlight P |
| | | | | S8 | Fairlight beach |
| | | | | S9 | Forty Baskets |
| | | | | S10 | Clontarf |

6.1.2 Water Quality Monitoring within Manly Council

Manly Council conducts water quality monitoring to guide decision making in the protection of the environment, recreational water quality, and in environmental restoration projects. Monitoring projects are conducted in partnership with research organisations, Warringah Council, Sydney Water, and the NSW Government. This information report provides a description of the program. Seven Key water quality monitoring sub-programs include (Water Cycle Management Team, personal communication):

1. Wet Weather Stormwater Event Monitoring

Description: Council undertakes a range of wet weather stormwater monitoring from drains, creeks, pipes, and pollution control devices (gross pollutant traps, street sweeping vehicles, vegetated stormwater treatment systems). This is undertaken with the University of NSW, UTS, UWS, Sydney Water, and the NSW EPA.

Constituents monitored: bacteria, sediment, nutrients, and heavy metals.

Purpose: to allocate Council resources, enforce cleaner stormwater quality, and inform Council on the current success of pollution control measures.

2. Dry Weather Sewer Leak Monitoring

Description: Council undertakes a program to detect and rectify illegal sewer leaks to stormwater infrastructure associated with aging infrastructure or illegal connections, in normal (dry weather) conditions. This is a partnership with Sydney Water, and has also been adopted by Warringah Council at Manly Lagoon.

Constituents monitored: bacteria, and sewage indicator parameters (ammonia).

Purpose: to improve recreational water quality in Manly and reduce sewage impacts on Manly Lagoon.

3. Recreational Water Quality Monitoring

Description: Commencing in 2008, between October - March annually, Council undertakes a pilot program to monitor water quality in 10 identified recreational waterways to complement the existing NSW Government Beachwatch system.

Constituents monitored: physio-chemical and environmental monitoring trigger values

Purpose: to improve procedures and preparation in the event of a pollution incident or beach closure.

4. Manly Lagoon Water Quality Monitoring (approximately monthly)

Description: Council has undertaken past programs to monitor the quality of water in Manly Lagoon to advise management activities. However, in recognition of the surrounding urban catchment being the source of Manly Lagoon's water, monitoring resources are now focussed on sub-programs 1, 2, and 7 of this report.



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Constituents monitored: Council continues to utilise publicly available water quality monitoring data collected approximately monthly in Manly Lagoon by Sydney Water. Parameters include bacteria, and physio-chemical parameters.

Purpose: undertaken by Sydney Water to assess the sewer system impact on the environment.

5. Manly Lagoon Rehabilitation Works Improvement Monitoring

Description: Council has received conditional NSW Government approval and significant NSW grants to proceed with works to remove accumulated material from the western section of Manly Lagoon. Council has undertaken a program to assess the "before", "during", and "after" water quality of the Lagoon, using a qualified environmental consultant.

Constituents monitored: sediment, nutrients, organic compounds, trace metals, bacteria, biological indicators, and physio-chemical parameters.

Purpose: "before" and "after" monitoring will be used to determine the beneficial impact of the project. The "during" monitoring will be used to ensure staging of the works do not negatively impact the environment.

6. Alternate Water System Monitoring

Description: Council undertakes water quality monitoring of existing alternate water sourcing systems including stormwater harvesting tanks, rainwater tanks, and groundwater bores. These are used for irrigation of parks, flushing toilets, and non-potable purposes.

Constituents monitored: groundwater – physio-chemical, salinity, nutrients, heavy metals. Rainwater and stormwater – physio-chemical, nutrients, bacteria.

Purpose: the data provides baseline assurance that systems are functioning appropriately and within specifications (for example, that groundwater is within plant tolerance limits). New potential sites are also investigated for new projects.

7. Burnt Bridge Creek Integrated Restoration Project Improvement Monitoring

Description: Council has received \$1.997 million from the NSW Government to implement an integrated restoration project in Burnt Bridge Creek. Council has undertaken a program to assess the "before", and "after" water quality of the creek.

Constituents monitored: physio-chemical, nutrients, heavy metals, bacteria

Purpose: "before" and "after" monitoring will be used to determine the beneficial impact of the project.

Monitoring estuary & coastal health, no doubt, goes beyond indicators being monitored for the SoE report & other water quality assessments.

6.1.3 Model Monitoring System

The Natural Resources Commission has made a rapid assessment of several models of monitoring being implemented in Australia (NRC 2007) and cited the 'Ecosystem Health Monitoring Program (EHMP)' undertaken in south-east Queensland' as an example.

The Ecosystem Health Monitoring Program (EHMP) is one of the most comprehensive marine, estuarine and freshwater monitoring programs in Australia (EHMP 2009). It delivers a regional assessment of the ambient ecosystem health (or 'pulse') for each of South East Queensland's (SEQ) 19 major catchments, 18 river estuaries, and Moreton Bay, highlighting where the health of waterways is getting better or worse. The EHMP is managed by the South East Queensland Healthy Waterways Partnership on behalf of its various partners and is implemented by a large team of experts from the Queensland Government, universities and CSIRO.

The EHMP uses rigorous science to measure waterway health using a broad range of biological, physical and chemical indicators of ecosystem health. These indicators were chosen because they provide essential information about the condition of waterways. Currently, 135 freshwater sites are monitored twice a year (in spring and autumn), and 254 estuarine and marine sites are monitored on a monthly basis. The results provide an assessment of the responses of aquatic ecosystems to human activities, such as catchment alterations and



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point source discharges (e.g. wastewater treatment plants (WWTPs), and also take into account natural processes such as rainfall. The estuarine/marine component, one of three components of EHMP assesses the tidal reaches of waterways including Moreton Bay.

The Estuarine/Marine EHMP monitors a range of physical/chemical and biological indicators: water quality, seagrass depth range and distribution, $\delta^{15}\text{N}$ mapping, *Lyngbya* and coral.

- *Water quality* is measured monthly at 167 sites and is comprised of physic-chemical parameters, dissolved and total nutrients, water clarity and phytoplankton abundance. Water quality information is collected to assess baseline ecosystem process and to track changes in the zones of human impact.
- Sewage nitrogen mapping, measured annually at 167 sites, assesses the extent of sewage treatment plant discharges into SEQ waterways through measurements of the uptake of the stable nitrogen isotope ^{15}N by the macroalga *Catenella nipae*.
- The seagrass depth range (SDR) is the difference in elevation (m) between the upper and lower depth record of the seagrass *Zostera capricorni* at a site. The distribution of seagrass in Moreton Bay is mapped every three years using a combination of remotely sensed images, underwater camera observation and visual estimation of seagrass cover.
- Riparian vegetation provides the interface between the land and a water body. The EHMP measures the extent of riparian habitat in the estuaries as the percentage of the total system that has retained unmodified riparian habitat. Measured 3 yearly.

Indicators & parameters used in EHMP is presented in **Table 6.1.2**.

Table 6.1.2: Ecosystem Health Monitoring Program (Estuarine & Marine)

| Indicators | | Frequency |
|--|-----------------------------|-----------|
| Water Quality | Turbidity | monthly |
| | Salinity | TBD |
| | Water temperature | TBD |
| | Secchi depth | TBD |
| | Dissolved Oxygen | TBD |
| | pH | monthly |
| | Nitrogen | monthly |
| | Phosphorus | monthly |
| | Chlorophyll a | monthly |
| Sewage Plume Map (Algae $\delta^{15}\text{N}$ Mapping) | $\delta^{15}\text{N}$ value | annually |
| Seagrass Depth Range & Distribution | Seagrass Depth Range (SDR) | 3-yearly |
| Riparian Assessment | | annually |

6.1.4 Indicators Framework & Indicators

A framework of indicators is designed as a continual process of identification, preparation, decision-making, implementation and evaluation of interventions. Indicators would serve the purpose to structure and facilitate this process, to monitor it and make it accountable. Indicators should thus provide concrete and meaningful information of conditions and changes over time of input into the process of coastal development and their output and outcome.

The National Land and Water Resources Audit (the Audit), established in 1997 under the Natural Heritage Trust Act, was responsible for developing key indicators for the Natural Resource Management M&E Framework, used to assess progress towards improved natural resource condition. The Audit was responsible for the development of indicators, as well as supporting the national collection and collation of data, and reporting against each indicator.



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The National NRM Monitoring and Evaluation Framework (NM&EF) called for the identification of key topics or 'matters for target'. Each matter for target has a set of 'indicators' that will be used to monitor and report on the topic.

