



Little Manly Coastline Management Plan



May 2004



MANLY COUNCIL

Coastline Management Plans: Introduction & Planning Frameworks

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1 INTRODUCTION

1.1 Purpose of the Coastline Management Plans

Council is developing Coastline Management Plans (CMPs) for its coastal and harbour foreshore areas to guide the sustainable management of these significant areas now and for the future.

1.2 Study Area

CMPs have been or will be prepared for Manly's coastal foreshores between Queenscliff and Shelly Beach Headland, as well as those areas within the harbour, which are exposed to coastal processes. While Sydney Harbour is defined as an estuary, areas towards the head of the estuary are still exposed to significant coastal processes and hazards and exhibit characteristics of both coastal and estuarine areas.

The CMPs cover a range of issues, both terrestrial and aquatic. Lands covered by the plans extend beyond land under Council's control and management in order to establish an integrated and holistic management approach.

Due to the more estuarine characteristics of Manly's harbour foreshore areas of Middle Harbour and Bantry Bay, the management of these areas will be addressed through the development of Coastal Management Plans with a more estuarine focus.

1.3 Implementation Responsibility

Whilst Manly Council is not responsible for all the areas and issues identified in the Coastline Management Plans, implementation of the recommendations contained in the Plans will rely heavily on an integrated approach by the relevant key stakeholder agencies, which have been, and will continue to be, involved in the development of the plans.

While some of the recommendations may identify other agencies as responsible for implementation, Manly Council will be responsible for encouraging and facilitating the Plan's implementation and will oversee the implementation.

1.4 Coastline Management Plan Structure

This document is an overarching document that groups together the introductory information that is common to all Coastline Management Plans in Manly. It also details the planning frameworks in which the Coastline Management Plans are developed and implemented.

Each Coastline Management Plan consists of two main documents, a Support Document and an Action Plan. The Support Document provides the background information on each study area and relevant issues, it provides insight into how each of the management strategies were derived and how the Plan meets legislative requirements. The Action Plan draws out the Plan's management objectives and recommendations, details implementation priorities and those agencies responsible for, or involved in, implementation of each strategy.

Each Coastline Management Plan is supported by a number of studies, including a coastal process and hazard definition study and a management study, which identifies the range of issues to be addressed by the Plan and possible options for their management.

The way that all these documents are linked together is shown in figure 1.

1.5 Funding Sources

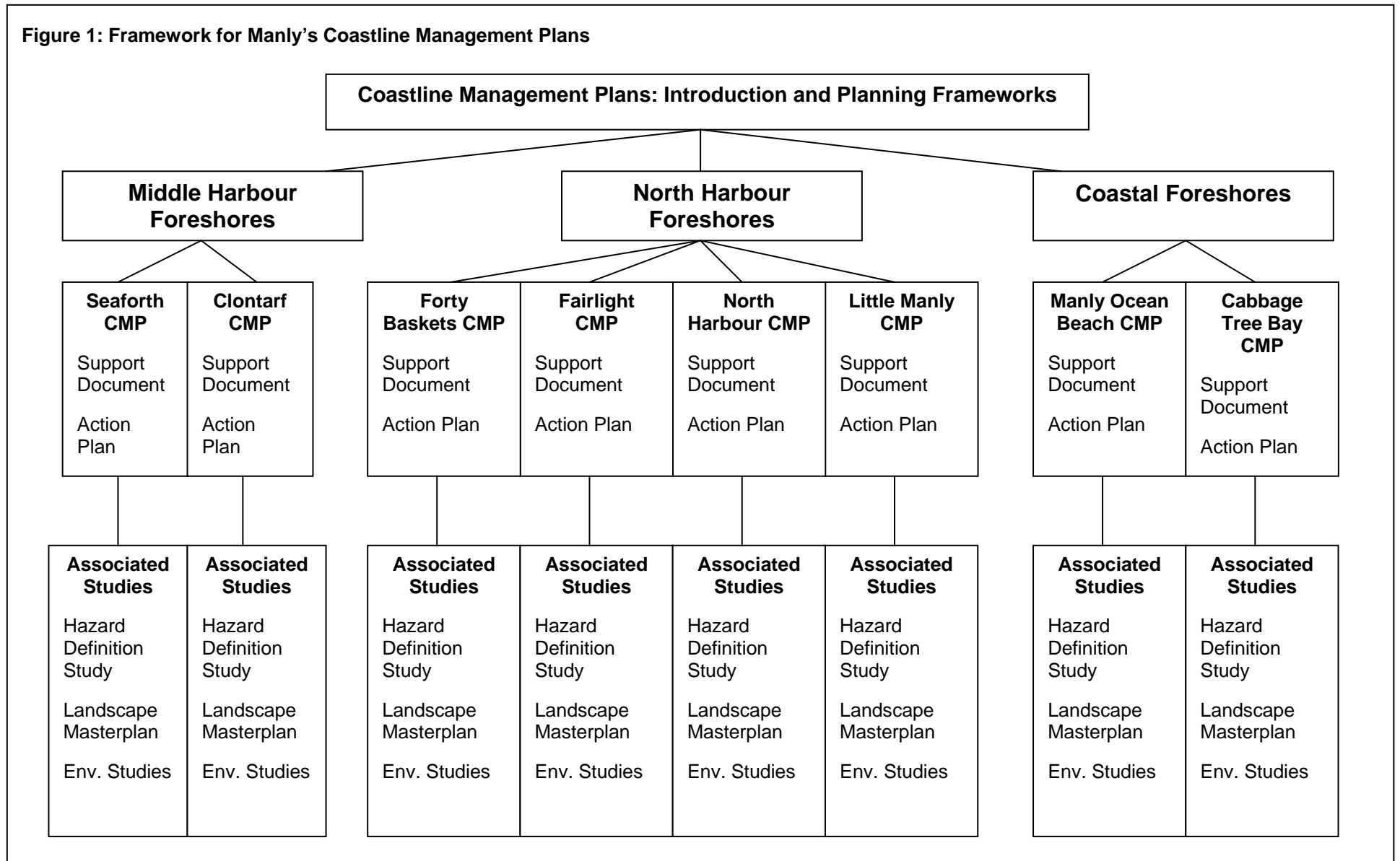
There are a number of possible options for funding of management recommendations (strategies) identified by this Plan. These include but are not limited to:

- 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 Management Program (50% subsidy funding subject to a submission process);
- State Government's Estuary Management program (50% subsidy funding subject to a submission process);
- Waterways Authority's Asset Development and Management Program (WADAMP) (subject to a submission process);
- NSW Agriculture – weed grant program;
- Department of Lands – Public Reserve Management Fund (Council must be appointed as Trust Manager to be eligible);
- Sharing Sydney Harbour Access Program; and
- Natural Heritage Trust.

1.6 Evaluation

This overarching Plan is to be review annually to ensure that all changes to the planning framework are incorporated.

Figure 1: Framework for Manly's Coastline Management Plans



2 MANAGEMENT PLAN FRAMEWORK

2.1 NSW Coastal Policy

Manly's Coastline Management Plans have been developed in accordance with the State Government's Coastal Management Manual 1990 and the Coastal Hazards Policy 1988. While the process described in the manual is generally applied to areas included in the *NSW Coastal Protection Act 1979* definition of the 'coastal zone', which specifically excludes Sydney Harbour, the process is considered to be current best practice and as a result Council has adopted this approach for its harbour areas. The Coastal Management Manual 1990 and Coastal Hazards Policy 1988 are described in further detail in [Section 3](#).

2.2 Community Land Plans of Management

Under the *NSW Local Government Act 1993* (as amended) Council is required to prepare Plans of Management for Public Land classified as 'Community' Land.

Manly's Coastline Management Plans (CMPs) have been developed to address all requirements for community land management under the *NSW Local Government Act 1993* and *NSW Crown Land Act 1989*. Each CMP with community land located within its study area will act as the Community Land Plan of Management (PoM) for each of those community land parcels unless specifically stated otherwise.

Each new adopted Coastline Management Plan, which satisfies *Local Government Act 1993* requirements for community land management will replace the existing PoM for areas of land covered in the Coastline Management Plan.

The legislation allows for either specific or generic PoMs to be prepared. In the case where generic PoMs may exist such as the Draft Manly Scenic Walkway PoM, there may be some overlap in terms of management and direct relationships with the CMPs. Those generic PoMs that have a direct relationship with any of these CMPs and the community land within the CMP study areas, will prevail in the event of an inconsistency (and only to the extent of the inconsistency) with any CMP adopted by Council.

3 LAND OWNERSHIP & MANAGEMENT

3.1 Frameworks for Coastal Management

Manly's Coastline is presently divided into two distinct coastal management areas including the foreshore areas of Sydney Harbour and the more oceanward areas of the 'coastal zone'. Each of these areas is governed by a different overarching management system / framework, both of which are outlined below.

3.1.1 Management of Sydney Harbour Foreshores

Currently there is no single authority responsible for the management of Sydney Harbour. Instead a number of authorities control the diverse and varied aspects of the Harbour, which combined with the richness and diversity of the Harbour's aspects, makes management of Sydney Harbour innately complex.

In response to this complexity a body was established in 1998 by the State Government to bring together those agencies with management responsibilities within Sydney Harbour. This body, namely the Sydney Harbour Manager, was given the responsibility of guiding the management of the Harbour as one system in which each decision affects other decisions. The Sydney Harbour Manager has since been abolished, with the roles and responsibilities of that body being divided up among a number of existing agencies and the newly formed Sydney Harbour Secretariat.

The present management system for the Harbour, known as the 'Sydney Harbour Governance Model' represents an example of place management, focussing on overall outcomes for Sydney Harbour rather than on specific functions, responsibilities and resources of the many agencies contributing to management of the area. The model aims to foster a comprehensive dialogue between stakeholders.

Under the 'Sydney Harbour Governance Model' the ongoing management of Sydney Harbour is facilitated through the Executive Officer (Sydney Harbour) and the Sydney Harbour Secretariat.

The model sets up place-specific entities (also called forums) such as The Sydney Harbour Executive and The Sydney Harbour Councils groups and focuses on enabling those groups of stakeholders to develop joint positions on management issues regarding the Harbour. The model also provides for networking between those groups to ensure holistic management of the Harbour. Refer to **Table 1**, which lists the bodies that play a role in the Sydney Harbour Model, details their primary function and indicates their foundation document.

Table 1 The Sydney Harbour Governance Model.

Bodies comprising the Sydney Harbour Model	Primary Function	Foundation Document	Lead and Support Agencies*
Sydney Harbour Executive	Brings together 20 State and 3 Commonwealth agencies with responsibilities in Sydney Harbour. Provides a whole-of-government approach to Harbour management	Sharing Sydney Harbour regional action plan.**	Sydney Harbour Secretariat (based out of Department of Infrastructure, Planning & Natural Resources (formerly PlanningNSW)).

	<p>issues.</p> <p>Manages the implementation of the Sharing Sydney Harbour regional action plan.</p>		
Sydney Harbour Councils	<p>Brings together elected representatives from 19 Councils.</p> <p>Provides a coordinated whole of-local-government approach to Harbour management issues and links the member councils to the Sydney Harbour Executive.</p>	Our Harbour Agreement	Sydney Harbour Secretariat (based out of Department of Infrastructure, Planning & Natural Resources (formerly PlanningNSW)).
Sydney Harbour Council Executive	<p>Brings together senior staff from 19 Councils.</p> <p>A working body of Harbour Councils focussing on the operational aspects of the Harbour, decision making and providing professional advice to Sydney Harbour Councils Group.</p>		Sydney Harbour Secretariat (based out of Department of Infrastructure, Planning & Natural Resources (formerly PlanningNSW)).
Sydney Harbour Maritime Forum	Represents the shipping, boating, maritime construction, recreational and commercial interests associated with the Harbour.	Statement on the economy of Sydney Harbour	Waterways Authority
Sydney Harbour Region Environment Forum***	<p>The Harbour's primary Non-Government Organisation.</p> <p>Provides links to the Sydney Harbour Executive.</p>	Spectacle Island Declaration	NSW DEC (formerly EPA)
The Sydney Harbour Research Forum***	Facilitates collaboration between research groups, government, industry and the	Sydney Harbour Research Agenda.	Sydney Water Corporation.

	community.		
Sydney Harbour Indigenous Forum***	Provides external advice and representation regarding the Aboriginal culture and heritage of the Harbour.	[Statement on Indigenous Culture].	Lead Agency: NSW DEC (formerly NPWS) Support Agency: Department of Aboriginal Affairs.
Sydney Harbour Catchment Management Board	Developing a catchment blueprint for Sydney Harbour.	Sydney Harbour Catchment Blueprint.	NSW Department of Infrastructure, Planning & Natural Resources (formerly DLWC).

* agency acting as the entity's secretariat.

** This document is presently being updated.

*** These forums are presently being reviewed. They may or may not be continued in the future.

Sydney Harbour presently has a shared strategic vision detailed in 'Sharing Sydney Harbour regional action plan', which involves a number of key partners, presented in [Table 1](#).

The Sydney Harbour Executive, the Sydney Harbour Councils group and the Sydney Harbour Councils Executive provide leadership and a whole-of-government perspective on harbour matters. The other forums listed are peak bodies and advocates representing community, environmental, business, recreational and research interests.

Although these bodies possess no direct powers, the system aims to provide leadership in developing a strategic vision for the harbour and its foreshores and facilitating its effective implementation.

3.1.2 Management of 'Coastal Zone' Foreshores

The 'Coastal Zone', is defined under the *NSW Coastal Protection Act 1979* (as amended 2002). The zone includes those areas of Manly's coastline outside Sydney Harbour that are affected by, or affect coastal processes. **At the time that this report was adopted, the revised 'coastal zone' maps had not yet been adopted by the State Government.**

The management of the 'coastal zone' is the responsibility of a range of government agencies, local councils and the community. The NSW Coastal Policy (1997 and soon to be amended) provides a framework for the balanced and coordinated management of the coast's unique physical, ecological, cultural and economic attributes. The Policy draws into a single document the State's various management policies, programs, standards and plans in order to co-ordinate our approach to coastal management.

The NSW Coastal Policy identifies a range of coastal management strategic actions. Strategic Action 1.4.3 identifies that the development of coastline and estuary management plans will continue to be prepared and implemented (for areas in the coastal zone to which the Coastal Policy applies).

The role of the Coastal Council of NSW in the management of the NSW coastal zone is detailed in [Section 3.2.1](#).

3.2 Coastal Management: Agency Responsibilities

As detailed in [Section 3.1](#), management of the NSW coast, including Sydney Harbour, is a complex arrangement involving numerous agencies and groups. Detailed below are some of the relevant responsibilities of each agency, which share in the management of Manly's coastal (including Sydney Harbour) areas.

3.2.1 Coastal Council of NSW

The Coastal Council was established by the *Coastal Protection Act 1979*. The Council's primary aim is to act as an independent 'watchdog' for management of the 'coastal zone' in NSW.

3.2.2 Manly Council

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).

Community Land Management

Council is responsible for the preparation and implementation of Plans of Management for community lands (under the *Local Government Act 1993*).

Coastline Management Plans

As a result of amendments to the *NSW Coastal Protection Act* in 2002, areas of the Manly coastline are to be included in the NSW 'coastal zone' as defined under that Act. As a result Council is also responsible for preparing Coastline Management Plans for those areas, in accordance with the Coastal Hazards Policy 1988 and the Coastline Management Manual 1990 (soon to be amended). **At the time that this report was adopted, the revised 'coastal zone' maps had not yet been adopted by the State Government.**

Development Consent

Council plays a role in controlling development within the Local Government Area boundary under the *Environmental Planning and Assessment Act 1979*. Council is the consent authority for most land-based developments and activities.

3.2.3 Department of Infrastructure Planning and Natural Resources

3.2.3.1 Ex- PlanningNSW

The Department of Infrastructure Planning and Natural Resources (DIPNR), formerly PlanningNSW, is responsible for managing the NSW planning System. DIPNR has no direct ownership or responsibility for the seabed in coastal or harbour areas.

The principle legislation under which DIPNR operates, which is relevant to Management of Manly's coastline includes:

- *Environmental Planning and Assessment Act 1979*; and
- *Coastal Protection Act 1979 (as amended 2002)*.

3.2.3.2 Ex – Department of Land and Water Conservation

The Department of Infrastructure Planning and Natural Resources' (DIPNR), formerly the Department of Land and Water Conservation, responsibilities relevant to Manly's Coastline Management Plans include:

- developing policies on resource use and management;
- maintaining databases on the condition of the State's land, soil, water and vegetation;
- providing expertise with management of the coast, estuaries and floodplains;
- managing the planning and sharing of water across the State; and
- providing survey and mapping services (the geographic information infrastructure), ensuring the fundamental interests and rights in land of individuals.

DIPNR offers funding for coastal and estuary management in addition to providing guidance for the management of the 'coastal zone' through the provision of the coastal and estuary management manuals and expert advice.

3.2.4 Department of Lands

The Department of Lands is the primary NSW Government agency responsible for managing state-owned land. In a number of cases however, Council manages Crown Land in accordance with the *Crown Lands Act 1989*. Further details regarding land ownership are provided in the respective Coastline Management Plans.

3.2.5 Waterways Authority of NSW

Waterways is responsible for the on-water management of all NSW navigable waters, including coastal areas, estuaries, rivers, lakes and dams to three nautical miles offshore. On-water management responsibilities include the management of safety, the protection of the marine environment from degradation by vessels, the provision of waterways infrastructure for vessels, the licensing of vessel operators, commercial vessels, on-water events, and mooring management.

The Waterways Authority (NSW) and the Marine Ministerial Holding Corporation is 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 is the landowner of Sydney Harbour and its tributaries and therefore controls Sydney Harbour. Sydney Harbour is defined by the PC&WM Act as:

"The waters of Sydney Harbour and of all tidal bays, rivers and their tributaries connected or leading to Sydney Harbour bounded by mean high water mark together with that part of the South Pacific Ocean below mean high water mark enclosed by the arc of a circle of radius 4 sea miles having as its centre the navigation light at Hornby Lighthouse." Section 41 PC&WM Act 1995.

Hornby Lighthouse is located on South Head.

Waterways is therefore responsible for management of waterways and the sea bed from mean high water mark (m.h.w.m) seaward.

As owner of the bed of Sydney Harbour, Waterways is the consent and determining authority for a variety of water-based developments and activities. Waterways are now 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).

3.2.6 NSW Fisheries

NSW Fisheries is responsible for administering the *NSW Fisheries Management Act 1994* (as amended) and for jointly administering the *Marine Parks Act 1997* with NSW Department of Environment & Conservation (formerly NPWS).

NSW Fisheries 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 NSW Fisheries has management responsibility for all aquatic animals (with the exception of aquatic mammals, reptiles, amphibians and birds, which are managed by the NSW Department of Environment & Conservation (formerly National Parks and Wildlife Service) and responsibility for all marine vegetation and key aquatic habitats including seagrass, mangroves, gravel beds and snags.

While NSW Fisheries 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 Fisheries officers to assist Fisheries with some of their on-the-ground 'localised' regulation functions.

NSW Fisheries' management responsibilities also include threatened fish species, populations and ecological communities.

3.2.7 Sydney Ports Corporation

The Sydney Ports Corporation was created to control shipping movements and port communication services. It maintains port facilities, protects and enhances the port environment, collects charges on port facilities and cargoes, and leases port land.

Sydney Ports has responsibility for both Sydney Harbour and Botany Bay and for 90km of the NSW coastline, for three miles out to sea.

Sydney Ports are also charged with protecting and preserving the environment of Sydney Harbour and adjacent Port Land (pers. comm. Christa Sams, Sydney Ports Corporation 2003).

Incident Management – Spills and other incidents

The Sydney Ports Corporation is responsible for investigating incidents involving trading ships on Sydney Harbour. The Corporation is also responsible for addressing all 'on water' oil, chemical or other spill incidents within its jurisdiction. This includes not only emergency response and clean-up but also investigations into the causes of on-water spills.

Ballast Water and Marine Pests Management

The Commonwealth Department of Agriculture, Fisheries and Forestry Australia (AFFA), through the Australian Quarantine and Inspection Service (AQIS) is the primary agency responsible for establishing or regulating processes for ballast water management. Sydney Ports is responsible for complying with the requirements and protocols established by international and national bodies.

Water Traffic Safety and Management

Sydney Port's major navigation and shipping responsibilities are outlined in the functions of its Ports Safety Operating Licence issued by the NSW Government. Sydney Ports coordinates shipping movements within Sydney Harbour (pers. comm. Christa Sams, Sydney Ports Corporation 2003).

3.2.8 Department of Environment & Conservation (ex-NSW National Parks and Wildlife Service)

The NSW National Parks and Wildlife Service (NPWS), which is part of the NSW Department of Environment & Conservation, is responsible for protecting the State's flora and fauna, and for managing and maintaining National Parks and Nature Reserves. NPWS (now DEC) is also responsible for Aboriginal Heritage and sites.

3.2.9 Sydney Water Corporation

Sydney Water is an unlisted public company (100% owned by the NSW Government). The Corporation provides fresh water and sewage management services and is responsible for the management and remediation of sewage infrastructure and trunk stormwater drainage.

Sydney Water's long-term blueprint for action is WaterPlan 21.

Relevant legislation includes:

- *Water Board (Corporatisation) Act 1994* as amended; and
- *State Owned Corporations Act 1989* as amended.

3.2.10 Sydney Harbour Federation Trust – (Commonwealth)

The Commonwealth established the Sydney Harbour Federation Trust to manage sites no longer required by the Department of Defense.

North Head Artillery School on North Head is the only site presently vested in the Trust within the Manly Local Government Area.

4 PLANNING FRAMEWORKS & PROJECT PROCESS

There is presently no single or overall plan for the NSW Coastal Zone or Sydney Harbour and no single authority with management responsibility. Planning and Management of Manly's Coastline (including harbour foreshores) is complex, made up of a number of plans, policies and other documents, which are administered by a number of different agencies. The following section details the planning framework that applies to Manly's coastline (including both coastal zone and Sydney Harbour foreshores).

4.1 Guiding Policies, Documents and Processes – Local Plans and Policies

The following documents have specific relevance to some or all of Manly's Coastline Management Plans. The documents discussed below play a significant role in setting the planning framework for the management of Manly's coastline.

4.1.1 Manly Local Environmental Plan 1988

The Manly Local Environment Plan (LEP) establishes Council as the consent authority for all purposes of the LEP and is the main statutory control on development within Manly Local Government Area.

The LEP details the zoning of land within the Manly Council area. It enables Council to make particular Development Control Plans regulating development in any zone and to make provisions for exempt and complying development within Manly.

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 ongoing appropriate management of each of these items and areas.

Specific zoning designations are discussed in more detail in each of the relevant Coastline Management Plans.

4.1.2 Council's Corporate Plan

The Corporate Plan details what Council has resolved to do in the next financial year and what it plans to do in the following 2 years. It integrates strategies, key objectives, programs and key actions across the organisation to guide and fund competing priorities, needs and resources.

At the time that this document was prepared, the development of Plans of Management for community lands was identified in the Corporate Plan 20003/4-6. It is recommended that the development and implementation of Manly's Coastline Management Plans be included in future Corporate Plans.

4.1.3 Manly Sustainability Strategy 2002

The Manly Sustainability Strategy 2002 aims to direct the following areas of action:

- managing and improving Council's own sustainability performance;
- integrating sustainability, Ecologically Sustainable Development and Total Catchment Management Principles into Council's Policies and activities;
- awareness raising and education;
- involving the broader community;
- partnerships with the community, business and other government agencies; and
- measuring, monitoring and reporting on progress towards sustainability.

The strategy identifies goals, objectives and actions for each of the following aspects of ESD:

- Land and geodiversity;
- Aquatic systems;
- Biodiversity;
- Air;
- Waste;
- Noise;
- Aboriginal and non-Aboriginal heritage; and
- Social environment.

Where appropriate the goals, objectives and actions for each aspect have been integrated into the management responses detailed in each of the CMPs.

4.1.4 Manly Social Plan

Council is required to prepare a Social Plan under the *NSW Local Government Act 1993* (Social and Community Plans amendment 1998). Manly's Social Plan assists Council to address social development concerns.

4.1.5 Plan of Management for Community Land

Under Part 2, Division 2 of the *Local Government Act 1993* as amended, Council is required to prepare Plans of Management for Community Land.

Council has adopted an overarching Plan of Management for Community Lands (1996). The document sets out a number of objectives under four (4) areas. Under the following subject headings the relevant objectives for these parks are to:

Natural Environment

- Look after our bushland and comply with the legislative requirements of State Environmental Planning Policy No. 19 (Urban Bushland).
- Manage our open spaces on a sustainable basis by addressing ecological systems and biodiversity in conjunction with user needs and demands.
- Integrate local drainage needs into park design and bushland management.

Cultural Environment

- Include heritage conservation and cultural identity matters in design criteria when designing and maintaining our reserves.

Recreation

- Manage all open space land in a flexible manner, and ensure that local needs are met.
- Provide a major open space connection between harbour and ocean foreshores, creek and lagoon edges, and the National Parks.
- Maintain our active sporting areas and manage them to maximize choice.

Operation and Finance

- Recognise the role of each open space within the wider community and in relation to other objectives.
- Encourage local participation in design, development and management.
- Provide for user health, safety and enjoyment.
- Retain opportunities to use open space land for special events or projects and for future activities or structures if need becomes apparent.
- Improve management of open space in Manly in order to achieve the objectives of this plan.

4.1.6 Other Council Policy

Council Policy that has not been addressed in this section is dealt with in each CMP within the relevant section to which each Policy applies.

4.1.6.1 Manly Council Draft Litter Avoidance Strategy

Council is developing a Litter Avoidance Strategy to provide a plan to address litter in the Manly Local Government Area. The strategy will outline litter issues in Manly and detail specific actions to be implemented to address those issues identified.

4.2 National Planning Frameworks

Commonwealth Legislation and Policies relating specifically to the coast also includes the following:

Seas and Submerged Lands Act 1973. This Act declares that the Commonwealth has sovereignty over, and is therefore responsible for, offshore waters, the airspace above them and the seabed below them, extending from the low water mark to the limits of the territorial sea. This has since been extended to 12 nautical miles.

Coastal Waters (State Powers) Act 1980. Under the Commonwealth's *Coastal Waters (State Powers) Act 1980*, each of the States have been granted general power in the marine area to 3 nautical miles from the territorial sea baseline (ie: mean low water mark).

Coastal Waters (State Title) Act 1980. The States were also granted title of the seabed of coastal waters through the Commonwealth's *Coastal Waters (State Title) Act 1980*.

Environmental Protection (Sea Dumping) Act 1981. This Act deals with the prevention of marine pollution and regulates the dumping of wastes and other matter in Australian waters.

The Commonwealth Coastal Policy May 1995

The aim of the Commonwealth Coastal Policy is to promote the ecologically sustainable use of Australia's coastal zone. It presents the Commonwealth's vision for a co-operative, integrated approach to coastal management. While this Policy only applies to those activities for which the Commonwealth has responsibility the document provides some direction in terms of coastal management standards.

4.3 State Planning Frameworks

A number of statutory controls, documents and policies have been developed by the State Government that are relevant to the scope of Manly's CMPs. These are discussed in the following paragraphs.

4.3.1 NSW Coastal Protection Act 1979.

Changes to the *Coastal Protection Act 1979* were gazetted in November 2002.

These included the redefinition of the land that comprises the 'coastal zone', which now includes areas of Manly affected by, or likely to affect, coastal processes such as coastal wave and wind action. The waters of Sydney Harbour (west of the Heads) are excluded from the definition, however this does not exclude them from the effect of coastal processes.

At the time that this document was adopted the revised 'coastal zone' maps had not been adopted by the State Government.

4.3.2 NSW Coastline Hazard Policy 1988

The Coastline Hazard Policy is detailed in the NSW Government's Coastline Management Manual 1990. The Policy applies to the 'Coastal Zone' as defined and mapped under the *Coastal Protection Act 1979*. Sydney Harbour is specifically excluded from the coastal zone.

While the harbour is excluded from the coastal zone, Manly's Harbour foreshores adjacent to the harbour entrance (ie: North Harbour) are subject to coastal processes that require consideration and management. In order to manage these areas according to best practice the Hazard Policy and Coastline Management Manual have been used in the development of the CMPs for these areas.

The primary objective of the NSW Coastline Hazard Policy is to reduce the impact of coastal hazards on individual owners and occupiers and to reduce private and public losses resulting from natural coastal forces. Consequently it is the policy of the NSW Government that:

- *The impact of coastal forces on existing developed areas shall be reduced by works and measures by the purchase of property on a voluntary basis, where appropriate;*
- *The potential for coastal damage in respect of any proposed coastline development shall be contained by the application of effective planning and development controls by local councils; and*
- *A merit approach to all development and building decisions which takes account of social, economic and ecological as well as oceanic process considerations, shall be followed by local councils and developers. (NSW Coastline Management Manual 1990: A-1)*

Application of the Policy can best be achieved through the development of a coastline management plan by the relevant local council.

All Government agencies are required to comply with the Policy for those coastal areas included in the 'coastal zone' as defined under the *Coastal Protection Act 1979*. In so doing, government agencies are required to give regard to social, economic, aesthetic, recreational and ecological factors, as well as coastal processes.

The Policy and steps to implement the Policy are detailed in the NSW Government Coastline Management Manual 1990. At the time that this document was written, the NSW Coastal Policy was under review by the State Government.

4.3.3 NSW Estuary Management Policy

The NSW Estuary Management Policy, a component policy of the State Rivers and Estuaries Policy is detailed in the NSW Government's Estuary Management Manual 1992.

While Sydney Harbour is defined as an Estuary by the State Government, it is specifically excluded from the estuaries to which the Estuary Management Policy applies. However, as the Policy is considered current best practice for the management of estuaries, Council has used and incorporated the Policy and Estuary Management Manual in the development of its Coastline Management Plans for those areas within Sydney Harbour.

The primary goal of the Estuary Management Policy is to encourage the integrated, balanced, responsible and ecologically sustainable use of the State's estuaries. Specific objectives of the Policy are:

- protection of estuarine habitats and ecosystems in the long-term, including maintenance in each estuary of the necessary hydraulic regime.
- Preparation and implementation of a balanced long-term management plan for the sustainable use of each estuary and its catchment, in which all values and uses are considered, and which defines management strategies for:
 - conservation of aquatic and other wildlife habitats;
 - conservation of the aesthetic values of estuaries and wetlands;
 - prevention of further estuary degradation;
 - repair of damage to the estuarine environment; and
 - sustainable use of estuarine resources, including commercial uses and recreational uses as appropriate.

The Policy is logically implemented through the preparation and implementation of Estuary Management Plans as set out in the State Government's Estuary Management Manual 1992.

4.3.4 NSW Coastal Policy 1997

The NSW Coastal Policy applies to the NSW Coastal Zone as defined in the *NSW Coastal Protection Act 1979* (as amended in 2002). As a result this Policy does not apply to areas of Sydney Harbour.

The NSW Coastal Policy sets a direction for coastal zone management, planning and conservation in NSW, it provides a framework for the balanced and coordinated management of the coast's unique physical, ecological, cultural and economic attributes. The Policy draws into a single document the State's various management policies, programs, standards and plans in order to co-ordinate our approach to coastal management.

The 1997 Coastal Policy is Government policy and all NSW State Government agencies and local councils are obliged to take account of it in the preparation of their own specific policies and programs. The Policy recommends that councils address their implementation of the Policy through the Management Plans councils are required to prepare under the *NSW Local Government Act 1993*.

It is recommended that, once the State Government's coastal zone maps are adopted and parts of the Manly area are thereby included in the 'coastal zone', the implementation of relevant sections of the NSW Coastal Policy be included as an action in Council's Corporate Plan.

4.3.5 Local Government Act 1993

Community Land Plans of Management

Under the *NSW Local Government Act 1993*, Councils are required to prepare Plans of Management for all community land. Community land is then required to be managed in accordance with the adopted Plan of Management applying to the land.

The *Local Government Act 1993* specifies minimum requirements that community land PoMs must include. PoMs must:

- categorise the land;
- establish objectives for the management of the land;

- establish performance targets;
- specify the means of achieving the objectives and performance targets (ie: strategies); and
- specify how achievement of the objectives and performance targets is to be assessed.

Manly's Coastline Management Plans have been designed to address these community land management requirements under the Act.

Under the *NSW Local Government Act 1993* a PoM may apply to one or more areas of community land (ie: a 'generic' PoM) or to just one area (ie: a 'specific' PoM). Councils may determine which type of PoM they prepare except in the following cases, for which 'specific' PoMs are required:

- Land declared to be "critical habitat" under the *Threatened Species Conservation Act 1995* (TSC Act) or *Fisheries Management Act 1994*.
- Land directly affected by a recovery plan or threat abatement plan under the TSC Act or FM Act.
- Land declared by Council to contain 'significant natural features'.
- Land declared by Council to contain an 'area of cultural significance'.

There are additional minimum requirements for 'specific' PoMs described in section 36(3A) of the LG Act.

The Coastal Policy 1997 states that where possible joint PoMs will be prepared for foreshore lands where Crown lands and community lands adjoin each other. The Coastline Management Plans include both Crown and Community Lands where appropriate.

Ecologically Sustainable Development

Under section 7 of the *NSW Local Government Act 1993* Council, Councilors and council employees are required to have regard to the principles of ecologically sustainable development in carrying out their responsibilities.

Section 8 of the LG Act 1993 defines Council as having the following charter:

"to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ESD."

The NSW LG Act states that "... ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

- *The precautionary principle – namely, that is there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*
- *Inter-generational equity – namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.*
- *Conservation of biological diversity and ecological integrity – namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.*
- *Improved valuation, pricing and incentive mechanisms – namely, that environmental factors should be included in the valuation of assets and services..."*

The integration of ESD principles into Council's planning and activities is also required by a number of state and regional policies, strategies and plans. For example ESD is an integral part of the Sydney Regional Coastal Management Strategy, the Sydney Harbour Catchment Blueprint and is required under the NSW Coastal Policy 1997.

Council has sought to integrate ESD into the management decisions and actions identified in each of its Coastline Management Plans in order to meet its responsibilities under the LG Act with regards to those Plans.

4.3.6 Crown Lands Act 1989 and Coastal Crown Lands Policy 1991

Crown Lands Act 1989

The *NSW Crown Lands Act 1989* governs the planning, management and use of Crown land, including reservation or dedication for a public purpose, and leasing and licensing.

The **Department of Lands** is the principal NSW government agency responsible for managing state-owned land together with the Reserve Trusts appointed by the Minister.

The *Crown Lands Act 1989* provides for the reservation and dedication of Crown land for a range of public purposes. When land is reserved or dedicated, management of the reserve is mostly undertaken either by:

- The Department of Lands
- A Reserve Trust
- Local Government Councils, by devolvement under the *Local Government Act 1993*.

In the case that Council is appointed as Trustee, Council has the ongoing responsibility to provide care, control and management of Crown land in accordance with the *Crown Lands Act 1989*.

To ensure that Crown Land is managed for the benefit of the people of New South Wales, Council as trustee is required to have regard for the principles of Crown land management. Crown land must be used and managed in accordance those principles under Section 11 of the *Crown Lands Act 1989*.

The principles of Crown land management include:

- that environmental protection principles be observed in relation to the management and administration of Crown land,
- that the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible,
- that public use and enjoyment of appropriate Crown land be encouraged,
- that, where appropriate, multiple use of Crown land be encouraged,
- that, where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity, and
- that Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles.

A Plan of Management will satisfy the *Crown Lands Act 1989* if the following points are addressed:

- The Plan of Management and its outcomes must incorporate the principles for Crown land management (listed above).

- In addition to incorporating the requirements of Section 36 of the *Local Government Act, 1993* the Plan of Management must address any matters required by the Minister responsible for the *Crown Lands Act* under Section 112 of the Act.
- Any proposed uses, developments and management practices must conform to the public purpose for the reserve.
- The draft Plan of Management is referred to the Department of Lands for comment prior to the public exhibition.
- The draft Plan of Management must be publicly exhibited, including a public notice in the NSW Government Gazette.
- Public submissions regarding the draft Plan of Management are to be referred to both the Minister for Land and Water Conservation and Manly Council as Trust Manager for consideration by the Minister prior to adoption.
- Any alterations to the Plan of Management by the Minister are made.
- Adoption of the Plan of Management by the Minister for Land.
- The Trust must follow the Plan of Management, with all operations being in accordance with the plan.

Coastal Crown Lands Policy

The Coastal Crown Lands Policy issued in 1991 applies to all coastal Crown lands within 1km landward and 3 nautical miles seaward from low water mark.

Objectives of the Policy are to:

- Conserve and maintain the intrinsic environmental and cultural qualities of coastal Crown land.
- Retain all coastal Crown lands of an environmentally sensitive nature and/or required for public purpose, in public ownership.
- Optimise public access and use of coastal Crown lands.
- Provide Crown lands, as appropriate, for recreation, tourism, residential and commercial coastal development with due regard to the nature and consequences of coastal processes.
- Encourage the rehabilitation of degraded coastal Crown lands.
- Continue to acquire significant coastal lands for future public use.

The Policy identifies the assessment of coastal Crown Land and the dedication of beaches for a range of public purposes as a high priority to facilitate sound land management of the coastal environment. Where estuary and coastline management plans exist they may form the basis for a land assessment waiver (by the minister or delegated authority), requiring no formal assessment under the *Crown Lands Act*.

The Policy provides support for the acquisition of unique or environmentally sensitive coastal lands by the State Government, under the Coastal Lands Protection Scheme.

Crown lands are identified in each of the land ownership sections of the relevant Coastline Management Plans.

4.3.7 Fisheries Management Act 1994 & Fisheries Management Amendment Acts 1997 and 2001

The *Fisheries Management (FM) Act 1994* and the *Fisheries Management Amendment Acts 1997 and 2001* were developed to conserve, develop and share the fisheries resources of the state for the benefit of present and future generations.

Habitat and species conservation

The Act established provisions for NSW Fisheries to conserve fish habitat such as the development of Habitat Protection Plans, the designation of aquatic reserves, regulation of damage to or removal of marine vegetation and the protection of fish spawning areas.

Under the FM Act approvals are required to undertake work or activities, which interfere with marine vegetation or fish.

Threatened Species

The *Fisheries Management Amendment Act 2001* includes new threatened aquatic species provisions including fish and marine vegetation. It also amends the *EP&A Act 1979* and a range of other legislation including the *Threatened Species Conservation Act 1995*.

Marine Protected Areas

The NSW Government is developing a representative system of marine protected areas for NSW Waters in collaboration with the Commonwealth Government's national representative system.

The major aim of NSW protected areas is to manage and conserve marine biodiversity on coastal, estuarine or oceanic areas. Marine protected areas generally fall into the categories of marine parks, aquatic reserves and intertidal protected areas.

The planning process for managing marine protected areas is designed to be flexible to suit local needs and conditions. NSW Fisheries prepare management plans for marine protected areas, which provide a framework for the development of work programs that meet the objectives of the marine protected area. This is undertaken in consultation with stakeholders and the community.

Aquatic Reserves

The FM Act provides for the creation and management of Aquatic Reserves in NSW Waters to conserve the biodiversity of fish and marine vegetation in the area.

At the time that this document was adopted, the Manly's coastline contained two (2) Aquatic Reserves, the North (Sydney) Harbour Aquatic Reserve and Cabbage Tree Bay Aquatic Reserve. These are detailed further in the relevant Coastline Management Plans.

4.3.8 NSW Fisheries Policy and Guidelines – Aquatic Management and Fish Conservation 1998/1999.

The Policy and Guidelines apply to all planning and development proposals that affect freshwater, estuarine and marine ecosystems. These documents aim to assist councils and other government agencies in their assessment of proposals and documents such as licenses, development applications and Environment Impact Statements in order to ensure that they are sensitive to, and mitigate impact on, the aquatic environment.

The Policy identifies a number of general Policies for the conservation of fish, marine vegetation and aquatic habitats, which have been considered in the preparation of this Management Plan.

4.3.8.1 FISH HABITAT PROTECTION PLANS

To assist in the protection of key fish habitats, the *Fisheries Management Act 1994* enables the creation of Fish Habitat Protection Plans for the protection of any fish habitat. This document presently has two Fish Habitat Protection Plans:

- Plan No 1

The Plan applies to the following habitats and features; the quantity and quality of waters, mangroves, seagrass, saltmarshes, wetlands (3), mudflats, sand and gravel substrates, rocky reefs, snags (primarily fallen trees and rocks), reed beds and other aquatic plants.

This Plan also applies to the following activities: dredging and reclamation, damaging marine vegetation, de-snagging and impeding fish passage.

- Plan No 2

This Plan is specific to the protection of seagrass and as a result its primary objective is to “ensure there is no net loss of seagrass within the coastal and estuarine waters of NSW”. The Protection Plan identifies a number of broad strategies for achieving this objective.

The *Fisheries Management Act 1994* states that “A person must not cut, remove, damage or destroy marine vegetation on public water land or an aquaculture lease, or on the foreshore of any land or lease....” Seagrass is included in the definition of marine vegetation. Therefore penalties apply for cutting, removing, damaging or destroying seagrass.

This Plan covers all of NSW's coastal and estuarine waters. Activities to which this Plan applies include: collection or ‘trimming’ of live seagrass, collection of seagrass from oceanic or estuarine beaches, dredging, reclamation, construction of groynes and breakwaters, construction of jetties, wharves, bridges, ramps and pontoons, moorings, boating and anchoring, fishing, construction and operation of aquaculture facilities, bait digging and collecting and point source pollution. Guidelines for the management of each of these activities are provided in the Plan.

4.3.9 Threatened Species Conservation Act 1995:

The *Threatened Species Conservation Act 1995* (TSC Act) protects all threatened plants and animals native to NSW (with the exception of fish and marine plants, which are covered by the *Fisheries Management Act 1995*). It provides for the identification, conservation and recovery of threatened species, populations and communities. It also aims to reduce the threats faced by those species.

Recovery plans are prepared by the NSW NPWS (now DEC) for each threatened species, population and ecological community listed under the TSC Act. The Act specifies that Council must not undertake actions that are inconsistent with a recovery plan and must manage the threatened species, population or ecological community in accordance with the relevant recovery plan.

The TSC Act also requires government planners to take account of threatened species before they make environmental plans and policies at a statewide, regional and local level. Consideration is therefore required by Manly's CMPs.

The TSC Act (and the EP&A Act), require that a determining authority can not carry out or approve an activity that is likely to significantly affect threatened species, populations or ecological communities, or their habitats, unless a Species Impact Statement (SIS), or an EIS has been prepared.

4.3.10 Environmental Planning and Assessment Act 1979.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the statutory basis in NSW for:

- The proper management, development and conservation of natural and artificial resources;
- The planning and co-ordination of development on land and water;
- The sharing of the responsibility for environmental planning between the different levels of government in the state; and
- Achieving ecologically sustainable development on land and water, while promoting orderly and economic development and use on land and water.

There are a number of State Environmental Planning Policies (SEPPs) which operate under the EP&A Act, only a few of which are relevant to the CMPs. These are detailed in the sections below.

4.3.10.1 State Environmental Planning Policy (SEPP) No 19 – Bushland in Urban Areas

The general aim of this Policy is to protect and preserve bushland within the Greater Sydney area. It requires that bushland not be disturbed without the consent of Council. This Policy is integrated into Council's Development Application process.

The SEPP also provides for the preparation of management plans for SEPP 19 Bushland.

The Manly LGA has a number of SEPP 19 bushland areas. These are detailed in the Terrestrial Ecology chapter of each of the relevant Coastline Management Plans.

4.3.10.2 State Environmental Planning Policy (SEPP) No 71 – Coastal Protection

The State Environmental Planning Policy (SEPP) No 71 – Coastal Protection, applies to land within the 'coastal zone' as defined by the *Coastal Protection Act 1979* (as amended 2002). The SEPP specifies certain development conditions and approval processes that apply within the zone.