A total of 19 nationally agreed indicators were developed to measure the effect of the stressors on ecosystem condition (physical/chemical and biological) and habitat extent.

| | |
|---|---|
| Matter for target/topic: | Estuarine, Coastal & Marine Habitat Integrity |
| Indicator heading: | Indicators |
| Estuarine, coastal and marine habitat extent and distribution | 1. Extent/distribution of key habitat types |
| Estuarine, coastal and marine habitat condition | <p><i>Biological condition:</i></p> <ul style="list-style-type: none"> 2. Algal blooms 3. Animal or plant species abundance 4. Chlorophyll a 5. Coral bleaching 6. Cass mortality events 7. Pest species (number, density, distribution) 8. Targeted pathogen counts 9. Vertebrates impacted by human activities <p><i>Physical/chemical condition:</i></p> <ul style="list-style-type: none"> 10. Dissolved oxygen 11. Nutrients 12. pH 13. Presence / extent of litter (marine debris) 14. Salinity (EC) 15. Sedimentation/erosion rates 16. Shoreline position 17. Temperature 18. Toxicants (in water / sediments/ biota) 19. Turbidity / water clarity |

Source: The National Land & Water Resources Audit (2008)

6.1.5 Proposed Indicators for Manly's Coastal & Estuarine Program

A long-term monitoring program is considered to be designed on the EHMP of the 'Healthy Waterways Program' and using Council's experience with Recreational Water Quality Monitoring Program. An indicator framework for Manly is proposed essentially based on the National NRM Monitoring and Evaluation Framework (NM&EF) and reviewing indicators currently being used under different programs in Manly including SoE Reporting.

Table 6.1.5 Proposed Indicators to monitor Manly's Estuarine, Coastal & Marine Habitat Integrity

| Indicator heading | Indicators | Frequency | Remarks |
|--------------------------|--------------------------------------|-----------|---------|
| Habitat Extent & Quality | 1. Seagrass distribution and % cover | | |



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| Indicator heading | Indicators | Frequency | Remarks |
|-------------------------|---|---|---------|
| | 2. Mangrove distribution and % cover | | |
| | 3. Beach indicators | | |
| | 4. Isohaline position | 1-5 years | |
| | 5. Riparian assessment | | |
| | 6. Rocky shore assessment | | |
| | 7. Intertidal species diversity/abundance?? | | |
| | 8. Sedimentation/erosion rates | Annual monitoring preferably after the wet season. | |
| Sedimentation Processes | 9. Shoreline position | | |
| Climate Change | 10. Saline intrusion into groundwater aquifers | | |
| | 11. King tide levels/inundation events | | |
| | 12. Days >35°C | | |
| Biotic Indicators | 13. Algal blooms | | |
| | 14. Animal or plant species abundance | | |
| | 15. Chlorophyll a | Annually | |
| | 16. Pest species (number, density, distribution) | at least every three months (i.e. summer, autumn, winter and spring). | |
| Water Quality | 17. Dissolved oxygen | monthly basis on the falling tide | |
| | 18. Nutrients Concentration of oxidised nitrogen. Concentration of organic nitrogen. Concentration of ammonia. Concentration of total nitrogen. Concentration of filterable reactive phosphorus. Concentration of total phosphorus. | Monthly | |
| | 19. pH | | |
| | 20. Salinity (EC) | Monthly | |
| | 21. Temperature | Monthly | |
| | 22. Turbidity / water clarity Turbidity of a waterbody. Secchi depth of a waterbody. | monthly on the falling tide. | |
| | 23. Sewage Plume Map (Algae $\delta^{15}\text{N}$ Mapping) | | |
| | 24. Presence / extent of litter (marine debris)* | at low tide every three months over a one-year period. | |
| Pollution | 25. Toxicants (in water / sediments / biota) | Annual | |



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| Indicator heading | Indicators | Frequency | Remarks |
|-------------------|--|-----------|---------|
| | 1: Concentrations of toxicants in sediments of an estuarine or coastal waterbody. 2: Concentrations of toxicants in waters of an estuarine or coastal waterbody. 3: Concentrations of toxicants in biota of an estuarine or coastal waterbody. | | |
| | 26. Sediment quality (i.e. heavy metals, dioxins etc) | 3 years | |
| | 27. Bioaccumulation assessment using oyster | 3 years | |

6.1.5 Proposed Monitoring System

Objectives

- Design a long-term monitoring set-up to assess environmental health across Manly's coastal environment
- To draft Manly Monitoring, Evaluation & Reporting Plan for coastal & estuary management
- Finalise Indicators & establish a baseline
- Establish an in-house laboratory

Activities & Output

- Monitoring, Evaluation & Reporting (MER) Plan for coastal & estuary management.

The MER Plan will provide evidence of a documented monitoring and evaluation approach. The document should indicate appropriate monitoring and evaluation design, taking into account the specific outcomes and targets being measured and the relevant variables. The document should indicate appropriate analysis of data and justification of conclusions. Monitoring and evaluation should be used as a tool for corrective and preventative action and continual improvement. The process of developing the MER would involve the following:

- Internal staff liaison
- Stakeholder liaison (OEH, SMCMA, SCCG)
- Draft MER Plan
- In-house workshops to discuss the draft
- Stakeholder Review
- Draft Final MER Plan
- Present to Harbour Foreshore & Coastline Management Committee then to Council for adoption.

OUTPUT : MER Plan

- Identification of Sample Site & establish baseline data

Sampling sites should be aligned to sub-catchments. Manly LGA has 19 sub-catchments of which 16 are directly adjacent to coastline, lagoon or estuary. At least one sample site should be considered for each catchments of Manly LGA.

- Review Manly LGA catchment map
- Identify 20-25 sites, incorporating 10-11 existing sample sites
- Map sites using GPS
- Collect samples & carry out laboratory tests
- Establish baseline



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OUTPUT : Baseline

3. Establishment of monitoring facilities and collaborative partnerships
 - a) Analyse cost benefit of undertaking analysis in-house or through an external independent laboratory
 - b) Establish in-house water quality tests set up.
 - c) Purchase softwares for Riparian assessment
 - d) Establish collaboration with Universities through MoU mechanism
 - e) Encourage community participation and organise training if needed

OUTPUT : Monitoring facilities & linkages

4. Analyse results, modify technique, review coastline/estuary management

OUTPUT : Trend, modify coastline/estuary management

6.2 PERFORMANCE EVALUATION

The Harbour Foreshore & Coastline Management Committee will assist staff in directing established review and evaluation processes. These processes will assess the performance of the Coastal Zone Management Plan and ensure it is continually updated and improved. A Performance Evaluation Program, to be developed as per the CZMP, will propose an integrated program showing the relationships between recommended actions, performance indicators to be monitored, data interpretation methodology, and targets for actions where baseline data is available. This detailed evaluation program shall be consistent with NRC (Natural Resources Commission) and Sydney Metropolitan CMA reporting protocols clearly defining estuary and management targets.

Quadruple Bottom Line (QBL) accounting, currently being used within the Manly Council, is the process of identifying, assessing and reporting business activities in terms of their impact on society, the environment, economic sustainability and governance. This reporting process is based on continuous improvement, and Council aims to produce a good quadruple bottom line result today and to provide an even better result tomorrow. With the adoption of the Community Strategic Plan in 2011, Council is undertaking a full review of current QBL reporting to further integrate the QBL process into Council operations to assist in improving the sustainability outcomes of operational decisions.

A standardised reporting format should be utilised on an annual basis to briefly evaluate the progress of the plan and the efficiency and effectiveness of management options implemented over each annual reporting period.

6.3 REPORTING MECHANISM

Reporting on the implementation of the plan through time is to be achieved through the three following mechanisms.

Harbour Foreshore & Coastline Management Committee

Manly Harbour Foreshores & Coastline Management Committee is the primary Committee responsible for overseeing the on-going implementation of the Plan. Regular bi-monthly meetings of the Committee will be held where on-going actions and any variations to the plan will be reported. This way all key stakeholders represented on the Committee will be kept abreast of the on-going implementation of the programs. Some specific items are referred, either as brief mention or full report, to Council's monthly Planning & Strategy Committee meetings.



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Reporting to the Community

Progress on implementation of the CZMP and/or specific achievements will be reported through an existing dedicated page on Council's website. This Coastal Zone Management Plan and all supporting documents, when adopted, are posted on this site. Selected items will be contributed to Precincts for publication in Precinct Forum Newsletter. Brief reporting will be made to Council's annual Report to the Community.

Other Formal & informal Reporting Processes

Reporting on the progress of implementation of the CZMP will be made, among others, through:

- Annual Report
- Environment Levy Report
- State of the Environment Report
- Sydney Coastal Councils Group's monthly e-news updates 'Making Waves' and quarterly newsletter

Internally, progress are discussed during weekly Branch's 'Works in Progress (WIP)' and monthly Divisional meetings and reported monthly in 'General Manager's report. Further reporting is also made to requirements of individual grant funding agencies.



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7. GLOSSARY

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| Accreted Profile | The profile of a sandy beach that develops in the "calm" periods between major storm events. During such periods, swell waves move sediment from the offshore bar back onto the beach to rebuild the beach form. |
| Accretion | A build up of sand which may cause or be associated with a seaward movement of the beach profile. |
| Aeolian Transport | Transport (of sand) by wind. |
| Bathymetry | Description of the shape of the ocean bed (underwater contours etc.). The measurement of depths of water. |
| Beach | The area of unconsolidated material between the lowest limit of tidal or lake water level and the highest level reached by wave action (i.e. both open coast and estuary foreshores). |
| Beach berm | That area of shoreline lying between the swash zone and the dune system. |
| Beach erosion | The offshore movement of sand from the sub-aerial beach during storms. |
| Beach nourishment | The supply of sediment by mechanical means to supplement sand on an existing beach or to build up an eroded beach. |
| Beach Profile | A cross-section of a beach, generally normal to the water line, showing the elevation of the surface relative to some datum. It may also extend some distance offshore. |
| Benthic | Pertaining to the seafloor (or bottom) of a river, coastal waterway, or ocean. |
| Bluff | Vertical or near vertical cliff face (relatively erosion resistant rock) or moderate to steep slope (less erosion resistant rock or soils perched on rock strata). |
| Breaker Zone | That area of coastal waters where shoaling effects cause swell waves to break. This typically occurs in the shallower waters over an offshore bar. |
| Breaking Waves | As waves increase in height through the shoaling process, the crest of the wave tends to speed up relative to the rest of the wave. Waves break when the speed of the crest exceeds the speed of advance of wave as a whole. Waves can break in three modes: spilling, surging and plunging. |
| Breakwater | Structure protecting a shoreline, harbor, anchorage or basin from ocean waves. |
| Buffer Zone | An appropriately managed and unalienated zone of unconsolidated land between beach and development, within which coastline fluctuations and hazards can be accommodated in order to minimise damage to the development. |
| Catchment | The area of land which collects and transfers rainwater into a waterway. |
| Coastal hazard | 'Coastal hazard' is defined in the <i>Coastal Protection Act 1979</i> (section 4) and means the following: a) beach erosion b) shoreline recession c) coastal lake or watercourse entrance instability d) coastal inundation |



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| | <p>e) coastal cliff or slope instability</p> <p>f) tidal inundation</p> <p>g) erosion caused by tidal waters, including the interaction of those waters with catchment floodwaters.</p> |
| Coastal inundation | Coastal inundation is the storm-related flooding of coastal lands by ocean waters due to elevated still water levels (storm surge) and wave run-up. |
| Coastal Process | The active forcing functions (waves, winds, currents etc.) and their interaction with and effects on the coastal environment (sediments, beach and cliff erosion etc.) |
| Coastal Structures | Those structures on the coastline designed to protect and rebuild the coastline and/or enhance coastal amenity and use. |
| Coastal Zone | <p>Statutory definition – Coastal zone is defined in the <i>Coastal Protection Act 1979</i> (section 4).</p> <p>Bio-physical definition – The coastal zone encompasses the interface between land and sea. It is a zone of interaction between terrestrial and marine systems and processes. Within this zone there is a wide variety of landscapes and habitats, including beaches, headlands, rock platforms, dunes, foreshores, estuaries and marine waters.</p> |
| Corridor | Lines of native vegetation connecting separate habitat areas that are essential for maintaining biodiversity. Corridors enable fauna to access larger habitats by encouraging mobility between areas. Corridors may also assist native plant species to spread and colonise new areas over time. |
| Diffraction | The "spreading" of waves into the lee of obstacles such as breakwaters by the transfer of wave energy along wave crests. Diffracted waves are lower in height than the incident waves. |
| Dune management | The general term describing all activities associated with the restoration and maintenance of the role and values of beach dune systems. Dune management activities and techniques include planning, dune reconstruction, revegetation, dune protection, dune maintenance and community involvement. |
| Emergency coastal protection works | Sand or sandbags placed on a beach to reduce beach erosion impacts in accordance with the <i>Coastal Protection Act 1979</i> |
| Entrance instability | Refers to the tendency of entrances to estuaries and coastal lakes to migrate along the shore, close up, reopen, form new entrances, etc. in response to wave and current action and freshwater flows. |
| Erosion | The depletion of the land mass by natural forces, such as the reduction of a beach by waves and/or wind. Commonly perceived as the landward movement of an erosion escarpment during storm events. |
| Erosion Escarpment | A near vertical step formed by wave erosion at the back of a beach. Usually indicates the landward extent of wave incursion during recent storm events. |
| Escarpment | The landward limit of erosion in the dune system caused by storm waves. At the end of a storm the scarp may be nearly vertical; as it dries out the scarp slumps to a typical slope of 1 vertical:1.5 horizontal. Also known as the 'scarp', 'dune scarp' and 'backbeach erosion'. |



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| Estuary (definition 1) | The tidal portions of river mouths, bays and coastal lagoons, irrespective of whether they are dominated by hyper saline, marine or fresh water conditions |
| Estuary (definition 2) | a semi enclosed coastal body of water which has a free connection with the open sea and within which sea water is measurably diluted with fresh water derived from land drainage |
| Flushing | Exchange of water between an estuary or coastal waterway and the ocean. |
| Frictional Attenuation | As applied to water waves, the reduction in wave energy as a result of resistant to water particle movement at the sea bed (bottom friction). |
| Groynes | Low walls built perpendicular to a shoreline to trap longshore sediment. Typically, sediment build up on the up drift side of a groyne is offset by erosion on the down drift side. |
| Hazard | Occurrence or change in a set of circumstances relating to the physical aspects of coastal processes. To constitute a hazard, the change gives rise to a potential negative impact on life or property located within close proximity to the coastline. |
| Intertidal | The environment between the level of high tide and low tide. |
| Likelihood | The chance of something happening. |
| Littoral Drift | The sedimentary material which is moved in the littoral zone by waves and currents. |
| Littoral Transport | The movement of littoral drift. |
| Littoral Zone | Extends from the onshore dune system to the seaward limit of the offshore zone and possibly beyond. |
| Longshore Currents | Currents flowing parallel to the shore within the inshore and nearshore zones. Longshore currents are typically caused by waves approaching the beach at an angle. The "feeder" currents to rip cells are another example of longshore currents. |
| Longshore Transport | Synonymous with LITTORAL TRANSPORT. |
| Mud | Fine sedimentary material, typically comprising both inorganic (mineral) and organic material. |
| Nearshore Zone | Coastal waters between the offshore bar and the 60 m depth contour. |
| Net | With respect to sediment transport is the resultant difference of the volume of transport in all directions, i.e. the time averaged resultant effect. |
| Nourishment | The replenishment of a beach with sand. Commonly used to increase the beach width after erosion. |
| Offshore Bar | Submerged sandbar formed offshore by the process of beach erosion and accretion. Typically, swell waves break on the offshore bar. Also known as longshore bar. |
| Offshore Zone | Coastal waters to the seaward of the nearshore zone. |
| Onshore/Offshore Transport | The process whereby sediment is moved onshore and offshore by wave, current and wind action. |



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| Organic Material | Once-living material (typically with high carbon content), mostly of plant origin. |
| Refraction | The tendency of wave crests to become parallel to bottom contours as waves move into shallower waters. This effect is caused by the shoaling process which slows down waves in shallower waters. |
| Rip Currents | Concentrated currents flowing back to sea perpendicular to the shoreline. Rip currents are caused by wave action piling up water on the beach. Feeder currents running parallel to the shore (longshore currents) deliver water to the rip current. |
| Risk | Effect of uncertainty on objectives, usually characterised by reference to potential hazards and their consequences, or a combination of these. It is also expressed as a combination of consequences of a hazard and the associated likelihood of occurrence. |
| Sand drift | The movement of sand by wind. In the context of coastlines, 'sand drift' is generally used to describe sand movement resulting from natural or human-induced degradation of dune vegetation, resulting in either nuisance or major drift. Sand drift can damage buildings, roads, railways and adjoining natural features such as littoral rainforest or wetlands. Sand drift can be a major coastline hazard. |
| Seagrass | Marine flowering plants which generally attach to the substrate with roots. |
| Seawalls | Walls built parallel to the shoreline to limit shoreline recession. |
| Sediment Budget | An accounting of the rate of sediment supply from all sources (credits) and the rate of sediment loss to all sinks (debits) from an area of coastline to obtain the net sediment supply/loss. |
| Sediment transport | The process whereby sediment is moved onshore and offshore by wave, current and wind action. |
| Sediments | Unconsolidated detrital material consisting of organic and/or inorganic fragments. The composition and textural characteristics (gravel, sand, mud) vary with sediment source (local, fluvial, marine) and the transporting medium. |
| Semi-diurnal Tide | Tides with a period, or time interval between two successive high or low waters, of about 12.5 hours. Tides along the New South Wales coast are semi-diurnal. |
| Shoreline Recession | A net long term landward movement of the shoreline caused by a net loss in the sediment budget. |
| Spilling Waves | The wave crest breaks gradually as the wave travels to the shore. Characterised by the appearance of white water at the crest. |
| Spring Tide | A tide greater than the mean tidal range. Occurs about every two weeks, when the Moon is full or new. |
| Storm Bar | An offshore bar formed by sediments eroded from the beach during storm conditions. |
| Storm Profile | The profile of a sandy beach that develops in response to storm wave attack. Considerable volumes of sediment form the beach berm, the incipient dune and the foredune can be eroded and deposited offshore. The landward limit of the storm profile is typically defined by a backbeach erosion escarpment. |