4.3.10.3 State Environmental Planning Policy (SEPP) No 56 – Sydney Harbour Foreshores and Tributaries.

This policy aims to coordinate the planning and development of land comprising the foreshores of Sydney Harbour and its tributaries. The Policy contains a set of Guiding Principles, which are required to be taken into account in the assessment and determination of development applications.

The Manly LGA presently has one Schedule 1, State Significant Development site, namely North Head Peninsula. The Minister for Planning is the consent authority for this site.

Two Schedule 2, Sites of Strategic Significance sites have been identified in the Manly LGA. These include Manly Wharf and St Patrick's College Estate.

Both Schedule 1 and 2 lands are covered by SEPP 56 and require particular considerations to meet the requirements of the Policy in the event of development. These sites require adherence to the policy's guiding principles and preparation of a Master Plan.

SEPP 56 considerations will be integrated into the proposed new SREP 32. Once SREP 32 is adopted SEPP 56 is likely to be rescinded.

4.3.10.4 Sydney Regional Environment Plans (SREPs)

Refer to [section 4.4.6](#).

4.3.11 Native Vegetation Conservation Act 1997

The *Native Vegetation Conservation Act 1997* (NVC Act 1997) was established to deal with the conservation and management of native vegetation on a State-wide basis.

Manly Local Government Area is partially excluded from the application of the NVC Act under Schedule 1. For the most part the NVC Act does not apply to Manly LGA however, the Act does apply to land within the local government area to the extent to which the land comprises 'State protected land'.

At the time that this document was written there were no State Protected Lands within the Manly Local Government Area.

4.3.12 NSW Heritage Act 1977

The NSW *Heritage Act 1977* provides for heritage management by government agencies. Section 170 of the Heritage Act outlines the special obligations of government agencies.

4.3.13 Heritage Impact Assessment Guidelines (NPWS)

The National Parks and Wildlife Service (now DEC) have drafted guidelines that must be followed by developers and consent authorities in their assessment of the impacts on Aboriginal heritage.

4.3.14 Land Owner's Consent Manual 1998 – Marine Ministerial Holding Corporation / Waterways Authority

Administration of proposals for development upon submerged land in Sydney Harbour (ie: the seabed below m.h.w.m) is generally undertaken in three steps. Firstly land owner's consent is required, secondly development consent is required and then construction approval.

The Land Owner's Consent Manual is related to the first step. It sets out the criteria which is used to assess whether or not a development proposal for submerged Sydney Harbour lands will be granted land owner's consent.

4.3.15 Rivers and Foreshore Improvement Act 1948

The *Rivers and Foreshores Improvement Act 1948* (R&FI Act) applies to natural and artificial water bodies, which are known as 'protected waters', and to the 'protected land' surrounding them.

Under Part 3A of the R&FI Act a permit is required when a proposed development is in, or within 40 metres of the top of the bank or shore of, "protected waters". Permits are not required if a development proposal is undertaken by a council.

4.4 Regional Planning Framework

4.4.1 Shaping Our Cities (1998)

Shaping Our Cities is a key planning strategy for the Greater Metropolitan Region of Sydney, Newcastle, Wollongong and the Central Coast. Shaping Our Cities identifies the overall planning priorities for this area and will guide the decisions of local councils and state government agencies.

The Strategy identifies key planning principles which governments should adopt into their plans and policies. The planning principle relevant to this Plan is to "Protect and improve our natural and cultural environments so as to sustain biological, water and air resources, to conserve Aboriginal heritage and to enhance our enjoyment of parklands".

The Shaping Our Cities Strategy has been considered in the preparation of management responses contained in this Plan.

4.4.2 Sharing Sydney Harbour - Regional Action Plan

Sharing Sydney Harbour is a NSW Government vision for the Harbour and a Regional Action Plan to manage the diversity of Sydney Harbour and its land and water based assets.

The Regional Action Plan identifies ten priority projects within Sydney Harbour, each with a project outcome. The Action Plan also identifies guiding principals to achieve each of those outcomes.

The Regional Action Plan will be managed by the Sydney Harbour Executive with the support of relevant State Government Authorities and the Sydney Harbour Secretariat.

4.4.3 Sydney Regional Coastal Management Strategy 1998

This strategy was prepared by the Sydney Coastal Councils Group to coordinate and integrate relevant coastal planning and management activities, and the responsible organisations, to improve coastal management in Sydney. This strategy originally applied to the coastal areas between Pittwater local government area and Sutherland local government area, including all areas that were previously excluded from the NSW Coastal Policy 1997. This strategy will be reviewed due to re-definition of the coastal zone under the Coastal Protection Amendment Act 2002.

The primary aim of the present strategy is “to protect and conserve terrestrial and marine ecosystems in the study zone, and to manage the social and economic conditions to achieve this, through the implementation of identified, sustainable coastal planning and management practices.”

4.4.4 Sydney Harbour Catchment Blueprint 2002

The aim of the Sydney Harbour Catchment Management Board's Catchment Blueprint is to provide the strategic direction for natural resource and environmental management (NREM) in Sydney Harbour over the next ten years.

The Blueprint is the primary integrating mechanism for all natural resource planning and management in the Harbour. It is Government Policy that sets the overarching natural resource priorities for the catchment as a whole.

DIPNR (formerly DLWC) has consulted with Council in the preparation of a Local Government Implementation Plan detailing actions that Council has already undertaken and actions that Council will undertake in the future to address those Management Actions identified in the Catchment Blueprint.

4.4.5 Stormwater Management Plans

There are two Stormwater Management Plans that apply within the Manly LGA including the Northern Beaches Stormwater Management Plan and the Middle Harbour Catchment Stormwater Management Plan.

The primary goal of the Stormwater Management Plans is to facilitate coordinated management of stormwater within catchments to maximise ecological sustainability and the social and economic benefits of sound stormwater management practices.

A formal update and review of the Stormwater Management Plans was undertaken during late 2002 and early 2003 as required by the NSW EPA (now Department of Environment & Conservation). The review and update focussed specifically on the SMP management actions, many of which had been completed. Manly Council decided that the main updated management actions detailed in the two relevant SMPs should involve an evaluation of measures undertaken to date. Once the evaluation is undertaken and the effectiveness of each action has been determined, Council will look at further management responses to be included in the updated Plans.

4.4.6 Sydney Regional Environmental Plans (SREPs)

4.4.6.1 Sydney Regional Environmental Plan (SREP) No 23 – Sydney and Middle Harbours.

This Plan aims to establish a consistent framework for the planning, development and management of the waterway, islands and foreshores of Sydney and Middle Harbours.

The Policy:

- Establishes zones below mean high water mark and, within them, permits (with or without consent) and prohibits certain development.
- Establishes a specific zone below mean high water mark adjacent to which certain development is permitted.
- Provides that State Environmental Planning Policy No. 4 – Development Without Consent does not apply to buildings used as sporting or social clubs or as community or cultural centres having frontages onto Sydney and Middle Harbours.
- Provides matters for consideration in the determination of development applications additional to those under Section 79C of the EP&A Act.

There are two zones relevant to Manly's Harbour foreshore areas below mean high water mark (m.h.w.m). The zone boundaries are shown in **Appendix 1**. These include:

Zone W1: General Waterways.

This zone covers most of the Harbour and permits a wide range of activities and facilities.

1. Objectives: The objectives of this zone are to permit waterway activities and facilities and land/water interface development which maintains or enhances important, natural and visual attributes of the Harbour; and is compatible with existing or planned future character of the waterway and adjoining foreshores.

2. Without development consent: The following developments may be carried out without development consent: Aids to navigation, maintenance dredging and single moorings (except those forming part of a marina).

3. Only with Development Consent: Development consent is required for the following: Any purpose other than a purpose included in item 2 or 4.

4. Prohibited: Large marinas.

Zone W3 – Environment Protection.

This zone covers areas of significant natural or cultural conservation values.

1. Objectives: The zone objectives are to identify and protect areas of the waterway having significant natural or cultural conservation value; and to permit waterway activities and facilities while ensuring that development does not adversely impact on any significant natural or cultural conservation value of adjoining land.

2. Without Development Consent: The following developments may be carried out without development consent: Aids to navigation; flora and fauna enclosures.

3. Only with Development consent: Development consent is required for any purpose other than a purpose included in item 2 or 4.

4. Prohibited: Development likely to have adverse impact on significant natural or cultural values is prohibited in the zone including: Aviation facilities, boat lifts, boat sheds, boating industry

facilities, commercial port facilities, houseboats, marinas and large marinas, reclamation, swimming pools, water based restaurants and entertainment facilities.

The Policy effects that the Waterways Authority is the consent authority for matters below mean high water mark (m.h.w.m) and the Council (with some exceptions) for matters above m.h.w.m and for certain development spanning m.h.w.m.

SREP 23 considerations will be integrated into the proposed new SEPP 32. Once SEPP 32 is adopted it is likely that SREP 23 will be rescinded. New waterways zones are presently being drafted.

4.4.6.2 Development Control Plan for SREP 22 and SREP 23

This Plan provides the basis for ecological and landscape assessment and provides guidelines for future development within the areas covered by SREP 22 and 23. The Plan provides an explanation of ecological communities and landscape character types to aid in the ecological and landscape assessment of development applications.

4.4.6.3 Draft Sydney Regional Environmental Plan (SREP) No 32 Sydney Harbour Catchment.

The primary aim of the SREP is an improved and clearer planning instrument for the Harbour and tributaries, providing better linkages between agency legislation and policies in relation to common outcomes.

The draft SREP has the following aims:

- *To ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised protected and maintained:*
- *As an outstanding natural resource; and*
- *As a community asset of national significance,*
- *For existing and future generations,*
- *To provide a consolidated, simplified and updated legislative framework for planning within the Sydney Harbour Catchment,*
- *To enable the permissible land uses for strategic foreshore sites to be changed through possible future amendment of this plan.*

(Part 1 Clause 2)

The draft SREP identifies a number of principles, which are significant to the management of Sydney Harbour. The following principles are relevant to Manly's Harbour Coastline Management Plans:

Sydney Harbour is to be recognised as a public resource, owned by the public, to be protected for the public good,

The public good has precedence over the private good whenever and whatever change is proposed for Sydney Harbour or its foreshores,

Protection of the natural assets of Sydney Harbour has precedence over all other interests.

(Part 1 Clause 2)

Once adopted SREP 32 will replace SEPP 56 and SREP 23. At the time that this document was written Waterways was in the process of drafting a new set of waterways zones.

4.4.7 Draft Sydney Harbour Federation Trust – North Head Plan

A Plan for North Head was placed on public exhibition towards the end of 2002. Following receipt of submissions, a revised plan was submitted to the Minister for Environment and Heritage in March 2003. The Plan has now been adopted.

The vision for North Head is to create an ecological sanctuary where native wildlife, habitats, and plant communities are managed in a sustainable way by all landholders; where endangered species are protected and conserved and feral animals managed effectively; where native species may be carefully re-introduced.

4.4.8 North Head Planning Strategy (Clouston, 1996)

This report comprises the study findings and planning strategy for the peninsula of North Head (including the Little Manly area).

The purpose of this strategy is to establish management and planning principles for both landowners, the statutory bodies and the community in guiding decision making and implementation processes.

This has not been adopted by the State.

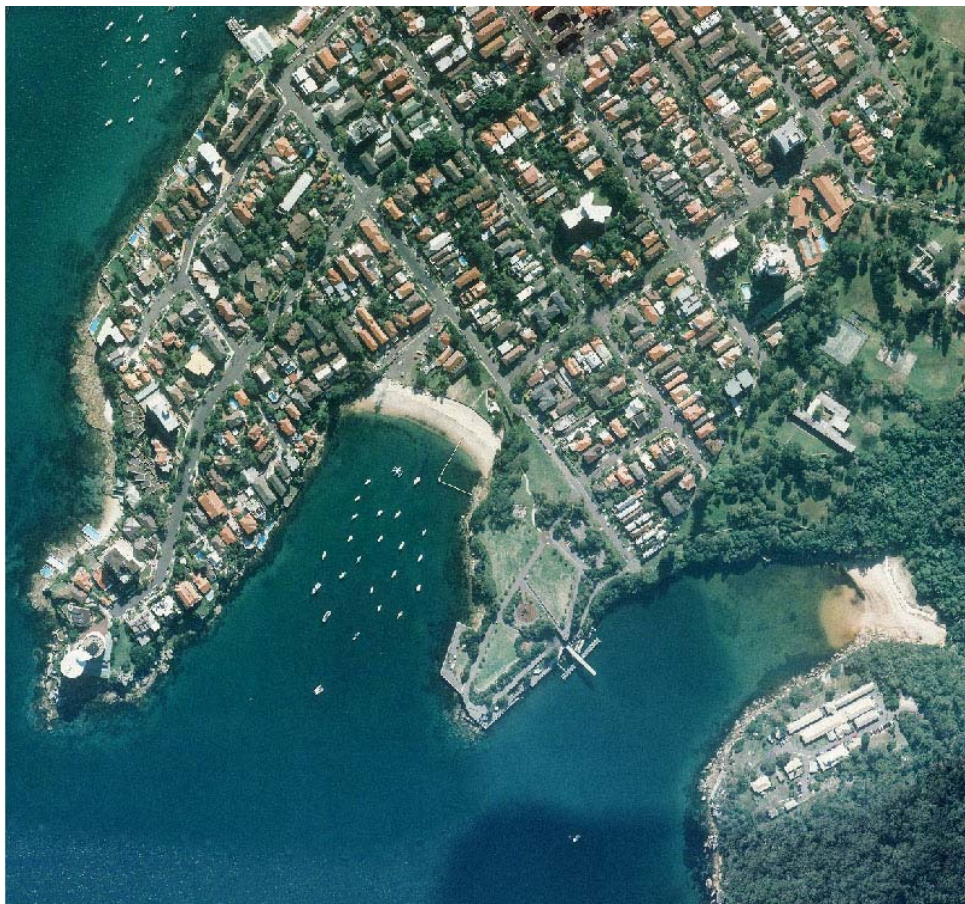
5 APPENDICES

Appendix 1 SREP No 23 Waterways Zones Map (April 1990)



MANLY COUNCIL

Little Manly Coastline Management Plan: Support Document



"Little Manly - Coastal urban living in a healthy, sustainable and natural environment achieved through partnership between the community, council and state government planning agencies"

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1 INTRODUCTION

1.1 About the Coastline Management Plan

This Coastline Management Plan has been developed in response to legislative requirements and community issues in accordance with current best practice for the management of coastal and estuary foreshores.

The development of Coastline Management Plans is also identified in Council's current Corporate Plan (5.1.1) and Sustainability Strategy 2002 (AQ35.1).

This Coastline Management Plan is intended to be a strategic plan for the study area with a long-term time frame of 10-20years (with appropriate revisions). Implementation of the Plan will involve considerable expenditure and therefore implementation must have regard to resource availability and to other priorities of Council and the other agencies identified in the Action Plan.

The Plan was developed to define the type, nature and significance of coastal hazards of relevance to Little Manly and Spring Coves, to identify other issues relevant to management of the coastal area in general and to identify appropriate management options for each issue and hazard identified.

Both aquatic and terrestrial issues have been considered by the Plan to ensure the holistic and sustainable management of these resources and environments. All land within the defined study area has been included, with a particular focus on community land and meeting the requirements for public land management under the *Local Government Act 1993*. As a result this Coastline Management Plan also serves as the **specific community land Plan of Management** for those community lands located within the study area.

While Council does not have management responsibility or jurisdiction for a number of the issues considered in this Plan, Council sought to liaise with relevant state government agencies responsible for each of those issues during the Plan's development. Please note that this Plan may not reflect the thoughts, ideas and perspective of those agencies however Council will be seeking endorsement of the Plan and a commitment to its implementation through a memorandum of understanding.

1.2 Study Area

Little Manly and Spring Coves are located in North (Sydney) Harbour. The study area includes the foreshore between the southern tip of Manly Point to Collins Beach and incorporates land and aquatic environments adjacent to the foreshore. Refer to **Appendix 1** for a map of the study area.

The study area is bounded on the eastern side by Sydney Harbour National Park, to the north by residential land and land owned by the Catholic Church and to the west by residential land.

The study area was used as a guide only in the development of the Little Manly Coastline Management Plan. Land and aquatic areas outside the boundary, which impact on the biophysical or social environment within the boundary, have also been considered in the Plan's development in order to establish holistic management strategies.

A description of the area's values and what the community would like the area to look like and be like in the future is detailed in Section 1.7.

1.3 Plan Objectives

The overall goal of the Little Manly Coastline Management Plan is

“to develop a long-term management strategy to guide the sustainable management of the Plan’s study area now and in the futures.”

The Plan also aims to meet the following objectives; to:

- meet requirements for community land management under the *Local Government Act 1993*;
- produce a user friendly plan addressing management of impacts on the area’s biophysical and social environments;
- define the area’s coastline hazards and identify appropriate management for the future;
- address issues requiring management as identified through community consultation;
- identify clear and achievable management strategies to conserve and protect the natural and social environment and to address community expectations;
- conserve, restore and protect the terrestrial and aquatic environments within Little Manly and Spring Coves;
- provide convenient access to all public open space areas including parks and reserves;
- identify a review process to monitor the success of the management options identified in the Management Plan;
- enable Council to renegotiate and/or enter into contracts, leases, licences, hire arrangements and other estates which relate to the development, maintenance or use of public land in accordance with this Plan’s stated objectives;
- provide for effective asset management, maintenance and improvement with regard to community land covered by this Plan.

Under the *Local Government Act 1993* a Plan of Management for community land must identify objectives of the Plan, including core objectives, which are set out in the Act. The categorisation of community land within this Plan’s study area is detailed in Section 4.2. The categories which apply have the following core objectives as specified in that Act:

The core objectives for management of community land categorised as **general community use** are to promote encourage and provide for the use of the land, and to provide facilities on the land, to meet the current and future needs of the local community and of the wider public:

- a) in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public; and
- b) in relation to purposes for which a lease, licence or other estate may be granted in respect of the land (other than the provision of public utilities and works associated with or ancillary to public utilities).

The core objectives for management of community land categorised as a **park** are:

- a) to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and
- b) to provide for passive recreational activities or pastimes and for the casual playing of games, and
- c) to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

The core objectives for management of community land categorised as a **natural area** are:

- a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- b) to maintain the land, or that feature or habitat, in its natural state and setting, and

- c) to provide for the restoration and regeneration of the land, and
- d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

The core objectives for management of community land categorised as **foreshore** are:

- a) to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area, and
- b) to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.

The core objectives for management of community land categorised as **bushland** are:

- a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the lands, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and
- b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and
- c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating and disturbance caused by human intrusion, and
- d) to restore degraded bushland, and
- e) to protect existing landforms such as natural drainage lines, watercourses and foreshores, and
- f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long-term, and
- g) to protect bushland as a natural stabiliser of the soil surface.

1.4 Structure of the Plan

The Little Manly Coastline Management Plan consists of two parts, the **Support Document** and the **Action Plan**. The Supporting Document provides the framework for preparing the management recommendations, which are outlined in the Action Plan.

1.5 Planning Framework

An introduction to Coastline Management Plans for Manly's coastline and harbour foreshores has been prepared as a separate and overarching document. The document is titled '**Coastline Management Plans: Introduction and Planning Frameworks**'. The document describes the planning framework in which the Coastline Management Plans were prepared and in which they will be implemented.

For example the overall introduction outlines requirements for community land management under the *Local Government Act 1993*. It also identifies the process for coastal management as detailed in the State Government's Coastline Management Manual.

The document also outlines the management responsibilities of a variety of government agencies.

1.6 Council's Corporate Plan & Budget

This Plan has a direct relationship with Manly Council's Corporate Plan through the performance targets and management recommendations (strategies) identified. The management recommendations identified to achieve the agreed performance targets shall be integrated into Council's Corporate Plan so that appropriate monetary and staff resources are allocated to achieve this Plan's performance targets.

1.7 Values

In making decisions about the future use and management of coastal and harbour foreshore lands and resources, it is important to gain an appreciation of the multiple values of the area and what the community would like the area to look like and be like in the future.

The following values reflect attributes or processes that are of importance to the community, derived from the community consultation undertaken during the development of this CMP. The values are intended as **interim** values to be replaced as a vision for the Plan is developed through the implementation of the Plan followed by the development of a series of evaluation indicators, which adequately reflect the values of the community and decision makers.

The following interim values have been identified for lands covered by this Plan:

- Aesthetic values associated with a pleasant, appropriate and sustainable landscape character. For example the consultation process identified that the community values the low-key and more natural characteristics of the area, they enjoy in particular the beach, grassed reserve and bush areas. Many people also value the opportunity to undertake more active pursuits such as boating.
- Physical values associated with the coastal/estuary foreshore and processes. For example residents and visitors value being able to access and experience the foreshore and harbour views.
- Biophysical values associated with the protection and improvement of aquatic and terrestrial natural environments. For example the consultation process identified that the community highly values the preservation of natural bushland, seagrass and threatened species.
- Cultural values associated with the area's indigenous and non-indigenous heritage. People value and want to learn about the area's history.
- Values associated with the sustainable use and management of resources, lands and areas of the harbour. Consultation identified that the community would like to ensure that the area is used and managed in a way that will ensure that its values are preserved into the future.
- Accessibility values associated with convenient access to all public areas. For example people value the ability for all to access and enjoy the area.
- Recreational and lifestyle values associated with a safe, healthy and enjoyable environment for all users, visitors and local residents. For example people value being able to enjoy the area knowing that it is safe and will not negatively affect their health.
- Values associated with effectively maintained infrastructure and services. For example people identify that well maintained facilities and services contribute to the value of the area as a recreational place, and contribute to maintaining biophysical and aesthetic values of the area.
- Community involvement values associated with appropriate consultation. That is, people recognise the area as public land for the enjoyment of the community and visitors and value being able to provide input into the future direction and management of the area.

2 DEVELOPMENT OF THE PLAN

Development of the Little Manly Coastline Management Plan was undertaken to meet requirements for community land management under the *Local Government Act 1993*. As a result the plan addresses legislative requirements with respect to community land within the study area. This Coastline Management Plan has also been developed in accordance with the coastal management system outlined in the State Government's Coastline Management Manual 1990 as current best practice for coastline management, which is further described in Council's '**Coastline Management Plans: Introduction and Planning Frameworks**'.

The process for the development of The Coastline Management Plan is illustrated in **Appendix 12**.

2.1 Committees

The Coastline Management Manual 1990 identifies the establishment of a Coastline Management Committee as the initial stage in the preparation of a Coastline Management Plan.

While a Coastline Management Committee was already established in Manly, it was agreed that a more site specific management committee should be established to guide the development of the Little Manly Coastline Management Plan.

The Little Manly Coastline Management Plan Steering Committee was established in August 2000 to guide the preparation of the Coastline Management Plan.

The specific roles of the Committee were to:

1. Collectively ensure that the Little Manly Cove Coastal Management Plan Project fulfils project brief outcomes.
2. Act individually as an initial point of contact and internal reference within respective organisations and agencies.
3. Promote the Little Manly Cove Coastal Management Plan Project, at all levels, within respective organisations and agencies to maximise relevant input, participation, eventual endorsement and implementation.
4. Facilitate timely exchange of necessary project information to enable project outcomes and milestones to be met.
5. Contribute, or facilitate the provision of, specific knowledge and advice in areas of expertise relevant to the project.
6. Ensure the integration of current policies, objectives and strategies of relevant organisations and agencies in the Little Manly Cove Coastal Management Plan.
7. Provide strategic direction to the Project Manager or consultant employed to prepare the Management Plan.
8. To the fullest extent possible ensure Coastal Management Plan complement concurrent planning for Aquatic Reserve and adjoining National Park.

The Committee comprised representatives from the following community organisations, local businesses and government agencies:

- Manly Council;
- Manly Environment Centre;
- Little Manly Precinct Community Forum;
- NSW Department of Land and Water Conservation (now DIPNR);
- NSW Fisheries;
- NSW Waterways Authority;
- PlanningNSW (now DIPNR);
- NSW National Parks and Wildlife Service (now DEC);
- Sydney Water;
- NSW EPA (now DEC) ; and

- Nature Conservation Council.

The Committee met at strategic milestones throughout the development of the Plan and provided information as requested by the project manager.

2.2 Community Consultation

Prior to the commencement of the Coastline Management Study (detailed below), Council undertook two rounds of community consultation. Both rounds of community consultation were widely publicised through the Precinct, letterbox drops and advertising material.

The first round conducted in June 2001 requested that the community identify issues to be included in the Coastline Management Plan. 218 submissions were received.

The second round of consultation undertaken by Council in December 2001 involved a public BBQ, where a second survey was undertaken. The second survey sought further detail into the issues identified in round one providing the opportunity for detailed comments to be submitted and considered.

Consultation with the Little Manly Precinct was undertaken through attendance at their Precinct meetings, their representative on the Steering Committee and through written correspondence.

2.3 Coastline Management Study

A coastline management study was undertaken to identify options relevant to the environmental planning and management of the study area. The study assessed the social, economic, aesthetic, recreational and ecological issues associated with land use along the coastline.

The management study aimed to consider all possible management options.

Components of the management study included:

- A literature review for all issues;
- Site visits;
- Community consultation through surveys, Committees, Precinct meetings and Task Forces;
- Coastline Hazard Definition Study;
- Natural Terrestrial Environment Assessment Study; and
- Landscape Study and development of a Landscape Masterplan.

2.4 Approval from the NSW Department of Infrastructure Planning and Natural Resources

The study area includes community land (Little Manly Point Park) owned by the NSW Department of Infrastructure, Planning and Natural Resources, which is leased to Council. The Plan of Management was forwarded to the Department of Infrastructure, Planning and Natural Resources for comment prior to public exhibition, and DIPNR's endorsement of the final Plan will be sought prior to implementation of the Plan.

A representative from PlanningNSW (which has been incorporated into the NSW DIPNR) was invited to join the CMP steering Committee.

2.5 Plan Exhibition

The Little Manly Coastline Management Plan was placed on public exhibition for comment between 10 November and 22 December 2003. The community was also invited to attend a public hearing on 10 December 2003 with regards to the categorisation of two parcels of community land that had not previously been categorised, in accordance with requirements of

the *Local Government Act 1993*. Written submissions were considered and where appropriate integrated into the amended plan for adoption.

Under the *Local Government Act 1993*, Plans of Management applying to community lands wholly or partly containing critical habitat must be sent to the Director General of either NSW National Parks and Wildlife Service (now DEC) or NSW Fisheries. As the endangered population of little penguins falls under the responsibility of the DEC, a copy of the Plan was sent to the Director General of that department. The DEC (formerly NPWS) provided comments which have since been included.

A representative of NSW NPWS (now DEC) was involved in the CMP Steering Committee.

2.6 Public Hearing

Section 40A of the *Local Government Act 1993* requires that Council hold a public hearing in respect of a proposed Plan of Management for community land where that proposed Plan categorises or alters the categorisation of community land.

A public hearing was held on 10 December 2003 with regards to the categorisation of two parcels of Community Land that had not previously been categorised. Under requirements of the *Local Government Act 1993*, the public hearing was presided over by an independent person.

Also in accordance with the Act, a public hearing report was submitted to Council by the independent facilitator. This report has been registered on Council's electronic document management system (EDMS).

2.7 Adoption of the Plan

Following the public exhibition period and public hearing Council considered those submissions received in addition to the public hearing report. As the subsequent amendments made to the CMP were not considered to be substantial the document was passed through the steering committee for endorsement of the Plan to go to Council for adoption. The document will also be forwarded to the DIPNR for adoption and public notice of the adoption arranged. A copy of the adopted plan will be forwarded to the Director General of NSW NPWS (now DEC).

3 IMPLEMENTATION, REVIEW AND EVALUATION

3.1 Implementation

Implementation of Council's adopted Coastline Management Plans (CMPs) is identified in the Manly Sustainability Strategy (AQ35.2) and should be included in Council's Corporate Plan.

Whilst Manly Council is not responsible for all the areas and issues identified in the CMP, implementation of the recommendations contained in the Plan will rely heavily on an integrated approach by the relevant key stakeholder agencies, which have been involved in the development of the Plan.

Manly Council will be seeking a memorandum of understanding / statement of intent or similar, signed by all responsible agencies to adopt and implement this Plan.

Implementation will be assisted by a Committee to be serviced by Council.

Funding sources for implementation of the Plan is detailed in Council's 'Coastline Management Plans: Introduction and Planning Frameworks' document.

3.1.1 Education

This Plan acknowledges education as a key management tool and as a result a number of education recommendations have been identified to address issues covered by this CMP, refer to the Action Plan for the relevant recommendations. The Action Plan recognises the important role that education plays and the need to expand on current education programs, Starboard Right and Green and Bricks and Water.

Environmental education within Manly is guided by the Manly Sustainability Strategy and Council's Education for Sustainability Strategy. These documents have been consulted in the development of this CMP.

3.2 Review

The Little Manly CMP Support Document is to be reviewed every five (5) years and updated on an as needed basis.

The Little Manly CMP Action Plan is to be reviewed every two (2) years, or as required, to ensure that the Plan's strategies and priorities are kept up-to-date.

3.3 Evaluation

Evaluation of the effectiveness of recommendations identified in the Action Plan should be undertaken to determine whether the vision (to be established), the Plan's objectives, performance targets and values have been achieved.

In order to evaluate the CMP, in particular the effectiveness of the Action Plan's management recommendations in achieving the Plan's objectives, it is essential that specific and measurable performance targets and indicators be established from the start. Therefore the initial implementation of the Plan shall involve the establishment of a set of indicators (performance measures), which can be used in the evaluation of the CMP. The indicators should be:

- simple;
- measurable;
- achievable;
- reliable; and
- timely.

Evaluation is to be undertaken every 5 years, except where ongoing evaluation through frequent monitoring is required.

4 LAND OWNERSHIP, ZONING AND CATEGORISATION

4.1 Land Ownership

Ownership of land within this Plan's study area is identified in **Appendix 2**.

4.2 Community Land Management & Categorisation

Classification of public land in the study area

Under the *Local Government Act 1993* a Council must classify Public Land as either 'community' or 'operational' land. Operational land has no special restrictions other than those that may apply to any piece of land. Whereas community land is intended for public access and use and its use and management is strictly governed in accordance with an adopted Plan of Management.

Community land management requirements

Community land can not be sold, exchanged or otherwise disposed of (except when adding the land to Crown Reserve or to a protected area under the *National Parks and Act 1974*). Community land can not be leased, licensed or any other estate granted over the land for more than 21 years.

Under section 36 of the *Local Government Act 1993*, a Plan of Management for community land must be prepared for the land and that plan must categorise the land. Possible categories identified in the Act include:

- a natural area;
- a sportsground;
- a park;
- an area of natural cultural significance; and/or
- general community use.

This Coastline Management Plan serves as the community land Plan of Management for community lands within the Study area.

Specific Plans of Management have been prepared for Manly Peace Park and the unnamed reserve at the end of Stuart Street (although this reserve is not formally named it is commonly referred to as 'the Unnamed Reserve at Spring Cove') due to requirements under Section 36A of the *Local Government Act 1993*. However, the management issues, performance targets and management recommendations have been integrated into this CMP to provide for the holistic and sustainable management of those sites. The specific PoMs are attached as **Appendix 3** and **Appendix 4**.

For **community land that is not owned by Council** the *Local Government Act 1993* requires that, where Council controls but does not own the land, the Plan of Management must:

- Identify the owner of the Land;
- State whether the land is subject to any trust estate, interest, dedication, condition, restriction or covenant; and
- State whether the use or management of the land is subject to any condition or restriction imposed by the owner.

Identification and categorisation of community land covered by this plan:

Community land covered by this plan is listed below and is shown in **Appendix 2**. The list below also details the **categorisation** of each parcel of land in accordance with section 36 of the *Local Government Act 1993*.

In accordance with Section 21 of the *Local Government (General) Regulation 1999*, a plan of management that categorises an area of community land, or parts of an area of community land, in more than one category must clearly identify the land or parts of the land and the separate categories (by a map or otherwise). Refer to **Appendix 5** for map of community land categorisation.

- Description: forms a small part of the south western portion of the Craig Avenue car park.
Area: 94.3m²
Owner: Manly Council
Title: Lot 1, DP 574989
Category: General community use.
- Description: This land forms the majority of the Craig Avenue boat ramp and car park and part of the beach.
Area: 1605m²
Owner: Manly Council
Title: Lot 1, DP 552122, area 1605 m².
Categorisation: General community use and natural area - foreshore.
- Description: Beach space in front of the seawall behind 36-40 Stuart Street.
Area: 510.8m²
Owner: Manly Council
Title: Lots 4, 5 and 6 DP 252420
Categorisation: Natural area – foreshore.
- Description: Grassed area of Little Manly Reserve (at the western end of the reserve adjacent to No 40 Stuart Street). Also the beach area in front of this land.
Area: 1,132m²
Owner: Manly Council
Title: Lot 1, DP 304765
Categorisation: Park and natural area foreshore.
- Description: Part of Little Manly Reserve behind the eastern end of the beach includes the kiosk and amenities block.
Area: 2371m²
Owner: Manly Council
Title: Lot 1 Section 13 DP 975494
Categorisation: Park and natural area foreshore.
- Description: Eastern most part of Little Manly Reserve. It is an undulating grassed area (vegetated in parts) extending from Stuart Street down to the waterline of little Manly Cove. An access path dissects the area, which connects Little Manly Reserve with Little Manly Point Park.
Area: 2,900m²
Owner: Manly Council
Title: Lots 2,3,4 and Lot 6 plus Lot 5, Section 13, BK.623, No.201
Categorisation: Park and natural area – foreshore.
- Description: This is a closed road, which was previously the end of Carey Street. It adjoins Little Manly Reserve and Little Manly Point Park. It has not been made formally a part of Little Manly Reserve although is connected to and well integrated with the reserve due to present landscaping and access arrangements.
Area: 3,200m²
Owner: Manly Council
Title: Lot 2851, DP 823994

Categorisation: Park and natural area foreshore.

- Description: Little Manly Point Park.
Area: 1.411ha
Owner: PlanningNSW
Title: Lot 1 DP 528565
Categorisation: Park and natural area - foreshore.
Owner conditions/restrictions: The use and management of this land is subject to the conditions set out in the lease (LD325019) between the Minister administering *the Environmental Planning and Assessment Act 1979* and Manly Council, which expires on 6 September 2097.
- Description: Although physically adjacent to Little Manly Point Park, it is a separate parcel. It is located on the north-eastern side of Little Manly Point Park.
Area: 2453 m²
Owner: Manly Council (public reserve under Council's ownership)
Title: Reserve in DP528565
Categorisation: Park and natural area foreshore.
- Description: Part of the area of land located at the end of Stuart Street which includes through access to the lower rock platform area and a walking track to Collins Beach.
Title: Part Lot 52, Sec 17, Volume 1877, Folio 437
Area: 193m²
Owner: Manly Council
Categorisation: Park.
- Description: Unnamed reserve at the end of Stuart Street. Part of the area of land located at the end of Stuart Street which includes through access to the lower rock platform area and a walking track to Collins Beach.
Area: 4,338m²
Owner: Manly Council
Title: Lot 1, DP 544297
Categorisation: Natural Area – foreshore and bushland.
- Description: Manly Peace Park. This land includes the gently sloping grassed park and the public space in front of 'Kilburn Towers' above the mean high water mark, which consists of a series of large rock platforms and boulders.
Area: 2175 m²
Owner: Manly Council
Title: Lots 9 and 10 DP10356 and Lot DP564246
Categorisation: Grassed area is categorised as Park. The large rock platforms in front of 'Kilburn Towers' and the rock platforms in front of the grassed area are categorised as Natural Area – Foreshore.

4.3 Operational Land

While the *Local Government Act 1993* does not require a Plan of Management to be prepared for public land classified as '**operational**', this plan does apply to those lands and includes their management needs as they are within the study area.

Operational public lands owned by Manly Council include Numbers 34 and 36 Stuart Street, as shown in **Appendix 2**. These properties are presently leased to tenants, with the exception of the dinghy storage area located at the rear of number 34.

There are a few options available regarding the management of these 'operational' lands. Management options and recommendations are discussed further in Section 6.14 of this Plan.

4.4 Leases, Licenses and Other Estates

4.4.1 Existing Leases, Licenses and Other Estates

Leases and licenses relevant to this Coastline Management Plan include the following:

- Deed of Licence to Little Manly Kiosk* (3 year lease)
- Department of Infrastructure Planning and Natural Resources (formerly PlanningNSW) lease of Little Manly Point to Manly Council (99 year lease)
- Licensing of commercial SCUBA Diver operators* (annual licences)
- Lease of road reserve adjoining 40 Stuart Street, Manly, for the purpose of an existing timber deck and stairs as front entrance walkway
- Lease of house numbers 34 and 36 Stuart Street from Council to private occupants

*These current leases/licenses require express authorisation in this Plan as they are in relation to the use of community land.

4.4.2 Leases, Licenses and Other Estates Prohibited by this Plan

This Plan prohibits leases, licenses and other estates being granted for all those lands identified in Section 4.2 for the following:

- activities prohibited by the zoning of the land;
- activities which are inconsistent with the objectives as described in Section 1.3; and
- a lease, license or other estate must not be granted, in respect of community land categorised as a natural area:
 - to authorise the erection or use of a building or structure that is not one of the following: walkways, pathways, bridges, causeways, observation platforms or signs; or
 - to authorise the erection or use of a building or structure that is not one of the following purposes: an information or refreshment kiosk, a work or storage shed required in connection with the maintenance of the land, toilets or rest rooms.

4.4.3 Leases, Licenses and Other Estates Permitted by this Plan

The granting of a lease, licence, or other estate in respect of the community land to which this Plan applies, as listed in Section 4.2 is hereby expressly authorised for the following:

- one refreshment kiosk;
- for any purpose which the land was being used for at the date that this Plan was adopted; and
- for any purpose prescribed by section 46 of the *Local Government Act 1993*, or the regulation made thereunder.

The granting of leases, licences and other estates must be consistent with the objectives of this Plan, as described in Section 1.3.

A lease or licence for community land covered by this Plan for a term exceeding 5 years may be granted only by tender in accordance with Division 1 of Part 3 of the *Local Government Act 1993*, unless it is granted to a non-profit organisation.

Short-term casual licenses, as allowed by Section 24 the *Local Government (General) Regulation 1999*, are expressly authorised with regard to those Community Lands covered by this Plan for the following purposes and/or events:

- community events;
- commercial photographic sessions;

- picnics, ceremonies and private celebrations such as weddings and family gatherings only where general public access is not affected; and
- filming for cinema or television.

Authorisation of short-term licenses for the above listed purposes and/or events may only be granted if the use or occupation does not involve the erection of any building or structure of a permanent nature. A licence for the above mentioned purposes should generally not be issued if public access to the area will be affected for more than three (3) consecutive days (including weekends).

This Plan also expressly authorises the issuing of short-term casual licences granting the use of any existing road or fire trail on community land covered by this Plan for the following purposes:

- a) to transport building materials and equipment required in relation to building work to be carried out on land adjoining the community land, or
- b) to remove waste resulting from such work.

The following conditions must be met before such a licence may be granted:

- there must be no other suitable access to the site on which the building and/or landscaping works are to be undertaken;
- Rehabilitation of the site must be to the site's condition prior to use by the licensee and will be at the expense of the licensee.
- A suitable licence agreement must be established prior to the community land's use by the licensee.

Consideration must be made to the impact of any activities listed above on critical habitat, or community land identified in a recovery plan of an endangered species, population or ecological community. For community lands covered by this Plan consideration should be given to the impact of the activity on the endangered populations of little penguins and long-nosed bandicoots. Where an unreasonable impact is identified the licence must not be granted.

Council must obtain permission from the Department of Infrastructure, Planning and Natural Resources (formerly PlanningNSW) prior to issuing licences with regard to Little Manly Point Park.

4.5 Land Zoning

The Manly Local Environmental Plan (1988) was made under the *Environmental Planning and Assessment Act 1979*. It establishes Council as the consent authority for all purposes of the Plan and is the main statutory control on development within Manly Local Government Area.

The Local Environmental Plan (LEP) details the zoning of land within the Manly Council area. It enables Council to make particular Development Control Plans regulating development in any zone and to make provisions for exempt and complying development within Manly.

The LEP also identifies Items of Environmental Heritage, Environmentally Sensitive Areas, Foreshore Scenic Protection Areas and Acid Sulphate Soils.

The zones relevant to this Plan's Study area are detailed in the following sections.

4.5.1 Open Space Zone (Zone No: 6)

Manly's LEP (1988) designates Little Manly Cove and Little Manly Point reserves and the reserve that runs along the foreshore from Little Manly Point to Collins Beach as zone No.6 - Open Space Zone. All areas zoned open space are identified as existing open space areas, except for Nos 36, 38 and 40 Stuart Street, which are zoned as open space to be acquired.

Objectives of the Open Space Zone include:

- a) *to ensure there is provision of adequate open space area to meet the needs of all residents and provide opportunities to enhance the total environmental quality of the Manly Council area;*
- b) *to encourage a diversity of recreation activities suitable for youths and adults;*
- c) *to identify, protect and conserve land which is environmentally sensitive, visually exposed to the Waters of Middle Harbour, North Harbour and the Pacific Ocean and of natural aesthetic significance at the water's edge;*
- d) *to facilitate access to open areas, particularly along the foreshore, to achieve desired environmental, social and recreation benefits;*
- e) *to conserve the landscape, particularly at the foreshore and visually exposed locations, while allowing recreational use of those areas; and*
- f) *to identify areas which-*
 - i. *in the case of areas shown unhatched on the map are now used for open space purposes; and*
 - ii. *in the case of land shown hatched on the map are proposed for open space purposes.*

Within this zone works for the purposes of landscaping, gardening or bushfire hazard reduction are permitted without development consent.

Refer to the LEP for uses requiring development consent and prohibited uses in addition to exempt and complying development.

4.5.2 Residential Zone (Zone No 2)

The remainder of the land within the study area is within the Residential Zone. Refer to Manly's LEP (1988) for details concerning the objectives of this zone, development consent requirements and prohibited development.

4.5.3 Items of Environmental Heritage

Items of Environmental Heritage under Manly's LEP are addressed in Section 6.7.

4.5.4 Environmentally Sensitive Areas

Manly's LEP (1988) (Amendment 34. Exempt and Complying Development) identifies Environmentally Sensitive Areas. These areas are parts of the Manly LGA where development or works are required to be sensitive to actual or potential environmental conditions. Development is not complying development if it is carried out within an environmentally sensitive area. The whole of the study area falls within an environmentally sensitive area.

4.5.5 Foreshore Scenic Protection Areas

Manly's LEP (1988) designates the land within this Plan's study area as within the LGA's Foreshore Scenic Protection Area (refer to Manly LEP - Map 4). Clause 17 of the LEP states that 'the council shall not grant consent to the carrying out of development unless it is satisfied that the development will not have a detrimental effect on the amenity of the Foreshore Scenic Protection Area'.

4.5.6 Acid Sulphate Soils

Land within the study area is identified as class 5 with regard to Acid Sulphate Soils. However, as the land is not within 500metres of any class 1, 2, 3 or 4 land the class 5 restrictions do not apply.

4.5.7 Zoning of the Waterway

The Sydney Regional Environmental Plan No 23 – Sydney and Middle Harbours aims to establish a consistent framework for the planning, development and management of the waterway and foreshores of the Harbour. The Policy establishes zones below mean high water

mark in which certain development is permitted or prohibited. The Policy zones Spring Cove as 'Environmental Protection' and Little Manly Cove as 'General Waterways'. The objectives, and permitted and prohibited development of each zone are detailed in Manly's 'Coastline Management Plans: Introduction & Planning Frameworks'.

At the time that this report was written the waterways zones were being reviewed by Waterways in consultation with relevant Councils. Council has put forward an initial submission on some preliminary proposals put forward by Waterways.

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5 AQUATIC ISSUES

5.1 Aquatic Ecology

Very few published studies have been undertaken to describe and assess the ecological characteristics of Little Manly and Spring Cove areas. Those studies that have been undertaken are specific to assessing particular aspects of the marine environment or the impacts of a particular activity on the area's aquatic ecology.