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| Storm Surge | The increase in coastal water level caused by the effects of storms. Storm surge consists of two components: the increase in water level caused by the reduction in barometric pressure (barometric setup) and the increase in water level caused by the action of wind blowing over the sea surface (wind setup). |
| Subaerial | That section of the beach which is above the waterline. |
| Subaqueous | The portion of the beach profile below the water surface. |
| Surging Waves | The wave does not "break" but maintains its basic shape as it moves towards the shore, where it surges up the beach. Very little white water is evident before surging waves reach the shore. |
| Swell | Wind-generated waves that have travelled out of their generating area. Swell characteristically exhibits a more regular shape and longer period than the sea (c.f. SEA). |
| Swell Waves | Wind waves remote from the area of generation (fetch) having a uniform and orderly appearance characterised by regularly spaced wave crests. |
| Tidal inundation | The inundation of land by tidal action under average meteorological conditions and under any combination of astronomical conditions. |
| Turbidity | The condition resulting from the presence of suspended particles in the water column which attenuate or reduce light penetration. |
| Training walls | Walls constructed at the entrances of estuaries and rivers to improve navigability. |
| Tsunami | Long-period ocean waves generated by geological and tectonic disturbances below the sea. Incorrectly referred to as 'tidal waves', tsunami travel at speeds of up to 800 kilometres/hour in the open ocean, where they are of low height. However, tsunami can rise to a height of 10 metres or more through the shoaling process as they approach land. |
| Wave Height | The vertical distance between a wave trough and the following wave crest. |
| Wave Period | The time taken for consecutive wave crests or wave troughs to pass a fixed point. |
| Wavelength | The distance between consecutive wave crests or wave troughs. |
| Wave run-up | The vertical distance above mean water level reached by the uprush of water from waves across a beach or up a structure. |
| Wind Waves | The waves initially formed by the action of wind blowing over the sea surface. Wind waves are characterised by a range of heights, periods and wavelengths. As they leave the area of generation (fetch), wind waves develop a more ordered and uniform appearance and are referred to as swell or swell waves. |
| Wetlands | A wetland is an area of land whose soil is saturated with moisture either permanently or seasonally. Wetlands include swamps, marshes, billabongs, lakes, saltmarshes, mudflats, mangroves, coral reefs, fens, peatlands, or bodies of water — whether natural or artificial, permanent or temporary. Water within these areas can be static or flowing, fresh, brackish or saline. |



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APPENDIX A: MANAGEMENT AGENCIES

Integrated Coastal Zone Management (ICZM) is a management regime defined and directed by broader policy and organisational settings, in turn influenced by the prevailing institutional system. It is important to understand roles and responsibilities, direct and indirect, of institutional stakeholders. Like policy environment, institutional stakeholders also come from three levels of governments.

Local and regional

Manly Council (MC) is the principal management agency of this plan.

Manly Council was incorporated as a local government body on 6th January, 1877. Manly Council is a statutory body deriving authority from the *Local Government Act 1993* and other Acts enacted by the Parliament of New South Wales. The Council does not have the power to make decisions outside the legislation by which it derives its authority.

Council is responsible for the overall management of the Local Government Area (LGA) and enforcing the requirements of the *NSW Local Government Act 1993*, *Environmental Planning and Assessment Act 1979* and the *Crown Lands Act 1989* (where Council has care and control).

Manly Council is run by 12-member elected Councillors headed by the Mayor. Council is supported by the executive General Manager and staff. Councillors are elected to Council at local government elections, which are held every four years. In Manly local government area, there are no wards, and each Councillor represents the entire Council area. The Mayor is also directly elected by community for a term of 4 years.

Manly Council is committed to community consultation, a key component of which is the committee-based **Precinct Community Forums** system. The forum approach was introduced in 1990 to extend the involvement of the community through coordinated consultation and participation. The aim is to involve all property owners, residents and workers in the decisions which affect their local area. Precinct Community Forums are groups of people who live, work or own property in a Precinct area. There are 12 Precinct Community Forums in Manly Council area and Precinct meetings are held monthly. The meetings discuss matters referred by Council for community consultation, and matters of local importance and interest to the community. The decisions of the Precincts are advisory. Their comments are responded to and considered by Council in its statutory decision making role. The Community Forums are organised by the residents. They play a vital role in ensuring that future changes in the local area are taken into account, and are sympathetic to the amenity of the local residents.

Another operational arm of the Council is various Special Purpose Committees and Working Groups. Manly Harbour Foreshore & Coastline Management Committee is one of these committees, which oversees the development of the Manly Cove Coastal Zone Management Plan. The Committee meets bi-monthly.

SHOROC (the Shore Regional Organisation of Councils) is a cooperative group of Councils on Sydney's Northern Beaches representing Manly, Mosman, Pittwater and Warringah. SHOROC was launched in August 1994 in the belief they had significant shared features that would provide more opportunities for information and resource sharing and joint servicing at a local level. The SHOROC Executive plays a strong role in presenting regional issues effectively to all levels of government. SHOROC operates through a Board, made up of the four Mayors and four General Managers who meet at least quarterly. All member councils make an equal annual contribution to the operating costs of SHOROC and have equal voting rights.

The SHOROC Board is supported by a Management Committee, a Secretariat and a number of key working groups comprising cross council professional officers. SHOROC projects are diverse and divided between four portfolios – Planning, Environment, Community and Corporate. Publication of 'Regional State of the Environment' Report is one of the key documents produced by SHOROC each year. The Report contains a chapter of 'Land and Coastline'.



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The **Sydney Metropolitan Catchment Management Authority (SMCMA)** is a NSW Government agency working to meet community expectations by delivering natural resource management across Sydney. Natural resources include land, rivers, estuaries and coastal systems. The SMCMA meets its government and legislative expectations by implementing the Sydney Metropolitan Catchment Action Plan. This is a strategic planning tool that identifies the key natural resource features the Sydney community wants to protect and improve. The SMCMA was established under the *Catchment Management Authorities Act 2003*. The SMCMA partners with 39 local councils in the metropolitan catchment as well as State and Federal Government departments.

The **Sydney Coastal Councils Group** was established in 1989 to promote co-ordination between member councils on environmental and natural resource management issues relating to the sustainable management of the urban coastal environment.

The Group consists of 15 councils (Botany Bay, Hornsby, Leichhardt, Manly, Mosman, North Sydney, Pittwater, Randwick, Rockdale, Sutherland, City of Sydney, Warringah, Waverley, Willoughby and Woollahra) adjacent to Sydney marine and estuarine environments and associated waterways. The Group represents over 1.3 million Sydneysiders. This area encompasses the waterways of Broken Bay, Pittwater, Port Jackson, the lower Lane Cove River, Middle and North Harbours; Botany Bay, the Lower Georges and Cooks River; and Port Hacking.

The Sydney Coastal Councils Group is a Regional Organisation of Councils that provides project facilitation and coordination on environmental and natural resource management issues that relate to the sustainable management of the coastal urban environment. The Group provides strong advocacy and support for its 15 member councils on coastal, climate change and NRM issues. Being a member council also allows council elected and professional staff the opportunity to exchange ideas at a regional level through SCCG forums, presentations, meetings and conferences.

The **Aboriginal Heritage Office** is a joint initiative by Lane Cove, North Sydney, Manly, Warringah, Willoughby, Ku-ring-gai and Pittwater councils, in a progressive move to protect Aboriginal Heritage in these areas. Part of the work of the Aboriginal Heritage office is to monitor Aboriginal Sites on a day to day basis and long term management reports are developed to ensure their preservation and protection.

Another key role of the Aboriginal Heritage office is to give the Aboriginal people and non-aboriginal people involved with these council areas an avenue of approach to discuss issues or concerns they may have. The office is in direct contact with the Metropolitan Local Aboriginal Land Council and its many resources.

An important part of the role is to communicate with school and other groups and teach children an ethos of understanding to appreciate the unique culture of the Aboriginal people. In association with the local councils, talks, walks and activities are planned to enhance appreciation of Aboriginal culture in the wider community. A selection of information leaflets on various Aboriginal Heritage topics are available to download from AHO's website.

State

The **Department of Planning & Infrastructure** supports sustainable growth in NSW. It is responsible for:

- Long-term planning for the State's regions;
- Driving well-located housing and employment land;
- Assessing the State's biggest development proposals; and
- Ensuring the planning system is streamlined and effective

In May 2009, the Department established three divisions focussing on key activities in planning – land release, urban renewal and major project assessment. A fourth division focuses on corporate governance and policy development.

The functionality of the Department is run under the following seven Executive Directors:

- Corporate Governance & Policy



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- Strategy & Infrastructure Planning
- Land Release
- Planning Operations
- Urban Renewal & Major Sites
- Major DA Assessment
- Assessments Systems, General Counsel

In developing its roles and responsibilities, the Department identifies the following priorities:

- Sustainable growth in the right locations
- Improved investor and community confidence
- Effective management of natural, environmental and cultural resources and values
 - Protection for the New South Wales coastline from inappropriate development through the NSW Government's Coastal Policy, State Environmental Planning Policy No. 71 - Coastal Protection, the Comprehensive Coastal Assessment and the Coastal Lands Protection Scheme. Coastal wetlands, littoral rainforests and areas with acid-sulfate soils also need special attention if development is being considered.
 - Protection for other areas of high environmental value. For example, our drinking water catchment plan will protect the drinking water for Sydney and nearby regional centres
- Diverse, equitable and pleasant neighbourhoods which reflect community needs and aspirations
- Integrated delivery of regional infrastructure and government activities

Environmental planning instruments (State environmental planning policies, regional environmental plans and local environmental plans) are legal documents that regulate land use and development. Local environmental plans prepared by councils guide planning decisions for local government areas. Through zoning and development controls, they allow councils to supervise the ways in which land is used. Development control plans, prepared in accordance with the *Environmental Planning and Assessment Act*, are also used to help achieve the objectives of the local plan by providing specific, comprehensive requirements for certain types of development or locations e.g. for urban design, and heritage precincts and properties.

Planning and development within the NSW Coastal Zone (as declared under the *Coastal Protection Act 1979*) is now subject to a Ministerial direction for coastal protection, NSW Coastal Policy, SEPP 71 - Coastal Protection, and the Major Projects SEPP (which identifies coastal development that will need the approval of the Minister for Planning). The NSW Government in June 2001 announced its \$11.7 million Coastal Protection Package to protect the State's beaches, headlands and other coastal features for generations to come.

The Department has released the final NSW coastal planning guideline: adapting to sea level rise following extensive public consultation. The Guideline adopts the NSW sea level rise planning benchmarks in the NSW Sea Level Rise Policy Statement. The Guideline outlines a proposed approach to assist councils, State agencies, planners and development proponents when addressing sea level rise in land-use planning and development assessment. It applies to all coastal areas of NSW, including the NSW Coastal Zone, as well as Sydney Harbour and Botany Bay. The term 'coastal areas' is used broadly to include the coastline, beaches, coastal lakes, estuaries, as well as the tidal reaches of coastal rivers. It also includes other low-lying land surrounding these areas that may be subject to coastal processes in the future as a consequence of sea level rise.

In a recent restructuring (April 2011), with the abolition of Land & Property Management Authority, Office of Strategic Lands staff are transferred to Department of Planning and Infrastructure.

The Department of Primary Industries (NSW DPI) has been established to assist in building a diversified state economy that creates jobs. The department was formed in July 2004 with the amalgamation of Mineral Resources NSW, NSW Agriculture, NSW Fisheries and State Forests NSW. The Department was during 2009 - 2011 amalgamated with and acted as Industry & Investment NSW.



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One of the Divisions, 'Fisheries, Compliance and Regional Relations', manages and promotes sustainable, commercial and recreational use of NSW fisheries' resources, and the protection of the aquatic environment.

The Division has jurisdiction over all fish and marine vegetation in all waters of the state (including all private and public waters and permanent and intermittent waters) extending to 3 nautical miles offshore (and to 80Nm offshore in those fisheries for which it has jurisdiction under the Offshore Constitutional Settlement). This means that it has management responsibility for all aquatic animals (with the exception of aquatic mammals, reptiles, amphibians and birds, which are managed by the NSW Office of Environment & Heritage) and responsibility for all marine vegetation and key aquatic habitats including seagrass, mangroves, gravel beds and snags. It has also management and research responsibilities related to threatened fish species, populations and ecological communities.

While NSW DPI is responsible for the management of all aquatic animals, the department is a state government authority with limited on-the-ground staff to effectively regulate the management of aquatic environments. As a result Manly Council's rangers are presently licensed as NSW DPI (Fisheries) officers to assist Fisheries with some of their on-the-ground 'localised' regulation functions.

In a recent restructuring (April 2011), the following office and/or groups are added to the Department of Primary Industries, with the abolition of

- Staff principally involved in the administration of the Crown Lands Act and Soil Conservation Act from the Land & Property Management Authority;
- Staff principally involved in the management or administration of spatial data from the Land & Property Management Authority;
- Office of Water;
- Marine Parks Authority Secretariat;
- the group of staff who, in the opinion of the Director-General of Premier and Cabinet, are principally involved in the administration of the *Catchment Management Authorities Act 2003*.

The NSW Office of Water is responsible for the management of the State's surface water and groundwater resources. The Office of Water reports to the NSW Government for water policy and the administration of key water management legislation, including the *Water Management Act 2000*, *Water Act 1912*, and the *Hawkesbury-Nepean River Act 2009*.

The **Office of Environment and Heritage (OEH)** is a separate office within the NSW Department of Premier and Cabinet. OEH is an environmental regulator and a manager of parks and gardens in NSW and develops and leads policy and reform in sustainability, biodiversity and native vegetation, coastal protection and Aboriginal cultural heritage.

OEH manages 6.8 million hectares of national parks and reserves, which is almost 9 per cent of NSW.

In regulatory matters for environment protection, OEH acts under the powers of the statutory Environment Protection Authority (EPA) and its Board.

The organisation also provides staff, services and other support to the Royal Botanic Gardens and Domain Trust, the NSW Environmental Trust and the Lord Howe Island Board.

The Heritage Office works with communities to identify important places and objects and provides guidance in looking after heritage items.

OEH supports the Premier, the Minister the Environment and the Minister for Heritage in performing their executive and statutory functions.

OEH was formerly known as the Department of Environment, Climate Change and Water (DECCW).



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Coastal and estuary management programs

The NSW Government's Coastal Management Program's primary objective is to provide support to local councils to manage the risks from coastal hazards such as coastal erosion. A secondary objective of the program is to restore degraded coastal habitats. The primary objective of the Government's Estuary Management Program is to provide support to councils to improve the health of NSW estuaries and understand the potential risks from climate change.

The support provided to councils under these programs includes financial assistance to:

- prepare coastline, estuary and coastal zone management plans and supporting studies
- carry out projects to reduce risks associated with coastal hazards, improve coastal environments and improve estuary health.

A review of these programs has resulted in a revised focus on funding, with a greater emphasis placed on:

- updating coastal hazard studies to incorporate sea-level rise benchmarks
- updating estuary plans to consider climate change impacts, including sea level rise
- estuary health monitoring and improvement
- focusing on high-hazard coastal areas and stressed estuaries.

Grant offers are subject to availability of funds for each financial year and State-wide priorities. Funding of up to 50% of a project's costs will normally be offered for successful grant applications.

The NSW National Parks and Wildlife Service (NPWS), which forms part of the Office of Environment and Heritage, is responsible for protecting the State's flora and fauna, and for managing and maintaining National Parks and Nature Reserves. The NPWS is also responsible for Aboriginal Heritage and sites.

NSW Maritime is the State Government Authority responsible for marine safety, regulation of commercial and recreational boating and oversight of port operations. The Authority is also responsible for property management of submerged lands in Sydney Harbour, Newcastle Harbour, Botany Bay and Port Kembla, and for providing strategic advice on ports and maritime matters to the NSW Government.

NSW Maritime was created in 2004, replacing the Waterways Authority and the Marine Ministerial Holding Corporation. To better serve the boating community NSW Maritime has four key result areas as the focus for its endeavours:

- Boating Safety – develop and promote a safe commercial vessel and recreational boating culture through a comprehensive safety and compliance program involving education about safe boating practices, and through enforcement of laws
- Maritime Infrastructure – improve public access to waterways, including access for people with disabilities, ensure safe public ferry wharves, and encourage and promote maritime precinct developments which meet community expectations and help create maritime related jobs
- Safe and Competitive Ports – provide co-ordinated support for port policy and development, and ensure ports operate under effective port safety management arrangements
- Community Involvement – seek key stakeholder and community involvement in decisions that affect them, promote transparency and consistency in decision making and reduce red tape.

NSW Maritime the government body which owns the seabed of Sydney Harbour, North Harbour and Middle Harbour and all related tidal bays, rivers and their tributaries. Under the *Ports Corporatisation and Waterways Management Act 1995* (PC&WM Act 1995) the Waterways Authority (NSW Maritime) is the landowner of Sydney Harbour and its tributaries and therefore controls Sydney Harbour.



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NSW Maritime is therefore responsible for management of waterways and the sea bed from mean high water mark (MHWM) seaward. As owner of the bed of Sydney Harbour, NSW Maritime is the consent and determining authority for a variety of water-based developments and activities. NSW Maritime is also responsible for the investigation of on-water pollution incidents and issuing clean-up and prevention notices in relation to vessels (in navigable waters that are not required to have a pilot).

From 4 February 2008, most DAs lodged with NSW Maritime seeking consent for water based development under Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 are likely to be 'integrated development applications' because the development is likely to require a controlled activity approval under the *Water Management Act 2000*.

The change in the DA requirements is a result of the repeal of the *River and Foreshores Improvement Act 1948* and commencement of the controlled activity provisions of the *Water Management Act 2000*.

Under the *Water Management Act 2000*, controlled activities include the erection of a building or the carrying out of a work or the removal or deposition of material and approval is required where the work is carried out in, on or over the bed of any river, lake or estuary.

Once lodged with NSW Maritime, special advertising and notification procedures apply to these DAs under the *Environmental Planning and Assessment Act 1979*. These require a minimum public display period of 30 days, a public notice in a local newspaper and notifications to relevant public authorities and neighbours.

NSW Maritime's DA form has been updated so that the integrated referral(s) requirement can be identified. If relevant, other integrated approvals may also continue to be required, for instance, approvals required under the *Fisheries Management Act 1994*.

The **Land and Property Management Authority (LPMA)**, is abolished as a Division of the Government Service as part of the NSW Government restructure announced on April 4, 2011 and has largely been incorporated into other departments. Crown Lands Division is now housed in the Department of Primary Industries.

Sydney Water, a statutory State owned corporation, wholly owned by the New South Wales Government has three equal, principal objectives:

- to protect public health
- to protect the environment
- to be a successful business.