The lack of scientific data regarding the aquatic ecology of this area is a significant data gap, which is reflected in the management responses detailed for this section. However it is important to note here that the management of the area's marine ecology is essentially the responsibility of NSW Fisheries. Council's control over aquatic issues is therefore limited to the impact that the Local Government Area has on the marine environment.

5.1.1 Aquatic Habitats and Flora

The Little Manly marine environment between Manly Point and Collins Beach contains a variety of marine habitats, which are home to a diversity of marine species.

The area includes habitats such as intertidal rocky shorelines, walls, rocky reefs, subtidal waters, sandy beaches, surrounding sediment beds of sand and mud and seagrass beds.

The marine environment of Little Manly and Spring Coves is rated by the NSW EPA as 'extremely sensitive' (NSW EPA, 1994). It is the only area in the 'outer harbour' that is afforded that rating.

5.1.1.1 Intertidal rocky shoreline

Little Manly Point:

Little Manly Point's intertidal marine ecosystems are characterised by a sandstone platform, small pools and sandstone boulders with a small cliff or slope above mean high tide mark. The rock pools and rock surfaces contain algal crusts and molluscs. The intertidal zone consists primarily of either sessile or slow moving animals (Hassell et al 2001).

Manly Point:

According to AWT (October 1997) the intertidal community at Manly Point is similar to that at Little Manly Point in that it consists primarily of the sessile and semi-mobile organisms, which are adapted to cope with more exposed environments. Impacts may include stormwater discharge and water pollution.

Impacts

The community has identified people collecting bait and food (intertidal harvesting), including but not limited to oysters and turban shellfish, from the rock platform in Little Manly Cove. Trampling along the rocky foreshores crushes and kills many species of marine invertebrates, potentially increasing algal growth.

The rocky shoreline within the study area is also degraded by boat users anchoring off the rocks, which is a concern due to the direct damage caused by the anchor but also as a result of the chain dragging across the rocks.

Another potential impact on marine ecology is the contamination issue at Little Manly Point, the former gasworks site. Refer to Section 6.6 for further information.

5.1.1.2 Walls

The vertical eastern seawall of Little Manly Point is dominated by large kelp (Rooney 1987) and small encrusting algae.

5.1.1.3 Subtidal rocky reef

Below mean low water mark, the study area is dominated by kelp and encrusting algae (Chapman and Underwood, 1995). Kelp and rock distribution is shown in **Appendix 6**, which also indicates that seagrass is also a dominant feature of the subtidal environment. Seagrass beds are discussed in further detail below.

5.1.1.4 Sandy beaches

Sandy beaches within the study area include Little Manly Beach (managed by Council) and Collins Beach (managed by the Department of Environment & Conservation, National Parks).

5.1.1.5 Seagrass beds

Council commissioned The Ecology Lab Pty Ltd to undertake a literature review and analysis of existing seagrass studies and to develop management options for seagrass in the study area. The Ecology Lab's report 'Manly Seagrass Review and Management Plan Options for Little Manly (2003)' should be consulted in the implementation of the recommendations for seagrass management. A summary of the findings is provided below.

Importance of Seagrass

Seagrass plays an important role in marine ecosystems as they:

- stabilise sediments;
- provide important aquatic habitat for juvenile fish and invertebrates;
- support the growth and protection of recreational and commercially important fishing species, both juveniles and adults;
- recycle nutrients;
- maintain water quality; and
- provide food for fauna either directly or after being decomposed.

(The Ecology Lab, April 2003)

As a result of these functions the management and protection of seagrass within Little Manly and Spring Coves is important to maintain the ecosystem's health and functioning.

Seagrass beds within the study area are also important foraging grounds for Manly's endangered population of little penguins. The NPWS (now DEC) has identified the conservation of seagrass as important for the availability of prey species for the little penguin population. Seagrass and kelp beds provide habitat for prey species such as sandy sprat, anchovies and hardyhead (NSW NPWS, September 2002).

The management and protection of seagrass in Little Manly and Spring Coves has also been identified through the community consultation process as a significant issue. The vast majority of submissions identified the need to increase the protection of seagrass beds in the area.

NSW Fisheries provide further information on the importance of seagrass via their web-site.

Seagrass Species and Distribution

Seagrass beds are found within the study area growing in shallow subtidal areas along the foreshore, in depths where sunlight is available for photosynthesis.

Three (3) native species of seagrass exist in the study area, these include:

- *Posidonia australis* (strapweed)
- *Zostera capricorni* (eelgrass)
- *Halophila ovalis* (paddleweed)

Zostera and *Halophila* are the dominant species within the study area. *Posidonia* beds were more significant at Quarantine and Store Beaches (The Ecology Lab 2003).

Since the release of the Ecology Lab's report the invasive and noxious marine seaweed *Caulerpa taxifolia* has been identified by community members and NSW Fisheries in Little Manly Cove in addition to other areas of North Harbour. The exact distribution of this species is presently unknown and difficult to determine.

A number of maps and studies are available regarding the distribution of native seagrass in Little Manly and Spring Coves. However the use of the studies are limited due to each study utilising different aims and methods making comparisons difficult (The Ecology Lab 2003). Each of the studies is discussed in The Ecology Lab's report (2003).

The most recent map available showing the distribution of seagrass in Little Manly and Spring Coves, including known locations of *Caulerpa taxifolia*, is shown in **Appendix 6**. This mapping exercise was commissioned by the NSW Department of Transport and undertaken by NSW Fisheries in 2002 with funding assistance from the National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances. *Caulerpa taxifolia* distributions were added as an amendment to the map in 2003.

The Ecology Lab (2003) concluded that there appears that there has been limited change in the distribution of seagrass in the study area between 1998 and 2002 however no conclusions could be drawn regarding the condition of seagrass (ie: seagrass depth, percentage cover, density, shoot length and epiphyte cover) due to differences in sampling methods used by each study.

Impacts on seagrass in the study area

The Ecology Lab's review and analysis identified the following likely impacts on seagrass specifically within the Little Manly study area:

- Boating activities:

Little Manly and Spring Coves are popular boating areas, with anywhere between 30 and 60 boats moored or anchored in the area on a summer weekend day. Boating activities are known to cause damage to seagrass through propeller scarring, swing moorings (with chains dragging across the sea floor) and boat anchoring.

There are approximately 30 boat swing moorings in Little Manly Cove while moorings are prohibited from the Aquatic Reserve (which includes Spring Cove). Waterways have advised that there are limits on the number of moorings per bay in Sydney Harbour and the current policy of Waterways is a ban on the issuing of any new moorings.

Evidence of scarring of seagrass beds within the study area, indicates that boating activity such as anchoring, swing moorings and propeller damage impacts on seagrass in Little Manly and Spring Coves (The Ecology Lab 2003).

A number of restrictions on boating activities presently apply in the study area, which are designed to assist in the protection of seagrass and little penguins and to aid in providing a safe environment for user groups. These restrictions are outlined in Section 5.7. Non-compliance with the regulations was identified as an issue for seagrass management in the Ecology Lab's report and has been addressed in this Plan's management recommendations.

The Ecology Lab found from their review of each of the studies that recreational boating and anchoring would be the most significant source of damage to seagrass beds in the study area. However, further studies would be required to assess the intensity of boating and the level of disturbance to seagrass in the study area as a result.

Since The Ecology Lab's study *Caulerpa taxifolia* has been found within the study area. This noxious weed species is easily spread by fragments becoming attached to boat motors, which then dislodge elsewhere, where they readily grow.

- Pollution:

The study area is subject to urban stormwater run-off and there is evidence of sewage overflows. However the Little Manly study area is in close proximity to the open ocean and is well flushed suggesting that pollution would be unlikely to significantly impact on seagrass in the area (The Ecology Lab 2003). Further monitoring of stormwater and its impacts on seagrass would be required to determine the effect and significance of pollution on seagrass within the study area.

Boating pollution is another issue that has been identified as impacting on seagrass, particularly illegal litter and sewage disposal directly into the marine environment. This issue is dealt with further in section 5.7 and is addressed by the continuation of Council's Starboard Right and Green program.

Little is presently known about the effects of contaminants such as PCBs, metals and chlorine on seagrass (The Ecology Lab 2003). Contaminants from the former Gas Works site and other potential sources are discussed in sections 5.3 and 6.6 however their impact on the area's seagrass is unknown.

- Commercial Fishing:

The Ecology Lab's report determined that "the impact of commercial fishing on seagrass in the study area is unclear" and suggested that "studies assessing effects in the study area would need to be established to determine local impacts". However, given that commercial fishers have been operating in the area for numerous years it may be that the impact of commercial fishing on seagrass within the study area has already occurred and has therefore stabilised (The Ecology Lab, 2003).

Hauling over *Posidonia* seagrass in NSW has been banned under a fishing closure since September 2002. This will be under review by Fisheries after five years. According to Fisheries officers this closure is presently self-regulated, relying on the local knowledge of the fishers about the where *Posidonia* beds are located. It is important to note here that the NSW Fisheries (2002) seagrass distribution map (**Appendix 6**) identifies the presence of *Posidonia*, *Zostera* and *Halophila* in the area of Spring Cove, which are utilised by commercial fish hauling operations. This is an issue that should be addressed by NSW Fisheries through the development of the North Harbour Aquatic Reserve Management Plan.

Caulerpa taxifolia was found within the study area after the finalisation of The Ecology Lab's report and hence the spread of this species by commercial haul netting was not commented on. Despite this, there are effects of commercial haul netting in collecting fragments of the seaweed over which nets pass and further spreading the noxious species to other areas.

- Recreational Fishing:

Little is known about the impact of recreational fishing on seagrass in the study area. However given the area's protection as either an Intertidal Protected Area or Aquatic Reserve, recreational fishing is likely to have a minimal impact on seagrass beds. Some possible impacts exist, these may include:

- damage due to bait digging in seagrass beds;
- littering, in particular of plastic bags and bait bags, fishing lines and hooks; and
- anchoring and propeller damage from fisher's boats.

- Marine Weed Species:

Since the release of the Ecology Lab's report the invasive and noxious marine seaweed *Caulerpa taxifolia* has been identified in the study area. *Caulerpa* can grow from small fragments accidentally carried by boat owners and other water users (Fisheries 2001). *Caulerpa taxifolia* overruns and smothers existing native seagrass. It is a fast growing species usually found in warm tropical waters. Fisheries have undertaken initial salt treatment work to remove the invasive seaweed from North Harbour, however Fisheries have reported that isolated plants and small patches of *Caulerpa taxifolia* may still remain in the area.

In March 2004 NSW Fisheries adopted a *Caulerpa* Control Plan, which will be implemented in association with other relevant agencies, including Council. As part of this Plan NSW Fisheries

is undertaking further mapping of *Caulerpa* affected areas to determine the effectiveness of the salt treatment work.

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- Other impacts

Major impacts on the health and distribution of seagrass also include the loss of light, which inhibits the ability of seagrass to photosynthesis and siltation, which smothers seagrass and also reduces light availability.

Legislative framework for the management of seagrass

The NSW *Fisheries Management Act 1994* sets out the management requirements associated with seagrass beds and provides specific protection for seagrass. Other legislation has aided in the protection of seagrass such as the *Protection of the Environment Operations Act 1997*, which prohibits the pollution of any waters unless a Permit is held.

The Fish Habitat Protection Plan developed under the *Fisheries Management Act 1994* is specific to the protection of seagrass and as a result its primary objective is to “ensure there is no net loss of seagrass within the coastal and estuarine waters of NSW”. The Protection Plan identifies a number of broad strategies for achieving this objective and the activities to which the Plan applies.

Management options for seagrass

It is important to note here that the management of seagrass, as with all marine flora and fauna, is primarily the responsibility of NSW Fisheries. Council's control over the management of seagrass issues is therefore limited to management of the upper catchment terrestrial impacts such as stormwater pollution. Options that directly affect seagrass would therefore be implemented by NSW Fisheries or the NSW Waterways Authority.

Many of the factors impacting on seagrass operate throughout the whole of North Harbour. These management responses would therefore be more effective if they were implemented on a larger scale in North Harbour.

5.1.1.6 Sponge Fauna Gardens

A survey conducted by Tom and Garth Byron in 1997 identified Sponge fauna gardens and scattered sponges along the eastern side of Little Manly Point (Spring Cove) at depths of between about 7 and 8m.

Little is known about the impacts of human activities on sponges in the area.

5.1.1.7 Subtidal Sediment Beds

Studies have found that the area's subtidal sediments are characterised by sands and muds, with some traces of coal and shell sediments.

Herbert (1983) identified clean sand with <10% mud immediately off the shoreline of the study area and classified the sediment further offshore as muddy sand (10-50% mud). Refer to Herbert's sediment map in **Appendix 7**.

AWT (July 1998) assessed sediment types in Spring Cove and found that fine sand with silt is found in the middle section of the cove at depths below 7m. Medium sand forms a fringe along the eastern, northern and north western sections of the cove to a depth of 6-7m. Coal and shell sediments and medium grained sand are found along the man made wall along Little Manly Point. The coal and shell is to a depth of about 20cm underlain by the medium sand.

Further information regarding subtidal sediments is discussed in Section 5.3.

5.1.2 Aquatic Fauna

Few formal studies have been undertaken regarding the marine fauna of the Little Manly and Spring Cove study areas, representing a data gap that needs to be addressed for the future management of the area.

Fish Species

Fish species identified by Rooney (1997) and AWT (1997 & 98) as frequenting the Little Manly Study area include:

- moorish idols
- southern coral fish
- blackfish
- goatfish
- kale
- morwong
- leatherjackets
- luderick (*Girella tricuspidata*)
- sweep (*Scorpius aequipinnis*)
- maori wrasse (*Ophthalmolepis lineolatus*)
- senator wrasse (*Pictilabrus laticlavius*)
- common stingray (*Trygonoptera testacea*)
- pipefish; and
- yellowtail

The above list does not represent a complete list of aquatic fauna species found within the study area, and few studies have been undertaken to-date. NSW Fisheries have indicated that species within the study area would be similar to other outer harbour areas. Community reports have also identified trevally, flathead, sandy sprat, anchovies and hardyhead in the area.

The Underwater Research Group has also reported sighting red indian fish in the area. 2 green turtles have also been reported to the NPWS turtle watch as residing in the area, which is uncommon for this species.

Many more fish species frequent this habitat, which is indicative of a well-flushed cove subject to moderate to rough sea conditions. A number of the species residing in the area are identified by the interpretive shelter at Little Manly Point Park.

Intertidal Zone

The study conducted by AWT (October 1997) also surveyed species found within the intertidal zone around Little Manly Point. Twenty (20) marine intertidal species (including both flora and fauna species) were identified at intertidal locations in the Little Manly Point area.

Little Penguins

Critical habitat for the endangered population of little penguins is situated within the study area. Little penguins are known to forage in the study area's waters. Refer to section 6.1.3 for further detail.

5.1.3 Introduced Species

Marine species have been introduced to new locations through human activities such as hull fouling, dry ballast and aquaculture, and by natural processes such as drifting logs and seaweed (AMBS, 2001).

At the start of 2003 *Caulerpa taxifolia*, a noxious seaweed, was identified in Little Manly Cove in addition to other areas of North Harbour see Section 5.1.1.5.

NSW Fisheries has incorporated a photo of *Caulerpa taxifolia* on their web-site to assist with identification of the species.

The Sydney Ports Authority, with the support of The Department of Transport NSW and the Australian Navy commissioned Australian Museum Business Services (AMBS) to undertake baseline studies with the aim of documenting the occurrence of marine pest species in the port of Sydney Harbour. The study was undertaken in 2001. None of the survey sites were located within North Harbour.

The AMBS report recommended that the Sydney Ports Authority undertake ongoing monitoring for introduced species every three (3) to five (5) years. The report also suggested that additional areas outside the immediate port area should be included in the sampling program (AMBS 2001). Due to the regional importance of North Harbour's marine ecosystems, which has been acknowledged through the area's designation as an aquatic reserve, this Plan recommends that Council liaise with the Sydney Ports Authority regarding the location of a sampling site located within the boundaries of the North Harbour Aquatic Reserve.

5.1.4 Threatened Species

Threatened Species Conservation Act and Fisheries Management Act

The *Threatened Species Conservation Act 1995* (TSC Act) protects all threatened plants and animals native to NSW, with the exception of fish and marine plants, which are covered by the *Fisheries Management Act 1994* and are the responsibility of NSW Fisheries.

Both Acts, require that Council must not undertake actions that are inconsistent with a recovery plan and must manage the threatened species, population or ecological community in accordance with the relevant recovery plan.

The TSC Act requires government planners to take account of threatened species before they make environmental plans and policies at a state-wide, regional and local level. Consideration is therefore required by this Plan.

The endangered or protected species/populations that have been identified in the area include:

- elegant wrasse;
- grey nurse shark;
- black cod;
- weedy seadragon; and
- eastern blue groper.

The population of little penguins in Manly is also listed as endangered. Critical habitat for this population has been determined and includes a large part of the study area (refer to **Appendix 9**). Refer to section 6.1.3 for further information regarding little penguin issues and management.

5.1.5 Conservation Management

North Harbour Aquatic Reserve

North (Sydney) Harbour Aquatic Reserve (NHAR) was declared by NSW Fisheries on 26 March, 1982. The Reserve boundaries are formed by a line between the headlands at North Head and Grotto Point and a line joining Little Manly Point and Forty Baskets Beach. This reserve, of approximately 250ha, extends from the sea bed at these outer boundaries up to mean high water mark between them. Part of the Aquatic Reserve falls within this Plan's study area.

At the time that this Plan was adopted, Fisheries had declared fourteen (14) Aquatic Reserves along the NSW coast, including North Harbour Aquatic Reserve.

North (Sydney) Harbour Aquatic Reserve Regulations

Permitted and prohibited activities within the Aquatic Reserve are as follows:

- line fish for fish that have fins only is permitted.
- licensed commercial fishers are also permitted to set lobster pots.
- beach hauling is permitted but is restricted to an area north of Cannae Point and east of a line from Cannae Point to Manly Point and is only permitted on weekdays.
- besides these activities, the collection or disturbance of marine life or habitat is prohibited, including collecting shellfish, pumping for worms, spearfishing and collecting dead or empty shells.

NSW Fisheries are presently developing the North (Sydney) Harbour Aquatic Reserve Management Plan. Manly Council put forward a submission to NSW Fisheries in accordance with a resolution from Council's Service Planning and Commissioning meeting of 14 May 2001 regarding the development of the North (Sydney) Harbour Aquatic Reserve Management Plan. The submission included a proposal to extend the existing boundaries of the Aquatic Reserve to include the whole of North Harbour north of a line drawn between Quarantine Head and Grotto Point, and amendments to the management arrangements for the NHAR.

In Council's submission to NSW Fisheries the following amendments to the existing management arrangements were proposed:

- stringent conservation management to include rock platforms presently not included around North Harbour;
- increased protection of seagrass beds to minimise the effects of boat anchoring.
- cessation of all commercial fishing within the expanded North (Sydney) Harbour Aquatic Reserve; and
- increased enforcement of recreational fishing.

The proposed amendments to the management arrangements for the Aquatic Reserve were not recommended to replace the present conditions but to add to the existing conditions.

The proposed amendments are supported by actions in Manly's Sustainability Strategy.

Council's proposed amendments to the Management arrangements for the NHAR aim to achieve the following:

- improved conservation management;
- consistent management and enforcement across the whole of North Harbour;
- reduced confusion over aquatic reserve boundaries by clearly delineating the extent of the reserve;
- improved management of areas identified as critical habitat for the endangered population of little penguins; and
- increased protection for seagrass beds.

Intertidal Protected Area (IPA)

The whole of the foreshores of Sydney Harbour, including the Parramatta and Lane Cove rivers is an IPA and collecting intertidal animals is prohibited (excluding the foreshores of North

Harbour, from Manly Point around to the western end of Forty Baskets Beach). Therefore the Sydney Harbour Intertidal Protected Area (IPA) regulations apply to all of the study area's intertidal areas.

IPAs protect all invertebrates (some exceptions apply) from the mean high water mark to 10m seaward of mean low water mark. Fishing is permitted provided that bait is brought from outside the protected area.

5.2 Coastal/Estuarine Hydrodynamics

5.2.1 Current State:

Little is known about the specific hydrodynamics of the study area. However on a broad level it is evident that due to Little Manly and Spring Cove's proximity to the open ocean and open exposure, both Coves would be reasonably flushed.

Hydrodynamics of the area in terms of wave climates and water levels are discussed to some degree in the Little Manly Coastline Hazard Definition Study (Patterson Britton and Partners 2003).

5.2.2 Management Responses

Obtaining further information regarding the hydrodynamics of this area is presently a low priority for Council. Hydrodynamic data would really only be necessary where it forms baseline information for another study for example determining reasons behind contaminated sediment distribution and/or impacts of the Local Government Area's input to harbour pollution on marine ecosystems.

5.3 Sediment Processes

5.3.1 Sediment Budget

Although no detailed coastal/estuary processes study has been undertaken for the Little Manly and Spring Cove study area, some analysis of the present sediment budget was undertaken as part of the Little Manly Coastline Hazard Definition Study (Patterson Britton and Partners 2003). The Coastline Hazard Definition Study identified that the embayment is largely a closed sediment system based on the following factors:

- Little Manly Beach is deeply pocketed between Little Manly Point and Manly Point, hence it is unlikely that there is any significant littoral sand supply or loss;
- Little Manly Beach is truncated by a seawall along its full length and as there is no dune system there is consequently no significant loss or gain of sand across the back beach boundary.

(Patterson Britton and Partners, 2003)

Longer term sand movement at Little Manly Beach is characterised by beach erosion occurring through relatively rare events. The beach does not seem to recover from this sand loss, possibly due to the sheltered nature of the site limiting the remobilisation of sand in calmer swell, which does not rework the sand back on-shore, resulting in a general recession of the beach.

Refer to the Little Manly Coastline Hazard Definition Study report (Patterson Britton and Partners 2003) for further information.

Management recommendations for these issues are provided in the Section 5.10.

5.3.2 Sediment Types

Estuarine Sands

Little is known about the aquatic sediment types in the study area.

Roy (1983) mapped the distribution of estuarine deposits in Sydney Harbour. He identified Bay Sands in Little Manly Cove and Spring Cove and Tidal Delta Sands in the outer part of Spring Cove and on the harbour floor between Cannae Point and Old Mans Hat.

Bay Sands are thin deposits of medium grain marine sands containing Shelley material. Tidal Delta Sands are marine sands that have been transported into Sydney Harbour from the sea by wave action and tidal currents (Osborne 2004).

Herbert (1983) identified clean sand with <10% mud immediately off the shoreline of the study area and classified the sediment further offshore as muddy sand (10-50% mud). Refer to map in **Appendix 7**.

AWT (July 1998) assessed sediment types in Spring Cove and found fine sand with silt is found in the middle section of the bay at depths below 7m. Medium sand forms a fringe along the eastern, northern and north western sections of the bay to a depth of 6-7m. Coal and shell sediments and medium grained sand are found along the man made wall along Little Manly Point. The coal and shell is to a depth of about 20cm underlain by the medium sand.

Beach Sands

Beach sands primarily composed of relatively large quartz grains and containing various amounts of shell grit are located at Little Manly and Collins Beaches (Herbert and West, 1983).

5.3.3 Sediment Quality

Sediments are increasingly being used to monitor the aquatic environment as they integrate contaminants such as heavy and trace metals, organic and other contaminants over time. Sediments are able to provide information on contaminant source, accumulation and dispersion (Birch & Taylor 2000).

Sediment quality guidelines have been published as part of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000).

Trace Metals

Birch and Matthai (2000) note that the receiving waters of Sydney Harbour receive trace metals from natural estuarine discharge as well as from anthropogenic sources such as coastal and deepwater ocean sewage outfalls and off-shore dumping of dredged harbour sediments.

Birch and Matthai (2000) found that trace metal and TOC (Total Organic Carbon) concentrations decreased seawards, thereby indicating a significant contribution from land-based activities. They also stated that in Sydney's case higher concentrations of trace metals were unlikely to be due to natural enrichment processes.

Heavy Metals

Birch and Taylor (1999) claim that general drainage from the larger surrounding catchments (stormwater), leachate from reclaimed lands and atmospheric contributions (contributed by cars and industry emitting heavy metals into the atmosphere) are major sources of heavy metal contaminants in Sydney Harbour. Stormwater input from smaller catchments and sewage overflows in general within the harbour contribute significantly to nutrients and bacteria in the water, however Birch and Taylor (1999) found an absence of additional heavy metals adjacent to sewage overflow and stormwater facilities (in smaller catchments). As a result Birch and Taylor concluded that sewage overflows, and for smaller catchments stormwater, are not a significant factor in contributing to the presence of heavy metal contaminants.

They identified that the highest concentrations of heavy metals in sediments occur at the headwaters of embayments and tributaries in the estuary.

It should be noted here that Sinclair Knight and Merz (SKM) undertook an investigation into levels of some of the contaminants present at Little Manly Point as a result of the former gas works operations. SKM's wet weather testing results indicated that the metals at the background sample site in Little Manly Cove (between the end of the swimming enclosure and the boat ramp) were recorded at levels exceeding the marine water quality criteria (SKM, February 2003).

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs form from a variety of sources, mainly involving both natural and man-made combustion such as combustion of fossil fuels, coal gasification and liquification processes, waste incineration, production of coke and bushfires.

PAHs, because of their nature, may accumulate to high concentrations in sediments

The spatial distribution of PAHs resulting from tests undertaken in Sydney Harbour suggests that they predominantly derive from urban run-off (McCready et al, 2000), which is suggested by a general increase in PAH concentrations towards the bay ends, similar to heavy metal distributions found by Birch and Taylor (1999). McCready et al found that wind also played a significant factor in the distribution of PAHs, and as a result PAHs are often found in locations far removed from their likely sources.

In McCready's study 124 sample locations were used across Sydney Harbour including 6 in North Harbour (one of which was located within this Plan's study area at the tip of Little Manly Point, which is notably the site of the former gasworks). By comparing results of this study with PAH guidelines from the US indicated that most of the sites studied within Sydney Harbour have levels of PAHs are expected occasionally or frequently result in adverse biological effects (McCready et al, 2000). In the case of Little Manly adverse biological effects (especially in terms of impacting benthic biota) are unlikely to occur as a direct result of the sediment's PAH concentrations. McCready et al note that PAHs are not the only source of contamination and that combining the PAH data with results of all metallic and organic contamination concentrations would afford a more accurate representation of potential impact on benthic biota.

Acid Sulphate Soils

For information regarding acid sulphate soils refer to Section 6.2.

5.3.4 Sediment Movement & Transport

It appears that little study has been undertaken in regards to sediment movement and current strengths within Little Manly and Spring Coves. The Coastline Hazard Definition Study (PBP 2003) of the area addresses issues including beach erosion and shoreline recession. This study assesses photogrammetry from a number of different dates. The photogrammetry however is limited to data above the level of 0m AHD, which is approximately mean sea level. As a result the study does not address sand movement within the cove's total sediment system, which would require further study into wave and current patterns and sediment movement in that part of the system below the water.

Information regarding marine sediment type, quality and transport is presently a low priority for Council as independent information. Data would really only be necessary where it forms baseline information for another study for example determining impacts of the Local Government Area's input to harbour pollution on marine ecosystems, including the reasons behind contaminated sediment distribution, and the likes.

5.4 Recreational Facilities & User Groups

The most popular activities which occur within the study area include:

- picnicking;
- sunbathing;
- recreational fishing;
- commercial fishing;
- snorkeling and diving;
- swimming;
- boating & other recreational water craft;
- walking; and
- other passive uses.

As the area is presently used by a variety of groups, there are a number of conflicting activities that are carried out in the study area.

User group conflicts will generally be addressed by maintaining the existing division between active users (generally based on the western side of the Cove) and passive users (generally based on the eastern side of the Cove).

User group issues have been considered in the development of the Little Manly Reserve's Landscape Masterplan (refer to Section 6.4).

5.4.1 Boating

Refer to boating Section 5.7.

5.4.2 Swimming

Little Manly Beach swimming enclosure

A swimming enclosure is located on the eastern side of Little Manly Beach. The enclosure frame is made from wood with metal rods acting as the 'net'. The swimming enclosure is listed as an item of environmental heritage under Council's LEP 1988.

Community consultation has identified the expectation that the swimming enclosure be kept free of seaweed and other algae and sharp invertebrates such as barnacles and oysters for public safety and liability reasons.

It is important to note here that the marine life found on the swimming enclosure play an important role in cleaning and purifying the water, which is beneficial to both the aquatic ecosystems and the health of those using the swimming enclosure.

It is apparent that barnacles and other marine life inhabiting Little Manly pool's bars are holding some of the bars together. It is recommended that the bars be repaired with consideration given to the pool's heritage significance.

Seahorses have also been found at the ladder on the swimming enclosure and as a result any attempt to repair or clean the bars should involve a detailed underwater check prior to undertaking the work to ensure the seahorses are not harmed.

The pool has a 'no diving' sign, which is presently unclear and should be improved.

Private Foreshore pools

All privately owned ocean rock pools must be connected to the sewage system and as a result discharge from the cleaning of these pools is treated through the sewage system. As a result these pools should not directly impact on the marine environment.

'Jump Rock'

'Jump rock' is located at the eastern end of Stuart Street adjoining Spring Cove. Safety issues at 'jump rock' have been identified and a number of signs have been strategically placed in the area to warn users of the dangers of jumping into the water from 'jump rock'.

Collins and Store Beaches, which are managed by NSW NPWS (now DEC), are two (2) other popular locations for swimming. They offer shallow clean waters and a safe location for recreational activities such as snorkeling and wading.

5.4.3 SCUBA Diving & Snorkeling

Little Manly Cove is a popular destination for both recreational divers and commercially operated dive groups.

Council licenses commercial dive operators to conduct their commercial activities in the Local Government Area. Licences are renewed annually at the end of December. Council usually licenses usually between 5 and 6 commercial dive operators.

A number of general concerns have been expressed regarding diver use of the area. These have predominantly been related to pre- and post-dive land-based use of the reserve as opposed to any problems with the actual dive or impact on biodiversity and habitat. One concern relates to congregation of divers and their equipment in the boat launching area and on the beach.

5.4.4 Recreational & Commercial Fishing

Refer to Section 5.5.

5.5 Fisheries & Fishing

5.5.1 Recreational Fishing

There is presently no data that exists identifying the number of recreational fishers in the study area however Little Manly Point is known as an important recreational fishing ground. On any one night Little Manly Point is occupied by up to 30 recreational fishers, mainly based along the eastern side of the point. The rock platforms around Manly Point are also popular recreational fishing locations.

Impacts of Fishing

Little Manly Precinct representatives have raised the issue of recreational fishers impacting on intertidal marine life mainly through the collection of shellfish for bait and visitors to the area collecting shellfish for culinary purposes. Further education and patrol of these activities may be required to raise awareness of the impacts of these prohibited actions.

The gutting and scaling of fish within the Little Manly Boat ramp area and associated car park is presently prohibited, however the consultation identified the ongoing problem of Fishers leaving offal and fish remains in the area adjacent to the boat ramp. This is an ongoing problem regardless of the presence of bins in the area. A fish cleaning facility was considered in the development of the landscape masterplan adjacent to the boat ramp with the inclusion of bins and a code of conduct sign however this was strongly opposed by the local community.

Community consultation also identified the perceived reduction in fish stocks in the area as a result of not only recreational fishers taking undersized fish but also resulting from commercial netting. The general public opinion is that fish stocks are on the decline. However no official studies have been undertaken to identify the impact of fishers on the fish stocks of the area to support this. Whether estuarine fish stocks across NSW have declined in recent decades is ultimately unknown. The commonly held view amongst recreational fishers is that individual angler catches have decreased, but this may just reflect increasing human population levels and hence the numbers of fishers involved (Estuary General Fishery Management Strategy, NSW Fisheries 2002).

Recreational fishing regulations

NSW Fisheries specify legal bag and size limits for saltwater species under the *Fisheries Management Act 1994*. Fisheries have detailed these bag and size limits on a large sign adjacent to the Little Manly boat ramp. The sign indicates that penalties apply for offenders.

Spearfishing is prohibited within the study area, which is also designated as an Intertidal Protected Area prohibiting the collection of marine organisms within 10 metres of mean high water mark. Line fishing is permitted however certain restrictions apply to line fishing within the Aquatic Reserve areas (refer to Section 5.1.5).

Consultation during the development of the Plan highlighted the community's concern over the non-compliant use of the area by recreational fishers.

The community indicated that fishers and those illegally collecting invertebrates from the intertidal zone, access the Manly Point foreshore area via an informal access path at Manly Peace Park. The community have requested, through the consultation undertaken in the development of this Plan, that obvious but unobtrusive signage be erected at Manly Peace Park to inform those using the area of the area's fishing regulations.

Recreational Fishing Management

NSW Fisheries will be undertaking an impact assessment into recreational fishing and plan to develop a management strategy to address those impacts and to ensure that recreational fishing in NSW is more sustainable.

5.5.2 Commercial Fishing

Currently some commercial fishing is permitted under licence in the North Harbour area including haul netting (Spring Cove), lobster traps and general hauling.

NSW Fisheries and the community report that 2 or 3 commercial fishing operations utilise the study area. The hauling crews operate by anchoring and dragging a net through shallow waters and back onto the beach, trapping fish (The Ecology Lab 2003).

Species commonly fished for in Little Manly Cove are generally ocean or semi-ocean stock, which are traversing through the area (pers. Comm Ted Allen February 2002). The area has been fished using nets since 1900 (pers. Comm Ted Allen May 2001).

NSW Fisheries will be preparing environmental impact statements and management strategies for each of the major commercial fisheries in NSW. To date NSW Fisheries have prepared the General Estuary Fisheries Management Strategy and Environmental Impact Statement (2002). The strategy will help to ensure the general estuary fisheries of NSW, are managed in a sustainable way.

Community consultation undertaken by Manly Council in 2001 found that of the 220 submissions received, commercial fishing was important to 1.4% of those surveyed, with 98.6% submitting that commercial fishing was not important to them. The majority of responses received from a second round of community consultation undertaken by Council were opposed to commercial fishing being permitted within the study area. The following reasons were submitted by those opposed to commercial fishing in the Little Manly study area:

- depletion of fish stocks;
- depletion of food for little penguins; and
- damage caused to seabed flora such as seagrass.

Some members of the community dislike net fishing in estuaries and are quick to draw conclusions about the sustainability of such practices. Some commercial fishers on the other hand argue that the long history of relatively stable catches must mean that these fishing practices are sustainable but this may not necessarily be the case. Determining whether or not these practices are sustainable, is a major aim of the Environmental Impact Statement undertaken as part of the Fishery Management Strategy process (Estuary General Fishery Management Strategy, NSW Fisheries 2002).

It is important to note in this Plan, that management of fishery resources and the marine environment in North Harbour is essentially not a function of Council. This management responsibility and jurisdiction belongs to NSW Fisheries, however Council is able to lobby NSW Fisheries to put forward the changes that Council, and the local community, see as appropriate.

Council made a submission to NSW Fisheries regarding the development of a North (Sydney) Harbour Aquatic Reserve Management Plan, which was written in accordance with a Council resolution from the 14 May 2001 Service Planning and Commissioning Council meeting. Among other recommendations Council recommended to NSW Fisheries that the regulations be changed to prohibit commercial fishing within the reserve. Refer to Section 5.1.5 for more detail.

This position is also supported by the fact that *Posidonia* beds are located within the area used by the commercial hauling operation. Hauling over *Posidonia* beds anywhere in NSW has been banned under a fishing closure since 2002. Little penguin critical habitat has also been declared within Spring Cove adjacent to areas used by commercial fishers. The ability of commercial fishers to fish this area is inconsistent with the protection aims of the critical habitat.

Community feedback strongly indicates that the majority of the area's users are opposed to permitting commercial fishing in the area, an opinion reiterated by Council's resolution of 14 May 2001 as outlined above. At the same time this Plan acknowledges that it is important to ensure that management decisions resulting from this management plan do not unsustainably compromise the livelihoods of present commercial fishers. Management decisions should therefore consider not only conservation of the area's fish stocks, but also the present importance of the area to commercial fishers, within a regional perspective. These issues should be weighed, a balance achieved and a sustainable approach implemented by NSW Fisheries through the development of their Fisheries Management Strategies and the North (Sydney) Harbour Aquatic Reserve Management Plan.

The community has also expressed concern over the commercial use of two fishing (2) winches, which are left unaccompanied on the beach while the operator is in a boat offshore. The community's concerns are with regard to public safety as a result of the winches being left unmanned.

5.5.3 Fishing Closures, Exclusion Zones and Aquatic Reserve

A fishing licence is required by both recreational and commercial fishers, including spearfishers (some exemptions apply).

Fisheries specify legal bag and size limits for saltwater species under the *Fisheries Management Act 1994*. Fisheries have detailed these bag and size limits on a large sign adjacent to the Little Manly boat ramp. The sign indicates that penalties apply for offenders.

Aquatic Reserve Fishing and Collecting Regulations:

Within the North (Sydney) Harbour Aquatic Reserve line-fishing for fin-fish is permitted with one rod/headline per person, and no more than two hooks attached. The fish caught must be of legal species and size.

Spearfishing, fishtraps (including witches hats and hoop nets), and the collection of marine life including intertidal invertebrates and marine flora are strictly prohibited within the North (Sydney) Harbour Aquatic Reserve.

Commercial hauling of migratory species is permitted only in that part of the reserve north of Cannae Point and east of a line drawn from Cannae Point to Manly Point, but is prohibited on weekends and public holidays. This area includes Spring Cove.

Scientific collecting is permitted by those holding a permit issued by NSW Fisheries.

Prohibited and permitted fishing and collection activities are detailed in a NSW Fisheries sign adjacent to the Little Manly boat ramp.

Prohibited and Restricted Fishing and Collecting:

Part 2 (8-14) of the *Fisheries Management Act 1994* allows for the declaration of 'Fishing Closures'. These closures may be for a particular area, time or methods or combination of all three.

Prohibited or restricted fishing and collecting in Sydney Harbour includes the following:

- Octopus must not be taken from rock platforms in Sydney Harbour.
- The whole of the harbour foreshore (except the area between the western edge of Forty Baskets Beach and Manly Point in North Harbour) is an Intertidal Protected Area (IPA). This protects all intertidal invertebrates from collection or harvesting.
- General NSW saltwater restrictions on size and number of fish and invertebrates apply.
- Protected species may not be fished.
- Any crabs carrying ova (eggs) cannot be taken and must be released if caught.
- Ban on the collection of abalone.

A number of other fishing closures apply to the area under Section 8 of the *Fisheries Management Act 1994*. These can be viewed on the NSW Fisheries website.

A fishing closure banning the use of fish traps in certain areas within North Harbour presently exists. The regulation however excludes Little Manly Cove from the closure. Members of the community have indicated that fish traps should be banned from the area to assist in the protection of fish stocks for the endangered population of little penguins.

Since 16 September 2002, there has been a closure prohibiting hauling over *Posidonia australis* (seagrass) beds applying to all *Posidonia* beds in NSW, however this is presently self-regulated.

Critical Habitat

As a result of the declaration of Critical Habitat for the endangered population of little penguins at Manly, fishing is now prohibited in critical habitat areas A and B (refer to **Appendix 9**) between sunset and sunrise from 1 July to 28 February (during the penguin breeding season).

5.6 Maritime Operations

There are a number of safety and environmental issues associated with the maritime operations of Sydney Harbour that require management. These include ballast water and marine pest management, incident (including spills) management and water traffic safety. These are primarily the responsibility of the Sydney Ports Authority.

5.6.1 Incident Management

The Sydney Ports Corporation is responsible for investigating incidents involving trading ships on Sydney Harbour.

The Corporation is therefore responsible for addressing all 'on water' oil, chemical or other spill incidents within its jurisdiction. This includes not only emergency response and clean-up but also investigations into the causes of on-water spills.

Sydney Ports maintains a 24 hour response capability for any incident within its jurisdiction. The general community can contact Sydney Ports at any time to report an environmental incident, from harbour pollution to noise. The number is phone: 9296 4000.

A Coastal Resource Atlas for Oil Spills in Port Jackson was developed by the NSW Environment Protection Authority (EPA) and the Australian Maritime Safety Authority in 1994 at the request of the NSW State Committee of Advice to the National Plan to Combat Pollution of the Sea by Oil. The Atlas was developed as an advisory document and was designed to complement existing plans/manuals for dealing with oil spills in general.

The document details and maps environmentally sensitive areas of the Harbour and includes recommendations to minimise the impact of a spill. The coastal resources are divided into four categories of sensitivity including extreme, high, moderate and low. In the case of an oil spill, the first priority is to protect the extreme and high sensitivity areas. The whole of the Little Manly study area is identified as an area of 'extreme' sensitivity.

While Council is not responsible for, or capable of, responding to on-water incidents, it is important for Council rangers to be aware of who is responsible in the case that Council receives notification of an incident.

5.6.2 Ballast Water & Marine Pest Management

The Sydney Ports Corporation is not responsible for establishing or regulating processes for ballast water management. This responsibility lies with the Commonwealth Department of Agriculture, Fisheries and Forestry Australia (AFFA), through the Australian Quarantine and Inspection Service (AQIS), which is the lead agency in Australia for the management of ballast water of international vessels. Sydney Ports is however responsible for complying with the requirements and protocols established by international and national bodies such as AFFA.

There are mandatory ballast water management arrangements for international shipping.

The National Introduced Marine Pests Corporation Group (NIMPCG) is responsible for the development of a National System for the prevention and Management of Marine Pest Incursions.

All major Australian Ports have been required to undertake baseline surveys to establish whether or not marine pests are present. A survey commissioned by the Sydney Ports Corporation and Transport NSW was undertaken in 2001.

Since the discovery of *Caulerpa taxifolia* in areas of Sydney Harbour, it is important that the role of the maritime industry in the spread of this noxious species be closely monitored. Further information regarding the presence of *Caulerpa taxifolia* within the study area is provided in section 5.1.1.5.

5.6.3 Water Traffic Safety & Management

Sydney Ports Coordinates shipping movements within Sydney Harbour. The major navigation and shipping responsibilities of Sydney Ports are outlined in the functions of its Ports Safety Operating Licence issued by the NSW Government.

At the time that this Plan was adopted the Waterways Authority of NSW were preparing a Traffic Management Plan addressing a variety of issues related to boating traffic on Sydney Harbour. Council submitted comment on the discussion paper, which will be used by Waterways in the development of the Plan of Management.

5.7 Boating

Both Little Manly Cove and Spring Coves are popular boating destinations for recreational and commercial boats. Wind surfing, canoeing, kayaking, outrigger and surfboat activities are also popular activities in the area.

The use of personal water crafts (PWC's), including jet skis, in Sydney Harbour (including the study area) was prohibited in September 2001.

5.7.1 Waterways Zones

There is a four (4) knot speed limit for waters 100m off Store and Quarantine Beaches and continuing around Manly Point. This was arranged to assist with the protection of the endangered population of little penguins whose critical habitat has been declared in these areas. The zone has also addressed safety concerns of more passive user groups using foreshore areas of the study area.

The community has identified the continuing non-compliance with the 4 knot speed zones resulting in unreasonable noise, wash and unsafe conditions for other user groups.

5.7.2 Boat Ramp & Recreational Boating Facilities

The Little Manly Cove boat ramp is located at the western end of Little Manly Beach. The boat ramp was highlighted as a major issue for consideration through the community consultation undertaken in the development of this Plan. The ramp is considered important because it is one of only two public access points for watercraft in Sydney Harbour. It is therefore also the only public access point in North Harbour.

The present state of the boat ramp requires repair and improvement. The incline of the boat ramp at present is not consistent with Australian standards and it has no grooves in its surface, which reduces traction for launching and loading. The ramp has been identified as too short as it does not extend past mean spring low water mark, which has resulted in trailers often becoming bogged at low tide. The ramp has also suffered from significant cracking and erosion at its base, which is presently an urgent safety issue.

The Precinct has raised community concerns regarding any increase in the ramp's capacity and the resulting impacts on noise, traffic and parking. To increase the capacity of the boat ramp would bring additional traffic to the area representing a safety issue, which is also likely to raise tensions over parking issues.

The boat ramp and adjacent parking area is closed between 9:30pm and 5:30am. There is a boom gate separating the boat ramp and car park however this is rarely locked resulting in the use of the boat ramp after hours. At present the security company contracted by Council is responsible for locking the boom gate, while Council's cleansing team is responsible for unlocking the gate in the morning. However, the pad lock, which was left on-site while the gate was unlocked, was frequently filled with super glue, inhibiting the locking of the gate. Since this problem has arisen Council has arranged for the lock to be removed off-site while the boat ramp is open to inhibit this ongoing vandalism.

The issue of poor access to Little Manly Beach from the western side for both passive boat craft and pedestrians will be addressed through the development of the landscape masterplan.

Management Options

Council facilitated a Little Manly Boat Ramp task force workshop in May 2002 to discuss management options for the boat ramp. The workshop included representatives from a number of stakeholder groups and community representatives.

The group agreed on the following objectives for management of the boat ramp:

- to maintain the use and status of the boat ramp as a local ramp, as opposed to a regional boat ramp;
- to maintain capacity and constraints;
- take into account safety considerations and modernise the ramp from the roadside perspective and the waterside perspective;
- protect the area's amenity;
- recognise duality of use, including passive and active watercraft; and
- that Waterways be requested to identify Little Manly boat ramp as a local facility, to minimise the potential disappointment of users.

A number of management options for the boat ramp were considered and weighed by the task force. These options are detailed in the task force position paper (refer to **Appendix 8**). These included the reconstruction of most of the ramp with a new design and slightly longer length, the provision of access for more passive craft such as kayaks and canoes, and a pontoon system. These actions have been considered and as appropriate included in the CMP Action Plan.

Disabled Boating Access

Disabled access to boating activities is available at the Manly Yacht club located in East Esplanade, Manly Cove through the provision of a hard-stand between a pontoon and the Yacht and Skiff Club buildings.

Boat Ramp Cleaning/Maintenance

Cleaning of the Little Manly Cove boat ramp is on an average cycle of once a fortnight using a chlorine solution at the concentration of 20 parts water to 1 part chlorine (usually 500grams of chlorine for every 60Litres of water). The frequency of cleaning and chlorine concentration used is dependent upon tides, seasons and the condition of the ramp. In summer the boat ramp is cleaned more frequently because the higher temperatures increase algal growth. Chlorine dilution concentrations always remain within the Department of Environment and Conservation (formerly EPA) guidelines of 12:1.

Concerns have been expressed by swimmers, environmental groups and government organisations associated with the use of chemical algicide cleaners and their adverse impact on the surrounding environment.

It is common practice for Councils to use chemical cleaners for cleaning and maintaining estuarine tidal baths, ocean rock pools other marine structures such as boat ramps. The public has an expectation that the ramp be cleaned to a degree that removes most of the living matter, and this is a requirement of Council's Risk Management Policy. To not carry out cleaning of the Little Manly Cove boat ramp would create a safety issue and render the ramp unusable.

The SCCG released a discussion paper in June 1996 entitled: *'Finding Suitable Options for Cleaning Sydney's Estuarine Tidal Baths & Ocean Rock Pools'*. The key aims of the discussion paper were to canvas and promote debate on the issues and to assist in identifying better management practices for cleaning marine structures that will satisfactorily address safety and environmental protection issues. Unfortunately, a follow up paper has not yet been released and the use of chemicals to clean marine structures remains the most common and suitable method.

5.7.3 Public Wharf

A number of local residents and boat users have identified the lack of public wharf facilities in North Harbour.

Council however, is not supportive of the development of further wharf facilities in North Harbour, especially in the Spring Cove area, which has been suggested as a possible location. Council has sought the expansion of the North Harbour Aquatic Reserve, which Spring Cove is presently a part, to encompass the whole of North Harbour to allow for greater protection and conservation of the harbour's aquatic resources. The development of further facilities in the area would increase the pressures rather than the conservation of the area and contradicts Council's position that the Aquatic Reserve should be expanded.

Also of consideration is the declaration of little penguin critical habitat, which is centred in the Little Manly and Spring Cove areas. Developing public wharf facilities, which will increase boating activities in the area, conflicts with the desired outcomes of the critical habitat declaration by increasing boating usage of the area and therefore disturbance of the penguins and their habitat.

Traffic issues must also be considered in the development of such a facility. Traffic management, parking and access issues have already been identified as a problem in the area. The development of a public wharf facility would undoubtedly increase the area's traffic and is likely to intensify the existing problems.

Council presently provides and maintains a boat ramp facility in Little Manly Cove for the use and enjoyment of the public.

It is recommended that Council refuse any request to develop a public wharf facility in Little Manly and Spring Cove areas.

It is also recommended that Council investigate the provision of a public wharf facility in a more appropriate location elsewhere in Manly, such as in Manly Cove. This will reduce the number of commercial operators using the Little Manly boat ramp thereby decreasing the pressure on the

ramp and freeing it for use by recreational users, and will provide a better outcome in terms of protecting critical habitat areas.

5.7.4 Boat Storage

Boat storage facilities at Little Manly Cove consist of registered mooring sites and a dinghy storage area adjacent to Little Manly Cove boat ramp.

At the time that this Plan was adopted the Department of Infrastructure, Planning and Natural Resources (formerly PlanningNSW) and the NSW Waterways Authority were working towards the development of a boat storage strategy in collaboration with the boating industry. The strategy will aim to ensure that the needs of recreational and commercial boating are catered for whilst protecting the beauty and health of the Harbour (Sharing Sydney Harbour Regional Action Plan update 2003).

5.7.4.1 Dinghies

Historically dinghies have been stored along the western end of Little Manly Beach however the storage of dinghies on Little Manly Beach is now against Council regulations. Those found to be stored on the beach are impounded by Council rangers.

The existing storage area is accessed via Craig Avenue and is located at the rear of 34 Stuart Street. It consists of an impounded, uncovered block of land, with storage racks. About forty-six dinghies are presently registered with Council. The storage facility is secured by a locked gate to prevent theft and to control and coordinate use of the area.

Users of the dinghy storage area have identified issues concerning the improper and inconvenient storage of some dinghies, which are not kept on the designated racks and/or are never used. Their improper storage makes access for other storage space users inconvenient and a potential safety issue.

Currently, Council has a registered waiting list for dinghy owners wishing to utilise the storage area at Little Manly Cove. As spaces become available they are contacted. There are usually roughly 10-15 people on the waiting list. While additional storage spaces have been provided by Council, the community consultation process identified that the type of storage racks provided are impractical with many of the boats unable to fit into the racks, which then get left on the ground. These poor storage arrangements make it difficult for others to access their boats.

5.7.4.2 Mooring and anchoring

Mooring

There are 34 private moorings registered by Waterways Authority (January, 2003) in Little Manly Cove.

In 1992 an ICAC report set limits on the number of moorings permitted within each bay and cove in Sydney Harbour. The number of moorings along Manly's coastline is presently within the limits set by the report (The Ecology Lab 2003). Waterways has adopted a policy of not issuing any further moorings.

Mooring and anchoring within Little Manly and Spring Coves was identified by The Ecology Lab (2003) as having the most significant impact on seagrass beds within these areas refer to Section 5.1.1.5.

The Waterways Authority is currently trialing seagrass friendly moorings in an attempt to minimise the impact of boating on seagrass beds and the aquatic environment. NSW Fisheries is also undertaking an inventory of seagrass in NSW which, once completed, will be included in Waterways' boating maps to assist boats in the avoidance of areas where significant seagrass beds exist and to identify ideal areas for mooring.

Permanently moored recreational vessels in the area are likely to be a pollution source. To minimise the impact of hydrocarbon spills from these boats, owners should be encouraged to install bilge blankets in the vessel's motor compartment to absorb spilt oil (and other hydrocarbons). There are no legal requirements for boats to use bilge blankets. Council could

also liaise with Waterways to ensure that the use of bilge blankets is included as a condition in all recreational boat licences.

Anchoring

At all times anchoring is prohibited within 50metres of the mean high water mark off Store Beach and within 30metres of the MHW of Quarantine Beach. Anchoring is also prohibited in waters closer to Collins Beach, within the area of water northwards (towards Collins Beach) from an imaginary line of site between two signs, which are located on the foreshore on either side of the Cove (each sign is roughly 50m out from Collins Beach). These prohibited anchoring zones are extended (and other areas included) during the penguin breeding season (refer to regulations below).

The Threatened Species Regulations 2002 now set out anchoring regulations that apply within the study area due to the designation of critical habitat for the endangered little penguin population.

Under the regulations a person must not:

- a) anchor or moor a vessel in the little penguin critical habitat area A during the little penguin breeding season, or
- a) anchor or moor a vessel outside the little penguin critical habitat area A during the little penguin breeding season in such a way that the anchored or moored vessel enters the little penguin critical habitat area A , or
- b) cause a vessel (other than a non-motorised tender) to enter or remain in the little penguin critical habitat area A between sunset and sunrise during the little penguin breeding season.

Critical habitat areas are shown in **Appendix 9**.

The impact of anchoring has been identified as a potentially significant impact on seagrass within the study area refer to Section 5.1.1.5.

5.7.5 Marinas

In recognition of growing concern over the adverse impacts of marina development on the biophysical environment, the working draft REP 32 proposes a moratorium on the development of any new marinas in Sydney Harbour, except on four (4) designated sites identified as appropriate for marinas related to the working harbour's facilities. The moratorium allows for the completion of the Boat Storage Strategy presently being prepared by Waterways and the Department of Infrastructure Planning and Natural Resources (formerly PlanningNSW).

None of the four (4) marina sites identified are located along Manly's foreshores.

5.8 Water Quality

5.8.1 Stormwater

5.8.1.1 Catchment Description

The study area is located within the North Harbour catchment, which is approximately 5km² in area.

The Study area is also part of the Little Manly Cove sub-catchment (refer to sub-catchment map in **Appendix 10**). The Little Manly Cove sub-catchment is formed by a sandstone ridge along Addison Road to the west, a ridge to the north along Blue Fin Road and a ridge that runs south to North Head.

The Little Manly Cove catchment includes 4 major land uses:

- residential;

- open space;
- national park; and
- special uses (which includes Manly Hospital).

The open space component at Little Manly Point Park, formerly a gas works site, includes remediated contaminated land. Stormwater and catchment issues specifically associated with the contamination and remediation of the land are discussed further in section 6.6.

5.8.1.2 Stormwater Drainage of Little Manly Cove Catchment

There are four stormwater drainage lines that convey stormwater run-off from the surrounding streets and into Little Manly Cove. All four stormwater lines have their outlets on the western side of the cove. Stormwater lines and outlets are shown in **Appendix 11**.

The Little Manly Precinct has identified that the stormwater pipe at Little Manly Beach is broken and dangerous, requiring investigation and an appropriate management response. The community sees this present state of the drainage system as the source of significant quantities of effluent, foul odour and visible contamination at Little Manly Beach, as sewage overflows into the stormwater system thereby running off untreated into the cove.

Council will be undertaking a Local Government wide hydraulic assessment to determine the capacity of the present stormwater system and to identify the system's deficiencies eg: flooding and risk to property. The results of this assessment will be used to plan for future system upgrades.

The community has identified a number of problems with the stormwater drainage system, all of which should be investigated and addressed through the LGA wide hydraulic study. These include:

- the broken stormwater pipe at Little Manly Beach;
- the age of the drainage system in the whole of the Little Manly area; and
- the poor drainage system joints.

Stormwater Pollution Control Devices

There is a Gross Pollutant Trap (GPT) towards the end of the stormwater line in the Craig Avenue car park.

Both the lower and upper Bruce Ave stormwater lines have litter baskets installed.

The community consultation identified that the community perceive that the GPT is ineffective.

5.8.1.3 Water Quality

The existing water quality in Little Manly Cove is generally of a high standard, although during periods of heavy rainfall, stormwater significantly reduces water quality (EPA, 2000).

Aquatic pollution in Little Manly Cove is generally a result of heavy rain, which increases stormwater runoff into Sydney Harbour, and strong southerly winds, which carry pollution across the harbour to Little Manly Cove.

Stormwater is considered to have a significant impact on water quality in the Little Manly Cove study area (EPA 2000). High total suspended solids (TSS) in stormwater runoff from the neighbouring urban area reduces water quality and may cause damage to aquatic flora due to increased smothering. Increased nutrient loads in stormwater is also linked to reduced water quality and adverse impacts on aquatic flora and fauna (Connell Wagner 1999).

The main stormwater pollutants and their potential sources within the Little Manly Cove study area are likely to include:

- sediment from disturbed construction sites;
- organic matter from trees and lawn mowing;

- phosphorus and pathogens contained within faecal matter from domestic pets;
- oils, grease and surfactants from roadways and residential properties;
- fertilisers, pesticides and chemicals from building sites, gardens, parks and maintenance of natural bushland areas; and
- litter from stormwater, people leaving rubbish behind at beaches, parks, reserves, roads, and on the rocky foreshores and litter being washed in to the cove from across the harbour.

In a presentation to the Sydney Coastal Council's Group on 1 May 2003, Dr Gavin Birch identified that terrestrial stormwater contaminants such as heavy metals are mainly a problem for Sydney Harbour in low flow events as the rainwater and suspended contaminants generally remain in the harbour, whereas in high flow events the rainwater and suspended contaminants are exported out to the open ocean.

EPA HarbourWatch

Little Manly Cove is one of the sites for the EPA (now DEC) Harbourwatch program, which involves routine monitoring and reporting of bacterial levels five (5) times per month. The samples are taken immediately outside the swimming enclosure from a boat and as a result would be quite diluted samples.

Two types of indicator organisms, faecal coliforms and enterococci are used to measure recreational water quality as recommended by the National Health & Medical Research Council (NHMRC) and the Australian and New Zealand Environment and Conservation Council (ANZECC).

In most seasons, faecal coliform levels in Little Manly Cove have complied with the guidelines for 100% of the time. Levels of compliance for enterococci have been generally lower and more varied.

In the Little Manly Cove study area faecal coliform levels generally exceed the median guidelines after more than 20mm of rainfall in 24 hours. On several occasions, relatively high enterococci densities have been recorded after little or no rainfall (EPA, 2000).

5.8.1.4 Northern Beaches Stormwater Management Plan

A Stormwater Management Plan for the Northern Beaches was prepared in 1999 by Patterson Britton and Partners. The Plan has since been implemented.

A formal update and review of the Stormwater Management Plans was undertaken during late 2002 and early 2003 as required by the NSW EPA. The review and update focused specifically on the SMP management actions, many of which had been completed. Manly Council agreed that the main updated management actions detailed in the two relevant SMPs should involve an evaluation of measures undertaken to date. Once the evaluation is undertaken and the effectiveness of each action has been determined, Council will look at establishing further management responses to be included in the updated SMP.

While the management actions were to change in the above-mentioned update of the SMP, the goals and objectives of the plan will remain the same.

The primary goal of the Northern Beaches Stormwater Management Plan is to facilitate coordinated management of stormwater within catchments to maximise ecological sustainability and the social and economic benefits of sound stormwater management practices.

A large proportion of the community responses received through the consultation process identified that more litter traps and GPTs should be installed on stormwater lines within the study area. However councils and the state government are now realising the drawbacks of these hard engineering options including their high maintenance costs and their frequent contributions to stormwater pollution. The community has also identified that stormwater pollution is still entering the cove from the stormwater outlet at Little Manly Beach, which has been fitted with a GPT. It is therefore essential to ensure that the stormwater improvement works that have been implemented within the Little Manly study area to-date be evaluated in

terms of their effectiveness before further management options, especially hard engineering works, are pursued.

Stormwater education is essential to ensure that the community and visitors are aware of particular stormwater issues relevant to this area. Residents have reported a decrease in cars being washed in the street as a result of increased awareness. In particular the following issues should be addressed:

- car washing in the street;
- impact of pet droppings on water quality;
- impact of plastic bags on the marine environment;
- impact of cigarette butts as litter;
- fertilisers, garden clippings and leaf litter entering stormwater; and
- Council's adopted stormwater provisions on private property within little penguin critical habitat areas.

5.8.1.5 Waterways Management

The Waterways Authority of NSW conducts a continuous program of beach cleaning in Sydney Harbour, targeting rubbish hot spots depending on wind and tide conditions.

5.8.2 Sewage

5.8.2.1 Little Manly Sewage System

Residents have reported that sewage overflows into the stormwater system and subsequently run off into North Harbour have occurred.

Sydney Water reports that all sewage overflows in the Little Manly, Spring Cove and Collins Beach areas have been closed.

It is important to effectively manage the quality of water along Manly's foreshores not only to improve the health of the area's fragile marine ecology, but also to ensure that these popular attractions are appropriately managed to maintain the tourist interest in and local culture of the area.

5.8.2.2 Impacts of overflows on Marine Life

Impacts of sewer overflows on biota in the Little Manly Cove study area have not yet been assessed to date. Impacts would be difficult to detect due to the distance of the Little Manly Cove study area from any large, local sewer overflow (AWT Ensign 1997a).

5.8.2.3 Northside Storage Tunnel

Prior to Sydney Water's transport management option sludge was either directed into the ocean or burnt through incinerators at North Head. Later Sydney Water introduced a sludge trucking trial as a short-term option, which resulted in sludge trucks transporting sewage through the streets.

Work on the Northside Storage Tunnel commenced during 1999 however the project did not include the power supply line and sludge return pipe, which would transport sludge to Camellia for transport via rail to eventual purchasers/users throughout the State (as fertiliser).

The sludge piping option was preferred by most Manly residents however this option was not implemented and as a result sludge trucking continues through Manly's streets. The community has reported that there are currently approximately 60 truck movements per week that already congest streets from Eastern Hill, which by their size, noise and inherent odour present an unreasonable impact on Manly residents and the amenity of Eastern Hill.

The community has requested that sewage overflows, which are still occurring should be addressed and redirected into the Northside Storage Tunnel.

5.8.2.4 Sydney Water Modeling

Sydney Water are undertaking modeling across the Sydney region, using the SCAMP modeling process. This process will determine the rates of overflows to prioritise their response to addressing overflows. Where the result of an area is higher than the acceptable number of overflows in a given time period, Sydney Water has agreed to fix the area's sewage system to prevent further overflows.

5.8.3 Boating Water Pollution

The community has raised its concerns over the continued dumping of sewage and other wastes directly into Little Manly Cove and Spring Cove Waters by some boat users.

Under the *Protection of the Environment Operations Act 1997* it is illegal to discharge raw sewage into the waters of NSW. It is also an offence to dump other waste such as rubbish into NSW Waters.

Passenger carrying commercial vessels and houseboats are now required to install holding tanks to prevent the discharge of raw sewage and certain areas are to be declared 'no-discharge' zones for treated sewage. According to the Waterways Safe Boating Handbook 02/03) Pump-out facilities are to be used for all non-treated sewage.

The Waterways Authority recently implemented a state-wide strategy to manage sewage pollution from vessels in all NSW waters.

The community has identified that the requirement for boats to have sewage holding tanks with pump-out facilities needs to be pursued with Waterways.

Also of concern is the use of Council's tap, located near the boat ramp, for washing down boats and their motors. This not only uses considerable quantities of Council water, which represents Council water conservation issues, but also presents a pollution concern as pollutants (including grease and oils) are washed into the water.

Many fishers also clean their fish at the base of the boat ramp, leaving offal behind.

5.9 Air Quality & Noise

5.9.1 Boating Noise

Aquatic based noise is an issue not only for waterfront residents and other user groups within the area, but noise can also significantly impact on wildlife.

Noise emissions from all vessels within NSW are regulated under the *Protection of the Environment Operations Act 1997*. This legislation identifies 'offensive noise' rather than specifying specific noise levels. However the Waterways Authority also offers general guidelines for different boating vessels.

Charter vessels operating with an amplified music system are required to comply with a Code of Conduct which states that offensive noise will not be emitted from any charter vessel at any time and specifies operating guidelines for different time periods of the day (pers. Comm. Ryle Waterways 2003).

The community consultation has identified that noise disturbances coming from water-based activities have been reduced significantly since the exclusion of jet-skis from Sydney Harbour.

5.9.2 Air Quality

Sewage Odours

Air quality is primarily a regional issue outside the scope of this Plan. However the main source of local air pollution and odour is directly related to sewage and stormwater overflows in the Little Manly area, which has been identified as an issue of concern to residents. The North Head

Sewage Treatment Facility has also been identified by residents as a source of odours affecting residents on Eastern Hill depending on wind direction. These issues have been addressed in Section 5.8.2.

Boat fumes

No issues have been identified relating to boating fumes.

5.10 Coastline Hazards & Seawall Stability

Patterson Britton and Partners (PBP) were commissioned by Council to undertake a coastline hazard definition study for those areas of the Little Manly study area subject to coastal processes. The study was undertaken in accordance with the NSW State Government's Coastline Management Manual 1990 and the 1988 Coastal Hazards Policy.

This section of the Coastline Management Plan is a summary of the technical details of the Little Manly Coastline Hazard Definition Study. However, this section should not be used in isolation, and should be implemented with close reference to the Coastline Hazard Definition Study report by PBP, 2003.

The study involved the assessment of the coastline hazards potentially affecting the study area, including:

- beach erosion;
- shoreline recession;
- sand drift;
- coastal inundation;
- stormwater erosion;
- slope and cliff instability; and
- climate change.

To gain an understanding of these hazards the study also assessed the coastal processes that the area is subject to.

The study also included a stability assessment of the Little Manly Beach seawall.

5.10.1 Coastal Processes

The Coastline Hazard Definition Study identifies and defines the following coastal processes for the Little Manly and Spring Cove areas:

- storms;
- elevated water levels;
- wave climate;
- sediment budget;
- storm demand;
- longer term sand movement; and
- aeolian sand movement.

Refer to the Little Manly Coastline Hazard Definition Study for further detail on each of these processes.

5.10.2 Coastline Hazards

The study identified that the most significant hazards in the study area are beach erosion and shoreline recession, slope and cliff instability and climate change. Hazards that were assessed

and identified as relatively insignificant hazards for the Little Manly area include sand drift, coastal inundation and stormwater erosion (PBP 2003).

Each of the coastline hazards assessed are briefly described below, refer to the 'Little Manly Coastline Hazard Definition Study (2003)' for further detail.

Beach Erosion and Recession

Beach erosion is the removal of sand from a beach, usually during a storm event. Shoreline recession is the 'progressive landward shift in the average long term position of the coastline (PBP 2003), it is a longer term process than beach erosion.

Little Manly Beach is subject to erosion during severe storm events. The Coastline Hazards study identified that Little Manly Beach is also experiencing some minor longer-term sand loss (recession). The recession is likely to be due to sand, which is eroded from the beach during severe storm events, not being reworked back onshore during calmer conditions. The sand is unlikely to be reworked due to the relatively sheltered aspect of the study area.

PBP (2003) conservatively predicts that longer-term sand loss will increase over time due to sea level rise caused by the Enhanced Greenhouse Effect. The predicted loss in beach width over the next 20 to 50 years is in the order of 3 to 8m (taking into consideration sediment loss in severe storms and sea level rise). The current width of the beach is approximately 25 to 30m.

Slope and Cliff Instability

'Slope and cliff instability hazards refer to the possible structural incompetence of these features and associated potential problems with the foundations of buildings, seawalls and other coastal works' (NSW Government Coastline Management Manual 1990).

The foreshore along the east and west of Little Manly Cove is characterised by sandstone cliff faces and seawalls. The western side of Little Manly Cove is predominantly privately owned (to mean low water mark).

The western foreshore of Spring Cove is predominantly a sandstone cliff face, with a seawall and timber bridge located at Little Manly Point.

A number of slope and cliff instability hazards were identified through the geotechnical analysis undertaken as part of the study area. The hazards have been caused mainly by the jointing of the rocks in addition to undercutting erosion from wave action. Slope and cliff instability was assessed based on 'risk to property' and 'risk to life'. The potential geotechnical hazards are summarised briefly below and detailed in the Jeffrey and Katauskas (J&K) assessment included as an appendix to the Little Manly Coastline Hazard Definition Study. Item locations are shown in figure number 1 of the J&K report.

A number of the report's recommendations have identified potential stabilisation works, which may involve erecting such structures as concrete or masonry piers. Prior to any such works being undertaken it is important to evaluate the impact of those structures on the area's heritage, amenity and physical environments. These impacts should be carefully weighed against the level of risk in order to determine whether the works and their impacts are justified before proceeding.

Table 1 : Summary of Potential Geotechnical Hazards and Associated Risks.

[Note: this table is only a summary, for further action consult the Little Manly Coastline Hazard Definition Study].

Item	Potential Geotechnical Hazard	Risk to Property	Risk to Life
Items 3 - 11	Slope and cliff instability hazards associated with some private properties along the eastern side of Manly Point.	Refer to Little Manly Coastline Hazard Definition Study	Refer to Little Manly Coastline Hazard Definition

			Study
Item 19	Earth slide of the steep clay fill slope supporting footpath above.	Low to Moderate to Moderate	N/A
Item 25	Collapse of the piers supporting the stairs and sandstone undercut, and collapse of undercut.	Very Low to Low to Low to Moderate.	N/A
Item 21	Collapse of the concrete underpins supporting sandstone overhangs and seawall above, and collapse of overhang.	Very Low to Low	N/A
Item 26	Earth slide of the steep fill slope adjacent to the path above.	Very Low to Low	N/A
Item 22	Collapse of the sandstone overhang supporting a concrete wall and ramp.	Very Low	N/A
Item 30	Undercut at the base of the cliff extending for about 50m length of cliff line face and extending back about 3m horizontally.	N/A	Acceptable / tolerable

Refer to the Little Manly Coastline Hazard Definition Study (PBP 2003) for further detail.

Unstable embankment on the western side of Little Manly Point (Item 19):

Council has received consent to undertake works to stabilise the unstable embankment on the western side of Little Manly Point. Development approval was given for the erection of a stepped sandstone block buttress retaining wall. This consent lapses on 31 May 2004. A number of conditions were attached to this work. In accordance with the Hazard Definition Study's recommendations stabilisation work should proceed when funding is secured. Design of the stabilisation works are required to consider that potential critical habitat has been identified along this embankment for the endangered population of little penguins. Works should consider Little Manly Point's contamination issues.

Climate Change

It is widely accepted in the scientific community that there are rising concentrations of greenhouse gases in the atmosphere causing the Enhanced Greenhouse Effect. Climate modeling also indicates that global warming as a result of the Enhanced Greenhouse Effect will result in rises in the sea level, as well as altering coastal processes.

The estimates of accelerated sea level rise are published by the Intergovernmental Panel on Climate Change (IPCC), these predictions are adopted by the State Government. The present figures predict a 0.19m rise over a 50year planning period, and 0.47m over a 100 year period (these predictions are relative to 2001 sea levels).

Other potential impacts of the Enhanced Greenhouse Effect include an increase in the frequency and intensity of storms.

Climate change has the potential to impact on and enhance other coastline hazards such as coastal inundation and slope and cliff instability. However it is difficult to predict the exact effects of climate change on other coastline hazards and as a result it is important to monitor shoreline behaviour, trends in climate change predictions and the coastline hazards identified.

Sand Drift

Sand drift is a result of aeolian (wind) movement of beach sediment, usually controlled through the presence of a vegetated sand dune (PBP 2003).

Sand drift was identified as a relatively insignificant hazard due to the presence of the seawall, which restricts the landward movement of the beach sand.

Coastal Inundation

'Coastal inundation is the flooding of coastal lands by ocean waters, which is generally caused by large waves and elevated water levels associated with severe storms' (PBP 2003). The Coastline Hazard Definition study identified coastal inundation as a relatively insignificant hazard due to its rare occurrence. It was considered undesirable to increase the seawall crest level for aesthetic and cost reasons considering the rarity of coastal inundation in the area (PBP 2003).

Stormwater Erosion

Major stormwater runoff events can cause significant erosion to beaches onto which stormwater outlets discharge. The stormwater erosion hazard was identified as relatively insignificant by the Coastline Hazard Definition study as the major stormwater outlets in the study area discharge onto rocky areas rather than the sandy beach (PBP 2003).

5.10.3 Seawall Stability

The seawall at Little Manly Beach is believed to have been constructed in the early 1900s. It is built of concrete and runs for approximately 120m standing up to 1.2m high. It is a gravity retaining wall, with an almost rectangular cross section (it has no toe or a heel). The seawall is founded in beach sand (PBP 2003).

Jeffery and Katauskas Pty Ltd (J&K) geotechnical and environmental engineering consultants were engaged by PBP to investigate the stability of the seawall as part of the hazard definition study. J&K undertook surface observations and the excavation of test pits. J&K reported that from the surface, the seawall appears to be in generally fair condition though some cracking and movement is evident. Transverse movements by up to 20mm at the joints in the wall indicate that some sections have rotated outwards about the base (PBP 2003).

J&K identified a number of potential failure modes for the seawall. These are identified in detail in the Coastal Hazard Definition Study.

There is some cause for concern regarding the stability of the Little Manly seawall for the following reasons:

- the high toe level of the wall;
- the absence of drainage provisions through the wall;
- ongoing loss of beach sand; and
- existing signs of distress such as cracking and transverse movement.

Further details are provided in the Little Manly Coastline Hazard Definition Study 2003.

It was recommended that while seawall stabilising or reconstruction works are not necessary in the immediate term, monitoring of the seawall's condition, in particular for further movement, should be undertaken, in particular after heavy rain and after storm events when sand levels may drop. This monitoring should assist in identifying the timing and nature of any future stabilising or reconstruction works.

6 TERRESTRIAL ISSUES

6.1 Terrestrial Ecology

Council commissioned GIS Environmental Consultants to undertake a Terrestrial Natural Environment Assessment of the study area and a Flora and Fauna study of all of Manly Council's Bushland Reserves. The findings of their assessments have been integrated into this section.

6.1.1 Terrestrial Habitats & Flora

The majority of the open space in the study area is landscaped, grassed, beach or rocky foreshore. There is some remnant bushland connecting Little Manly Reserve with Little Manly Point Park along the eastern foreshore and a small patch to the northern end of the unnamed reserve at the end of Stuart Street (commonly referred to as 'The Unnamed Reserve at Spring Cove').

Natural vegetation in the area is representative of the original vegetation, which is mapped by Benson and Howell (1994) as Sydney Sandstone Ridgetop Woodland vegetation. At a more detailed scale, this vegetation is classified as 10ag(a) Coastal Banksia (GIS Environmental Consultants 2003a).

The Coastal Banksia Woodland between Little Manly Reserve and Little Manly Point Park is mainly characterised by an open forest structure with canopy heights ranging from 5-10m and up to 45% cover. The shrub layer is very sparse, most likely due to lack of fire and the removal of weed species. The understorey is very dense, with almost 100% cover (GIS Environmental Consultants 2003b). The strip of vegetation near the foreshore is largely dominated by weeds. This area of bushland is in relatively poor condition due to disturbance, weed invasion and lack of fire (GIS Environmental Consultants 2003b). Council's Flora and Fauna study found that the resilience and habitat value of the area's natural vegetation varies greatly from high resilience and habitat value in the patch near the footpath in Little Manly Reserve to low resilience and habitat value in the bushland closest to the shoreline. Lawn areas generally have low habitat value, however grassed areas surrounded by thickets are well used by long-nosed bandicoots and therefore are a valuable resource.

The Coastal Banksia Eucalypt Estuarine Forest in 'the unnamed Reserve at Spring Cove' has changed from its original structure and floristics most likely due to the lack of fire. The vegetation is now resembling littoral rainforest although few rainforest species are present. The tree canopy is between 8-10m with roughly 50% coverage. The shrub layer stands between 2-4m with 50-70% cover and the understorey is roughly 70% cover. Eucalypt dieback is occurring in some parts and the shrub and understorey layers are dominated by weeds. The vegetation closer to the foreshore is in better condition. The vegetation has a medium level of resilience (GIS Environmental Consultants 2003a&b).

Terrestrial flora species in the study area were surveyed by GIS Environmental Consultants (2003a). A total of 86 species of flora were detected, of which 51 species were native or planted and 35 species were weeds. Full flora species lists are provided in Appendix A of the Little Manly Natural Environment Assessment Report (GIS Environmental Consultants 2003a).

Impacts on the study area's bushland habitats include:

- disturbance resulting from operations of the former gasworks and remediation works;
- inappropriate fire regime; and
- weed infestation.

Introduced Flora

Weeds affect native vegetation communities, reduce biodiversity and habitat value for fauna and reduce aesthetic values. Weeds may pose serious threats to the integrity of remnant native vegetation communities or native landscapes by competing with native plants for nutrients, light,

space and water. Some weeds can also directly affect humans by setting off allergies, asthma and hayfever.

Weed species determined to be particularly harmful to the environment are identified and managed according to the *NSW Noxious Weeds Act 1993*. Noxious weeds are required to be removed or controlled on private and public land. Council is required to enforce the Act.

Some weeds also provide habitat for native fauna. Inappropriate removal of weeds can dramatically reduce habitat for birds, mammals, insects and reptiles. Weed control is to be undertaken in such a manner as to prevent significant loss to habitat.

The Natural Environment Assessment found that weeds are prevalent along the retaining wall, adjacent to Craig Avenue (mostly *Coprosma*). Inside the locked boat yard there are several small trees, possibly noxious rhus trees. Outside the yard there is a large oleander which is poisonous and should be removed. In the upper grassed area along Stuart Street there are two *Acacia saligna* trees. This species is an invasive weed and should be removed. The area undergoing soil remediation at the end of Stuart Street has a high density of weeds, which will be addressed during the site's rehabilitation.

There is an extensive area of weeds around the south-eastern section of Manly Peace Park. These weeds include elephant grass, spider plant, *Coprosma*, *Rhaphiolepis*, asparagus fern, madeira vine and oleander (GIS 2003a).

The species *Cynodon dactylon* occurs in this study area. This reportedly native species is known to behave like a weed, although it is important for soil stabilisation in many natural environments.

6.1.2 Terrestrial Fauna

Terrestrial fauna in the study area were surveyed by GIS Environmental Consultants (2003a&b). A total of 22 bird species (2 introduced), 9 mammals (5 introduced) and 4 species of native reptiles were recorded. Full fauna species lists are provided in Appendix B of the Little Manly Natural Environment Assessment Report (GIS 2003a).

The bushland connecting Little Manly Point Park and Little Manly Reserve was found to provide nesting and foraging habitat for long-nosed bandicoots.

Introduced fauna

Feral or semi feral cats are present at Little Manly Cove and are predators of small native animals. Predation by feral cats is listed as a Key Threatening Process in the *Threatened Species Conservation Act 1995*. Feral cats may also carry and spread toxoplasmosis (a disease that affects humans and native wildlife).

Domestic dogs are known to chase and kill native animals, especially when unleashed. Their droppings, when left, also contribute to nutrient increases in the environment.

Rabbits occur at Little Manly Point and are likely to spread to adjacent areas. Rabbits compete with ground dwelling native animals for food and shelter, their burrows can cause major soil erosion and they graze on native seedlings. Competition and land degradation by feral rabbits has been listed as a Key Threatening Process under the TSC Act.

There is a wide variety of feral bird species that compete with native species and cause an imbalance of the local ecology (GIS 2003a).

Foxes have been sighted by the local community within the study area. Foxes are omnivores, eating insects, vertebrates and fruits. Ring-tailed possums, bandicoots, blue-tongued lizards, little terns and little penguins may form part of their diet along with berries of noxious weeds such as blackberry or bitou bush, thereby contributing to their spread. Predation by the introduced European red fox has been listed as a Key Threatening Process under the TSC Act, in particular predation by foxes is listed as a threatening process for bandicoots under the TSC Act.

The European introduced black rat (*Rattis rattis*) is known to inhabit the eastern side of Little Manly Point mainly due to food and fish scraps being left by fishers and picnickers. Native water rats are also known to inhabit the area however this species generally only comes out at dusk and generally eats large insects, while the European rats will eat anything. The main issue associated with the presence of *Rattis rattis* is that they carry and can spread diseases.

6.1.3 Threatened Species, Populations and Ecological Communities

Two endangered populations occur near or at Little Manly Cove. These are:

- the North Head long-nosed bandicoot (*Perameles nasuta*) population; and
- the little penguin population (*Eudyptula minor*).

Long-nosed Bandicoot

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).

This species nests and forages within the study area, where there is some suitable nesting (thickets of low dense vegetation) and foraging habitat (grassland, including lawns).

Threats to the population include:

- road mortalities;
- predation and introduction of disease by cats;
- habitat loss, modification, degradation and fragmentation;
- competition and habitat modification as a result of rabbits; and
- inbreeding and genetic drift due to the population's isolation.

The NSW NPWS (now DEC) has prepared the draft recovery plan for the long-nosed bandicoot, at the time that this document was written the plan was in draft form..

The unnamed reserve at Spring Cove is habitat of relatively high value and significance to the endangered long-nosed bandicoot population, this habitat value should be maintained.

Long-nosed bandicoots have been identified in Marshall Street and there is evidence that they also forage in Little Manly Reserve. As a result plantings in the area should be increased using species suitable for use by long-nosed bandicoots (eg: low lying thickets).

Little Penguin

The population of little penguins at Manly is listed as endangered in Part 2 of Schedule 1 of the New South Wales *Threatened Species Conservation Act 1995* (TSC Act). The Little Penguin Recovery Plan was approved in October 2000 and is presently being implemented by NSW NPWS (now DEC), Manly Council and other agencies.

Little penguins nest along the foreshore of Manly Point and at Collins Beach and potential habitat for this species occurs on the foreshore of Little Manly Cove Reserve and on the foreshore of the western end of Stuart Street. Penguins nest and moult on the foreshore of Manly Peace Park. The study area is in the centre of the breeding area for this population.

Threats to the population include:

- loss of suitable nesting, moulting and breeding habitat;
- predation by dogs, cats and foxes; and
- human disturbance (NPWS, 2000).
- Loss of local food sources for the penguins through human activities such as fishing and damage to seagrass beds.

Little penguins have been observed nesting under seaside homes, garages, under stairs, in woodpiles and beneath overhanging vegetation in the Little Manly Cove study area.

Critical habitat for the population was declared at the end of 2002. Critical habitat areas are identified in **Appendix 9**.

Council's Manly Environment Centre, in consultation with the NPWS (now DEC) has developed and continues to implement, with some assistance from the DEC Threatened Species Unit, the Penguin Aware education project. This project trains volunteers to educate the community about the little penguin population and the threats that they are exposed to. A number of resources were also developed such as information sheets and workshop materials.

Local Government Act 1993 – Community Land Plans of Management for areas containing “critical habitat”

Under section 36(A (2)) a plan of management adopted for community land (all or part of which is) declared as critical habitat is to have a separate Plan of Management prepared for it. As shown in **Appendix 9** parts of the study area contain areas of critical habitat declared for Manly's endangered population of little penguins. Separate Plans of Management have been specifically prepared for the areas of Manly Peace Park and the unnamed reserve at the end of Stuart Street ('Collins Reserve') to meet these legislative requirements. The Plans of Management are attached in **Appendix 3** and **Appendix 4**. While separate Plans exist, their performance targets, recommendations and all relevant issues have been included in this Coastline Management Plan to ensure a holistic management approach.

This Coastline Management Plan is compliant with *Local Government Act 1993* requirements for community land in respect of the little penguin critical habitat areas as it:

- states that the land is little penguin critical habitat;
- categorises those areas as 'natural areas'; and
- identifies objectives, performance targets and strategies that take account of the existence of critical habitat, are consistent with the *Threatened Species Conservation Act 1995* and incorporates the core objectives for community land categorised as a natural area.

6.1.4 Conservation Management

6.1.4.1 Conservation of Bushland Areas

Council is likely to undertake the preparation of a generic Plan of Management (PoM) for bushland areas within the LGA classified as community land. In the case that the generic bushland PoM is prepared and adopted, there may be some overlap in terms of management and direct relationships with this Coastline Management Plan. In the case that a generic bushland PoM is adopted, the generic bushland PoM will prevail in the event of an inconsistency (and only to the extent of the inconsistency) with this Coastline Management Plan as adopted by Council.

It is important to note that any regeneration works being undertaken in areas of threatened species, populations or ecological communities require a Licence from the DEC under the provisions of the *Threatened Species Conservation Act 1995*. This Licence application would need to be accompanied by an SIS if works were proposed in areas of critical habitat. Any bush regeneration work would need to be undertaken in a staged manner to ensure that an adequate cover of habitat was maintained for threatened species and populations, in addition to native fauna generally.

6.1.4.2 Companion Animals

The *Companion Animals Act 1998* includes provisions to reduce the impact of domestic animals on native flora and fauna and prevent degradation of the natural environment. Under the Act Council has adopted and is implementing a Local Companion Animal Management Plan.

Issues associated with companion animals that were identified in the community consultation process include their impact on endangered species, safety, pollution and amenity. The

consultation identified that one of the top priorities for management in the area is the protection of the area's endangered populations of little penguins and long-nosed bandicoots. In particular the community identified that companion animals should be effectively controlled so as to avoid threats to those endangered populations, many responses recommended either exclusion of companion animals from open space areas of Little Manly and Spring Cove, while many others suggested making all of these areas on-leash zones.

Council designates on and off-leash areas for companion animals to assist in the management of the above mentioned issues. Council, at the Service, Planning & Commissioning (SPC) committee meeting 28 February 1998, resolved that dogs are permitted to be exercised off leash on public reserves with several exceptions.

In the study area the following applies:

- No dogs allowed on beaches.
- No dogs allowed in swimming enclosures.
- No dogs allowed on Manly Peace Park Wildlife Protection Area.
- No dogs on Council's reserve, Spring Cove.
- Dogs are permitted on Little Manly Point Park between dawn and dusk if they are under control of a competent person by means of a leash, cord or chain.
- Dogs are permitted on Little Manly Reserve if they are under control of a competent person by means of a leash, cord or chain.

These conditions were further confirmed in a resolution of Council at the SPC meeting of 14 October 2002 (SPC 152).

Critical habitat regulations for the endangered population of little penguins prohibits companion animals (except for assistance animals) from critical habitat areas. Council has also declared all critical habitat areas as Wildlife Protection Areas, which also excludes companion animals. Refer to **Appendix 9** for relevant areas.

6.1.5 Bushfire Issues and Management

In the bushland connecting Little Manly Reserve to Little Manly Point Park there is no evidence of recent fire and it is not likely that the area has experienced fire within the last 20 years. Although fire is not considered a major issue for this area at present, a controlled burn within the next 5 years would be highly beneficial (GIS 2003b).

The bushland of the unnamed reserve at Spring Cove has not been burnt for over 30 years resulting in the changing structure of the bushland. Controlled or pile burns would also assist with the control of some weed species.

Council has developed an Interim Bushfire Hazard Map. Within the Little Manly study area, the bushfire hazard has been deemed as low, although the adjacent Sydney Harbour National Park is identified as a high bush fire hazard area.

6.2 Geodiversity

Geodiversity includes "geological, geomorphological, palaeontological, soil, hydrological and atmospheric features, systems and earth processes" (Cairnes, 1996, p 6).

6.2.1 Geology

Bedrock

The bedrock in the Little Manly Coastline area is the Triassic Hawkesbury Sandstone. Conaghan (1980) recognised the three rock types (lithofacies) in the Hawkesbury Sandstone, which includes sheet sandstone, massive sandstone and mudstone. Sheet and massive rock types are in the Little Manly

Coastline area. Sheet and massive units are exposed in the cliffs on the western side of Spring Cove where their variable susceptibility to erosion can be observed (Osborne 2004).

Sedimentary Structures

Crossbeds are a characteristic feature of the Hawkesbury sandstone. Good examples of crossbeds are exposed in the cuttings on the western side of the path to Collins Beach and in the rock platform on the eastern side of Little Manly Cove (Osborne 2004).