Sydney Water provides drinking water, recycled water, wastewater services and some stormwater services to more than four million people in Sydney, Illawarra and the Blue Mountains. Drinking water is sourced from a network of dams managed by the Sydney Catchment Authority, then treated and delivered to customers' homes and businesses by Sydney Water.

Sydney Water has Memoranda of understanding with

- the Office of Environment and Heritage (OEH)
- NSW Health

The **Natural Resources Commission (NRC)** was created by the Natural Resources Commission Act 2003. The Natural Resources Commission (NRC) provides credible, independent advice to the NSW Government on managing the state's natural resources in an integrated manner to maintain landscapes that are resilient, function effectively, and support environmental, economic, social and cultural values. The NRC reports to the Premier, reflecting its independent nature.

In 2005, the NRC developed and recommended a Standard for Quality Natural Resource Management (Standard) and state-wide targets for NRM. The Government adopted the Standard and targets, and the targets



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are now part of the 'Green State' Priorities and Targets of the NSW State Plan. In 2008, the NRC began an ongoing program of audits to assess whether Catchment Action Plans are being implemented effectively, in compliance with the Standard and targets.

Together, the Standard, targets, and audit support flexible and innovative regional decision-making, and build consistency, rigour and accountability for NRM. 2010 marks five years of implementation of the Standard and targets. To drive continual improvement the NRC will undertake a mid term review of the Standard, targets and Catchment Action Plans and the regional model.

The NRC will contribute to achieving the targets of the NSW State Plan by advising the Government on:

- the natural resource policy and management settings required to improve the resilience of landscapes
- how to improve performance towards the state-wide targets and the effective implementation of Catchment Action Plans.

The NRC, at present, follows the Strategic Plan 2010-2013.

The functions of Emergency Management NSW have been transferred to the **Ministry for Police and Emergency Services**. The Ministry for Police and Emergency Services is a division of the Department of Attorney General and Justice. It is responsible to the Minister for Police and Emergency Services.

The Ministry was formed on 4 April 2011 as part of new administrative arrangements for the NSW public service outlined in the *Public Sector Employment and Management (Departments) Order 2011*.

The Ministry brings together the functions of the former Security and Recovery Co-ordination Branch and Law Enforcement Policy Branch of the Department of Premier and Cabinet, the Disaster Welfare section the Department of Human Services and Emergency Management NSW.

Emergency Management involves a range of programs and arrangements designed to prevent, prepare for, respond to and recover from the effects of hazards impacting on the community.

The *State Emergency Management Committee (SEMC)* was established under the *State Emergency and Rescue Management Act* to ensure that New South Wales has a system to cope with emergencies which is robust, effective and flexible enough to deal with the range of hazards experienced in New South Wales. A hazard impacting on the community may result in an emergency.

The *State Rescue and Emergency Management Act* identifies the SEMC as being responsible for the following emergency management activities:

- identify, evaluate and monitor hazards and threats to life and property;
- establish and review appropriate emergency management structures at all levels;
- identify emergency resources both within and outside the State and make plans for the allocation and co-ordination of the use of those resources;
- establish and review systems for use in the control and co-ordination of emergency operations;
- review and recommend emergency management legislation including legislation and proposals for legislation of other agencies);
- advise the Minister on the creation of combined local government emergency management arrangements;
- establish communication networks within and between functional areas at all levels;
- review plans at all levels and within each emergency services organisation and functional area;
- produce specific hazard management guidelines;
- arrange emergency management training for individuals, including individuals employed in emergency services organisations and functional areas;
- produce and disseminate educational material on established emergency management policies and procedures;



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- arrange the conduct of training exercises to periodically test emergency management plans;
- advise the Minister on the declaration of states of emergencies;
- advise on the efficient use of local government resources in relation to Displan;
- assist in the selection and training of district and local government personnel for appointment to relevant organisations under Part 2 of the Act;
- act as the single point of contact for Commonwealth support to emergency operations in New South Wales in the absence of other arrangements;
- produce standing orders and instructions and standing operating procedures under Displan;
- assist the Minister, as required, in the preparation and review of Displan; and
- arrange for graduated warnings of emergencies to the public.

In addition to these responsibilities the SEMC undertakes planning for the emergency management aspects of terrorist threats and critical infrastructure.

The SEMC presently comprises the Chairperson, the State Emergency Operations Controller and nineteen (19) representatives of relevant government and non-government agencies, as determined by the Minister. The current membership and member biographies are contained in the SEMC Annual Report.

The **State Emergency Service** is an emergency and rescue service dedicated to assisting the community. It is made up almost entirely of volunteers, with 232 Units located throughout New South Wales. The Units comprise of more than 10,000 volunteer members, who are easily identified by their distinctive orange overalls.

Though major responsibilities are for flood and storm operations, the SES also provides the majority of general rescue effort in the rural parts of the state. This includes road accident rescue, vertical rescue, bush search and rescue, evidence searches (both metropolitan and rural) and other forms of specialist rescue that may be required due to local threats. The Service's trained rescuers also support the full-time emergency services during major disasters.

The SES also assists other emergency services when they are performing major operations. These services include the NSW Police Service, the NSW Rural Fire Service, the NSW Fire Brigade and the Ambulance Service of NSW.

Commonwealth

The Australian Government **Department of the Environment, Water, Heritage and the Arts** (formerly the Department of the Environment and Water Resources) develops and implements national policy, programs and legislation to protect and conserve Australia's environment and heritage. The Department, among others, deals with coasts and ocean issues.

The Department sets the scene for national cooperation in managing coastal issues and ensuring effective and complementary arrangements within and across jurisdictions, and to better reflect the interests of coastal stakeholders through the *Framework for a National Cooperative Approach to Integrated Coastal Zone Management*. The implementation of the Framework is managed through the Intergovernmental Coastal Advisory Group (ICAG), comprised of representatives from the Australian Government, each state government, the Northern Territory Government and the Australian Local Government Association (ALGA). ICAG members meet several times a year to share experiences and to work on Framework implementation.

Another program, the Coastal Catchments Initiative aims to achieve target reductions in pollutant discharges to coastal water quality hotspots. This is being done through the development and implementation of Water Quality Improvement Plans, prepared in accordance with the Australian Government's *Framework for Marine and Estuarine Water Quality Protection*.

The **Department of Climate Change and Energy Efficiency** was established on 8 March 2010 as part of the Prime Minister and Cabinet Portfolio. The Government takes the challenge of climate change seriously. The approach is to:



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- reduce greenhouse pollution in Australia in the short and long term
- work with the international community to develop a global response that is effective and fair
- prepare for the climate change that we cannot avoid.

A number of initiatives to address climate change such as National Climate Change Adaptation Framework, the National Climate Change Adaptation Programme, the Climate Change Adaptation Actions for Local Government are also relevant for coastline management.



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APPENDIX B: FUNDING SOURCES

There is range of financial and technical assistance available to assist implementation of the Coastal Zone Management Plan. The following descriptions of likely sources have been provided to assist Council and the Committee with the implementation process. Potential funding opportunities continue to be developed by State and Commonwealth agencies, particularly through their environmental programs.

The Australian **Federal Government** provides a range of funding opportunities to address important natural resource issues at a local level.

Caring for our Country The Australian Government is investing \$2 billion to achieve a real and measurable difference to Australia's environment. Caring for our Country funds projects across the country to achieve national targets - projects that improve biodiversity and sustainable farm practices.

This funding supports regional natural resource management groups, local, state and territory governments, Indigenous groups, industry bodies, land managers, farmers, Landcare groups and communities. In its first five years, from July 2008 to June 2013, Caring for our Country is investing funds to improve strategic outcomes across six national priority areas:

- the National Reserve System
- biodiversity and natural icons
- coastal environments and critical aquatic habitats
- sustainable farm practices
- natural resource management in northern and remote Australia, and
- community skills, knowledge and engagement.

Under the coastal environments and critical aquatic habitats priority, the targets for funding are:

- Protecting the Reef
- Protecting Ramsar wetlands
- Protecting critical aquatic ecosystems
- Improving coastal hotspots
- Increasing coastal community engagement

Through the **Local Adaptation Pathways Program**, the Australian Government is providing funding to help councils undertake climate change risk assessments and develop action plans to prepare for the likely local impacts of climate change. The funding will help councils integrate climate change risk assessment into their broader decision-making processes. The greater level of funding available in this Round reflects higher costs for some activities in more remote regions. The process should align with that outlined in the Climate Change Impacts & Risk Management: A Guide for Business and Government.

Under Round 1 of the Local Adaptation Pathways Program, more than 60 local governments received funding for a total of 33 projects. This funding totalled \$1.5 million. The majority of these councils were located in coastal and urban areas. Under Round 2 of the Local Adaptation Pathways Program, 30 councils in regional and remote areas of Australia received \$874,000 to complement and build on the work from Round 1.

Department of Climate Change and Energy Efficiency's **Low Carbon Communities** will provide \$80 million over four years to support local councils and community organisations to cut pollution and reduce their energy costs through energy efficiency upgrades to street lighting, community facilities and council buildings. The program will also assist communities to reduce carbon pollution through investment in cogeneration facilities or energy efficient upgrades to community icons such as stadiums, education facilities, town halls and nursing homes. Low Carbon Communities will provide competitive grants to local councils and operators of community facilities via three funding streams.



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1. Small scale grants of up to \$500,000 for local councils to undertake smaller scale projects to reduce energy consumption in facilities such as outdoor lighting.
2. Large scale grants of up to \$5 million for operators of community facilities to invest in energy efficient upgrades such as the installation of cogeneration or new heating and air conditioning.
3. Greener Suburbs grants of up to \$500,000 for councils to implement capacity building and demonstration projects that improve the use of parks and green spaces in urban areas.

Program guidelines and other support material will be available shortly. The first call for applications for funding is expected to occur in mid 2011.

The **Threatened Species Network Community Grants Program** is a partnership between WWF-Australia and the Australian Government. Funding is available for on-ground activities to protect threatened species and ecological communities such as: habitat restoration, weeding and feral animal control, monitoring and surveying species populations, fencing and fire management. Funding for individual projects is limited to a maximum of \$50,000 (GST inclusive). A total of \$500,000 is available each year. For more info: www.wwf.org.au/ourwork/species/tsn

The **NSW State Government** also provides a range of funding opportunities for Councils, community organisations and individuals to address important natural resource issues at a local level.

The following funding programs are relevant to coasts & estuaries that provide funding assistance to Local Government generally on a 50% subsidy basis.

The NSW Government's **Coastal and Estuary Management Programs** are administered by the Office of Environment and Heritage (OEH) with grant funding provided by an annual allocation from NSW Treasury. Funding provided to local councils under the programs does not generally extend to matching other State Government sources of funds or funds administered by other State Government agencies. Councils are encouraged to develop partnerships with catchment management authorities (CMAs) and submit applications based on joint funding sources. Financial assistance is provided for up to 50% of the project's costs and is dependent upon State-wide priorities and availability of funding. Where a joint application is prepared with a CMA, a council or group of councils must contribute at least 25% of the project costs, with the CMA contributing up to 25% of the costs.

A review of these programs has resulted in a revised focus on funding, with a greater emphasis placed on:

- _ updating coastal hazard studies to incorporate sea-level rise benchmarks
- _ updating estuary plans to consider climate change impacts
- _ estuary health monitoring and improvement
- _ focusing on high-hazard coastal areas and stressed estuaries.

The **Floodplain Management Program** provides technical advice, data collection and funding assistance on a varying subsidy basis. Activities subsidised include studies, mitigation works and other measures that reduce the impact of flooding and flood liability on existing owners and occupiers of flood liable land (existing problems) or ensure that future development is compatible with the flood hazard (potential additional problems).

Over \$18 million in grant offers for some 258 projects was made during 2011-12 under the Coastal, Estuary and Floodplain management programs.

Opportunities under OEH Sustainability Funding Initiatives

Funding is provided or administered by OEH to support a range of sustainable practices and programs.

The NSW Government's \$700 million **Climate Change Fund** was established in July 2007 to help business, households, schools, communities and government save water, energy and greenhouse gas emissions. Current programs include:



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- \$170 million NSW Home Saver Rebates providing rebates for hot water systems, hot water circulators, rainwater tanks, dual flush toilets and washing machines
- \$30 million Public Facilities program
- \$20 million School Energy Efficiency program
- \$20 million Rainwater Tanks in Schools program
- \$150 million program under the Energy Efficiency Strategy

In addition, the Climate Change Fund provides \$2 million a year for the Central Coast Water Savings Fund

The Climate Change Fund was established under the Energy and Utilities Administration Act 1987. It incorporates the Water and Energy Savings Funds, the Climate Action Grants Program and funding from the Environmental Trust.

The City & Country Environment Restoration Program introduced a suite of new environmental initiatives in 2006. The program provides grants for projects such as urban sustainability and waste minimisation (through the Environmental Trust), as well as native vegetation assistance grants.

The Climate Action Grants Program supports projects that assist the development and adoption of technologies, processes and practices that reduce greenhouse gas emissions or help the NSW community to adapt to the impacts of climate change.

The Aboriginal Land Clean-Up Program supports partnership projects between Local Aboriginal Land Councils and local government that seek to remove illegally dumped waste from Aboriginal owned land whilst incorporating prevention, resource recovery and partnership building initiatives.

The **City & Country Environment Restoration Program** is a suite of environmental initiatives that provides \$439 million grants for projects such as urban sustainability and waste minimisation (through the Environmental Trust), in addition to grants provided for farmer exit assistance, sustainable farming and offset actions under the Native Vegetation Assistance Package. Over the next five years, the City and Country Environment Restoration Program will make \$80 million in new grants available to fund **Urban Sustainability Program** local environment programs. Projects will support stormwater harvesting and its reuse, waste recycling and avoidance, and campaigns to prevent litter and illegal dumping, as well as initiatives to restore local waterways and urban bushland. The Urban Sustainability Program will allow the Environmental Trust to continue to work in partnership with local councils, to help the people of NSW to protect and restore the environment.

The aim of the **Environmental Restoration & Rehabilitation Grants** is to improve the capacity of communities and organisations to protect, restore and enhance the environment. The grants are offered by the Environmental Trust, administered by the Department of Environment, Climate Change and Water (DECC). The Trust is offering ten competitive grant programs in 2009 up to a value of \$6.75 million. The Objectives of the Environmental Restoration and Rehabilitation Program are:

- to restore degraded environmental resources, including rare and endangered ecosystems
- to protect important ecosystems and habitats of rare and endangered flora and fauna
- to prevent or minimise future environmental damage
- to enhance the quality of specific environmental resources
- to improve the capacity of eligible organisations to protect, restore and enhance the environment
- To undertake resource recovery and waste avoidance projects and to prevent and/or reduce pollution.

Total funds being offered under the R&R program in 2009 are: \$1.5 million allocated to the Community grants program and \$1.5 million allocated to the State and Local Government grants program. Grants between \$5,000 and \$100,000 are available.

Grants are available from **Recreational Fishing (salt water) Trust Fund**, operated by I&I NSW for various groups including councils for the improvement of recreational fishing for a period of one year, up to a maximum



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of three years. Applications are sought in February each year but can also be submitted any time. Contact Recreational Fishing Trusts Executive Officer.

Each year up to \$1.35 million is distributed on a dollar-for-dollar basis under **Sharing Sydney Harbour Access Program**, a NSW government initiative operated by the Department of Planning to improve public access to and enhance the recreational enjoyment of Sydney Harbour and its tributaries for the people of and visitors to Sydney. The Sharing Sydney Harbour Access Program was launched in February 2003 to assist with implementing the Sharing Sydney Harbour Access Plan. The NSW Government has recently announced that the Program will be extended over five years to provide \$6.75 million until 2013. Grant is available for specific capital works projects such as walking tracks, cycle paths, new public waterfront parks, jetties, pontoons and boat launching facilities.

The **Better Boating Program (BBP)** is a State Government grants program aimed at providing recreational boating infrastructure for the benefit of the boating community on New South Wales waterways. The BBP, which commenced in July 2009, consolidates the three grants programs previously run by NSW Maritime.

Since the inception of infrastructure grant funding in 1998, the State Government has provided over \$25 million for around 470 boating infrastructure improvements across NSW. Under the BBP, up to \$5 million is available annually from 1 July 2009 for the next five years, across three categories:

Better Boating - Regional Infrastructure Grants

| | |
|-------------------|--|
| Funding allocated | Up to \$2.5 million per year |
| Funding ratio | Up to 50% of total eligible costs |
| Outcomes | Better public recreational boating infrastructure across NSW |

Better Boating – Sharing Sydney Harbour Access Program (SSHAP)

| | |
|-------------------|--|
| Funding allocated | Up to \$0.5 million per year |
| Funding ratio | Up to 50% of total eligible costs |
| Outcomes | Improvements to water-based public access to Sydney Harbour and its tributaries for the people of and visitors to Sydney |

Better Boating – Sydney Harbour Boatramps

| | |
|-------------------|---|
| Funding allocated | Up to \$1.5 million per year |
| Funding ratio | Up to 100% of total eligible costs |
| Outcomes | Improved public boatramp facilities in Sydney Harbour |

Note: The remaining \$0.5 million each year may be distributed across the above categories subject to demand.

The **Metropolitan Greenspace Program (MGP)** has been identified in the Government's City of Cities plan for Sydney's future as a key initiative for improving links between bushland, parks, waterways and centres. In implementing the program, the Department of Planning works closely with local councils to plan and improve regionally significant greenspace, including parks, trails and reserves. In 2009, MGP delivered \$2.4 million to councils across Sydney on a dollar-for-dollar basis for 17 separate open space and regional trail projects across Sydney.



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The **Coastal Lands Protection Scheme (CLPS)** is used to bring significant coastal lands into public ownership and provides for their long term management and care. The Department of Planning administers the Scheme which receives an annual budget allocation of \$3 million for acquisitions.

The Scheme, which commenced in 1973, identified certain lands to be protected and acquired. These lands usually included features such as headlands, dunes, hinterland, coastal lagoons and lakes, particularly where the original vegetation was still dominant. More recently the Scheme has been used to acquire additional lands on an opportunistic basis, if they meet certain criteria.

The main criteria for acquisition under the Scheme are:

- Public access: to promote public access to the coastal foreshore.
- Scenic quality: to maintain the scenic quality of the NSW coast.
- Ecological values: to protect ecological sites of regional, state and/or national significance.