Geological Structures

The main structures developed in the Hawkesbury Sandstone in the Little Manly Coastline are joints. While jointing has not been examined in detail, there appear to be several types of joining present that have guided the development of landforms and weathering features. Ferruginous concretions have been deposited in joints in the rock platform on the eastern side of Little Manly Cove (Osborne 2004).

Other geological structures found in the area include bedding which dips gently to the south-west and small-scale sedimentary structures (Osborne 2004).

Rectilinear joints are clearly visible in the rock platforms. These joint sets strike generally north-south and east-west. Osborne & Osborne (1999) described close-spaced joints which may possibly be a sheer zone in the rock platform on the western side of Little Manly Point. These strike SSW and line up with the gap separating Flagstaff from the rest of Cannae Point (Osborne 2004).

6.2.2 Geomorphology

The Little Manly Coastline is part of North Head; a rocky tied island joined to the Hornsby Plateau by the sand spit at Manly Village. North Head became separated from the Hornsby Plateau as a result of erosion during periods of lower sea level (Osborne 2004).

Drowned (ria) Valleys

Little Manly Cove and Spring Cove are the drowned valleys (rias) which formed when the sea rose at the end of the Last Glacial about 6 000 to 6 500 years ago. The main ria of Port Jackson can be seen from the lookout to the west of Little Manly Beach (Osborne 2004).

Valleys

The main valleys north of Spring Cove and Little Manly Cove are the landward extensions of ancient valleys drowned by the sea and filled by sediment following the most recent rise in sea level. Mapping of palaeodrainage patterns in Sydney Harbour by Roy (1983) shows a southward-flowing valley system in the floor of North Harbour joined by tributaries from Manly Cove, Little Manly Cove and Spring Cove (Osborne 2004).

These valleys would have been well above sea level and contained active streams during the Last Glacial between 6 000 and 30 000 years ago when sea levels were up to 150 m below that today (Osborne 2004).

The valley north of Spring Cove is the largest developed at North Head. It extends from Manly Hospital to Collins Beach and is the landward extension of the palaeovalley in Spring Cove. The valley that extends from Addison Road to Little Manly Beach is the land ward extension of the palaeovalley in Little Manly Cove (Osborne 2004).

Harbour Cliffs

Due to the high strength of cross-bedded sheet sand units in the Hawkesbury Sandstone, cliffs are developed along much of the Little Manly Coastline (Osborne 2004).

"Cliffs, approximately 10m high, are developed along the western side of Spring Cove. As the rock platform is poorly developed in this area much of the cliff line drops directly into the harbour. The cliff faces are guided by north-south striking joints and intersected almost perpendicularly by east-west striking joints. A number of large sandstone blocks have fallen into the harbour on the western side of Spring Cove. These joint-bedding plane bounded blocks have toppled off the cliff" (Osborne, 2004).

Cliffs on the western side of Spring Cove and the eastern side of Little Manly Cove generally increase in height to the north. On the eastern side of Little Manly Cove cliffs reach a height of 6m at the lookout, where a sheer cliff-face has developed as a result of failure along a north-south striking joint (Osborne, 2004).

"Overhangs, formed by weathering and erosion of the weaker channel sand units, are well developed in cliffs on the western side of Spring Cove and on the eastern side of Little Manly Cove" (Osborne, 2004).

The cliffs on the eastern side of Little Manly Cove have been greatly modified, however, some of the cliff line towards the northern end is in good condition and important features including a cliff-foot cave with a spring. These are generally in good condition, with the exception of deposits of rubbish (Osborne, 2004).

Rock Platforms

"Wave-cut platforms are developed at the base of many of the cliffs along the Little Manly Coastline. They are poorly developed on the western side of Spring Cove and better developed on both sides of Little Manly Cove. The irregular rock platform on the western side of Spring Cove is widest at the base of the steps to the landing place" (Osborne, 2004).

The rock platform on the eastern side of Little Manly Cove is widest (approx. 10 m) at its southern end. At the northern end of this platform preferential erosion has resulted in northerly-dipping cross beds cropping out strongly in the rock platform (Osborne, 2004).

The rock platform and cliff on the western side of Little Manly Cove has been substantially modified due to the area's former use as a gasworks site. A small area in relatively undisturbed condition survives at the beach end, near the wooden stairs. This section of platform, up to 10 m wide retains a number of features including grikes and pans in good condition (Osborne, 2004).

Small-scale Sandstone Landforms and Weathering Features

"A range of small-scale sandstone landform features are developed in the Little Manly Coastline area. Small landforms, resembling karst surface solution features, are well developed in the rock platform at the base of the stairs on the western side of Spring Cove. Grikes are developed in joints in the platform as are deep runnels and pans. Large pans with runnels are very well developed in the small rock platform just north of the old collier berth. Runnels are also developed in the rock platform on the western side of Little Manly Cove" (Osborne, 2004).

A sandstone pavement, approximately 10m square occurs in the reserve north-east of Little Manly Beach and to the north-west of the lookout. This feature is in good condition and should be conserved (Osborne, 2004).

Little Manly Beach

The Little Manly Beach area has been substantially modified by human activity, particularly by the construction of the beach seawall and the piping and diversion of the creek that probably originally flowed across the western end of the beach (Osborne, 2004).

6.2.3 Landform History

"The history of the rocks in the Little Manly Coastline begins in the Middle Triassic, some 240 million years ago. Its history as a landform, however, has its origins in events 90 million years

ago during the Late Cretaceous with the rifting of the Tasman Sea and the uplift of the Hornsby Plateau.

After the opening of the Tasman Sea and the uplift of the Hornsby Plateau about 90 million years ago, stream erosion began to cut into the plateau surface. This excavated the valley system currently flooded by Sydney Harbour and left behind the ridges and plateau remnants which now form the high ground and headlands around the harbour.

The process of erosion was interrupted by numerous changes in sea level (at least eight in the last 700 000 years). The whole of North Head, including the Little Manly Coastline, has on various occasions during the Cainozoic formed a mesa, an island and a tied island as a result of these changes in sea level.

The Little Manly Coastline was largely flooded, during the highest sea levels, 25m above the present level, which occurred during the Early Miocene some 20 million years ago.

During the Penultimate Glaciation prior to 140 000 years ago, North Head was probably a high mesa, with the Little Manly Coastline forming its flanks. During the Last Interglacial, 120 000-140 000 years ago, the sea level rose to about 6 m above its current level again flooding much of the Little Manly Coastline

From 120 000 years ago the climate cooled and sea levels fell as the Last Glacial became established. At the height of the Last Glacial, 18 000 years ago, the sea level was approximately 150 m below its present level. At this time the Little Manly Coastline formed the upper slopes of the Manly Cove and Spring Cove palaeovalleys.

Between 6 000 and 6 500 years ago the sea level began to rise quite rapidly as temperatures rose at the end of the Ice Age and the sea rose to its present level along the Little Manly Coastline. Marine sand brought in through the Heads, accumulated to form beaches at Little Manly and Collins Flat" (Osborne, 2004).

6.2.4 Soils

Mapping by Chapman & Murphy (1989) recognised one soil landscape unit in the Little Manly Coastline, the Gynea (Erosional) unit.

The Gynea Soil Landscape develops where the Hawkesbury Sandstone outcrops in sloping landscapes. This soil landscape unit forms most of the western side of North Head including the hill slopes facing Spring Cove and Little Manly Cove and all of the urbanised land at Little Manly and Manly Point. Soils are shallow and of very low fertility and include yellow earths, siliceous sands and yellow podzolics. Bare rock outcrops are common and there is a high soil erosion hazard, partly due to the presence of unstable clays. This soil landscape does, however, support some prolific natural vegetation such as that behind Collins Beach (Osborne, 2004).

Soil Cores

The Natural Environment Assessment undertaken by GIS Environmental Consultants (2003a) included undertaking soil cores at Manly Peace Park and Little Manly Reserve in order to establish the soil properties of each location.

Two soil cores were drilled at Manly Peace Park reaching 0.05 m and 0.1 m before hitting bedrock. Locations of the drilling sites are shown on Map 1 of the Little Manly Natural Environment Assessment report. The topsoil at Manly Peace Park was high in organic matter with some blue metal inclusions. This indicates that fill was used to cover the bedrock, and then loam topsoil was added to establish the grass.

At Little Manly Cove, three soil cores were drilled (locations are shown on Map 1 of the report). The results indicate backfilling of the retaining seawall of varying depth from 0.1 - 0.6 meters with sandstone rubble fill over a base of marine sediments (beach sand) or shallow sandstone bench. The backfill material consisted of loamy sand with rock inclusions and is of uneven depth. There was very little imported material found in the soils adjacent to the play equipment.

No cores were taken in the vicinity of Little Manly Point due to its status as a remediated contaminated site with a capping layer roughly 1m below the present surface.

Acid Sulphate Soils

Coastal, marine and estuarine sediments have the potential to contain acid sulphate soils, which is the common name for soils that contain iron sulfides. When exposed to oxygen these soils oxidise forming sulfuric acid. Until these soils are exposed to oxygen however they are referred to as potential acid sulphate soils.

Planning for acid sulphate soils is addressed by Manly Council's LEP 1988. Map 5 of the LEP categorises Manly's soils from 1 to 5 (with class 5 soils having the least potential to be acid sulphate soils and the least impact if disturbed). Land within the Little Manly study area is identified as class 5 with regard to acid sulphate soils. However, as the area is not within 500metres of any class 1, 2, 3 or 4 land the class 5 restrictions do not apply.

The study area is therefore not affected by potential acid sulphate soils.

The working draft SEP 32 (clauses 19 and 43 and schedule 6) also contains planning provisions for works that are likely to disturb acid sulphate soils. The REP's provisions are based on the Acid Sulphate Soils Model ELP and the Acid Sulphate Soil Planning Maps prepared by DLWC.

No acid sulphate soils were detected in any of the soil cores. Soil results are presented in Appendix D of the Natural Environment Assessment: Little Manly.

6.2.5 Hydrogeology

There has been no formal or proper study undertaken to determine the hydrology and hydrogeology of the Little Manly Coastline area.

Osborne (2004) notes that the hydrogeology of the Hawkesbury Sandstone is quite complex. "Its primary intergranular porosity and permeability is quite variable and surface hardening tends to inhibit infiltration of water into the rock itself. Like karst rocks, it has a separate secondary permeability made up of water flowing in joints, along shale and other beds and through weathered massive channel sands. The secondary permeability is more significant than the primary in the Little Manly Coastline area" (Osborne, 2004).

Soils of the Gynea Soil Landscape are highly permeable and have little water holding capacity. As a consequence much of the rain falling in the Little Manly Coastline quickly reaches the impermeable bedrock from where it either runs quickly along the soil-rock interface into surface streams, drains through enlarged joints or in some cases runs directly off the cliff faces.

Streams

The major stream in the area is located in the National Park. It rises on North Head and flows into the harbour on the eastern side of Collins Beach. This is one of the few perennial freshwater streams in the Manly Area, and one of only two flowing directly into North Harbour.

The stream draining the valley north of Little Manly Beach is diverted through pipes entering the harbour through a pipe embedded into the rock platform on the western side of little Manly Cove, west of the boat launching ramp (Osborne, 2004). Refer to section 5.8 for further details on catchment characteristics.

Springs

A number of small springs and ephemeral streams flowing through enlarged joints enter the harbour along the Little Manly Coastline. A significant iron spring rises from the sandstone on the western side of Collins Beach and has formed a ferruginous spring deposit on the steps of the Little Manly to Collins Beach pathway" (Osborne, 2004).

Small springs rise from overhangs in the sandstone. Examples are found along the western side of Spring Cove (Osborne, 2004).

A small spring rising from an east-west joint in the small cliff on the eastern side of Little Manly Cove has deposited bright-coloured stains on the rock, presumably derived from leachate from the former gasworks (Osborne, 2004).

6.3 Recreational Facilities & User Groups

Walking Tracks

The Manly Scenic Walkway is a scenic harbour walking track between the Manly CBD area and the Spit Bridge. Part of the walk starts at the eastern end of Stuart Street, follows Stuart Street west to the Manly Yacht Club and proceeds to Manly Wharf via east esplanade.

The State Government's Integrated Land and Water Access Plan proposes the development of an additional walk between Spring Cove and Shelly Beach via St Patrick's Estate and the Sydney Harbour National Park. The walk would be accessed from Manly via Stuart Street to Little Manly Point. Walkers could also detour to Manly Peace Park along Addison Road.

The Sydney Harbour Federation Trust Plan for the former School of Artillery at North Head also proposes the creation of a network of paths to form circuits linking attractions such as the former School of Artillery and Quarantine Station etc. The network may include:

- a track between Shelly Beach and the former School of Artillery;
- a track linking cemeteries in the former School of Artillery and the Quarantine Station and a branch path to Old Man's Hat lookout; and
- subject to the impact on little penguin nesting areas, extending the foreshore link to Little Manly Point and Collins Beach. The NPWS (now DEC) has emphasised the need to restrict access to Collins Beach to minimise any additional direct and/or indirect impacts on the penguin colony.

Subject to requirements for the protection of seagrass beds and little penguin population, water access may be established at the former 1930s wharf below the Australian Institute of Police Management.

Some sections of the track between Stuart Street and Collins Beach, in particular the stairs leading to Collins Beach, which are within NSW NPWS (now DEC) land, have been identified as requiring maintenance.

Draft Manly Scenic Walkway Plan of Management

Council is currently in the process of drafting a Plan of Management (PoM) for the Manly Scenic Walkway. The Little Manly Point, Fairy Bower and Bluefish Point walks will also be included in the PoM. The PoM is likely to propose that the walks be linked with the rest of the walk following the designation of further tracks on North Head.

In the case that the Draft Manly Scenic Walkway Plan of Management (PoM) is adopted, the PoM will have a direct relationship with a number of the CMPs. Once adopted the Manly Scenic Walkway PoM will prevail in the case of any inconsistency with Manly's Coastline Management Plans (and only to the extent of the inconsistency).

Turf Management

Management issues associated with grassed areas within the study area include the presence of bindies and the excessive wearing of the grass especially around the kiosk area at Little Manly Reserve.

Council usually sprays to control the bindi problem.

6.4 Landscape Masterplan

The development of a Landscape Masterplan for Little Manly Reserve has been commissioned by Council and will be publicly exhibited separately to this CMP. The Landscape Masterplan is to be attached to this CMP as an appendix once it has been exhibited and adopted. The landscape masterplan aims to improve the aesthetics of the area, address a variety of conflicting issues and plan for the long-term use of the area.

Little Manly Point was extensively landscaped as part of the remediation of the gasworks contaminated lands and as a result has not been the focus of the landscape masterplan however some small issues have been included.

The following **major** issues were considered in the development of the masterplans:

Issue	Landscape Masterplan recommendation
Beach access.	Access to the beach on the western side (aside from the boat ramp) for pedestrians and passive boating craft users addressed through timber stairs/ramp provided from the Reserve to the beach. Proposed disabled access from the eastern side of the Reserve to the beach.
Maintenance of the existing user group separation with the active user groups using the western side and passive user groups using the eastern side of the beach and Cove.	Achieved through the provision and maintenance of relevant facilities in each area.
Concentrating diver groups' use of the area to reduce their impact on other user groups.	Achieved through installation of diver platform on the western side of the reserve, near the existing dinghy storage area.
Disabled access to Reserve (eastern side) while maintaining vehicular access to electricity sub-station.	Addressed by installing an access path further west to take advantage of the more suitable gradient. Retain existing access road.
Address aesthetic issues associated with the existing crib retaining wall at the rear of the amenities block.	Further investigations required into soil properties.
Dinghy storage area.	To be maintained in its existing location with a slightly increased capacity through the proposed removal of the storage shed/garage to increase storage area.
Disabled access to the toilet block.	Proposed addition of disabled toilet and access to existing amenities building.
Remove 'dead space' at the rear of the amenities/kiosk block to improve safety, amenity and usability.	Possibly through plantings and/or re-design of the crib-retaining wall.
Community request for further shade on and near the beach.	Addressed through additional planting in the Reserve (taking into consideration view maintenance issues).
Unused steep grassed space adjacent to steps leading up to Little Manly Point and associated cost of mowing.	Undertake low to medium native plantings.
Lack of connectivity between Little Manly Reserve and Little Manly Point (especially	Addressed by continuing the footpath along southern side of Stuart Street to bypass the

for prams).	stairs up to Little Manly Point Park.
Poor aesthetics of Little Manly Reserve.	Improve aesthetics through native plantings, improving access and connectivity throughout, more strategic pathways and improved facilities.
Fishers leaving offal and fish scraps around the Reserve.	Fish cleaning facilities were considered but disregarded after initial community consultation.
Improved picnic facilities on the eastern and western sides of Little Manly Point.	Rearrange seating, upgrade BBQ facilities and re-design shelters to provide more adequate shelter.
Protection of trees listed as heritage items in the Manly LEP 1988.	Included in the landscape plan for the future of the area. Noted on landscape masterplans.
*Identification of other significant trees.	To be noted on landscape masterplan.
Lighting at Little Manly Point	Refer to Section 6.13
**View maintenance	Achieved through use of appropriate plant species.

*Significant Trees

While the protection of heritage trees in the area is presently catered for by legislation, there may be a number of other significant trees within the study area. These have been identified to ensure their future management in terms of Energy Australia tree maintenance programs, view enhancement, fire management programs etc. which are potential threats to the survival of significant trees in the area.

**View Maintenance

View maintenance was identified as a significant issue for local residents. It is recommended that current views be reasonably upheld and considered in the selection of appropriate species for additional plantings.

Funding

Implementation of works identified in the landscape masterplan may be eligible for 50% subsidy funding under the Coastal Management Program and the Sharing Sydney Harbour Access Program.

6.5 Air Quality & Noise

6.5.1 Air Quality

Management of air quality issues is best dealt with at a regional level and is therefore outside the scope of this Plan. However a few local issues within the scope of this Plan were identified by the community, these included the use of woodfire heaters in winter, some illegal backyard burning activity and concern over the use of incinerators in unit blocks.

6.5.2 Noise

Noise from Quarantine Station and Little Manly Point Park from groups celebrating was identified through community consultation as the main sources of land-based noise. This may be exacerbated in the future by the formalisation of the Quarantine Station Lease, which is likely to result in increased pedestrian activity.

The firing of large fireworks has also been identified as an occasional problem.

6.6 Contaminated Land Management

6.6.1 Stuart Street Properties

Environmental Sciences Engineering (ESE) were contracted by Council to undertake an analysis of the soil and material on Council property at the end of Stuart Street after concerns were raised regarding the contamination of the area and the potential risk of harm to human health and/or the environment.

The results from ESE categorised the soil and other materials as 'furnace waste or natural soils', the furnace waste resulting from by-products of the gas-making processes undertaken during operation of the Little Manly Point gasworks. The categorisation of the waste is 'inert'.

Council informed the EPA of the potential 'significant risk of harm' in accordance with section 60 of the *Contaminated Land Management Act 1997*. However the EPA determined that the site does not pose a significant risk of harm to human health or the environment for the following reasons:

- there is no evidence of harm at the site;
- the site is fenced and a warning sign has been erected thus minimising the exposure paths to humans; and
- the contamination is generally of low mobility and leachability.

Council also put in place appropriate sediment control.

Due to the location of the materials in recreational land and adjacent to marine waters Council proceeded to undertake the consultants' recommended remedial option including the removal of the wastes to an off-site licensed landfill followed by appropriate on-site rehabilitation. This involved the construction of a sandstone gravity boulder retaining wall founded on bedrock and the capping/regrading of the embankment behind the wall. The stabilisation works were designed by Sinclair Knight and Merz (SKM).

6.6.2 Little Manly Point Park

The land that is now known as Little Manly Point Park, is the site of the former gas works, which operated between 1883 and 1964.

As a result of the gasworks' operations the site became polluted with chemical by-products, such as coal tars and cyanide compounds, generated by the gas making process. The NSW EPA has recently developed draft Guidelines for the assessment of Former Gasworks sites (NSW EPA).

The site is currently owned by the Department of Infrastructure Planning and Natural Resources (DIPNR, formerly PlanningNSW) however is leased to Council under a 99 year Lease. The present Lease will terminate on 6 September 2097. Further details regarding the Lease are provided later in this section.

The site was left dormant between 1964 and late 1989. In 1989 the Department of Planning (now DIPNR) commissioned consultant Dames and Moore to develop a remediation strategy for the site. The Little Manly Point Remediation Strategy was accepted by the State Pollution Control Commission in early 1990.

Remediation works of the gasworks site commenced in 1990 in accordance with the site's Remediation Strategy developed by Dames and Moore. Remediation works involved the following:

- removal of waste materials and tar from highly contaminated areas to an EPA licensed landfill;
- decontamination and preservation of the site's remaining industrial heritage;
- placement of a clay cap barrier (at least 1 m thick) across the whole site to provide a clean physical barrier between park users and any underlying low-level contamination. Plastic marker mesh was installed immediately above the clay layer to indicate where future

excavations may not pass beyond without approval from the NSW EPA. General fill and top soil layers were then used to cover the mesh;

- the installation of a series of groundwater collection drains around the perimeter of the site. These drain into two (2) collection tanks, which are located at the eastern and western ends of the site;
- the installation of a stormwater drainage system providing drainage for the car park; and
- a number of landscaping and maintenance works.

Remediation works were completed in March 1991, following which the site was landscaped as a public park opened in 1992.

In 1993 two (2) self priming pumps were installed in the eastern collection tank. The tanks were installed to pump liquid waste collected from the site into Sydney Water's sewage system. The DIPNR (formerly PlanningNSW) is licensed by Sydney Water to convey run-off collected from the site to the Sydney Water Sewage system for treatment and discharge at North Head Sewage Treatment Plant. The details of the Licence are outlined in Trade Waste Agreement No 12822.

Between 1991 and 1995 Dames and Moore undertook an After-Care Monitoring Program for the site on behalf of the Department of Urban Affairs and Planning (now DIPNR). This program was initiated to monitor and evaluate the site rehabilitation work. Results from the evaluation are detailed in the Dames and Moore Report "Results of After-Care Monitoring Program for the Period 1991-1995, Little Manly Point Park Manly".

Despite the site's remediation, it was anticipated that small amounts of contaminants would continue to be present at the site. Ongoing management of these contaminants would be required to ensure that the associated health and environmental risks continue to be minimised and managed to the standards adopted by the NSW EPA.

The main contaminants of concern, which have been identified in terms of potential impact on health and environmental risks, associated with the site's former land use may include:

- Polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene;
- Total Phenols;
- Cyanide (free, total and weak acid dissociable);
- Metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc);
- Sulfide and Sulphate;
- pH;
- Benzene; and
- Asbestos.

Iron, total sulphate and sulfide are also of concern with regards to aesthetics. The risk of harm to human health or the environment in small quantities is considered to be unlikely.

An Environmental Control (Management) Plan for the site was prepared by Dames and Moore in June 1997. The Plan outlines the remediation works that were undertaken up to 1997, provides technical details for each remedial action and sets out a control plan (ie: a set of further/ongoing management actions) for the future.

One of the control plan's management responses requires regular monitoring, at two monthly intervals, of the site's perimeter drainage system, which catches leachate run-off. Monitoring is presently undertaken by the consultant firm URS on behalf of Council.

Since the completion of the site's remediation in 1991 there have been a number of monitoring programs and tests undertaken including tests by community groups and routine monitoring commissioned by Council, many of which obtained differing results which lead to community concern. In response the relevant government organisations established an independent and transparent testing process with the aim of establishing the present conditions accurately and

through a process agreed to by the community (through the involvement of a community reference group).

Sinclair Knight and Merz (SKM) were therefore commissioned to undertake investigation, coordinate remediation and manage follow up work as necessary to ensure that Little Manly Point is fit for use as a public park and meets all appropriate standards. The main objective of the investigation was to obtain data to assess the health and environmental risks presented by ground contamination, which may be exposed or leaching into surrounding waters.

Tests were undertaken in accordance with standards endorsed by the NSW EPA.

Initial investigations undertaken by SKM indicated the following results for **dry weather** conditions:

- in dry weather the conditions along the foreshore of Little Manly Point Park are not a health hazard with respect to land or water based users. Furthermore water seepage under dry weather conditions is unlikely to pose a general hazard to the marine aquatic environment in the waterways surrounding the site.
- Areas identified with stained rocks, soils and ponded water tested well within the chemical levels recommended by the NSW EPA with metal, phenol and cyanide compound concentrations recording generally below the specified criteria. However, some water samples contained small amounts of toxic contaminants including free cyanide that were recorded above guidelines for protection of aquatic ecosystems. Therefore minor impacts in the marine ecology may be occurring in some of the rock crevices along the western rock platform.
- Tests also identified extreme acidity in soils along the Point's western foreshore causing concern for plant growth.
- Blue staining of rocks along the western foreshore is caused by high levels of iron dissolved by ground water and reacting with small amounts of soluble cyanides. These dissolved contaminants came from buried gasworks waste material.
- Elevated levels of sulphates are dissolved by ground water and deposited as yellow crystals in some rock crevices. These dissolved contaminants came from buried gasworks waste material.
- Brown films equated to deposited iron. These dissolved contaminants came from buried gasworks waste material.

(SKM media release 2 Jan 2003)

Sampling site selection was biased to include the most suspect areas along the foreshore boundaries of Little Manly Point. As a result the strategy outcomes should provide over-estimates of contamination levels that may be migrating from the site and are present in the surrounding foreshore areas (SKM August 2002).

The study's initial/preliminary recommendations included the following:

- that supplementary remedial works be undertaken to address the aesthetic issues of the stained rock faces and to provide a higher level of protection to the marine environment.
- The leachate collection system on the western side of the site was identified as not working effectively and it was recommended that it be redesigned and modified (the work may include the construction of a supplementary cut-off sub-soil drain and leachate disposal system near the base of the western slope).
- Other remedial measures include repairs to the southern seawall, the removal of stained and malodorous soil from rock ledges along the western foreshore, and the removal of small amounts of waste materials from some remote locations.

All the proposed works are to be designed so they do not impact the heritage or recreational values of the park. Investigations have been proposed for the design of these works and to assess the feasibility of additional remedial technologies.

(SKM media release 2 Jan 2003)

Data collected from the site over the past decade suggests that water seepage poses a higher risk to marine ecology during wet weather events. Wet weather testing was therefore critical to more accurately assess the ecological risks.

Wet weather sampling was undertaken by SKM on 12 December 2003, water samples were taken from five (5) locations considered most critical by the community reference group. As the most critical sites, the samples collected from Little Manly Point represent the most affected areas and provide worst case samples of water quality at the time of sampling. A sample was taken from Little Manly Beach to provide background water quality information.

In summary the results of the investigation found that after wet weather, most of the gasworks contaminant levels in the water seeps were at acceptable levels and did not pose a health hazard to land or water based user groups. Safe levels of free cyanide, PAHs, phenols, benzene and lead were recorded. The results also identified that some levels of cadmium and nickel were found to exceed Recreational Water Quality Criteria. The level of cadmium, nickel chromium, copper and zinc in most of the water seeps sampled were found to pose a potential risk to the marine ecology along with one of the location's free cyanide levels (SKM Media Release 12 February 2003).

The detailed results of the testing were as follows:

- The water seeping from the site recorded under the wet weather conditions was more acidic than recorded under the dry weather conditions.
- Metal concentrations were higher in the water seeps collected in the wet weather sampling than in the dry weather sampling.
- Cadmium was detected at three (3) of the wet weather sampling sites, one of which exceeded the Recreational Water Quality Criteria. Cadmium has not been recorded at the site at detectable levels before.
- Hexavalent chromium was not detected under wet weather conditions.
- PAHs and Sulphide were not detected during either the wet or dry weather monitoring.
- Free cyanide was detected at similar concentrations during both the wet and dry weather sampling. All samples with the exception of one (1) had non-detectable concentrations.
- Total cyanide was detected (above the detection limit) at more sites in the wet weather testing than the dry weather testing, however the maximum total cyanide concentration detected under the wet weather conditions was similar to that recorded under the dry weather conditions.
- Phenol levels were lower under the wet weather conditions than the dry weather conditions.
- Benzene was not detected at any locations in the wet weather sampling results.
- The highest concentration of contaminants (metals and free cyanide) under the wet weather conditions was measured at Location 8 (one of the locations on the western side of Little Manly Point between Little Manly Beach and the western groundwater collection tank). Location 8 also recorded the highest level of metals in the dry weather sampling.
- Practically all samples recorded contaminant concentrations less than the recreational water criteria, with the exception of one site (location 8) in the wet weather sampling. In the wet weather results, location 8 recorded cadmium and nickel concentrations above the recreational water criteria.
- The marine water quality criteria were also exceeded for metals (for all locations including the sample from Little Manly Cove) and for free cyanide (at location 8).

(SKM Wet Weather Report 6 February 2003)

Following the review of this report, the Community Reference Group at its 6 February 2003 meeting, unanimously agreed that sufficient investigations had been undertaken to confirm that supplementary remedial works should be undertaken to address the problems of water quality

along the western foreshore and to provide a higher level of protection to the sensitive marine environment. The Committee also agreed that the design of these works should be commenced without delay and that ongoing environmental monitoring would take place following completion of those works (SKM Media Release 12 February 2003).

EPA Licence requirements for Western Embankment:

The western embankment was not capped as part of the remediation works completed in 1991 as it was determined to be a 'low level of risk to health'. The area is however subject to a notice issued under the *Contaminated Land Management Act 1997* (section 28). The notice prohibits disturbance of the land below 0.5m unless written approval has been obtained from the NSW EPA and requires that work cease immediately and the EPA be notified if any gasworks waste material is intercepted at depths less than 0.5m (Hassell et al 2001).

Little Manly Point Park Lease arrangements:

The following paragraphs concerning the site's Lease have been included to highlight the major management arrangements and requirements pertaining to Council. This section should not be substituted in place of the Lease itself as it is not complete.

The lease requires that the land be used as a public park for passive recreational uses of a like or similar kind.

Council is required, as the lessee, to not only maintain the site but also to repair any defects in the land or any constructions on the land.

The DIPNR (formerly PlanningNSW), as lessor, is responsible for repairing any defects associated with the pre-existing contamination of the land where these were not caused by penetration of, or other disturbances to the capping. The Lease releases Council from liability with respect to defects associated with pre-contamination. The Lease outlines further details for cases where the defects have been caused by penetration of the cap.

Consent must be obtained from DIPNR (formerly PlanningNSW) before any works can be undertaken on the site. Approval must also be obtained from the EPA (Environment Authority) before penetration or disturbance of the capping knowingly takes place.

6.7 Heritage

6.7.1 Indigenous Heritage

History

The natural environment of the study area would have been well suited to occupation by Aboriginal people, who lived throughout the harbour area. The area is rich in resources and the variety of plant and animal species, both terrestrial and aquatic would have been highly utilised by Aboriginal people.

Shell middens, shelters, stone artefacts and both mammal and fish bones were found at one particular undisclosed site according to the Manly Municipal Heritage Study (Blackmore 1986). Aboriginal art has also been discovered in the Spring Cove area including engravings of kangaroos, shields, mundoes and hand stencils.

Dennis Foley, an Aboriginal descendant of the Gai-marigal Aboriginal people of northern Sydney recently documented his cultural history in the publication 'Repossession of our Spirit' (2001). The book explains the social traditions of the Gai-marigal clan, the 'traditional' owners of northern Sydney.

Legislation

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the protection of Aboriginal objects and places. The NPW Act requires that reasonable precautions are taken and due

diligence is exercised to determine whether an action would, or would be likely to, impact on an Aboriginal object or place.

Under section 91 of the EP&A Act an Aboriginal Heritage Impact Assessment is required if a development will or is likely to impact on an Aboriginal object or place. As Aboriginal objects and places are found within the study area, it is likely that a Heritage Impact Assessment will be required if the development or activity is likely to cause destruction, damage, defacement or desecration of the Aboriginal place and any known Aboriginal objects.

Council has sought access to the NPWS (now DEC) Aboriginal Heritage database, however this was not available to Council at the time that this Plan was written. This database will be helpful in planning works to avoid destruction of Aboriginal heritage.

6.7.2 Non-Indigenous Heritage

There is evidence to suggest that Spring Cove was the second place visited by the first fleet in the harbour, and that it may have been the place of the spearing of Governor Phillip, although some contest that this took place in Manly Cove.

From the 1820s North Head and its immediate surrounds was used as a quarantine for diseased ship passengers. The Cove was used as a landing place for infected ships and houses were built for 'the diseased' to reside in during the quarantine period (Foley 1995).

In the 1880's much of the land in the vicinity of Little Manly was sold for subdivision.

The use of Little Manly Point site as a gas works also has significant heritage values. Its former industrial use was celebrated and interpreted in the design of the park. The gas works at Little Manly Point, established in the late 19 century was also a major employer in the area during its operation. The gas works filtered impurities from coal gas to supply the village of Manly with gas and street lighting.

Men's Baths were opened in the early 1880's in Little Manly Cove, and despite early problems with poorly constructed pylons and complaints from bathers of the long walk taken to reach the baths, they remain intact today.

The area is rich in non-indigenous heritage, most of which has not been discussed in this Plan.

6.7.3 Natural Heritage

The natural heritage value of the study area, as part of the Sydney Harbour foreshore, has been recognised through its listing on Manly's LEP 1988 as an item of environmental heritage.

The natural environment values of the area have been discussed further in the terrestrial and aquatic ecology chapters of this document.

6.7.4 Sydney Regional Environmental Plan No 23 - Sydney and Middle Harbour Foreshores

Sydney Regional Environment Plan identifies development controls for Heritage Items listed in Schedules 5 of the SREP.

These development controls apply to the following Heritage Items identified in Schedule 5, which are located within the study area of this CMP:

- Little Manly Cove Pool, Stuart Street.
- Site and remains of harbourside pool and steps, Stuart Street (located on the eastern side of Little Manly Point).
- Remains of former Gasworks, Little Manly Point, Carey Street.

6.7.5 Draft Sydney Regional Environmental Plan 32 – Sydney Harbour Catchment

The draft SREP 32 essentially does not change the heritage items or provisions identified in SREP 23. These are described in Schedule 7 of the draft SREP. They remain the same as

those described above. When any planned developments or changes are likely to affect those heritage items listed above, SREP 32 should be consulted prior to works going ahead.

Commonwealth owned heritage sites, which were previously excluded from SREP 23 have been included in the draft SREP 32 (Sharing Sydney Harbour working draft January 2003).

6.7.6 Items of Environmental Heritage – Manly Council’s LEP 1988

Schedule 4 of Manly's LEP (1988), specifies Items of Environmental Heritage. The following items, which are located within the study area, are listed under the Architecture and Historical Archaeology section of Schedule 4, as Items of Environmental Heritage:

- “Site of Gasworks” at Little Manly Point (bounded by Carey and Stuart Streets).
- The old stone seawall at Little Manly Point.
- The old cottage adjacent to the Little Manly Cove boat ramp and boat shed at 34 Stuart St.

The following items located within the study area are listed as Items of Environmental Heritage under the Landscape Items section of Schedule 4 of Manly's LEP:

- The western kerb of Carey Street in Little Manly Point Reserve, being a stone kerb.
- All of Sydney Harbour foreshore.
- Two trees located in the western portion of Little Manly Reserve as heritage items.
- The Unnamed Reserve off Stuart Street (adjacent to Spring Cove).

A number of clauses within Manly's LEP (1988) control development of Items of Environmental Heritage and development in the vicinity of Items of Environmental Heritage. Any proposals for works in the vicinity of the items mentioned above must show consideration of these clauses in the development application to Council.

6.7.7 NSW Heritage Act 1977

The **NSW Heritage Act 1977** requires that all statutory agencies maintain a heritage and conservation register, known as a section 170 register, of identified heritage properties that they own or manage. Little Manly Point Park (the former gasworks site) is listed on the section 170 register.

6.7.8 The Australian Heritage Commission Act 1975 / Australian Heritage Council Bills (2002)

Under the Act the Australian Heritage Commission has responsibility to maintain a Register of the National Estate. The Register is an inventory of all those parts of Australia's natural, historic and Aboriginal and Torres Strait Islander heritage that have special value for present and future generations. It is compiled solely on the basis of National Estate significance.

In 2000, North Head as a single entity was placed on the interim list of the National Estate under the *Australian Heritage Commission Act 1975* (Commission of Inquiry Report – Quarantine Station).

At the time that this plan was adopted, three (3) Australian Heritage Council Bills (2002) were progressing through Parliament. Should those Bills be passed as legislation, the resulting Act will replace the *Australian Heritage Commission Act 1975*.

6.8 Access

6.8.1 Disabled & Aged Access

Council adopted a Development Control Plan (DCP) for Access in 1996, which incorporates the Manly Access Policy. The aim of the Policy is “to adopt and implement objectives and strategies

which will enabled Manly Council to provide an environment that is accessible to all people including those with disabilities". The relevant objectives of the Policy are to:

- *"Ensure access to all sites buildings and facilities.*
- *Ensure access to all buildings and facilities owned or leased by Council.*
- *Ensure access throughout the pedestrian network in the Council area including footpaths, through-site links, public arcades, overpasses and underpasses.*
- *provide convenient access to all public open space including parks, reserves, malls, plazas and squares."*

Having regard to Council's Policy and Australian Standards AS1428.2, Council seeks to improve the accessibility of public open space and facilities by addressing matters such as signage, ramps, parking and toilet facilities.

6.8.1.1 Present Situation

Discussions with Council's Access Officer and a review of existing facilities within the Little Manly Cove area highlighted the following list of issues of concern regarding access to or within Little Manly Point, Beach and Reserve.

Little Manly Point

- Adequate disabled parking is provided at Little Manly Point however this is limited by a 2 hour time limit. No other parking spaces in the car park have time limits.
- The access path around Little Manly Point provides adequate access to all areas except to the existing BBQ facilities. The BBQ facilities located on the western and eastern sides of Little Manly Point are accessed via a grade only acceptable for electric wheel chairs. The grading is too steep for self propelled wheel chairs and the aged (recommended grade required 1:14).
- Stairs found at Little Manly Point require colour contrast edging for people with sight impairments.
- Existing seating at the BBQ facilities is adequate, however the supporting shade structure prevents wheel chairs from direct access. Disabled persons have to be transferred onto the seating provided.
- Toilet, shower, kiosk, beach and pool facilities are only accessible by stairs from Little Manly Point and are considered inaccessible to people with a disability.

Little Manly Reserve

- There is inadequate disabled access from Stuart Street to the amenities block, shower facilities, the beach, the reserve and the telephone.
- The access ramp to the reserve from Stuart Street is of a grade steeper than that allowing disabled access.
- The path leading from Stuart Street to the beach is stepped, as a result those in wheel chairs have to use the grass and must be lifted to the sand.
- While the step into the toilet facilities has been removed, the access passage is too narrow to allow for wheel chair or stroller access.
- The only ramped access to Little Manly Beach is via the boat ramp located at the end of Craig Avenue, however this does not provide access to the swimming enclosure and the area may be considered unsafe due to high boating usage.
- There is no disabled parking located in the vicinity of Little Manly Beach or Reserve.
- Disabled and aged access from the designated Little Manly Point car park to Little Manly Beach and the available facilities is inadequate.

The community consultation process identified the desire for ramped access to the beach from Little Manly Reserve to enable the elderly and people with disabilities easier access to the swimming enclosure end of the beach. Consideration should be made to the impact that coastal hazards may have on a ramp and an appropriate design (eg: parallel to the existing seawall rather than perpendicular) should be investigated.

6.8.2 Traffic Access and Parking

Addressed in section 6.9.

6.8.3 Public Transport

Extensive public transport is available in Manly Cove, which is a relatively short distance from Little Manly. This includes ferry and bus services connecting Manly with the wider Sydney region.

Public transport to Little Manly Cove is limited to a Hail 'n' Ride 135 bus service. The closest stop is the intersection of Addison Road and Stuart Street.

6.8.4 Pedestrian

There is a dedicated pedestrian pathway running the length of Stuart Street on the northern side of the road. No designated crossing areas are in place creating a safety concern.

Pedestrian access around Little Manly Point, to and at Little Manly Beach and Reserve is adequate. Access pathways link up all facilities including the toilet and kiosk block, shower and telephone facilities.

Overhanging trees were identified as a particular pedestrian access issue in the community consultation. Overhanging branches force people, especially people with strollers, to walk on the road.

Similarly the absence of a footpath on the south side of Stuart Street from the access point behind the amenities building walking up the hill to Little Manly Point is of concern in wet weather in summer as boat trailers and cars line the road and people, especially those with strollers, are forced to walk up the road. Access for people with disabilities could also be improved through an extension of the footpath.

Pedestrian access from Stuart Street down to Collins Flat. The pathway to the end of Council owned property is hard surfaced and in reasonable condition. The remainder of the track to Collins Flat is located on National Parks land, it is in a natural state and therefore the pathway is non-structural.

6.9 Traffic Management

6.9.1 Parking

Little Manly Point car park has 38 off-street non-metered parking spaces including 2 disabled parking spaces. This parking area is rarely utilised to capacity.

Little Manly Beach & boat ramp car park consists of 7 extended angle parking bays designed to cater for cars with trailers, 10 standard size angled parking bays providing parking for standard vehicles, and a turning head at the southern end of Craig Avenue.

Parking along Stuart Street is limited. These parking spaces are also unrestricted allowing vehicles to occupy these limited spaces for any length of time. Stuart Street and Marshall Street provide the closest parking to Little Manly Beach and Reserve.

A number of traffic and parking related issues have been identified in Little Manly Beach car park:

- lack of parking facilities to cater for cars with trailers;

- trailers are left overnight or longer in the Craig Avenue extended parking bays;
- cars with trailers overflow into Stuart Street, occupying two standard car spaces, again reduce the availability of on-street parking to both visitors and residents;
- both residents and visitors to the area compete for the limited spaces available on-street;
- parking is unrestricted, allowing vehicles to occupy spaces for any length of time;
- traffic congestion on weekends; and
- absence of allocated disabled parking drop off/pick up point.

In September 2001, Council engaged Woolacotts Consulting Engineers to undertake a Resident Parking Scheme Investigation in the Manly Area. Woolcott's recommendation relevant to the Little Manly Cove area was that a 4 hour non-residential time limit apply, in order to provide greater turnover of vehicles in the high demand locations, while limiting the occasions where residents without permits or resident's visitors need to move their vehicles. However this recommendation has not been pursued to-date and further investigations into similar options will be undertaken into improving traffic and parking problems in the area in the future.

To address the issue of long-term parking of boat trailers in the Craig Avenue car park Council will be trialing a 24 hour time limit applying to all parking spaces within the Craig Avenue car park, refer to resolution from Council's Planning and Strategy Committee Meeting 14/4/03. The time limit will be facilitated by appropriate and clear signage. The trial will run for 6 months during which time it is recommended that residents and users provide written feedback to Council regarding the effectiveness of the 24hour limit.

Community consultation identified that vehicles were being parked on nature strips along Stuart Street. The parking of vehicles on nature strips outside residential properties is illegal. Rangers are able to regulate this issue when reported.

Community consultation also identified that boat trailers and their accompanying vehicles were being parked on the street for extended periods such as for the weekend. The parking of any vehicle or trailer over 7.5m in length is illegal and can therefore be policed by Council's rangers when reported.

Discussions regarding the implementation of a resident parking scheme are continuing.

6.9.2 Locked Gates

There are presently three (3) locked gates restricting vehicular access within the study area:

- a gate separates the boat ramp car park from the boat ramp and is intended to prohibit use of the ramp out of hours (between 9:30pm and 5:30am) however is rarely locked during these hours;
- a locked gate is located on the access way on the eastern end of Little Manly Beach. It is immediately adjacent to Stuart Street; and
- a locked gate is located at the eastern end of Stuart Street prohibiting entrance to the eastern side of Little Manly Point Park.

6.9.3 Speed Limits

Stuart Street is presently a 50km/hour area. The community has identified that there are frequently speeding cars along Stuart Street. Combined with the congested parking situation, the public perceives that even at 50km/hour, this presents a danger to pedestrians, especially children.

Council has undertaken a traffic count in the area to identify speeding vehicles. The results failed to identify any significant speeding issues. Isolated speeding incidents are therefore an enforcement issue for Police. Residents should be encouraged to formally register their complaints about speeding with the Police and Council.

6.10 Interpretation & Signage

Present signage within the study area can be classified as either regulation/instructional signage or interpretive signage.

The following issues have been identified with regards to interpretation and signage:

- the large volume of signs;
- the need for consolidation of ad-hoc signage;
- positive messages should be conveyed; and
- no coordination between signage installed by a variety of organisational bodies.

A signage review and inventory are proposed to control signage in the area.

The need for further signs in the area has been identified with regards to the Intertidal Protected Area, coastline hazards, traffic issues and the boat ramp. These should be considered in the signage review and signage consolidated where possible. Any new signs are to be included in the proposed signage inventory.

6.11 Infrastructure

6.11.1 Playgrounds

Manly Council has undertaken an assessment of all playground facilities within the LGA. The study was undertaken to determine the location of existing playground facilities, the nature and safety of the facilities and also to identify actions required to address issues identified and non-conformance with the relevant standards.

Little Manly Point Park

Children's playground facilities are located in the centre of Little Manly Point Park. The equipment is extensive and well maintained.

The playground area is considered by many to be under utilised but is an important local facility that is to be maintained for future use. Reasons for this might include the lack of cover and safety concerns.

The majority of the playground surfaces are metal. With no cover and high exposure to the sun the surfaces become heated and the equipment rendered unusable.

Council's playground assessment identified a number of improvements and maintenance actions required to ensure that the play equipment at Little Manly Point Park is safe for use. At the time that this Plan was adopted the following actions were required to conform with the Australian Standards:

- re-positioning of the rocker snail to ensure correct safety clearance to roll log;
- re-positioning of the see-saw to ensure correct safety clearance;
- installation of a shade structure over the playground;
- replace woodchips with appropriate soft-fall or synthetic grass;
- re-positioning of the swing frame to ensure correct safety clearance to border and unit; and
- install a panel on the track ride to stop possible falls.

Other recommendations not required for conformance but recommended included:

- replacing the swing's large linked chains with smaller links to avoid finger entrapment;
- replace the corroded S-hooks on the swing seat connectors;

- to paint equipment in appropriate colours to reflect heat;
- replace corroded binoculars;
- replace sections of the bridge and platforms with holes in them to avoid finger entrapment; and
- remove and install open trolley or similar on the track ride to avoid sticking.

The community has indicated that the tan bark under the playground area harbours ticks.

Little Manly Reserve

The play equipment at Little Manly Reserve consists of a single swing set consisting of one standard swinging seat and a baby chair. Softfall has been installed under the swing set in accordance with Australian Standards. The swings were replaced in 2003.

6.11.2 BBQ Facilities

BBQ facilities in the vicinity of Little Manly Point are located on the south-eastern and north-western sides of the point. The BBQs are electric and their use is free of charge.

There are few issues associated with the BBQ facilities with the exception of maintenance and cleanliness, especially in relation to the BBQ located on the eastern side of Little Manly Point. The community has indicated that there is an issue with rats along the eastern side of Little Manly Point due to food and fish scraps being inappropriately disposed of. This is to be addressed through the ongoing provision and maintenance of bin facilities and encouraging users of the area to dispose of their rubbish appropriately.

6.11.3 Showers and Taps

A single shower facility is located at Little Manly Reserve adjacent to the beach. The shower has been replaced with a spring-loaded (automatic shut-off) shower for water conservation purposes. Community consultation indicates that the facility is highly utilised and considered to be practical and strategically located.

A tap is located on the grassed areas adjacent to the boat ramp. The tap has been used to wash down boats. Concerns were raised over the inappropriate use of the tap for cleaning boat motors on the boat ramp. Motor washing in an uncontained environment not only holds up other ramp users but leaves pollutants on the ramp and allows pollutants to enter the harbour impacting on water quality and the health of aquatic ecosystems. Concerns were also raised over the quantity of water being used.

A few management responses have been identified including the provision of an on-site wash-down bay to allow the cleaning of boats within a contained environment so as to avoid pollutants entering the harbour. This approach however requires reorganisation of the parking area, and likely reduction in parking space, which is already considered to be minimal, it is also likely to reduce water conservation efforts. Provision of a wash-down bay may also encourage the inappropriate use of the facility as an informal car washing bay. Considering the lack of property space for washing cars on and the limited number of places at which Manly residents are able to wash their cars, this is a potential scenario. At the same time *Caulerpa taxifolia* has been identified in the Cove, the provision of wash down facilities would aid in the control of the weed's spread to other areas.

Another management response is replacing the existing tap with a spring loaded tap with no hose access. Rather than removing the tap completely, this will cease the washing down of motors without removing water access from the western end of the beach. This recommendation is appropriate to discussions of the Little Manly Boat Ramp task force, which agreed on the removal of the tap to stop motor flushing, however was discussed before *Caulerpa taxifolia* was discovered in the area.

6.11.4 Amenities

The public toilet block is maintained and refurbished by Council to ensure that the facilities are in good working order. The last refurbishment, which involved new standard finishes and fixtures and repairs to the roof/column joints was undertaken in January 2003.

Ground movement below the amenities building has resulted in the block 'slipping' forwards in the past. Council is presently unsure whether this 'slipping' is still occurring or whether the ground movement has stabilised. The building will be monitored over the next two (2) years. If ground movement is detected further and the amenities block determined to be unstable, the building will be demolished or stabilisation works undertaken. In this case the future location and design of the block will be revisited at a later date prior to demolition however the new block should incorporate adequate disabled access. If the building is determined to be stable alterations should then be made to the building to allow appropriate disabled access, and appropriate water saving devices installed.

It has been reported that children play on the roof of the amenities building presenting a safety and liability concern.

An accessible toilet should be included in the amenities block and appropriate access to the facility provided.

Amenities at Little Manly Point

Public toilet facilities are provided at Little Manly Reserve, which is within walking distance of Little Manly Point. Community consultation however highlighted the desire for a public toilet facility to be installed at Little Manly Point Park. It is reported that people are not prepared to walk to the Little Manly Reserve facilities and instead use the surrounding bush and landscaped areas of Little Manly Point Park. One view held is that the beach reserve amenities block is not sufficient for the large numbers of users of both the beach and Little Manly Point Park in summer.

Limitations to the installation of a toilet include the clay capping layer located roughly 1metre below the surface, which acts as a physical barrier between materials remaining from the remediated gas works site and the public. The provision of a flushing toilet would require sewage pipes and building footings that would undoubtedly need to penetrate the capping. Should permission be obtained from the EPA to penetrate the capping layer, maintenance of the system would be difficult.

The community has indicated despite these limitations, that further investigations are required before this option should be set aside. Investigations might include engineering designs to avoid capping penetration or the installation of a composting toilet.

6.11.5 Kiosk

A kiosk is run at Little Manly Cove Reserve, which operates under a Council Licence.

The licence arrangement includes a clause that prohibits the selling of products using glass containers or ringtop cans and disposable products and packaging including plastic: drink cups, food containers, drinking straws, knives, forks, spoons and stirrers. This is required along with a Waste Management and Minimisation Plan in order to manage and minimise the effects of waste and litter.

6.11.6 Electricity Substation

The electrical substation at Little Manly Beach was noted as aesthetically unpleasing by the community.

The sub-station is not presently on Energy Australia's de-commissioning and upgrading list however they have encouraged Council to write to them explaining the landscaping plans and what Council is doing in the area. This may result in the fast-tracking of addressing the substation.

Energy Australia have informed Council that any new substations or upgrades are not being built within 40m of the foreshore and as a result the Little Manly sub-station would need to be relocated elsewhere.

6.11.7 Lighting

The community has expressed concerns over the regular blackouts at Little Manly Point. The community perceive that the lack of lighting during black outs attracts inappropriate behaviour into the area such as late night parties and under aged drinking. Manly Police and Council have undertaken a safety audit in the area and are recommending a trial to turn off the lights (with the exception of the eastern side of Little Manly Point) to address safety concerns. Further information is provided in [section 6.13](#).

The community also identified that the light adjacent to the boat ramp is often not lit.

6.12 Waste Management

6.12.1 Litter

Litter, both from harbour based activities such as boating and land based activities such as picnicking and fishing presents a continuing issue for the environmental management of Little Manly and Spring Coves. Due to the high level of human activity on the harbour and surrounding urban areas, undesirably large amounts of litter accumulates on harbour beaches and rocky foreshores.

Large volumes of flotsam and jetsam are often washed up on the high tide mark especially at the western end of the beach near the boat ramp. Some of this litter may be from the large stormwater pipe but it is more likely that the litter has floated across the harbour and becomes concentrated in this corner due to southerly winds. Litter can have a negative impact on the flora and fauna (for example, plastic can entangle birds and fish, killing or disabling them). Litter can cause blockages of the drainage system and can present a safety issue. It is well known that litter costs the community significant amounts of money to clean up each year.

The community raised their concerns over the litter problems associated with fishing and boating activities in particular. Local residents have reported plastic shopping bags, bait bags and drink containers being left along the rocky foreshores of the study area as a result of improper rubbish disposal by fishers using the area. Some boat users have also been seen inappropriately disposing of rubbish in the area.

Council addresses litter issues on a Council-wide basis through education, compliance and infrastructure/management.

Future Management

Council has adopted a '*Litter Avoidance Strategy*' to provide a plan to address litter in the Manly Local Government Area.

Ongoing education of boat users is addressed through the implementation of Council's Starboard Right and Green education program.

6.12.2 Waste Management

Bins in public areas within the study area are provided, maintained and serviced by Manly Council.

Manly Peace Park

There is presently one (1) bin at the entrance to this park, which appears to be sufficient as there is little demand for further bins. Litter is an issue in the park mainly in the form of bottle

tops and cigarette butts however this is unlikely to change through the installation of more bins rather requiring behavioural change. The high wind in this area would also cause problems for the placement of further bins.

Little Manly Cove Reserve

Currently there are two (2) 240L mobile garbage bins located near the boat ramp. These bins are on a metal post and are primarily intended for use by people launching boats.

There are two banks of two bins in the eastern side of Little Manly Cove Reserve. These are 240L mobile garbage bins. The bins are contained in a locked metal frame. The bins are located near the kiosk and an entry point to the park and cater for waste from products sold at the kiosk as well as from other sources.

The community has identified the need for recycling facilities within the vicinity of the kiosk. This would be feasible considering recycling bins are provided for at Little Manly Point Park.

The Little Manly Reserve kiosk, under the licence agreement with Council, is not permitted to use disposable products and packaging (including plastic drinking cups and food containers, plastic drinking straws, plastic knives, forks, spoons and stirrers). Soft drinks and beverages can only be served in cardboard containers or press top cans. In order to maximise the recycling options for users of the area, it is recommended that the feasibility of installing a paper recycling bin as an addition to the recycling stations proposed for the Little Manly Reserve area be investigated. This investigation would be to determine whether the demand for such recycling would warrant the set up of a new Council service.

Little Manly Point Park

Little Manly Point has a variety of bin systems in place.

One (1) 240L garbage bin and one (1) red 240L recycling bin are located near the main car park, housed in a cage to restrict movement and size of material deposited. The bins are well sign posted as to their correct use. The recycling includes PET bottles, aluminium cans and glass. This is the only recycling facility in the reserve.

Since one recycling bin is provided, and has to be serviced separately to the garbage, recycling services could potentially be extended to the other bin enclosures and also to Little Manly Reserve.

A dog tidy bin and bag dispenser is located beside the bin housing in the car park. This is the only dog tidy bin located at Little Manly Point Park.

Garbage bins are also provided at the picnic and BBQ facilities, and near the playground.

Collins Beach

The bin on Collins Beach was removed in 2000 and has not been replaced as it did not appear to reduce the amount of litter on the beach and detracted from the area's amenity. A bin could be installed on the pathway between Stuart Street and Collins Beach to encourage beach goers to carry their waste off the beach and dispose of it on the way to their vehicle. However, it may also encourage incorrect disposal of residential waste from the surrounding houses.

Collins Beach is cleaned by the Waterways Authority of NSW. Their beach cleaning program within Sydney Harbour is undertaken on a priority basis rather than a routine schedule.

6.13 Crime Prevention & Safety

Community consultation prior to and throughout the development of this Plan strongly identified the community's concern over the occurrence of illegal, unsafe and disturbing behaviour at both Little Manly Reserve and Little Manly Point Park.

The consultation also indicated that local residents strongly support both areas of Little Manly Point and Little Manly Reserve being well lit throughout the night to address these safety concerns. The community has reported their perception that by improving the lighting, especially at Little Manly Point, safety concerns will be reduced.

Manly Police's Crime Prevention Officer was consulted on a number of occasions to discuss the community's safety concerns. Council staff and Manly Police's Crime Prevention Officer undertook an on-site safety by design audit of both Little Manly Reserve and Little Manly Point Park in May 2003.

Manly Police's Crime Prevention Officer noted that safety by design studies show that to prevent or reduce unsafe and inappropriate behaviour in an area at night the area should be either very brightly lit or that lighting be entirely removed. Areas that are generally brightly lit would be those providing a thoroughfare between for example a restaurant and a car park and other such areas. In general the provision of some low lighting attracts and encourages inappropriate behaviour in an area, on the other hand if no lighting is provided this behaviour is discouraged.

Little Manly Reserve

Manly Police's Crime Prevention Officer noted that in general Little Manly Reserve was well designed in terms of safety. The site has a natural 'guardianship' as it is well exposed to, and in full-view of, numerous water-side dwellings, which naturally discourages inappropriate behaviour. The only potential improvement noted was to remove the hidden or 'dead' space between the crib retaining wall and the back of the amenities/kiosk block.

Little Manly Point Park

The safety audit undertaken by Manly Police's Crime Prevention Officer in consultation with Council at Little Manly Point Park identified that the intricate and compartmentalised design of the whole park does not lend itself to safety by design, in particular during the evening, as each section is isolated, hidden and removed. The western side of Little Manly Point has moderate natural 'guardianship' being in view of some dwellings although somewhat removed from dwellings at the back of the beach and on the other side of Little Manly Cove. The eastern side of the park (adjacent to Spring Cove) and the central sections of the park however have low natural 'guardianship' from surrounding dwellings with minimal exposure due to the surrounding National Park. Safety of the eastern side of the point is however increased due to the area's extensive use by fishers in the early morning and at night, all year round.

It is therefore recommended as a direct result of the safety audit that night activity be discouraged from the western and central sections of Little Manly Point by removing the lighting from these areas for a trial period of between six (6) months and one (1) year. It is recommended that the trial be reviewed in consultation with the Manly Police's Crime Prevention Officer after the trial period is complete. Park users will be able to use these areas during summer on daylight saving time and all year round during daylight hours, which is when the majority of BBQs and picnics take place in the Park. It is recommended that lighting be maintained after dark on the eastern side of the park (adjacent to Spring Cove) to provide for the safety of the fishers and those wanting to have a BBQ after dark. The concentration of activity and provision of adequate lighting after dark should increase safety of all user groups during this time and discourage inappropriate behaviour. Lit access for the fishers should be maintained from the car park to the eastern access road and in some of these areas lighting should be improved.

Little Manly Point Park Playground

The safety audit also identified the playground area on Little Manly Point as a safety and crime concern even during daylight hours. The area is located at the centre of the Park and is therefore removed from sight and sound. The playground is also surrounded by dense vegetation on all sides thereby reducing outside visibility and increasing the isolation of the playground facility. On the day of the safety audit significant vandalism (graffiti) was present on the equipment indicating that the area is prone to illegal activities. It is recommended that, in the

long term, Council investigate the relocation of this playground facility to a safer location with greater visibility and therefore 'guardianship' and less removed and isolated. As a short term solution it is recommended that all vandalism be addressed within 48 hours of its identification.

Manly Peace Park

The community has identified a number of potential crime and safety issues at Manly Peace Park. The community has requested regular Police patrols in the area to discourage any illegal and unsafe activities.

6.14 Land Ownership & Logistics

6.14.1 Land Acquisition

Acquisition of Nos: 38 and 40 Stuart Street

Previous discussions have been undertaken regarding the acquisition of these remaining privately owned properties located on Stuart Street immediately behind Little Manly Beach.

These two properties, presently privately owned, are zoned Open Space – to be acquired by Council under the Manly LEP 1988. Council is the acquisition authority for Nos 38 and 40 Stuart Street. Council has been liaising with the State Government in order to seek funding assistance for the acquisition of these properties.

Conflicting views regarding this issue were identified in the community consultation process. A number of submissions saw it as imperative that the remaining houses be acquired and removed whereas other submissions highlighted the heritage significance of the houses and the desire to see those heritage qualities maintained, while some proposed that Council could not justify the expense incurred.

At the Service Planning and Commissioning meeting of Council on 10 November 1997, a report was considered, which recommended the re-zoning of these properties to Zone No 2 - Residential. However, the Council resolved at that meeting to reinforce its existing Open Space - to be acquired zoning for these properties. This motion was supported by the Little Manly Precinct Committee at that time.

The land has been identified as regionally significant in the Sydney and Middle Harbour Regional Environmental Plans.

These private properties are significant in terms of providing connectivity between the Little Manly boat ramp and surrounding land and Little Manly Reserve. Acquisition of all or part of these lands would provide a more holistic and connected reserve system in the area, with greater public access to the foreshore.

It should be noted that No 34 Stuart St is listed in the Manly LEP 1988 as an Item of Environmental Heritage. As a result it would be unlikely that the building could be greatly modified. Therefore its inclusion in the open space network would need to be within its heritage context.

Acquisition Options

One option available to Council is to acquire properties 38 and 40 Stuart Street as they become listed on the property market. Should they be acquired Council would convert each property, along with those already acquired by Council, to form part of the Little Manly Cove open space system classified as community land. In which case their use and management would be governed by this Plan following the appropriate amendments. Should this management option be adopted, it would be appropriate for numbers 34 and 36 (already owned by Manly Council – classified operational), to be reclassified as community land also; or

Council could also negotiate the acquisition of the rear of each of these properties (including the undeveloped grassed areas), for conversion into public lands. This would enable the existing houses to continue to enjoy their position while improving public access to the foreshore and connectivity between the two sections of reserve. Re-zoning the built land remaining from Open Space to Residential could be used as a negotiating point. This option was discussed in 1997 with the property owners, who indicated, according to the Council report, that this option was not favourable as the property lengths had been reduced on previous occasions and various use-associated concerns would be raised.

6.14.2 Land Categorisation Changes

Operational Lands converting to Community Lands

Operational public lands owned by Manly Council include Nos. 34 and 36 Stuart Street, as shown in **Appendix 2**. These properties are presently leased with the exception of the dinghy storage area located at the rear of No. 34.

There are a few options available regarding the management of these 'operational' lands. Council could continue to lease the residential homes and retain ownership of the properties for possible future resale. Alternatively Council could change the classification of these lands from operational to community land to become part of the open space system and made available for the general community's use bearing in mind that community land can not be sold unless the classification is changed back to operational land.

The rear of No 36 Stuart Street, which is owned by Council, has been earmarked in the initial Landscape Masterplan for Little Manly Reserve, to be opened up to increase the size of the reserve. Only the grassed area at this stage is earmarked for conversion.

Unformed public road converting to Community Lands

Although it is not officially part of Little Manly Reserve, the **unformed public road** at the end of Marshall Street is for all intents and purposes physically part of Little Manly Reserve. As the land is also owned by Council it is recommended that the road be closed and dedicated as public land (community) and officially included as part of Little Manly Reserve.

6.14.3 Naming Public Land

The Council reserve at the end of Stuart Street (Spring Cove) is presently unnamed, making reference to the site difficult. The area is commonly referred to as 'the unnamed reserve at Spring Cove' as it provides access to Collins Beach, Spring Cove. It is recommended that this reserve be formally named. The area's heritage and natural values should be considered in the naming process.

6.14.4 Land Development

There are four major future developments in the Little Manly and Quarantine Station Catchments including: Quarantine Station, the School of Artillery, Manly Hospital and St Patrick's College.

These potential redevelopment sites could impact on the marine environment of the study area and therefore should ensure that no polluted run-off (including sediments) as a result of the construction process be allowed to impact on the study area. This should be covered by the development control processes already in place within Council and other agencies.

7 ADMINISTRATIVE MANAGEMENT

In order to successfully implement the recommendations of this Coastline Management Plan it will be necessary to record the level of agreement amongst the various stakeholders to the recommendations made and their commitment to implementing the Action Plan. Various stakeholders should be requested to review the recommendations that fall within their delegations and record their agreement to the implementation. Similarly, concerns regarding the recommendations should be indicated and negotiated with Council.

To ensure Council's commitment to the implementation of this CMP it is recommended that the implementation of the CMP be integrated into Council's Corporate Plan.

In the past Council has set up individual Implementation Management Committees focusing on small areas such as Little Manly Cove, this has proven to be time consuming and quite narrow in focus. It is therefore recommended that only one committee be serviced to implement all of Manly's Coastline Management Plans.

8 REFERENCES

AAR (October 1999) *Australian Road Rules Part:12 Divisions 6-8*

Australian Museum Business Services (May 2002) *Port Survey for Introduced Species – Sydney Harbour: Final Report for Sydney Ports Corporation*. Australian Museum Business Services, Sydney.

AWT EnSight Pty Ltd (1997a) *Assessment and Monitoring of the Aquatic Environment Little Manly Point*. Report No. 97/242. Prepared for Capital Programs, Sydney Water Corporation.

AWT EnSight Pty Ltd (1997b) *Interceptor Tunnel Project Environmental Impact Statement of Aquatic Flora & Fauna*. Report No. 97/153. Prepared for Sydney Water Corporation.

AWT EnSight Pty Ltd (1998) *Assessment and Monitoring of The Aquatic Environment - Little Manly Point – Second Baseline Sampling*. Capital Programmes, Sydney Water Corporation. Sampling dates: 22/1/98 & 23/1/98.

Baker, Timothy (1999) *Terrestrial Vertebrate Fauna Survey of Dobroyd Head-Grotto Point Reserve, Sydney Harbour National Park*. Integrated Project prepared as partial fulfilment of the requirements of the Bachelor of Applied Science (Environmental Resource Management) Southern Cross University.

Birch G F and Matthai C. (2000) *Mar. Freshwater Res.*, "Effect of coastal cities on surficial mantling an adjacent high-energy continental margin – central New South Wales Australia" Vol 51, 565-576. CSIRO 2000.

Birch G and Taylor S, (1999) *The Science of the Total Environment* "Source of heavy metal sediments of the Port Jackson estuary, Australia" Vol 227 pp123-138. Elsevier Science.

Birch G and Taylor S E, (2000) *Australian Journal of Earth Sciences* "Distribution and possible sources of organochlorine residues in sediments of a large urban estuary, Port Jackson, Sydney" Vol 47.

Birch G and Taylor S E, (2000) *Hydrobiologia* "The use of size-normalised procedures in the analysis of organic contaminants in estuarine sediments" Vol 431 pp. 129-133. Kluwer Academic Publishers, Netherlands.

Cairnes L.B, (1996) *Australian Natural Heritage Charter: Standards and Principles for the Conservation of Places of Natural Heritage Significance*. Australian Heritage Commission and Australian Committee for IUCN, Sydney.

Champion, Shelagh & George (1998) *Manly_Warringah and Pittwater 1850-1880*.

Chapman G.A. & Murphy C.L, (1989) *Soil Landscapes of the Sydney 1:100 000 Sheet*. Soil Conservation Service of New South Wales.

Clouston, Carver, Perkins, Stapleton. (1996) *North Head Planning Strategy – Draft*.

Commonwealth of Australia (December 1992). *National Strategy for Ecologically Sustainable Development*. Australian Government Publishing Service. ISBN 0 644 27253 8.

Conaghan P.J, (1980) *New South Wales Geological Survey Bulletin* "The Hawkesbury Sandstone: gross characteristics and depositional environment." Vol 26 pp. 188-253.

Connell Wagner Pty Ltd. (1999) *Synthesis and Interpretation of Existing Information on Seagrass at Spring Cove*. Northside Storage Tunnel Alliance (9/15/99). Monitoring month: 4/99.

Cramp, D. (May 2001) *Stop the Spread of Invasive Seaweed – Caulerpa taxifolia*. NSW Fisheries brochure.

Dames and Moore (April 1991) *State Pollution Control Commission Sign-off Report - Little Manly Point Remediation Project*. Prepared on behalf of the Department of Planning New South Wales.

Dames and Moore (Date unknown) *Report: Results of After-care monitoring Program for the Period 1991-1995, Little Manly Point Park Manly* Report prepared for the Department of Urban Affairs and Planning.

Department of Urban Affairs & Planning, (1998) *Shaping Our Cities*. NSW Department of Planning.

Department of Urban Affairs and Planning (1999) *Sydney Harbour and Tributaries Discussion Paper*.

Department of Urban Affairs and Planning (1999) *Sydney Harbour and Tributaries Discussion Paper, Towards a Vision and Strategic Program: Sydney Harbour Planning Strategy Forum Background Report*.

Department of Urban Affairs and Planning (1999) *Sydney Harbour and Tributaries Discussion Paper, Towards a Vision and Strategic Program: Urban Design Opportunities, Background Report*.

Department of Urban Affairs & Planning (NSW), (September 2000) *Sharing Sydney Harbour: Regional Action Plan*.

Environment Protection Authority, (2000) *Beachwatch and Harbourwatch State of the Beaches 1999-00 Sydney - Hunter - Illawarra*. Environmental Protection Authority, NSW.

Environment Protection Authority, (1994) *Coastal Resource Atlas for Oil Spills in Port Jackson*. Environmental Protection Authority, NSW. Australian Maritime Safety Authority. ISBN 0 7310 1285 2

ESE Pty Ltd (July 2002) *Site Assessment Report: Manly Council, Stuart Street Reserve*.

Foley, D. (2001) *Repossession of our Spirit: Traditional Owners of northern Sydney*.

GIS Environmental Consultants (June 2003a) *Natural Environment Assessment and Recommendations for the Coastline Management Plan: Little Manly*. Report prepared for Manly Council.

GIS Environmental Consultants (2003b) *Flora and Fauna of Manly Council Bushland Reserves (Draft)*. Report prepared for Manly Council.

Hassel Pty Ltd, Patteron Britton & Partners, (2001). *Little Manly Point Western Embankment Stabilisation Project Design Report and Statement of Environmental Effects*.

Herbert C, (1983) Sydney Basin Stratigraphy. in C. Herbert. Ed *Geology of the Sydney 1:100,000 Sheet 9130*. Geological Survey of New South Wales, Department of Mineral Resources, Sydney, pp 8-34.

Herbert C & West J.L, (1983). *comp. Sydney Geological Series Sheet 9130* (Edition 1). New South Wales Department of Mineral Resources, Sydney.

Integrated Open Space Services (February 2002) *Park User Satisfaction Benchmark Survey: Regional Parklands and Sportsfields Round 1* Report prepared for Manly Council.

Jones, P.G. (1993) *The Effectiveness of Clean-Cover Style Site Remediation at Little Manly Point, Manly*. University of New England – Northern Rivers.

Kico Australia Pty Ltd (March 2002) *Manly Council Equipment Register*.

Land Systems EBC Pty Ltd (July 1990) *Little Manly Point Plan of Management and Landscape Design Report*. Prepared on behalf of Department of Planning New South Wales.

Macquarie University, (1985). *Redevelopment of Little Manly Point and Reserve – Assessment of Environmental Effects*. CEUS Report 93/85

Manly Council, (1996a). *Manly Development Control Plan For Access – Incorporating the Manly Access Policy*. Prepared by the Manly Access Committee, 1996.

Manly Council and Manly Access Committee, (1996b) *Accessing Manly: A directory for people with disabilities and those who have problems getting around*. Manly Council.

Manly Council (1996c) *Plan of Management for Community Lands*.

Manly Council (2000) *Cabbage Tree Bay Management Plan, Supporting Document*. Manly Municipal Council.

Manly Council (April/May 2000a) *Bushland Review*.

Manly Council, (2000b) *Noxious Weeds – A Threat To Our Environment*.

Manly Council, (2000c) *State of Environment Report 1999-2000*.

Manly Council (December 2000) *Development Control Plan for Waste Minimisation and Management 2000*. Manly Council.

Manly Council, (2001a) *Manly Corporate Plan 2001/02-2003*.

Manly Council (2001b). *Fact Sheet No. 25 – Tree Preservation Order 2001*.

Manly Council (2001c) *Manly Development Control Plan for - The Residential Zone 2001*.

Manly Council, (2001d) *State of the Environment Report 2000/01*. Manly Municipal Council

Manly Council (March 2002) *Public Toilets – Condition Report*. Service Planning & Commissioning Division, Manly Council.

Manly Council (August 2002) *Manly's Sustainability Strategy: Blueprint for our Future*. Manly Council.

Marine Ministerial Holding Corporation (July 1998) *Land Owner's Consent Manual: Policies for Granting Land Owner's Consent, Sydney Harbour and its tributaries*. Marine Ministerial Holding Corporation.

McCready S, Slee D J, Birch G F, Taylor S E (2000) *Marine Pollution Bulletin* "The Distribution of Polycyclic Aromatic Hydrocarbons in Surficial Sediments of Sydney Harbour, Australia" Vol 40, No 11 pp. 999-1006. Elsevier Science, Great Britain.

NPWS (1999) *Sydney Harbour National Park - Dobroyd Head-Grotto Point Reserve Flora and Fauna Survey*.

NPWS & MMC, (2000a) *Visitor Guide – Manly Scenic Walkway, Manly to Spit Bridge, Sydney Australia*. Manly Council & NSW National Parks & Wildlife Service.

NPWS, (2000b) *Endangered Population of Little Penguins at Manly *Eudyptula minor* Recovery Plan*. NSW National Parks and Wildlife Service, Hurstville.

NPWS, 2002. *Endangered Population of Long-nosed Bandicoots (*Perameles nasuta*) at North Head, Draft Recovery Plan*. NSW NPWS Hurstville.

NSW Department of Urban Affairs and Planning, (2000) *Sharing Sydney Harbour regional action plan*. NSW DUAP

NSW Environment Protection Authority & Australian Maritime Safety Authority (July 1996) *Coastal Resource Atlas for Oil Spills in Port Jackson*. NSW EPA.

NSW Environment Protection Authority (2000) *Litter Prevention Program - Participants Workbook*.

NSW Environment Protection Authority (January 2003) "Draft Guidelines for the Assessment of Former Gasworks Sites" Environment Protection Authority, Sydney.

NSW Fisheries. *North Harbour (Sydney) Aquatic Reserve Pamphlet*.

NSW Fisheries (1999) *Policy & Guidelines: Aquatic Habitat Management and Fish Conservation*. NSW Fisheries.

NSW Fisheries, NSW National Parks and Wildlife Service and NSW Marine Parks Authority (November 2001) *Developing a Representative System of Marine Protected Areas in NSW – an Overview*. Marine Parks Authority Sydney.

NSW Fisheries, NSW National Parks and Wildlife Service and NSW Marine Parks Authority (revised July 2002) *Developing a Representative System of Marine Protected Areas in NSW – an Overview: summary document*. Marine Parks Authority Sydney.

NSW Fisheries (December 2002) *Interim Report: Survey of Recreational Fishing in New South Wales*. www.fisheries.nsw.gov.au

NSW Fisheries (2003) *Distribution of Caulerpa taxifolia at Little Manly and Forty Baskets, Port Jackson*, map.

NSW Government, (September 1990) *Coastline Management Manual*. NSW Government. ISBN 0730575063

NSW Government, (October 1992) *Estuary Management Manual*. NSW Government. ISBN 0731009339

NSW Government, (1997) *NSW Coastal Policy 1997: a Sustainable Future for the New South Wales Coast*.

Osborne, R.A.L. & Osborne, P.J., (1999) *Geoheritage Values of National Estate Significance at North Head*. Unpublished report to Manly Council.

Osborne, R.A.L (March 2004) *Submission on Draft Little Manly Coastline Management Plan*. Unpublished correspondence to Manly Council.

Patterson Britton & Partners Pty Ltd, (1999) *Northern Beaches Stormwater Management Plan*. Northern Beaches Stormwater Management Plan Committee; Warringah, Manly and Pittwater Councils.

Patterson Britton & Partners Pty Ltd, (May 2003) *Little Manly Coastline Hazard Definition Study*. Report prepared for Manly Council.

Roads & Traffic Authority, (1997) *Traffic Authority of New South Wales, Guidelines for Traffic Facilities*. 1st Edition November 1997. "Part 3.5: Parking for the disabled".

Rooney, W. S. & Associates. (1987) *Little Manly Point Boat Launching Facility Environmental Study*. Prepared for NSW Public Works Dept. By Land Systems P/L, June 1987.

Sinclair Knight Merz (August 2002) *Little Manly Point, Manly: Site Investigation Work, Environmental and Safety Plan final* Prepared for PlanningNSW.

Sinclair Knight Merz (February 2003) *Little Manly Point – Round 2 Wet Weather Sampling Event report*.

Sinclair Knight Merz (April 2003) *Slope Restoration Works – Stuart Street Manly: Geotechnical Report*. Report prepared for Manly Council.

Swancott, Charles (1968) *Manly 1788 to 1968* Sydney.

Sydney Harbour Councils (2001). *Sydney Harbour Councils Agreement*.

Sydney Water, (1997) *Flora and Fauna Assessment for the North Side Storage Tunnel*. As part of the Environmental Impact Statement appendices vol 1.

Sydney Coastal Council, (June 1996) *Finding Suitable Options for Cleaning Sydney's Estuarine Tidal Baths & Ocean Rock Pools For Use by Local Government: A Discussion Paper*.

Sydney Coastal Council, (1998) *Sydney Regional Coastal Management Strategy 1998*. Sydney Coastal Councils Group.

The Ecology Lab, (April 2003) *Manly Seagrass Review and Management Plan Options for Little Manly*. Report prepared for Manly Council.

Wierzbicki, M and Manly Council Planning Design & Environment Group (2000) *Matters for consideration for the Little Manly Cove Coastal Management Plan*.

Woolacotts, (2001) *Manly CBD and Environs Parking Management Strategy*. Woolacotts Consulting Engineers. Prepared for: Manly Council.

9 APPENDICES

Appendix 1 Little Manly Coastline Management Plan study area map, (Manly Council 2003).

Appendix 2 Land Ownership Map, Little Manly study area (Manly Council 2003).

Appendix 3 Manly Peace Park Plan of Management (Manly Council).

Appendix 4 Stuart Street Properties Plan of Management (Manly Council).

Appendix 5 Little Manly Land Categorisation Map (Manly Council 2003).

Appendix 6 Seagrass and Kelp Distribution Map – North Harbour (Source: Department Transport & NSW Fisheries 2003).

Appendix 7 Estuarine Sediments in Sydney Harbour (Herbert, 1983).

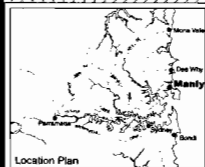
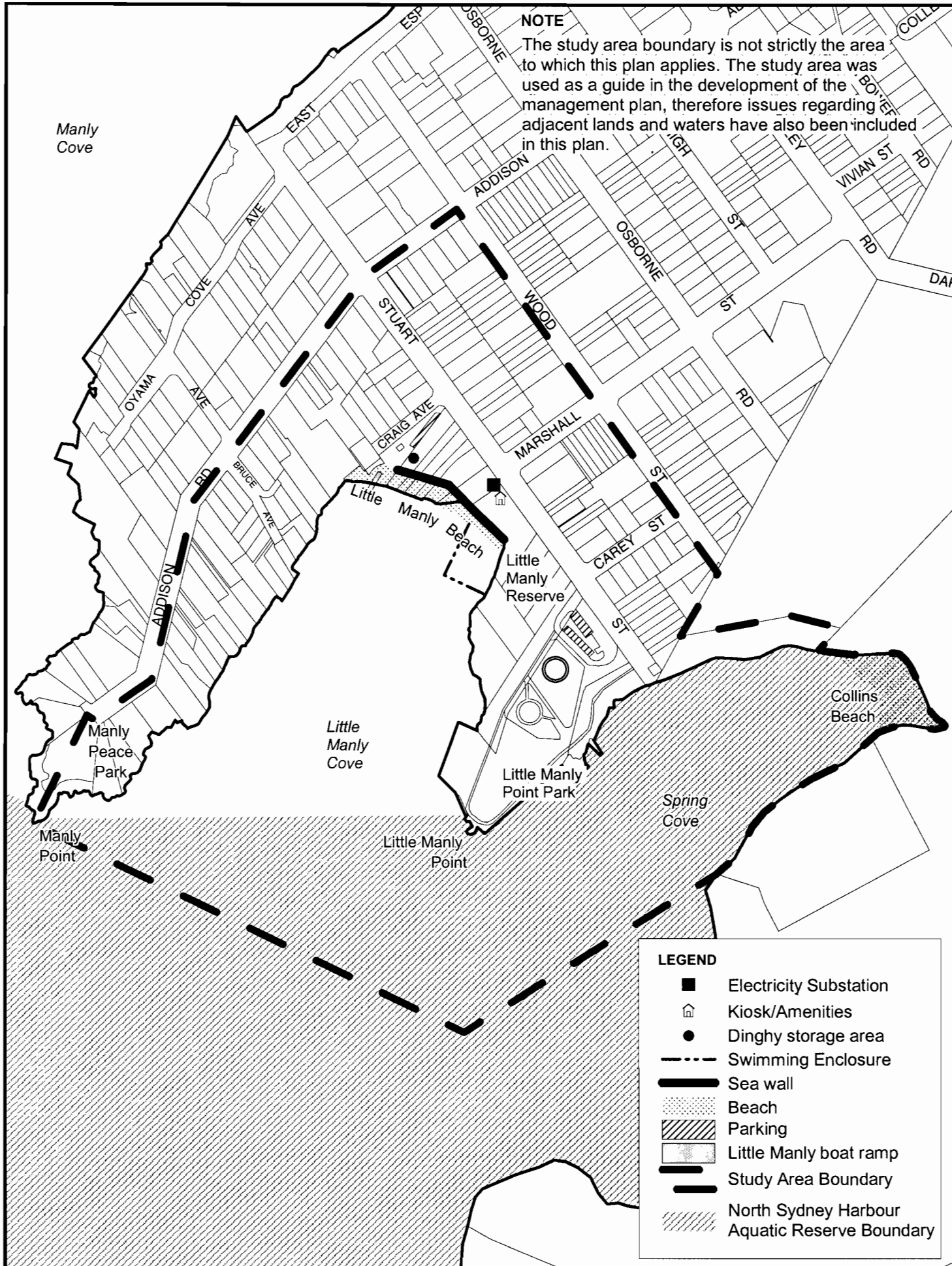
Appendix 8 Little Manly Boat Ramp Taskforce Position Paper (Manly Council, 2002).

Appendix 9 Little Penguin Critical Habitat Map (NPWS, 2003).

Appendix 10 Manly Catchment Map (Manly Council 2003).

Appendix 11 Sewage and Stormwater Networks Map, Little Manly and Spring Coves (Manly Council 2003).

Appendix 12 Process for the Development of Coastline Management Plans Flowchart (Manly Council).

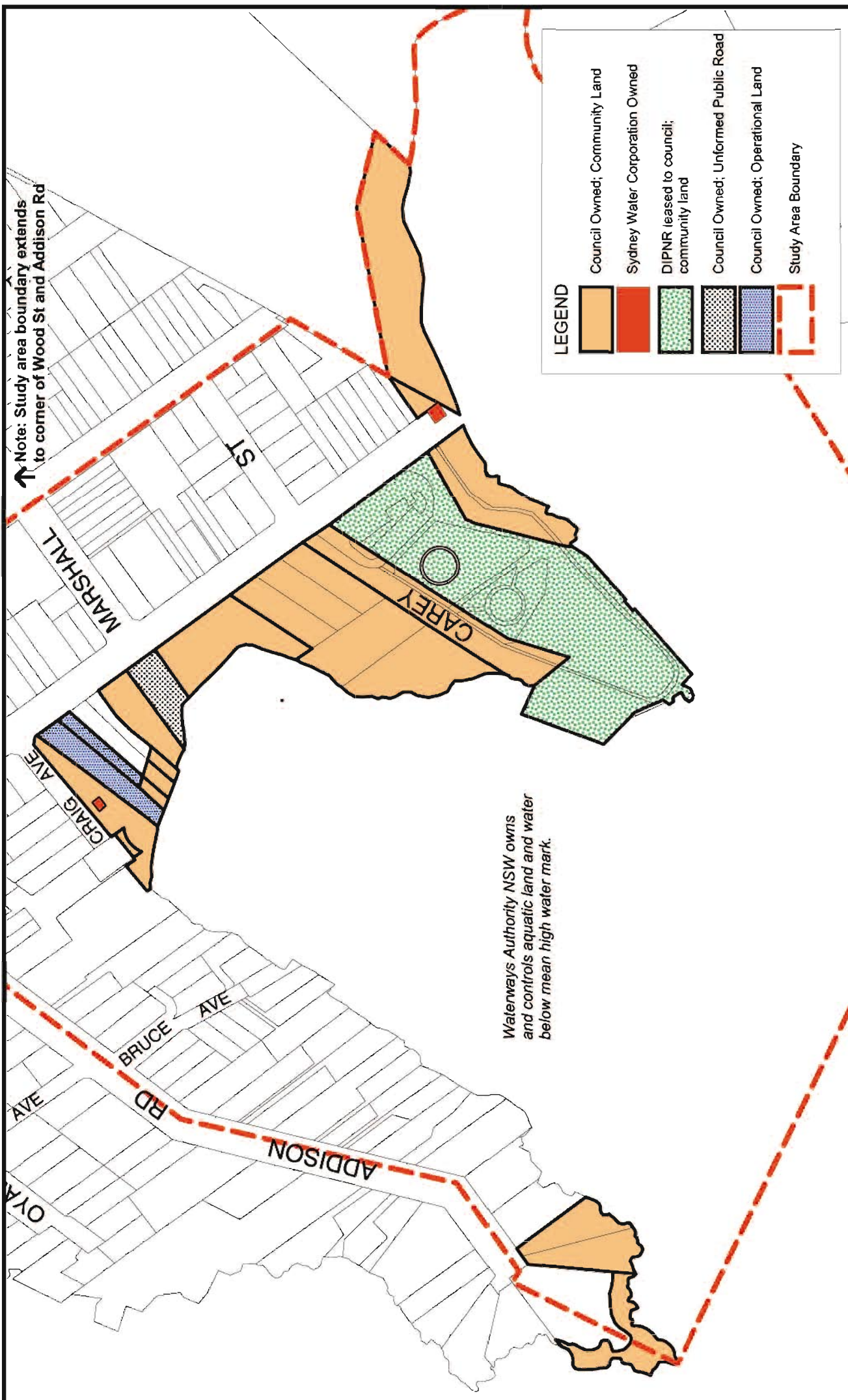


Scale NTS Australian Map Grid 56 (AGD 66)

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APPENDIX 1 Little Manly Cove CMP Study Area

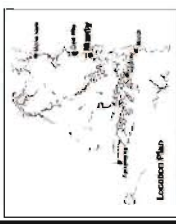


Note: Study area boundary extends to corner of Wood St and Addison Rd

LEGEND

- Council Owned; Community Land
- Sydney Water Corporation Owned
- DIPNR leased to council; community land
- Council Owned; Unformed Public Road
- Council Owned; Operational Land
- Study Area Boundary

Waterways Authority NSW owns and controls aquatic land and water below mean high water mark.



Scale: NTS

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APPENDIX 2 Little Manly Cove Land Ownership

DRAFT PLAN OF MANAGEMENT FOR MANLY PEACE PARK, ADDISON ROAD MANLY

1 INTRODUCTION

1.1 Introduction and Land Covered by this Plan

Under the *Local Government Act 1993* a Council must prepare Plans of Management for Community Land.