Since the Scheme commenced approximately 15,427 hectares at a total cost of \$70.8 million have been acquired (as at June 2009). By identifying, acquiring and reserving land we have been able to create new coastal national parks and reserves for public enjoyment.

The Department's land managers and resource specialists work together to negotiate purchases under the Scheme, arranging the transfer of land to management agencies such as the Department of Environment, Climate Change and Water (for a national park), the Land and Property Management Authority (for a Crown reserve) or under some circumstances the local council (for a public reserve).

The NSW Government in partnership with the Commonwealth Government under the Natural Disaster Resilience Program is offering the **Natural Disaster Resilience Grants Scheme (NDRGS)**. The NDRGS replaces the Natural Disaster Mitigation Programme and makes grants available to local governments and agencies to undertake a wide range of natural disaster risk assessments and risk reduction works; which contribute to safer, sustainable communities which are more resilient to the effects of natural disasters.

All three spheres of government provide funding under the Natural Disaster Mitigation Program. In the 2009 Budget the Australian Government announced funding of \$79.3 million over four years for a new Natural Disaster Resilience Program (NDRP). The Program will consolidate the existing Bushfire Mitigation Program (BMP), the Natural Disaster Mitigation Programme (NDMP) and the National Emergency Volunteer Support Fund (NEVSF).

Generally, the Australian and New South Wales Governments contribute up to one third each of approved project costs. Local agencies and in some cases private sector contributors make up the balance.

A wide range of natural disaster risk reduction works, which contribute to safer, sustainable communities which are more resilient to the effects of natural disasters, qualify for funding under the NDRGS. They may include:

- natural disaster risk management studies
- disaster mitigation strategies
- investment in disaster resilient public infrastructure
- structural works to protect against damage (e.g. disaster proofing of existing buildings at risk, levees, retarding basins and channel improvements, permanent fire breaks, other engineered works that offer protection from natural disasters)
- disaster warning systems
- community awareness and readiness measures
- audits of levees and warning systems
- research to improve knowledge of natural disaster risk and mitigation
- Geographic Information Systems (GIS) based hazard and flood data for disaster mitigation purposes
- land and building purchase schemes in high-risk areas



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APPENDIX C: LIST OF THE ARCHITECTURAL AND ARCHAEOLOGICAL ITEMS IN THE MANLY COVE STUDY AREA

| ITEM | ADDRESS |
|--|-------------------------------|
| Listed under State Heritage Register | |
| Manly Cove Pavilion | West Esplanade, Manly |
| Manly Wharf | |
| | |
| Listed under s.170 NSW State Agency Heritage Register | |
| Manly Cove Pavilion | West Esplanade, Manly |
| Manly Wharf | |
| | |
| Listed under Sydney Regional Environmental Plan | |
| Manly Wharf | |
| Manly Rowing & Sailing Club | East Esplanade, Manly |
| Remains of Manly public baths | East Esplanade, Manly |
| Site and remains of Brightside cargo wharf | East Esplanade, Manly |
| Site and remains of harbour side pool and steps | East Esplanade, Manly |
| Site of Manly Fun Pier | Manly Wharf |
| | |
| Listed under Manly Local Environmental Plan (version 11 March 2011, Schedule 4) | |
| <i>Architectural and Archaeological Items</i> | |
| Manly Wharf (façade & street returns only) | The Esplanade, Manly |
| House | 5 and 7 East Esplanade, Manly |
| Residential flat building | 1 Addison Rd, Manly |
| Two terrace houses | 59 -61 Addison Road, Manly |
| Addison Road (from Wood Street to Osborne Road) | Manly |
| "Trevitt House" | 12 Oyama Avenue, Manly |
| Bus Depot | West Esplanade, Manly |
| Dressing Pavilion and Amenities Block | West Esplanade, Manly |
| Manly Fun Pier | Manly Wharf |
| Manly Rowing and Sailing Club group of Buildings | East Esplanade, Manly |
| Merriwa, Residential buildings | 10 Wood Street Manly |
| <i>Landscape Items</i> | |
| Monument | East Esplanade |



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| ITEM | ADDRESS |
|--------------------|--|
| Harbour Foreshores | Boundary of Municipality adjacent to the Harbour |
| Stone kerbs | Manly Municipal area |
| Park | East Esplanade |
| Park | West Esplanade |



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APPENDIX D: STATE OF THE ENVIRONMENT (MANLY COUNCIL) – MONITORING INDICATORS & DATA

| Indicators | 2006/07 | 2007/08 | 2008/09 | 2009/10 | Comments |
|---|-----------|-----------|-----------|-----------|--|
| Land Clearing and Re-vegetation | | | | | |
| Approvals to remove trees (private land) | 159 | 193 | 173 | 208 | |
| Total number of local native plants supplied to volunteers, contractors and residents | 10,679 | 13,237 | 8,576 | 7,413 | |
| Air Quality | | | | | |
| Air pollution complaints received by Council | 20 | 8 | 3 | 16 | |
| Greenhouse Gas Emissions | | | | | |
| Registered vehicles in council LGA* | 23,113 | 23,727 | 24,585 | 24,804 | Data source RTA |
| Number of council fleet vehicles^ | 170 | 162 | 177 | N/A | |
| GHG emissions from all council fleet vehicles (tonnes CO2e)^ | 1,335 | 1,367 | 1,384 | N/A | |
| Electricity use – council's operations (mWh) | 5,698 | 5,441 | 5,427 | 5,562 | |
| GHG Emissions from kilowatt hrs (tonnes CO2e) | 5,485 | 5,775 | 5,760 | 5,755 | |
| Stormwater | | | | | |
| Number of gross pollutant traps (council control) | 23 | 24* | 23** | 23 | *Two units were not performing to full operational capacity during 2007/08. ** Four units were not performing to full operational capacity during 2008/08 |
| Total gross pollutants removed from GPTs (tonnes) | 183 | 158* | 79** | 169 | |
| Water Consumption | | | | | |
| Total LGA potable water use (kilolitres) | 3,776,919 | 3,565,403 | 3,774,512 | 3,726,619 | |
| Total residential potable water use (kilolitres per capita) | 80 | 76 | 77 | 76 | |
| Total council potable water use (kilolitres) | 104,967 | 79,185 | 80,350 | 82,213 | |
| Biodiversity Condition | | | | | |
| Noxious weed notices* | 48 | 83 | 40 | 36 | |
| Noxious weed assessments undertaken* | 0 | 47 | 80 | 48 | |
| Number of registered active Bushcare volunteers | 210 | 66 | 86 | 26 | # During 2009/10, a major overhaul of Manly Council's volunteer database was conducted. Previous year's data includes inactive volunteers as well. |
| Bushcare program volunteer hours | 583 | 528 | 598 | 675 | |
| Number of active volunteer groups | 16 | 11 | 12 | 12 | |
| Number of native plant species recorded | 449 | 449 | 449 | 449 | |



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| Indicators | 2006/07 | 2007/08 | 2008/09 | 2009/10 | Comments |
|--|---------|---------|---------|---------|---|
| Number of threatened flora | 10 | 10 | 10 | 10 | |
| Number of threatened fauna | 20 | 20 | 20 | 20 | |
| Number of endangered ecological communities | 2 | 2 | 2 | 2 | |
| Number of endangered fauna populations | 2 | 2 | 2 | 2 | |
| Number of feral fauna species targeted through programs | 2 | 2 | 1 | 1 | |
| Population | | | | | |
| Residential density (persons per hectare)* | 25.82 | 26.21 | 26.20 | 27.04 | |
| Noise | | | | | |
| General noise complaints received | 40 | 90 | 87 | 117 | |
| Barking dog complaints received | 7 | 67 | 16 | 30 | |
| Waste | | | | | |
| Total waste to landfill including general cleanup (tonnes) | 7,921 | 8,402 | 8,416 | 8,453 | |
| Total waste to recycling including metal and green waste (tonnes) | 7,479 | 7,576 | 6,618 | 7,407 | |
| Total waste to landfill including general cleanup per capita (kg) | 203 | 212 | 212 | 206 | |
| Total waste to recycling including metal and green waste per capita (kg) | 193 | 191 | 167 | 181 | |
| Green waste diverted from landfill per capita (kg) | 41 | 44 | 30 | 45 | |
| General cleanup sent to landfill per capita (kg) | 22 | 22 | 30 | 24 | |
| Aboriginal Heritage | | | | | |
| Number of Aboriginal Heritage Sites | 62 | 66 | 68 | 68 | *This data includes sites within Council jurisdiction only. Previous SoE Reports (2006/07, 2007/08 and 2008/09) have also included sites managed by DECCW and the Sydney Federation Harbour Trust |
| Non-Aboriginal Heritage | | | | | |
| Total Number of Non-Aboriginal Heritage items | 306 | 312 | 314 | 315 | |
| Number of built items | 194 | 199 | 201 | 202 | |
| Number of landscape items | 78 | 79 | 79 | 79 | |
| Number of archaeological items | 34 | 34 | 34 | 34 | |
| Heritage conservation areas | 2 | 2 | 2 | 2 | |

Source: SHOROC State of the Environment Report 2009/2010, Manly Council data