The land covered by this Plan is shown in [Appendix 3a](#) and includes the following Community land:

- Description: Manly Peace Park. This land includes the gently sloping grassed park and the public space in front of 'Kilburn Towers' above the mean high water mark, which consists of a series of large rock platforms and boulders.
Area: 2175 m²
Owner: Manly Council
Title: Lots 9 and 10 DP10356 and Lot DP564246

Under the *Local Government Act 1993* a 'specific' Plan of Management is required for each parcel of community land all or part of which consists of critical habitat (as declared under the *Threatened Species Conservation Act 1995*), or to which a recovery plan applies. In September 2002 Critical Habitat was declared for the endangered population of little penguins at Manly. As shown in [Appendix 3b](#), critical habitat (Area B) applies to part of the reserve covered by this Plan. As a result this Plan has been prepared as a specific Plan of Management to meet legislative requirements.

1.2 Relationship Between this Plan of Management and the Little Manly Coastline Management Plan

The Little Manly Coastline Management Plan is intended to be the overall holistic Plan for the strategic management of the Little Manly Study area, including the land covered by this Plan. **This specific Plan of Management has been prepared solely for the purpose of meeting legislative requirements** as described in section 1.1. All performance targets, strategies (management recommendations) and monitoring programs identified in this Plan have been incorporated into the Little Manly Cove Coastline Management Plan for ease of use and reference.

Please refer to the Little Manly Cove Coastline Management Plan for details of Council's holistic management approach to issues in the Little Manly Cove and Spring Cove areas.

1.3 Definition of Community Land

Community land is public land that is significant to the community and has been classified as such. Community land does not include land to which the *Crown Lands Act 1989* applies.

1.4 Categorisation

The land identified in [Appendix 3a](#) and section 1.1 of this Plan are owned by Council and classified as **Community Land**.

Under Part 2, Section 36, Clause 4 of the *Local Government Act 1993* a Plan of Management must further categorise the Community Land covered by this Plan. Under Section 36A Clause 3(b) this Plan must further categorise the land covered by this Plan as natural area.

This Plan of Management therefore categorises the land identified in [Appendix 3a](#) and Section 1.1 of this Plan as:

- The land on which the large rock platforms in front of 'Kilburn Towers' are located is categorised as **Natural Area – Foreshore**.
- The grassed area is categorised as **Park***

*The *Local Government Act 1993* required that community land containing critical habitat must be categorised as a natural area. In the case of Manly Peace Park however there are two distinct sections, the rocky foreshore, which has been identified as critical habitat, and the grassed parkland, which has not been identified as critical habitat as a result this Plan categorises the grassed area as park.

In accordance with Section 21 of the *Local Government (General) Regulation 1999*, a draft Plan of Management that categorises an area of community land, or parts of an area of community land, in more than one category must clearly identify the land or parts of the land and the separate categories (by a map or otherwise). Refer to [Appendix 3a](#) for map of community land categorisation.

1.5 Land Zoning

The land covered by this Plan is zoned as Open Space under the Manly Local Environment Plan 1988.

Under the Manly Local Environment Plan 1988 the area is also identified as a Foreshore Scenic Protection Area, thereby requiring consent for any development in the area. Council must be satisfied that any development proposed within the area does not impact on the amenity of the Foreshore Scenic Protection Area.

1.6 Critical Habitat

Part of the land to which this Plan of Management applies consists of Critical Habitat for the endangered population of little penguins at Manly. Part of Manly Peace Park is also directly affected by the approved Recovery Plan for the endangered population of little penguins at Manly.

Refer to [Appendix 3b](#) for a map of Critical Habitat areas declared for the Endangered Population of Little Penguins at Manly.

2 PLAN OBJECTIVES

This Plan has been developed to meet the following objectives:

- to meet Council's obligations under Section 36 of the *Local Government Act 1993* in respect to Public (Community) Land Management;

- to enable Council to renegotiate and/or enter into contracts, leases, licences, hire arrangements and other estates, which relate to the development, maintenance or use of the land in accordance with this Plan's Stated objectives;
- to address issues requiring management as identified through community consultation;
- to identify clear and achievable management strategies to conserve and protect the natural and social environment and to address community expectations;
- to manage and protect, within the capacity of Council, critical habitat areas declared for the endangered population of little penguins at Manly.
- to conserve, restore and protect the terrestrial and aquatic environments of the land covered by this Plan and adjacent waters;
- to identify a review process to monitor the success of the management options identified in the Management Plan;
- to provide for effective asset management, maintenance and improvement with regard to community land covered by this plan;
- to provide for user health, safety and enjoyment of the area;
- In accordance with requirements of the *Local Government Act 1993*, the following objectives apply to land categorised as natural area – foreshore and natural area – bushland:

The core objectives for management of community land categorised as a **natural area** are:

- (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- (b) to maintain the land, or that feature or habitat, in its natural state and setting, and
- (c) to provide for the restoration and regeneration of the land, and
- (d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- (e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

The core objectives for management of community land categorised as **foreshore** are:

- (a) to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area, and
- (b) to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.

The core objectives for management of community land categorised as a **park** are:

- (a) to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and

- (b) to provide for passive recreational activities or pastimes and for the casual playing of games, and
- (c) to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

In accordance with Section 36A of the *Local Government Act 1993*, the above objectives take account of the existence of critical habitat, and are consistent with the objectives of the *Threatened Species Conservation Act 1995*, which are as follows:

- (a) to conserve biological diversity and promote ecologically sustainable development, and
- (b) to prevent the extinction and promote the recovery of threatened species, populations and ecological communities, and
- (c) to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and
- (d) to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and
- (e) to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed, and
- (f) to encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

3 USES OF THE LAND

3.1 Current and Permitted Uses

This Plan provides for and authorises the following current and permitted purposes for which the land covered by this Plan (as identified in [Appendix 3a](#) and Section 1.1) may be used:

- Bushland and foreshore conservation and management;
- Passive recreation;
- Protection of Critical Habitat declared for the Endangered Population of Little Penguins at Manly;
- Heritage conservation;
- Landscaping;
- Bushfire hazard reduction;
- Coastal Hazard Management/reduction;
- Any activity required to meet the core objectives applying to the land categorised as natural area, foreshore and bushland as prescribed by the *Local Government Act 1993* (refer to section 2).

3.2 Future Development of the Land

This Plan of Management permits future 'development' of the land covered by this Plan (refer to [Appendix 3a](#)) only for uses listed in section 3.1 of the Plan. Any such developments must meet the requirements of all relevant legislation and Council Policy, and must not contradict the objectives of this Plan of Management as stated in section 2.

3.3 Scale and Intensity of Use

The *Local Government Act 1993* requires that this Plan describe the scale and intensity of those uses or developments permitted in sections 3.1 and 3.2.

This Plan requires that all future uses and developments that are permitted by this Plan are to be undertaken at a scale and intensity that does not contradict the objectives of this Plan of Management as stated in section 2.

4 DESCRIPTION OF THE LAND

4.1 Description of Condition of the Land

The following is a description of the condition of the land and any improvements that have been undertaken on the land to-date.

The land covered by this Plan is located at the end of Addison Road, Manly. It is located at the tip of Manly Point. The land is bounded by residential land and the marine waters of North Harbour. The Park offers a unique vantage point of the Harbour.

The land consists of grassed parkland and rocky foreshore (above mean high water mark). The grassed area is in good condition. It is gently sloping land which contains basic facilities such as safety fencing, park benches and bollard lighting. Access to this area is from Addison Road. The rocky foreshore consists of a series of rock platforms and large boulders. Access to this area is available from a set of stairs located on the boundary between 'Kilburn Towers' and the Park.

Vegetation in the grassed area, although predominantly indigenous, has been planted. Vegetation includes Banksias, paperbarks, *Leptospermum* and a low branching Port Jackson Fig.

The rock platform is typical of those in North Harbour. The area behind the rock platform leading up to the grassed area of the reserve is quite steep and predominantly covered in weeds such as asparagus fern, maidera vine and *Tradascantia*.

4.2 Description of Use of the Land

At the time that this Plan was adopted the grassed area was primarily used for passive recreation, while the rock platform was used predominantly for recreational fishing.

Both areas were predominantly used by local residents.

This Plan permits the use of the land for those purposes outlined in section 3.1.

5 LEASES, LICENCES AND OTHER ESTATES

5.1 Existing Leases, Licences and Estates

There are no Leases or Licences relevant to this Plan of Management.

5.2 Prohibited Leases, Licences and Estates

This Plan of Management prohibits the granting of Leases, Licences and other estates for the land to which this Plan applies (as identified in [Appendix 3a](#)) for the following:

- Activities prohibited by the zoning of the land; and
- Activities which are inconsistent with the objectives of this Plan as described in section 2.
- Under the *Local Government Act 1993* a lease, licence or other estate must not be granted, in respect of land categorised as a natural area:
 - To authorise the erection or use of a building or structure that is not a building or structure prescribed in the following list: walkways, pathways, bridges, causeways, observation platforms and signs.
 - To authorise the erection or use of a building or structure that is not for a purpose in the following list: information kiosks, refreshment kiosks (but not restaurants)
 - Work sheds or storage sheds required in connection with the maintenance of the land and toilets or rest rooms.

Under the *Local Government Act 1993* the period for a Lease or Licence can not exceed 21 years.

5.3 Permitted Leases, Licences and Estates

The grant of a lease, licence or other estate in respect of so much of the land to which this Plan of Management applies (refer to [Appendix 3a](#)), as comprises Manly Peace Park, is hereby expressly authorised:

- (a) For any purpose which the land was being used for at the date that this Plan was adopted.
- (b) For any purpose prescribed by section 46 of the *Local Government Act 1993*, or the regulation made thereunder.

The granting of leases, licences and other estates must be consistent with the objectives of this Plan, as described in Section 2.

6 ISSUES AND MANAGEMENT

This section includes a discussion of the issues requiring management relevant to the land covered by this Plan, establishes performance targets, and the means by which Council proposes to achieve this Plan's objectives and performance targets (ie: management recommendations).

In accordance with Section 36A of the *Local Government Act 1993*, the following issues and management recommendations have taken into account the existence of critical habitat, and are consistent with the objectives of the *Threatened Species Conservation Act 1995*, which are outlined in section 2 of this Plan.

This section also established priorities for implementation of each management recommendation. The priority assigned to each management recommendation gives an indication of the intended timing regarding its implementation. The following priorities have been assigned:

High – within one (1) year of adoption of this Plan.

Medium – within three (3) years of adoption of this Plan.

Low – within five (5) years of adoption of this Plan.

Ongoing – throughout the time that this Plan of Management is current.

6.1 Terrestrial Ecology

Issues:

- ❑ Companion animal management. Manly Peace Park is designated a Wildlife Protection Area under the *Companion Animals Act 1998*. Immediately following the announcement of Critical Habitat for the Endangered population of Little Penguins, Council resolved that all areas designated as critical habitat also be designated as a Wildlife Protection Area.
- ❑ Protection of the rock platform from collection and graffiti.
- ❑ Little Penguins – critical habitat: note eradication of the weeds leading from the rocky foreshore to the grassed area of the park would be undesirable as they provide habitat (shelter and protection) for little penguins. Any removal of exotics/weeds should be undertaken gradually with the slow replacement with indigenous species.
- ❑ People should be deterred from going down to the rocky foreshore area as this may disturb little penguins and their habitat.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

- ❑ To protect and improve the natural environment of Manly Peace Park.
- ❑ To facilitate ecologically sustainable use of the foreshore and park areas.
- ❑ To protect the Critical Habitat of the Endangered population of Little Penguins at Manly Peace Park.

Management Recommendations (Strategies) and priorities:

Implement Terrestrial Ecology recommendations outlined in the Little Manly Coastline Management Plan – Action Plan in accordance with the priorities identified within that Plan.

Ensure that provisions of the *Threatened Species Conservation Act 1995* are met in undertaking any bush regeneration works. For example a Licence is to be obtained from the DEC to undertake any regeneration works in areas of threatened species, populations or ecological communities. The Licence application is likely to require an SIS where regeneration is in areas of critical habitat.

6.2 Recreational Facilities and User Groups

Issues:

Railing needs upgrading and improving.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Maintenance of existing recreational facilities.

Management Recommendations (Strategies) and priorities:

- ❑ Replace existing safety railing with a more aesthetically sympathetic design.
- ❑ Implement Terrestrial Ecology recommendations outlined in the Little Manly Coastline Management Plan – Action Plan in accordance with the priorities identified within that Plan.

6.3 Coastline Hazards

Issues:

Potential slope and cliff instability although present stability does not threaten property or life.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Reduce to an acceptable level, the risk to property and life as a result of slope and cliff instability.

Management Recommendations (Strategies) and priorities:

- ❑ Implement Coastline Hazard recommendations outlined in the Little Manly Coastline Management Plan – Action Plan in accordance with the priorities identified within that Plan.

6.4 Landscape Character

Issues:

Increase indigenous species planting near boundary with Kilburn Towers to soften the impact of the harsh wall.

View maintenance to be taken into consideration with all landscaping works.

The safety fencing (cliff line railing) may require upgrading.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

- ❑ To retain existing views and maintain or improve the landscape character of the grassed area.
- ❑ Maintain the existing low key and informal landscape character.

Management Recommendations (Strategies) and priorities:

- ❑ Install signage regarding the exclusion of companion animals from the Park and foreshore area (Critical habitat and Wildlife Protection Area).
- ❑ Implement landscaping recommendations identified in the Little Manly Coastline Management Plan: Action Plan in accordance with the priorities identified within that Plan.

6.5 Heritage

Issues:

The foreshore land included in and surrounding Manly Peace Park is listed under Schedule 4 of the Manly Local Environment Plan 1988 as an item of environmental heritage.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

- Foreshore area maintained as an item of environmental Heritage.

Management Recommendations (Strategies) and priorities:

- Continue to assess all potential impacts on the foreshore in accordance with relevant provisions under the Manly LEP 1988.
- Implement heritage recommendations identified in the Little Manly Coastline Management Plan – Action Plan in accordance with the priorities identified within that Plan.

7 PLAN REVIEW AND PERFORMANCE ASSESSMENT

The management recommendations are to be reviewed every two (2) years simultaneously with the review of the adopted Little Manly Coastline Management Plan.

The review process is to ensure that this Plan's management recommendations are kept up-to-date and that they reflect the views of the community and other stakeholders.

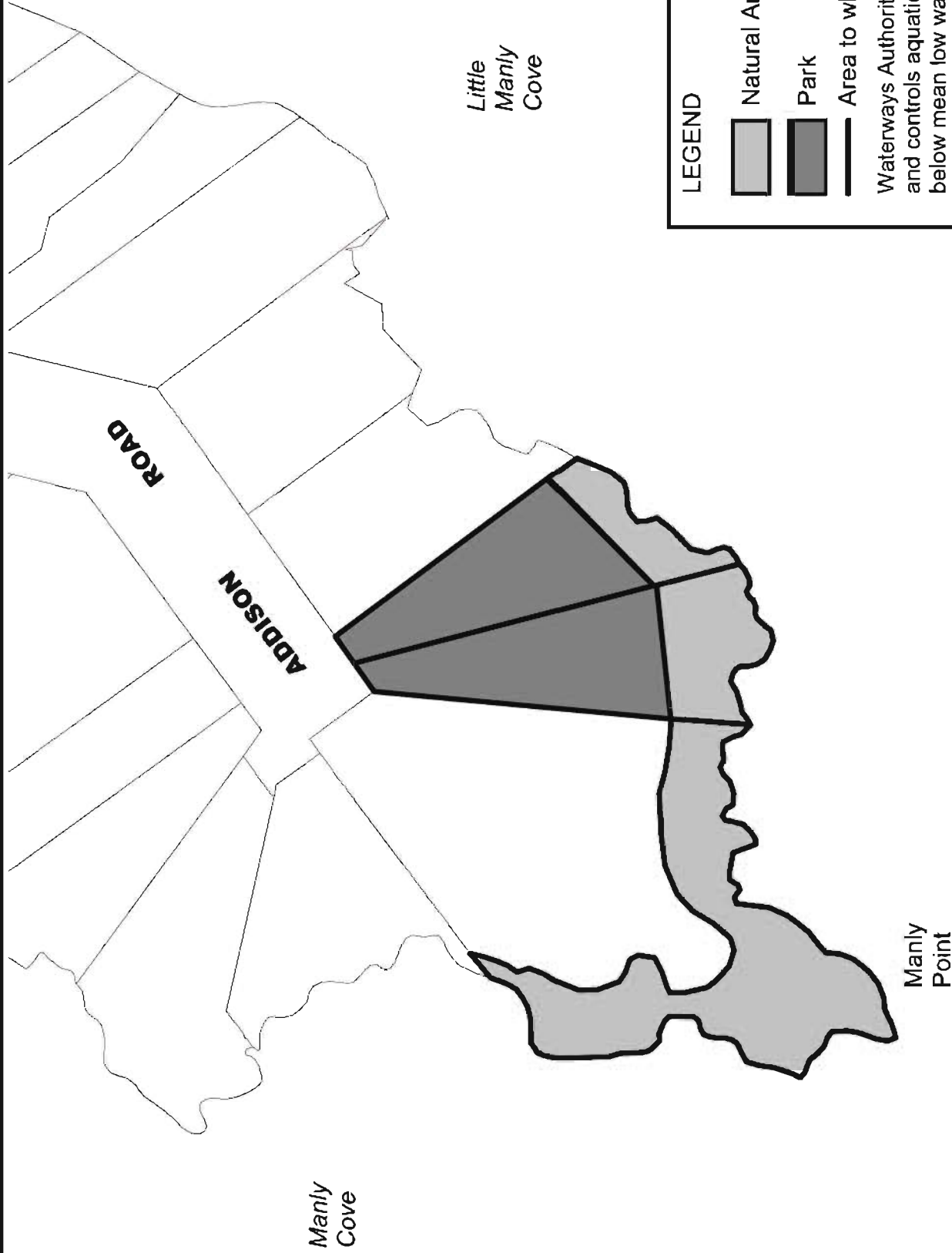
The review will include:

- A brief report on the progress of the Coastline Management Plan (directed to the appropriate Council file). The progress is to be measured against the adopted Plan's performance targets.
- Alterations and/or updates to the management recommendations, if required.
- The introduction of new issues that may need to be addressed.

8 APPENDICES

Appendix 3a Land covered by this Plan.

Appendix 3b Little Penguin Critical Habitat Map.



Scale: NTS

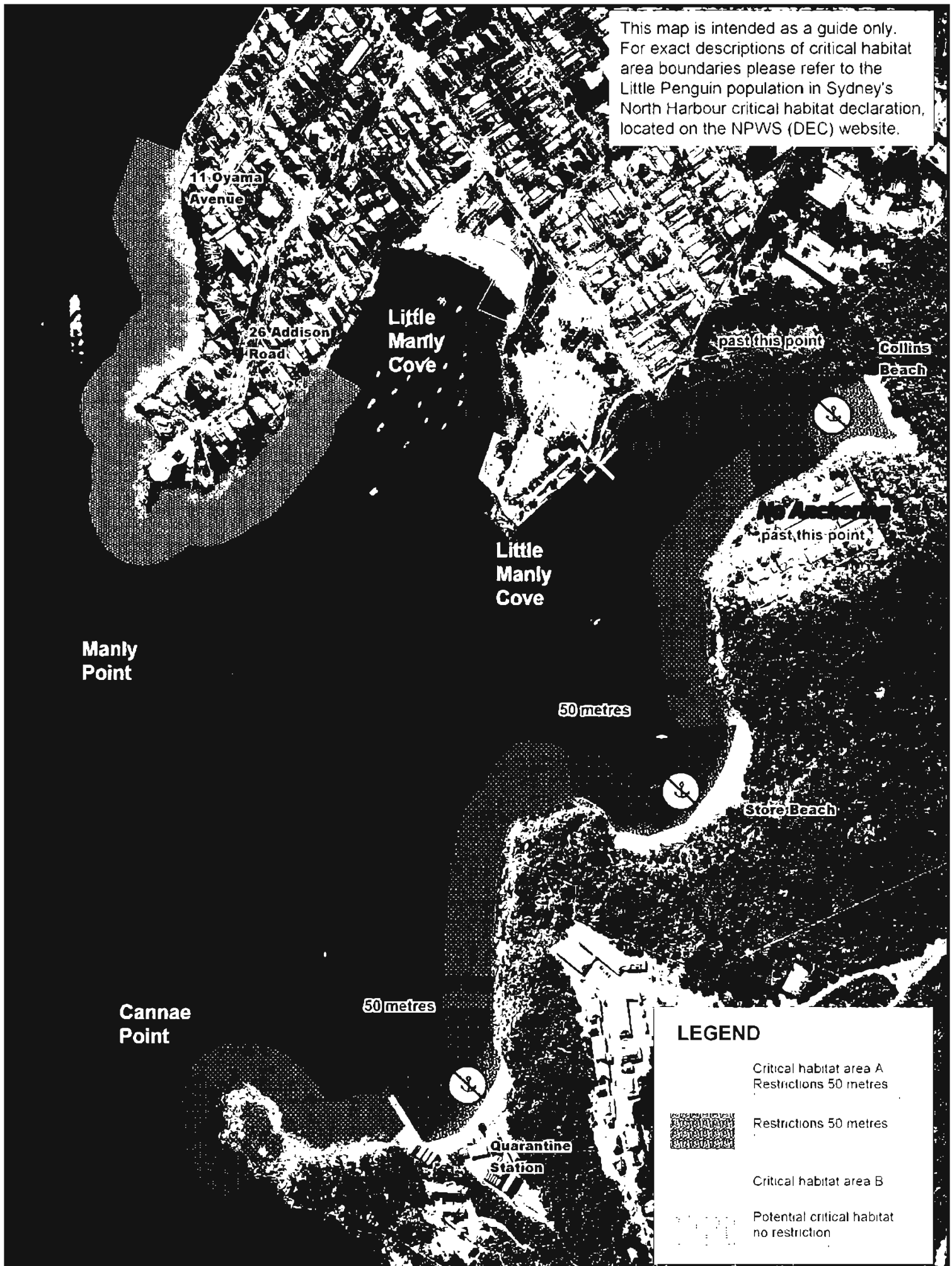
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APPENDIX 3a Manly Peace Park Study Area

This map is intended as a guide only. For exact descriptions of critical habitat area boundaries please refer to the Little Penguin population in Sydney's North Harbour critical habitat declaration, located on the NPWS (DEC) website.



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APPENDIX 3b Penguin Critical Habitat Aerial View

**DRAFT PLAN OF MANAGEMENT FOR UNNAMED RESERVE –
STUART STREET, LITTLE MANLY**

1 INTRODUCTION

1.1 Introduction and Land Covered by this Plan

Under the *Local Government Act 1993* a Council must prepare Plans of Management for Community Land.

The land covered by this Plan is shown in [Appendix 4a](#) and includes the following Community land:

Title: Lot 1, DP 544297

Owner: Manly Council

Description: Part of the area of land located at the end of Stuart Street which includes through access to the lower rock platform area and a walking track to Collins Beach. The area of the land is 4,338m².

Categorisation: **Natural Area – foreshore and bushland.**

Under the *Local Government Act 1993* a 'specific' Plan of Management is required for each parcel of community land all or part of which consists of critical habitat (as declared under *the Threatened Species Conservation Act 1995*), or to which a recovery plan applies. In September 2002 critical habitat was declared for the endangered population of little penguins at Manly. As shown in

[Appendix](#)

~~Appendix 4b~~, critical habitat (Area A) applies to part of the reserve covered by this Plan. As a result this Plan has been prepared as a specific Plan of Management to meet legislative requirements.

1.2 Relationship Between this Plan of Management and the Little Manly Coastline Management Plan

The Little Manly Coastline Management Plan is intended to be the overall holistic Plan for the strategic management of the Little Manly Study area, including the land covered by this Plan. **This specific Plan of Management has been prepared solely for the purpose of meeting legislative requirements** as described in section 1.1. All performance targets, strategies (management recommendations) and monitoring programs identified in this Plan have been incorporated into the Little Manly Cove Coastline Management Plan for ease of use and reference.

Please refer to the Little Manly Cove Coastline Management Plan for details of Council's holistic management approach to issues in the Little Manly Cove and Spring Cove areas.

1.3 Definition of Community Land

Community land is public land that is significant to the community and has been classified as such. Community land does not include land to which the *Crown Lands Act 1989* applies.

1.4 Categorisation

The land identified in [Appendix 4a](#) and section 1.1 of this Plan are owned by Council and classified as **Community Land**.

Under Part 2, Section 36, Clause 4 of the *Local Government Act 1993* a Plan of Management must further categorise the Community Land covered by this Plan. Under Section 36A Clause 3(b) this Plan must further categorise the land covered by this Plan as natural area.

This Plan of Management therefore categorises the land identified in [Appendix ~~Appendix- 4a~~](#) and Section 1.1 of this Plan as **natural area – foreshore and bushland**.

In accordance with Section 21 of the *Local Government (General) Regulation 1999*, a draft plan of management that categorises an area of community land, or parts of an area of community land, in more than one category must clearly identify the land or parts of the land and the separate categories (by a map or otherwise). Refer to [Appendix 4a](#) for map of community land categorisation.

1.5 Land Zoning

The land covered by this Plan is zoned as Open Space under the Manly Local Environment Plan 1988.

Under the Manly Local Environment Plan 1988 the area is also identified as a Foreshore Scenic Protection Area and as a result only some developments are exempt from requiring development consent. The provisions for the Foreshore Scenic Protection Areas are detailed in Clause 17 of Manly's LEP 1988.. Council must be satisfied that any development proposed within the area does not impact on the amenity of the Foreshore Scenic Protection Area.

1.6 Critical Habitat

Part of the land to which this Plan of Management applies consists of Critical Habitat for the Endangered Population of Little Penguins at Manly.

Refer to

[Appendix](#)

[Appendix 4b](#) for a map of critical habitat areas declared for the endangered population of little penguins at Manly.

2 PLAN OBJECTIVES

This Plan has been developed to meet the following objectives:

- to meet Council's obligations under Section 36 of the *Local Government Act 1993* in respect to Public (Community) Land Management;
- to enable Council to renegotiate and/or enter into contracts, leases, licences, hire arrangements and other estates, which relate to the development, maintenance or use of the land in accordance with this Plan's Stated objectives;
- to address issues requiring management as identified through community consultation;
- to identify clear and achievable management strategies to conserve and protect the natural and social environment and to address community expectations;

- to manage and protect, within the capacity of Council, Critical Habitat areas declared for the endangered population of little penguins at Manly.
- to conserve, restore and protect the terrestrial and aquatic environments of the land covered by this Plan and adjacent waters;
- to identify a review process to monitor the success of the management options identified in the Management Plan;
- to provide for effective asset management, maintenance and improvement with regard to community land covered by this plan;
- to provide for user health, safety and enjoyment of the area;
- In accordance with requirements of the *Local Government Act 1993*, the following objectives apply to land categorised as natural area – foreshore and natural area – bushland:

The core objectives for management of community land categorised as a **natural area** are:

- (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- (b) to maintain the land, or that feature or habitat, in its natural state and setting, and
- (c) to provide for the restoration and regeneration of the land, and
- (d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- (e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

The core objectives for management of community land categorised as **foreshore** are:

- (a) to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area, and
- (b) to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.

The core objectives for management of community land categorised as **bushland** are:

- (a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the lands, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and
- (b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and
- (c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating and disturbance caused by human intrusion, and

- (d) to restore degraded bushland, and
- (e) to protect existing landforms such as natural drainage lines, watercourses and foreshores, and
- (f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long-term, and
- (g) to protect bushland as a natural stabiliser of the soil surface.

In accordance with Section 36A of the *Local Government Act 1993*, the above objectives take account of the existence of critical habitat, and are consistent with the objectives of the *Threatened Species Conservation Act 1995*, which are as follows:

- (a) to conserve biological diversity and promote ecologically sustainable development, and
- (b) to prevent the extinction and promote the recovery of threatened species, populations and ecological communities, and
- (c) to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and
- (d) to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and
- (e) to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed, and
- (f) to encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

3 USES OF THE LAND

3.1 Current and Permitted Uses

This Plan provides for and authorises the following current and permitted purposes for which the land covered by this Plan (as identified in [Appendix 4a](#) and Section 1.1) may be used.

- Bushland conservation and management;
- Passive recreation;
- Protection of Critical Habitat declared for the Endangered Population of Little Penguins at Manly;
- Heritage conservation;
- Walking/jogging access to Collins beach;
- Bushfire hazard reduction;
- Coastal Hazard Management/reduction;
- Any activity required to meet the core objectives applying to the land categorised as natural area, foreshore and bushland as prescribed by the Local Government Act (refer to section 2).

3.2 Future Development of the Land

This Plan of Management permits future ‘development’ of the land covered by this Plan (refer to [Appendix 4a](#)) only for uses listed in section 3.1 of the Plan. Any such developments must meet the requirements of all relevant legislation and Council Policy, and must not contradict the objectives of this Plan of Management as stated in section 2.

3.3 Scale and Intensity of Use

The *Local Government Act 1993* requires that this Plan describe the scale and intensity of those uses or developments permitted in sections 3.1 and 3.2.

This Plan requires that all future uses and developments that are permitted by this Plan are to be undertaken at a scale and intensity that does not contradict the objectives of this Plan of Management as stated in section 2.

4 DESCRIPTION OF THE LAND

4.1 Description of Condition of the Land

The following is a description of the condition of the land and any improvements that have been undertaken on the land to-date.

The land covered by this Plan is located at the end of Stuart Street, Little Manly. It is adjacent to Spring Cove, which forms part of North Harbour. The land consists of grassed areas, bushland areas and rock foreshore.

The bushland area includes ridgetop vegetation and slopes steeply down to the rocky foreshore of Spring Cove. The weed density at the time of this Plan’s adoption was quite high, however an intact canopy cover existed throughout the reserve.

A walking track runs across the land, which provides through access from the end of Stuart Street to the rock platform area and also to Collins Beach. The pathway is in good condition and is well used.

An analysis of the soil and material on the land has been undertaken after concerns were raised regarding the contamination of the area, which received materials from the former gasworks site that was located at Little Manly Point.

The soil and material analysis categorised the soil and other materials as ‘furnace waste or natural soils’ resulting from by-products of the gas-making processes undertaken during operation of the Little Manly Point gasworks between 1883 and 1964. The categorisation of the waste is ‘inert’.

The waste The NSW EPA determined that the sites does not pose a significant risk of harm to human health or the environment.

4.2 Description of Use of the Land

At the time that this Plan was adopted the land was primarily used for walking or jogging, access to other natural areas such as Collins Beach and the rocky foreshore of Spring Cove, other passive recreation such as wildlife observation and for bushland management purposes.

In the past the land was also used as a site for the placement of waste material from the former gas works site at Little Manly Point, evidenced by the continuing furnace waste found on the site at the time that this Plan was adopted.

This Plan permits the use of the land for those purposes outlined in section 3.1.

5 LEASES, LICENCES AND OTHER ESTATES

5.1 Existing Leases, Licences and Estates

There are no Leases or Licences relevant to this Plan of Management.

5.2 Prohibited Leases, Licences and Estates

This Plan of Management prohibits the granting of Leases, Licences and other estates for the land to which this Plan applies (as identified in [Appendix 4a](#)) for the following:

- Activities prohibited by the zoning of the land; and
- Activities which are inconsistent with the objectives of this Plan as described in section 2.
- Under the Local Government Act a lease, licence or other estate must not be granted, in respect of land categorised as a natural area:
 - To authorise the erection or use of a building or structure that is not a building or structure prescribed in the following list: walkways, pathways, bridges, causeways, observation platforms and signs.
 - To authorise the erection or use of a building or structure that is not for a purpose in the following list: information kiosks, refreshment kiosks (but not restaurants)
 - Work sheds or storage sheds required in connection with the maintenance of the land and toilets or rest rooms.

Under the *Local Government Act 1993* the period for a Lease or Licence can not exceed 21 years.

5.3 Permitted Leases, Licences and Estates

The grant of a lease, licence or other estate in respect of so much of the land to which this Plan of Management applies (refer to [Appendix 4a](#)), as comprises the unnamed reserve at the end of Stuart Street, is hereby expressly authorised:

- (a) For any purpose which the land was being used for at the date that this Plan was adopted.
- (b) For any purpose prescribed by section 46 of the Local Government Act 1993, or the regulation made thereunder.

The granting of leases, licences and other estates must be consistent with the objectives of this Plan, as described in Section 2.

6 ISSUES AND MANAGEMENT

This section includes a discussion of the issues requiring management relevant to the land covered by this Plan, establishes performance targets, and the means by which Council proposes to achieve this Plan's objectives and performance targets (ie: management recommendations).

In accordance with Section 36A of the *Local Government Act 1993*, the following issues and management recommendations have taken into account the existence of critical habitat, and are consistent with the objectives of the *Threatened Species Conservation Act 1995*, which are outlined in section 2 of this Plan.

This section also established priorities for implementation of each management recommendation. The priority assigned to each management recommendation gives an indication of the intended timing regarding its implementation. The following priorities have been assigned:

High – within one (1) year of adoption of this Plan.

Medium – within three (3) years of adoption of this Plan.

Low – within five (5) years of adoption of this Plan.

Ongoing – throughout the time that this Plan of Management is current.

6.1 Terrestrial Ecology

Issues:

- ☐ Companion animal management.
- ☐ Management of the endangered population of little penguins critical habitat and associated issues.
- ☐ Fire management.
- ☐ Weed infestations.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target(s):

- ☐ To protect the natural environment of the 'Stuart Street Reserve'.
- ☐ To facilitate ecologically sustainable use of the rocky foreshore and bushland areas.
- ☐ To protect critical habitat of the endangered population of little penguins within and adjacent to the reserve.

Management Recommendations (Strategies) and priorities:

Implementation the terrestrial ecology recommendations as identified in the Little Manly Coastline Management Plan – Action Plan according to the priorities indicated in that Plan.

Ensure that provisions of the *Threatened Species Conservation Act 1995* are met in undertaking any bush regeneration works. For example a Licence is to be obtained from the DEC to undertake any regeneration works in areas of threatened species, populations or ecological communities. The Licence application is likely to require an SIS where regeneration is in areas of critical habitat.

6.2 Recreational Facilities and User Groups

Issues:

Maintenance of the bush track.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

A safe and accessible walking track between Stuart Street and Collins Beach.

Management Recommendations (Strategies) and priorities:

Implement the terrestrial Recreational Facilities and User Groups recommendations as identified in the Little Manly Coastline Management Plan – Action Plan.

6.3 Safety

Issues:

Patrons using 'Jump Rock' to dive into Spring Cove.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Information made available to inform patrons of the risk of using 'Jump Rock'.

Management Recommendations (Strategies) and priorities:

Implement Terrestrial Safety recommendations as identified in the little Manly Cove Coastline Management Plan – Action Plan according to the priorities identified in that Plan.

6.4 Coastline Hazards

Issues:

Slope and cliff instability – potential risk to property/life.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Reduce to an acceptable level, the risk to property and life as a result of slope and cliff instability.

Management Recommendations (Strategies) and priorities:

Implement Coastline Process and Hazards recommendations as identified in the little Manly Cove Coastline Management Plan – Action Plan according to the priorities identified in that Plan.

6.5 Heritage

Issues:

There are three (3) items of environmental heritage listed under Schedule 4 of the Manly Local Environment Plan 1988. These include:

- the foreshore around Spring Cove;
- two Norfolk Pines at the end of Stuart Street near Spring Cove; and
- the grassed area at the end of Stuart Street with a through access path leading to the lower rock platform area and a walking track to Collins Beach.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Appropriate management of heritage items.

Management Recommendations (Strategies) and priorities:

Implement Heritage recommendations as identified in the little Manly Cove Coastline Management Plan – Action Plan according to the priorities identified in that Plan.

6.6 Contaminated Site Management

Issues:

Contamination as a result of wastes from the former gasworks located on adjacent land.

Refer to the Little Manly Coastline Management Plan: Support Document for further detail.

Performance Target:

Management of contaminated land to ensure the land is safe for recreation and the marine environment.

Management Recommendations (Strategies) and priorities:

Implement Contaminated land recommendations as identified in the little Manly Cove Coastline Management Plan – Action Plan according to the priorities identified in that Plan.

7 PLAN REVIEW AND PERFORMANCE ASSESSMENT

The management recommendations are to be reviewed every two (2) years simultaneously with the review of the adopted Little Manly Coastline Management Plan.

The review process is to ensure that this Plan's management recommendations are kept up-to-date and that they reflect the views of the community and other stakeholders.

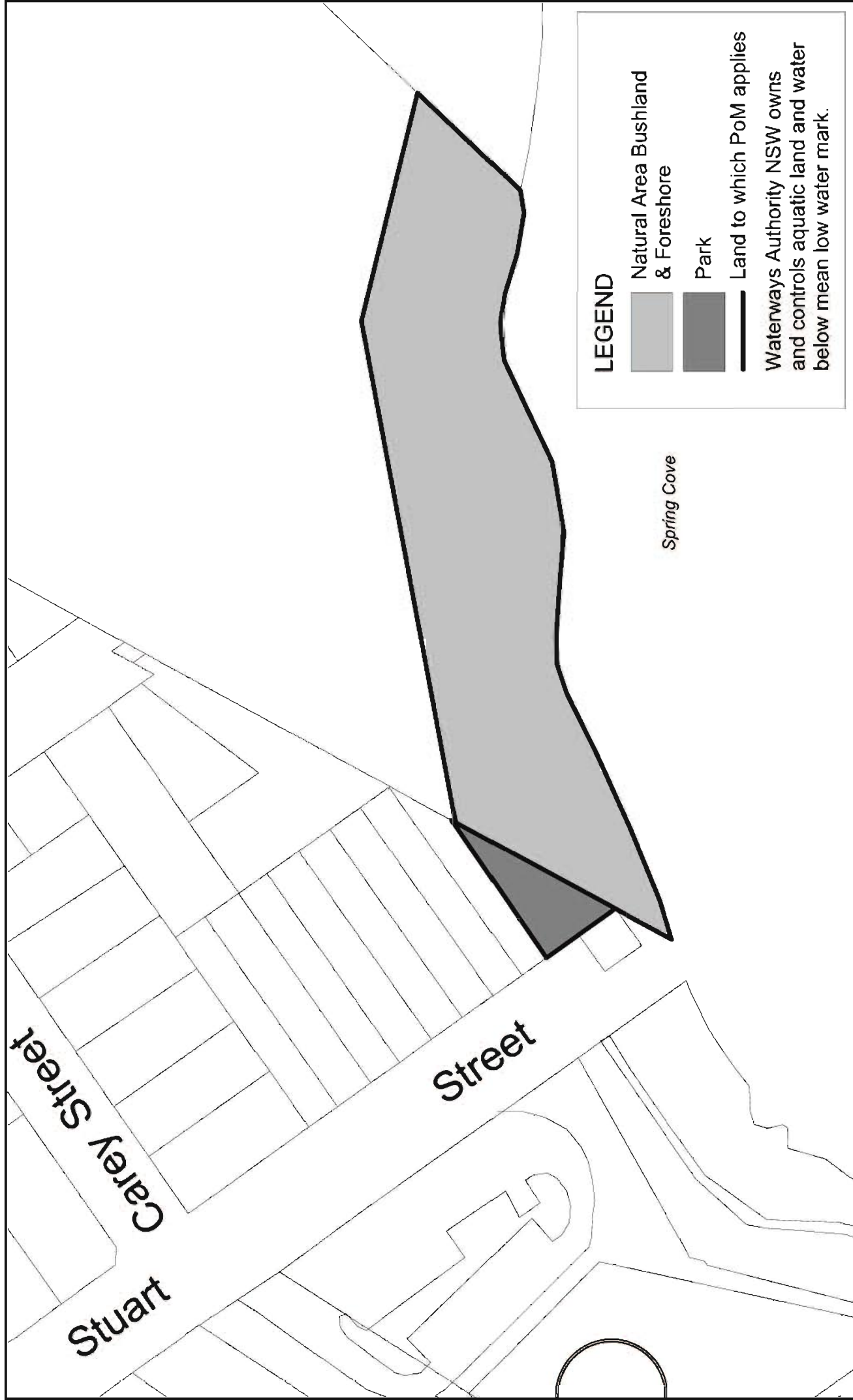
The review will include:

- A brief report on the progress of the Little Manly Coastline Management Plan (directed to the appropriate Council file). The progress is to be measured against the adopted Plan's performance targets.
- Alterations and/or updates to the management recommendations, if required.
- The introduction of new issues that may need to be addressed.

8 APPENDICES

Appendix 4a Land covered by this Plan.

Appendix 4b Little Penguin Critical Habitat Map.



Scale: NTS

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APPENDIX 4a

Unnamed Reserve
Stuart Street
Study Area

This map is intended as a guide only. For exact descriptions of critical habitat area boundaries please refer to the Little Penguin population in Sydney's North Harbour critical habitat declaration, located on the NPWS (DEC) website.

11 Oyama Avenue

26 Addison Road

Little Manly Cove

past this point

Collins Beach

Little Manly Cove

No Anchoring past this point

Manly Point

50 metres

Store Beach

Cannae Point

50 metres

Quarantine Station

LEGEND

Critical habitat area A
Restrictions 50 metres



Restrictions 50 metres

Critical habitat area B

Potential critical habitat
no restriction

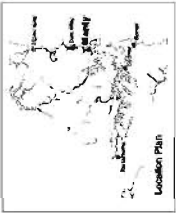


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Metres

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**APPENDIX 4b Penguin Critical Habitat
Aerial View**



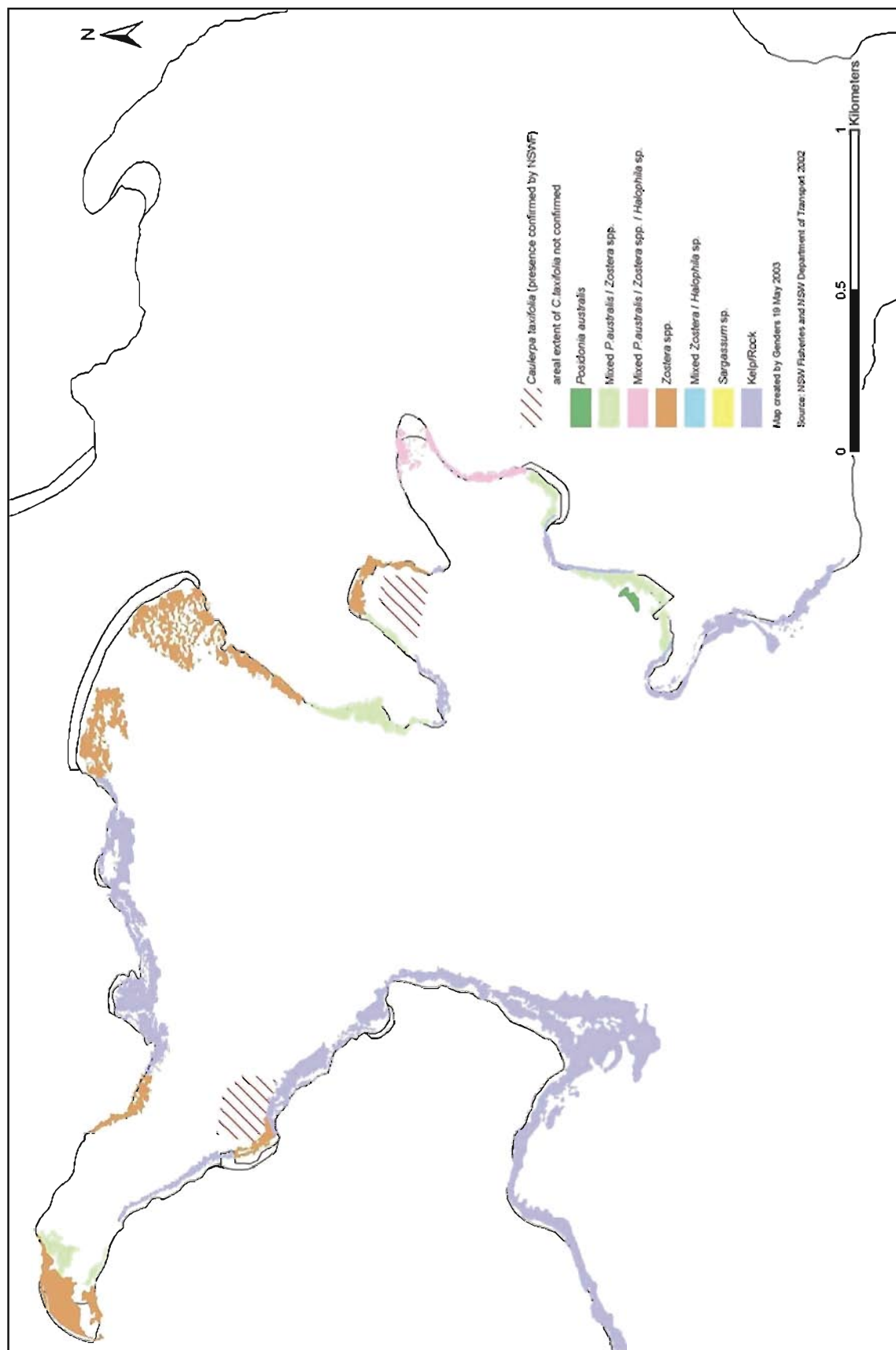
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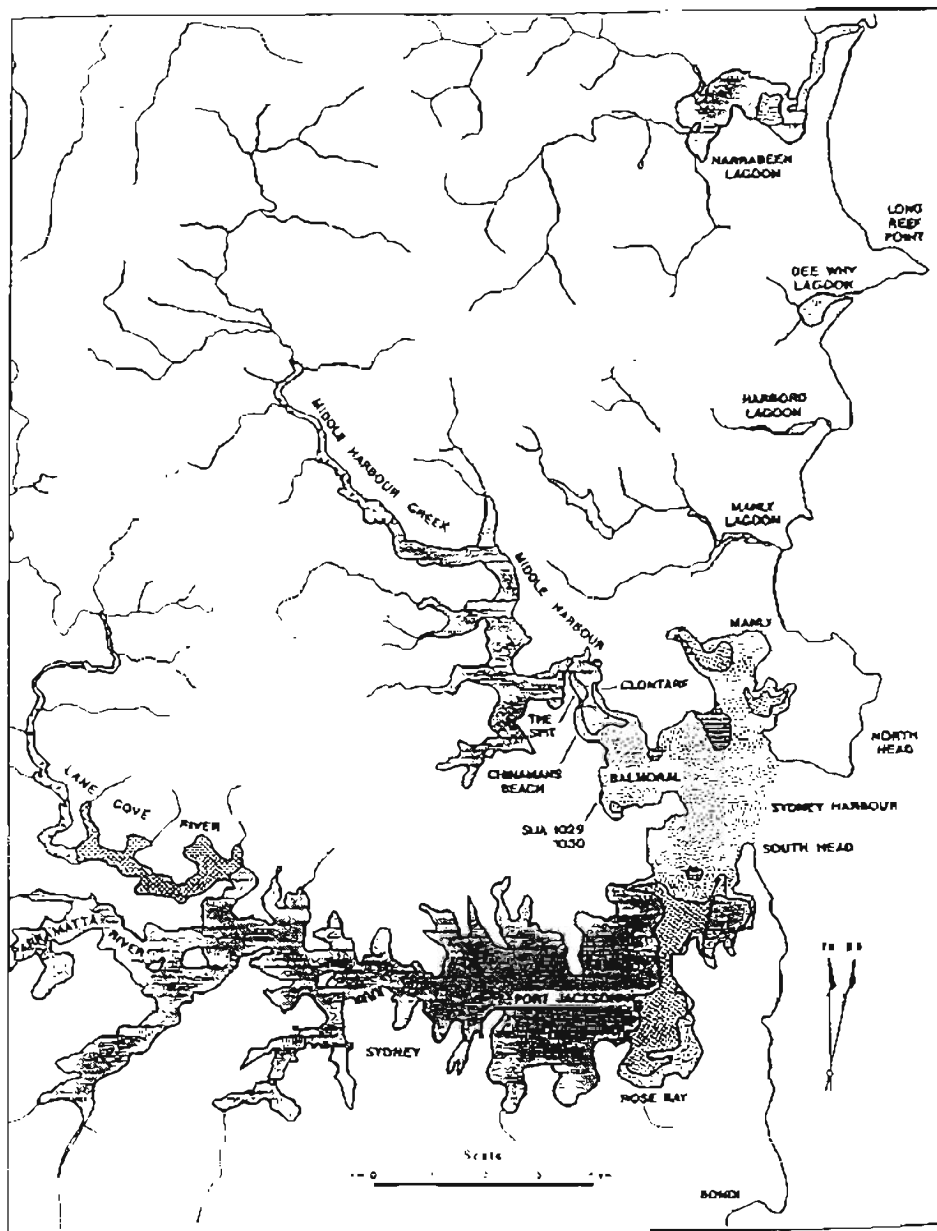


APPENDIX 5 Little Manly Cove Community land Land categorisation map

Distribution of *Caulerpa taxifolia* at Little Manly and Forty Baskets, Port Jackson



Appendix ■: Estuarine Sediments in Sydney Harbour
(Herbert 1983)



REFERENCE

	Mixed (fluvial and marine)		Clean sand (<10% mud)		Clean sand (<10% mud)
	Exposed sub-aqueous rock reef		Muddy sand (10-50% mud)		Muddy sand (10-50% mud)
					Mud and sandy mud (>50% mud)

LITTLE MANLY COVE BOAT RAMP TASKFORCE – POSITION PAPER **(File C30/3)**

SUMMARY:

THE LITTLE MANLY BOAT RAMP WAS IDENTIFIED AS A MAJOR ISSUE, IN THE CONSULTATION FOR THE DEVELOPMENT OF THE LITTLE MANLY COVE COASTLINE MANAGEMENT PLAN.

TO ASSIST IN THE DEVELOPMENT OF BOAT RAMP MANAGEMENT OPTIONS FOR INCLUSION IN THE DRAFT MANAGEMENT PLAN, A TASKFORCE CONSISTING OF A REPRESENTATIVE FROM ALL MAJOR STAKEHOLDERS, USER GROUPS AND THE LOCAL COMMUNITY WAS ARRANGED.

THE LITTLE MANLY COVE BOAT RAMP TASKFORCE WAS HELD ON TUESDAY 7 MAY 2002.

REPORT:

BACKGROUND

Based on the consultation process for the Little Manly Cove Coastline Management Plan to date, the Little Manly Cove Boat Ramp has been highlighted as a major issue for consideration. It has become clear that this boat ramp is considered important, as it is the only public access for watercraft in North Harbour.

Some of the issues associated with this boat ramp facility that were identified through the consultation include:

- Width of boat ramp access gate and the boat ramp;
- General safety issues;
- Ramp maintenance;
- Access;
- Impacts to surrounding residents;
- Overcrowding of the facilities during peak periods; and
- Planning for future use of the boat ramp

OVERVIEW

Council sort advice from a number of stakeholders to determine their interest in participating in a meeting to discuss management options for the Little Manly Boat Ramp, which would be included in the Little Manly Cove Draft Management Plan. Based on the positive feedback, Council organised the Little Manly Cove Boat Ramp Task Force to be held on Tuesday 7 May 2002.

The meeting mainly consisted of a workshop facilitated by Council, which discussed management options for the boat ramp, to be included as recommendations in the Draft Management Plan.

The aim of the taskforce was to provide a wide representation, so as to assist in the development of management options appropriate for the area.

Refer to the Agenda (Attachment A) and the Minutes (Attachment B) of the meeting, for a list of invited stakeholders and a list of stakeholders that were able to attend.

TASKFORCE MEETING

Refer to the Minutes (Attachment B) of the meeting which outlines items discussed at the meeting.

The group acknowledge that debate would not be recorded verbatim and that a position paper would be produced, which outlined general discussion points and the groups recommendations.

The group discussed the potential objectives of the meeting in relation to the boat ramp and agreed, as follows:

1. To maintain the use and status of the boat ramp as a local ramp, as opposed to a regional boat ramp;
2. To maintain capacity and constraints;
3. Take into account safety considerations and modernise ramp from the roadside perspective and the waterside perspective;
4. Protect amenity of the area;
5. Recognise duality of use, including passive and active watercraft;
6. That Waterways be requested to identify Little Manly boat ramp as a local facility, to minimise the potential disappointment of users.

FEEDBACK BEFORE MEETING

The representative from Anglers Action, Blair Gilmore was unable to attend the meeting and requested that the following points be expressed to the group:

- It is important that the boat ramp be upgraded;
- A wish list would be a landing attached to the pool, giving access to boats and additional parking.
- It would be useful if a ramp etiquette handout was developed and Anglers Action would be interested in helping with development.
- Timing for any upgrade should be late winter (August).

GENERAL DISCUSSION POINTS – TASKFORCE PARTICIPANTS

The following points were raised at the meeting:

- The need for the enhancement of existing facilities;
- The current situation is not safe:
 - Singular access/ramp – dual use not recognised.
 - Passive users not catered for.
 - People holding boats in water – exposed position.
 - Modernisation of ramp needed.
- This is a local ramp for the local community - concern about increased usage.

The following information was presented to the group from the Association representatives:

- 122 680 boat drivers licences in NSW, which is a 4.8% increase per annum and a 5.6% increase since 1991.
- 179 835 vessels registered in NSW, increase 26% since 1991 and expected to continue.
- Possibly 70 000 other craft not registered, includes dinghy's and kayaks.

- 550 000 registered vessels in Australia, with Western Australia the highest state with boat ownership.
- 90% of trailer coats in dryland storage;
- Public access ramps are crucial. They are usually constructed in public land or near recreational reserves;
- Present trailer boats are larger than what Little Manly Boat ramp was designed for. Many boats are powering on and this can lead to noise impacts.

The association representatives outlined the deficiencies of the Little Manly boat ramp, as follows:

- 1:10 incline;
- Single ramp;
- No grooves in surface;
- Occasional surge/ferry wash;
- Trailers bog at low tide;
- Operational restrictions – Residential/parking; and
- Narrow – maneuverability not good.

The fact that the area had public toilets and a sealed carpark was listed as positives.

The association representatives outlined the ideal Boat Ramp, as follows:

- Australian Standards for incline 1:7-1:9, ideal 1:8 incline;
- Consistent with Australian Standards (Marine guidelines) and public works/DLWC infrastructure standards.
- Diagonal groove surface;
- 2 lanes;
- Alongside ramp, pontoon for safety of boats and passengers;
- Shoreline protection measures – containment walls, surge alleviation;
- Sealed carpark;
- Hardstand storage;
- Washdown bay/tap for trailer wheels;
- Basic services – bins, toilets, signage;
- Minimum amount of reversing;
- Fish cleaning tables;
- Lifespan 20-25 years depending on use/weather;
- Maintenance, includes frequent maintenance (ie rubbish/weekly), periodic maintenance (maintain grass) and special maintenance (Repairs to ramp); and
- Code of Practice for use of boat ramp.

The Precinct representative emphasised to the group that this is a residential area and the impacts on the local community need to be taken into account. For this reason the present the boat ramp capacity should be maintained, to minimise impacts on local residents, parking and noise. This was acknowledged by the group and it was agreed that this is a local boat ramp facility. The group discussed the erosion at the base of the ramp and that it needed to be increased in length. It was also raised that the flushing of motors at ramp, should be banned and existing taps removed. The group agreed that there was a need to maintain existing footprint above Mean High Watermark but lengthen boat ramp below Mean High Watermark to avoid continued erosion. The group further agreed that improved traction is needed at top by diamond cutting then putting on a new surface and that the grooves need to be diagonal.

TASKFORCE WORKSHOP

Boat Ramp Options

The group agreed on seven options that would form the basis of the workshop discussion. The group identified quite early on that a number of the options were not suitable and these were eliminated from further discussion. A summary of the groups discussion is included.

Option 1 Repair cracks and reconstruct the left side of boat ramp (which has broken off).

The group agreed that this would:

- Not be a favourable option for safety reasons;
- Risk management issue;
- Human safety issue;
- Large negative effect on boats that use boat ramp.

This option was eliminated from discussion.

However the group agreed that in the short term, any urgent repairs should be done immediately.

Option 2 Reconstruct the boat ramp entirely, within the present boat ramp footprint above High Water Mark:

A) Retain Design - same slope, same material

The group agreed that this would:

- Not be a favourable option;
- Would be a mismanagement of resources; and
- The present design leads to additional noise from boats (powering on).

This option was eliminated from discussion.

B) New Design - new slope, new material

The group agreed that this would be:

- Positive in terms of budget/funding, it offers the opportunity for a staged approach, with this being the first stage;
- It addresses safety issues to some extent;
- Maintaining the single boat ramp is not ideal for boat users, but keeps constraints on boat ramp, which has positive implications for the residents; Changing the design of the ramp below Mean High Watermark by having the ramp in deeper water, is likely to decrease the need for powering on and will decrease noise impacts on residents; and
- Parallel raised gutters, could be considered as part of this design.

The group agreed potential option.

Option 3 Reconstruct the existing ramp from middle to end (ocean side) with a special material and new design (ie. if required change the slope etc)

The group agreed that this would be:

- Positive in terms of budget/funding and it includes part of Option 2B;
- This offers the opportunity for a staged approach, with this being the first stage;
- Reconstruct 60% of the ramp;
- Economically favourable, however support for this option conditional on the ability to achieve a 1:8 gradient for whole ramp;
- If medium point is above high water mark, may be suitable;
- Would need consistent traction the length of boat ramp to ensure minimise noise. Could amend top of structure, to ensure consistent with remaining part of ramp. Grooves to be diagonal and consistent with Australian standards.

The group agreed potential option.

Option 4 Construct a new boat ramp, based on a new design and increase the width.

The group agreed that this would:

- Increase conflict;
- Could lead to safety concerns; and
- Is not an ideal option.

This option was eliminated from discussion.

Option 5 Boat Ramp kept as is and review options at a later date.

The group agreed that this is not an option, as the boat ramp needs to be managed now for safety reasons.

This option was eliminated from discussion.

Option 6 A new design (ie. Slope of ramp, texture of surface) and floating pontoon system to improve safety and accessibility.

This option incorporates option 2b or 3 (conditional on the ability to achieve a 1:8 gradient for whole ramp) as stage 1.

The floating Pontoon system, fixed boarding dock or alternate module, is a supplementary stage.

The group agreed that:

- The location of the floating pontoon system would be dependent on design factors and safety;
- Examples of locations are extreme western side of boat ramp or off the swimming enclosure.

The group identified a potential location for the Floating Pontoon system (refer to Attachment C).

The group agreed potential option.

Option 7 Passive boat area set aside on beach in addition to boat ramp and holding bay (5 minute zone - 2 car spaces) for unloading passive craft.

The group agreed that this would:

- Decrease conflict, as at present the passive craft have no designated area and have to fight to drop off and load into the water when active craft are loading onto the boat ramp;

The group discussed locations for the passive boat area and holding bay. It was agreed that:

- A review of the area should occur and a point identified for access by passive craft. It needs to be a gentle slope from grass to sand. This should not be a hard surface, it should remain as is but be identified through signage and education. Developing a boat ramp etiquette handout, would assist in the identification to users of the passive boat area.
- A review of the parking area should occur with the aim of incorporating a holding bay (5 minute zone - 2 car spaces) for dropping off passive craft.

The group identified potential locations for access area and holding bay (refer to Attachment C).

The group agreed potential option.

Taskforce Conclusions

The taskforce agreed that a staged approach for the boat ramp would be the recommended option. This could then allow works to be done as funding becomes available. The group agreed that the management recommendations should incorporate the three stages of works:

Stage 1

- Reconstruct the boat ramp, within the present boat ramp footprint above Mean high Water Mark with a new design, including new slope and new material (Option 2B); or
- Reconstruct the existing ramp from middle to end (ocean side) with a new design, including new slope and new material (this option is conditional on the ability to achieve a 1:8 gradient for whole ramp) (Option 3)

Stage 2

Passive boat area set aside on beach and holding bay (5 minute zone - 2 car spaces) for unloading passive craft (Option 7).

Stage 3

Floating Pontoon System to improve safety and accessibility.

The group did conclude that any urgent short-term repairs that are a safety hazard, should be done immediately while funding and approvals are being obtained for the preferred management option.

The group also discussed the need for a Boat Ramp code of conduct/etiquette handout and associated education project.

The group also agreed that there is a need for the boat ramp design to reflect the duality of use (ie passive and active boating).

Construction of Potential Option

The group agreed that the time period when construction should occur is during the winter months, June to September.

Funding Opportunities

The group discussed funding opportunities and the opportunity of obtaining grants through the process administered by Waterways.

The representatives from the Boating Industry Association and the Boat Owners Association, confirmed that letters of support for a Council grant application could be obtained from the Associations.

The application should emphasise redesign of existing ramp with public liability and infrastructure safety implications.

TASK FORCE RECOMMENDATION:

That the Little Manly Boat Ramp management recommendations outlined below be included in the Draft Little Manly Cove Coastline Management Plan.

1. That a staged approach for the boat ramp enhancement works be adopted, as follows

Stage 1

- Reconstruct the boat ramp, within the present boat ramp footprint above Mean high Water Mark with a new design, including new slope and new material (Option 2B); or
- Reconstruct the existing ramp from middle to end (ocean side) with a new design, including new slope and new material (this option is conditional on the ability to achieve a 1:8 gradient for whole ramp) (Option 3)

Stage 2

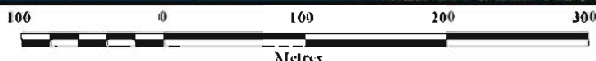
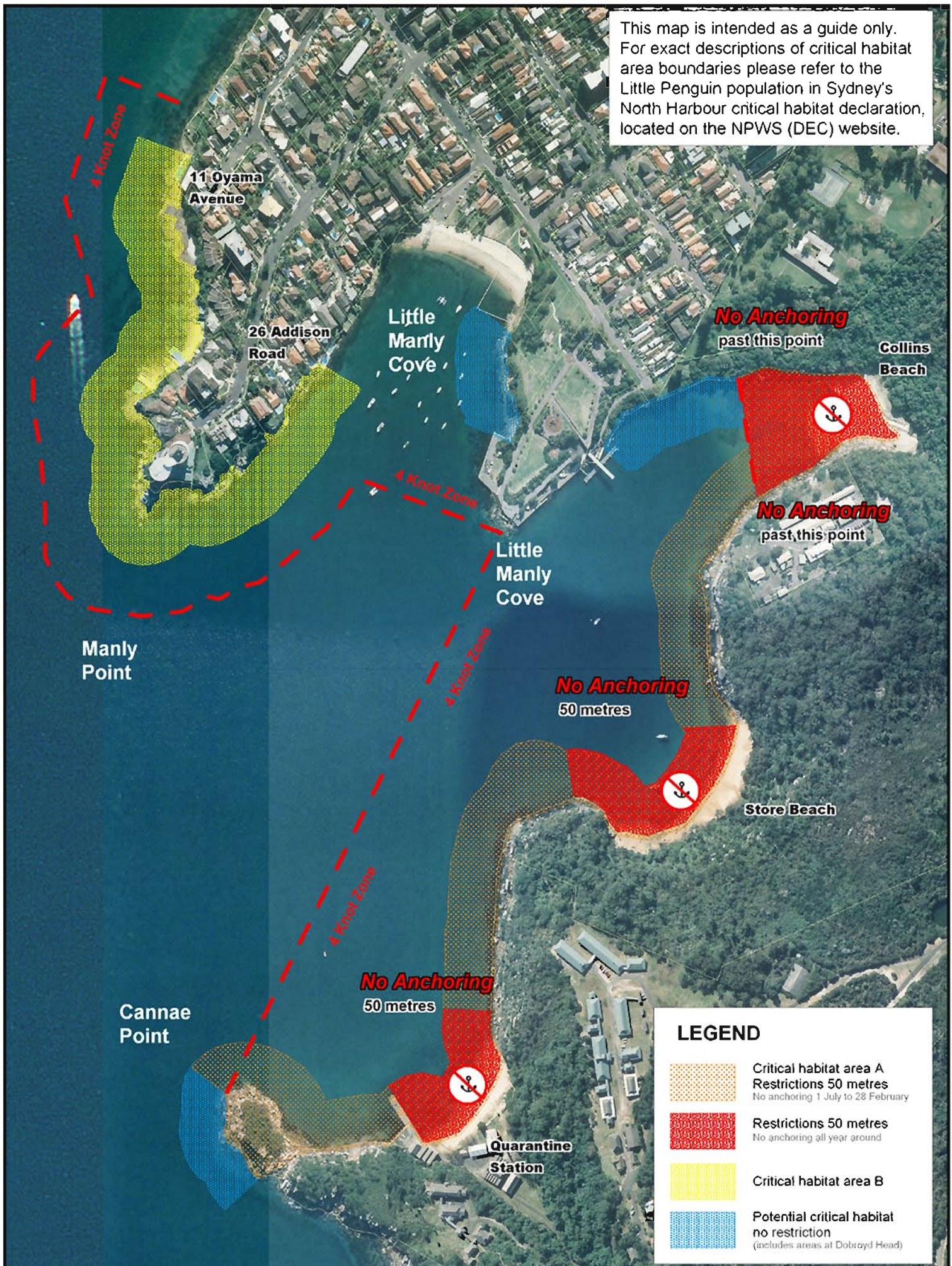
Passive boat area set aside on beach and holding bay (5 minute zone - 2 car spaces) for unloading passive craft (Option 7).

Stage 3

Floating Pontoon System to improve safety and accessibility.

2. That a Boat Ramp code of conduct/etiquette handout and associated education project be developed and implemented.
3. That the management recommendations reflect that the Little Manly Boat Ramp is a local facility and that there is a need for duality of use (ie: passive and active boating).

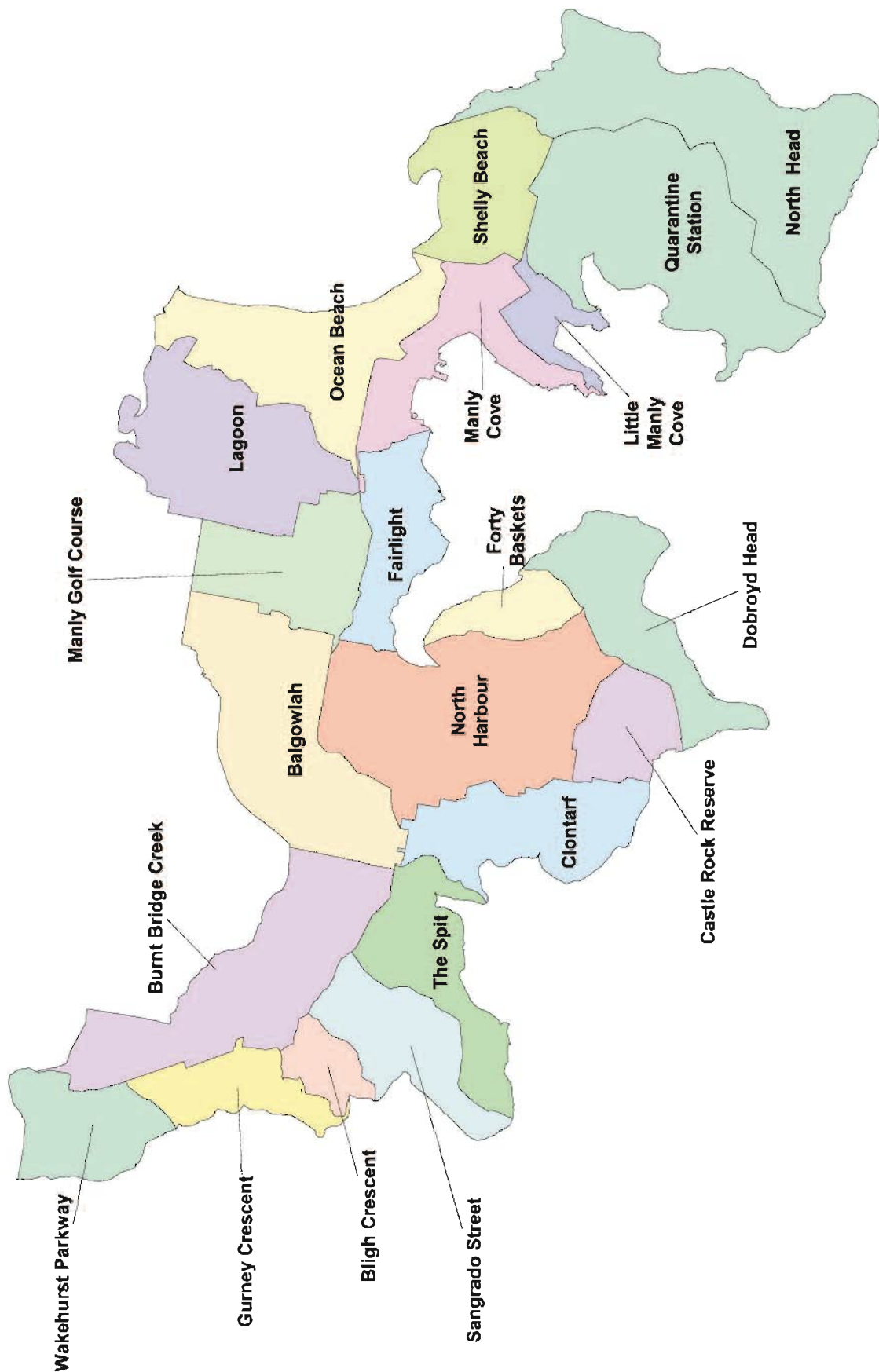
This map is intended as a guide only. For exact descriptions of critical habitat area boundaries please refer to the Little Penguin population in Sydney's North Harbour critical habitat declaration, located on the NPWS (DEC) website.



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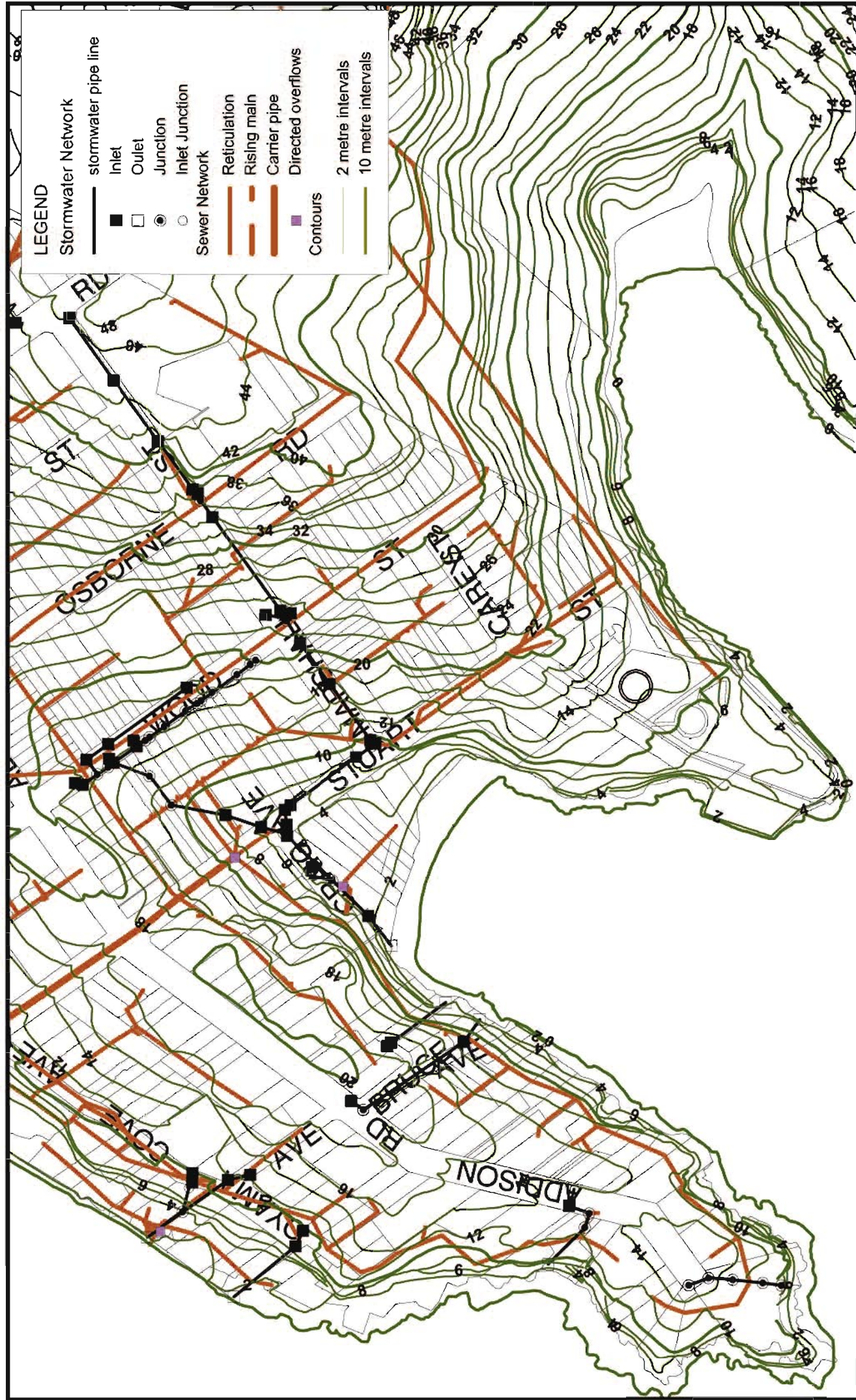
APPENDIX 9 Penguin Critical Habitat Aerial View



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APPENDIX 10 Catchment Boundary Map



Scale: NTS Australian Map Grid 56 (AGD 66)

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APPENDIX 11 Little Manly Cove

Note: The Sewer and water supply data used in this map is the property of Sydney Water. It is a guide only, for current information please contact Sydney Water.



Stormwater and Sewerage Networks

**Process for the development of Coastline Management Plans
(in accordance with the NSW Government Coastline Management Manual
1990 and the Local Government Act 1993)**

**Local Government Act 1993
Requirements.**

Minimum Requirements under the Act:

- Categorise the land in accordance with s.36(4) and (5)
- Detail objectives for the management of the land
- Specify performance targets
- Specify the means of achieving the objectives and targets
- Specify how achievement of the objectives and performance targets is to be assessed

For plans that are specific to one area of land made after 1 January 1999, the plan must also:

- Describe the condition and use of the land and buildings on the land as at adoption
- State the purpose for which the land will be allowed to be used, and the scale and intensity of the use

Additional Matters as outlined in the Local Government Act 1993

Where the Council controls but does not own the land the plan must:

- Identify the owner of the land
- State whether the land is subject to any trust, estate, interest, dedication, condition, restriction or covenant
- State whether the use or management of the land is subject to any condition or restriction imposed by the owner
- Include any provisions that may properly be required by the person who owns the land
- Not contain provisions inconsistent with the owner's requirements

**Process under NSW Government
Coastline Management Manual 1990**

Establish Coastline Management Committee and Coastline Management Plan Steering Committee



Coastline Management Study

- Undertake a Coastline Hazard Definition Study
- Address social issues – access, recreation use, visual features etc.
- Land ownership and planning controls
- Terrestrial and aquatic environments
- Management options.



Draft Coastline Management Plan

- Support Document
- Action Plan that describes the recommendations for management of the coastline



Draft Coastline Management Plan Exhibition

- Public exhibition
- Government authorities



Coastline Management Plan Adoption & Implementation



Coastline Management Plan Review & Evaluation



Little Manly Coastline Management Plan

ACTION PLAN: May 2004

Priorities:

High – within 2 years of adoption of the CMP

Medium – within 4 years of adoption of the CMP

Low – within 5 years of adoption of the CMP

Ongoing – throughout the time that this Coastline Management Plan is current.

Authority Abbreviations

WA – Waterways Authority

NSWF – NSW Fisheries

NPWS – NSW National Parks & Wildlife Service (now part of the Department of Environment & Conservation)

DIPNR – Department of Infrastructure, Planning & Natural Resources

MC – Manly Council

SPA – Sydney Ports Authority

Police – NSW (Manly) Police Service

SAP – Manly Scientific Advisory Panel

SW – Sydney Water

SCCG – Sydney Coastal Council Group

P&S – Planning & Strategy (Corporate Planning & Strategy), Manly Council

NRM - Natural Resource Management (Corporate Planning & Strategy), Manly Council

US – Urban Services (Corporate Planning & Strategy), Manly Council

ES – Environmental Services, Manly Council

CS – Civic Services, Manly Council

COS – Corporate Services, Manly Council

MEC – Manly Environment Centre

Please note that these priorities are intended as a guide only and represent the desirable timeframes for addressing each action. The priorities may be revised to be in accordance with available resources and in consultation with the responsible agency and/or department/division of Council, bearing in mind that this is a strategic plan with a timeframe of 10 to 20 years (with revisions). Implementation of this plan will also be required to have regard to other Council priorities.

Note the status column is to be filled out during the implementation of the Plan. When a recommendation is completed the status column is to read 'complete' and the date of completion recorded.

A number of the identified recommendations are issues that are broader than this Coastline Management Plan and have been included in more weighty Council documents and programs such as the Manly Sustainability Strategy, Council's Development Control Plans etc. These have still been included in the action plan however appear shaded grey.

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AQUATIC ISSUES – ACTION PLAN

AQUATIC ECOLOGY

Objective / Performance Target:

- ☐ To conserve and enhance the integrity and diversity of the indigenous marine flora and fauna, and their ecosystems.
- ☐ To achieve community awareness of and assistance with the conservation of aquatic ecology through education and participation.
- ☐ To minimise the impact that the Manly LGA has on the aquatic ecology of North Harbour.

Recommendation / Strategy	Additional Action	Priority, Responsibility & Collaboration	Funding	Status
AE1. Identify moorings located over seagrass beds and where feasible relocate those moorings to reduce impact on seagrass beds.	MC to liaise with WA to undertake this recommendation.	Responsibility: WA Priority: High	WA	
AE2. Extend the seagrass friendly moorings into North Harbour (including Little Manly Cove) as replacement moorings should they prove effective in the current Waterways trial.	MC to stay up-to-date in the progress of the mooring trial in Port Hacking and MC to encourage the WA to introduce effective seagrass friendly moorings in North Harbour.	Responsibility: WA Priority: Medium	WA	
AE3. Lobby WA to increase time and resources allocated to the enforcement of boating restrictions in the area.		Responsibility: MC – NRM to lobby WA. Priority: High	N/A	

AE4. Lobby NSWF to undertake further mapping and monitoring of seagrass in the study area.		Responsibility: MC to lobby, NSWF to undertake the mapping and monitoring. Priority: High & ongoing.	N/A	
AE5. NSWF to provide up-to-date seagrass distribution maps to WA and MC for decision-making and education purposes.	WA and MC to distribute map to boat users and other community groups for their education and use.	Responsibility: NSWF Priority: High	NSWF	
AE6. Lobby state government to authorise NSWF officers to enforce boating restrictions near seagrass beds.		Responsibility: MC – NRM Priority: Medium	N/A	
AE7. Continue to liaise with NSWF to facilitate the extension of the North (Sydney) Harbour Aquatic Reserve boundary to include the whole of North Harbour north of a line drawn between Quarantine Head and Grotto Point.	Continue to provide input into the development of the North (Sydney) Harbour Aquatic Reserve Management Plan reiterating: <ul style="list-style-type: none"> the need for the extension of the aquatic reserve; The inclusion of rock platforms around North Harbour presently excluded; increase protection of seagrass beds to minimise 	Responsibility: MC – P&S & NRM Priority: High & ongoing	N/A	

	boat anchoring damage in the reserve; and <ul style="list-style-type: none"> increase enforcement of recreational fishing in the reserve. 			
AE8. Nominate North Harbour Aquatic Reserve for inclusion on the NSW State Heritage Register.		Responsibility: MC – P&S, NRM Priority: Medium	N/A	
AE9. Lobby NSWF to act on the issue of commercial fishing in the area taking into consideration the issues of community feedback, little penguin critical habitat, the area's designation as an aquatic reserve <i>Posidonia</i> beds and evidence of <i>Caulerpa taxifolia</i> in the area. As a minimum response encourage NSWF to undertake a study into the impacts of commercial fishing in the Aquatic Reserve to investigate whether commercial fishing should be banned.	Implement through continued participation in the development of the North Harbour Aquatic Reserve Management Plan.	Responsibility: MC – P&S, NRM and MEC Priority: High	N/A	
AE10. Include seagrass awareness information on boat ramp code-of conduct sign adjacent to Little Manly boat ramp.	Incorporate information regarding the presence of <i>Caulerpa taxifolia</i> in Little Manly Cove.	Responsibility: MC – NRM, NSWF. Priority: High	MC Sharing Sydney Harbour Access Program (DIPNR)	

AE11. Encourage local residents, dive/snorkel groups and boat users to report all <i>Caulerpa taxifolia</i> sightings to NSW Fisheries.		Responsibility: NSWF, MC – NRM and MEC. Priority: High & ongoing	N/A	
AE12. Fisheries to keep the community, Waterways and MC informed of the distribution of <i>Caulerpa taxifolia</i> .	MC to integrate updated information into planning decisions. NSWF to continue mapping and monitoring <i>Caulerpa taxifolia</i> distributions.	Responsibility: NSWF priority: High & ongoing	NSWF	
AE13. Seek the results of any marine ecology studies that are undertaken in the area in the future.	Liaise with the Underwater Research Group regarding their Marine Biodiversity Study. Liaise with the North Head Sanctuary Foundation, who were seeking grant funds to undertake a marine study.	Responsibility: MC – NRM and MEC Priority: Medium	N/A	
AE14. Encourage the establishment of a community based seagrass monitoring program to provide reliable data on any change in the distribution or health of seagrass in North Harbour.	Contact the URG, who are undertaking marine biodiversity studies in the aquatic reserve, including a snap shot of <i>Caulerpa</i> distribution, also contact Dive shops. Refer to AE11.	Responsibility: MC – NRM and MEC, NSWF. Priority: Medium & ongoing	MC – Environment Levy	

AE15. That NSW Fisheries develop and implement a management strategy to stop the spread of <i>Caulerpa taxifolia</i> in and around North Harbour (including Little Manly Cove).	The strategy should include a program to monitor the spread of <i>Caulerpa taxifolia</i> .	Responsibility: NSWF Priority: High	NSWF	Caulerpa Control Plan adopted by Minister for Fisheries in March 2004. Implementation of Control Plan underway.
AE16. That MC encourage Fisheries to investigate the possibility of boating and fishing exclusion zones around known <i>Caulerpa taxifolia</i> locations in North Harbour (including Little Manly Cove).	Consider as part of <i>Caulerpa taxifolia</i> Control Plan/management strategy.	Responsibility: MC – NRM Priority: High	N/A	
AE17. Liase with the Sydney Ports Authority to facilitate the inclusion of a North Harbour Aquatic Reserve sampling site into the Authority's ongoing marine pest surveys.		Responsibility: MC – NRM Priority: Medium	N/A	
AE18. Improve signage for the Sydney Harbour Intertidal Protected Area to address ongoing collection of invertebrates from rock platforms along the eastern side of Manly Point.		Responsibility: NSWF & MC – NRM Priority: High	NSWF	

AE19. Continue to liaise with the Underwater Research Group to obtain results of their marine biodiversity study of North Harbour.	<p>The study also looks at the presence and distribution of <i>Caulerpa taxifolia</i>, these results should also be obtained.</p> <p>Refer to AE15.</p>	<p>Responsibility: MC – NRM and MEC</p> <p>Priority: High</p>	N/A	
AE20. Continue to educate boat users on their impacts on the marine environment through MC's Starboard Right and Green education program.	<p>Refer to Manly Sustainability Strategy and Education for Sustainability Strategy.</p> <p>Include information regarding the importance of seagrass beds, the potential impacts of boating activities on seagrass, and the presence of <i>Caulerpa taxifolia</i>.</p> <p>Work in consultation with NSWF and WA.</p>	<p>Responsibility: MC – NRM & MEC, NSWF, WA</p> <p>Priority: High & ongoing</p>	MC – Environment Levy	

Estuarine / Coastal Hydrodynamics

Objectives / Performance Targets:

- Greater understanding of the hydrodynamic environment in the study area to guide future management decisions.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
HYD1. That information regarding the hydrodynamics of Little Manly and Spring Coves be obtained through a sound scientific study only where this information is required by MC to assess Local Government Area impacts on the marine environment or as part of a process study.	The study should include recommended management actions where appropriate, to be included in this Management Plan.	Responsibility: MC – NRM Priority: Low	MC – Environment Levy State Government's Coastal or Estuary Grants Programs	

Sediment Processes

Objectives / Performance Targets:

- A greater understanding of sediment quality and processes to guide future management responses with regard to the impact that the Manly LGA has on the marine environment.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
SP1. Undertake investigations into sediment types and sediment quality in Little Manly and Spring Coves only where	For example information may be required to assess Local Government Area impacts on	Responsibility: MC – NRM	MC – Environment Levy	

this information is critical baseline information required by MC.	the marine environment or as baseline data should beach nourishment be required in the future.	Priority: Low		
SP2. Continue to obtain results from Dr Gavin Birch's contaminated sediments studies in the North Harbour area.		Responsibility: MC – MEC and NRM Priority: Medium & ongoing	N/A	

Recreational Facilities & User Groups <u>Objectives / Performance Targets:</u> <input type="checkbox"/> A safe, sustainable and enjoyable public area for use by a variety of user groups. <input type="checkbox"/> Reduction in conflict between user groups.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
AREC1. Replace the existing 'no diving' sign at Little Manly Beach swimming enclosure with an updated code of conduct and safety warning sign.	Also include a warning of the presence of sharp marine animals on the pool's poles, which are likely to cut through skin.	Responsibility: MC – NRM and P&S to design, US implement approved works. Priority: High	MC	

AREC2. Repair bars of the Little Manly swimming enclosure where the gaps are going to become a safety hazard.	Note the enclosure is an item of environmental heritage on MC's LEP 1988. Undertake detailed underwater check for seahorses prior to cleaning or repair of the bars.	Responsibility: MC - US Priority: Medium	MC	Beginning repair works undertaken during March 04.
AREC3. Design & construct a diver platform for diver use.	To be addressed and implemented through development of the Little Manly Reserve Landscape Masterplan.	Responsibility: MC – P&S to design, CS to implement works Priority: High	MC Sharing Sydney Harbour Access Program (DIPNR)	
AREC4. Ensure that a clause requiring the use and sharing of the diver platform is included in the Commercial Diver Licences.		Responsibility: MC - COS Priority: High	N/A	
AREC5. Ensure rehabilitation works at the end of Stuart Street include measures to further deter jumping from 'Jump Rock'.	Incorporate plantings and signage. Fence off informal access paths that are created.	Responsibility: MC – NRM Priority: High and ongoing.	MC	Plantings and signage have been installed to deter use of 'jump rock'.

Fisheries & Fishing

Objectives / Performance Targets:

- ☐ Minimise the impact that the Manly Local Government Area has on the marine ecology of North Harbour.
- ☐ Minimise conflict between user groups.
- ☐ Balance fishing and conservation objectives.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
F1. Liaise with NSW Fisheries regarding the regulation of unmanned commercial fishing winches to ensure that winches are not left unattended on Little Manly and Collins Beaches.	Unmanned fishing winches are also a problem on Store and Quarantine Beaches, which should also be regulated.	Responsibility: MC – NRM & NSWF Priority: High	N/A	
F2. Encourage and inform the community to report illegal fishing activity to Fisher's Watch or MC's rangers.	Liaise with Little Manly Precinct.	Responsibility: MC – NRM and MEC & NSWF Priority: High & ongoing	MC & NSWF	
F3. NSW Fisheries to continue to prepare a North (Sydney) Harbour Aquatic Reserve Management Plan in consultation with the community and MC.		Responsibility: NSWF Priority: High	NSWF	

F4. That MC provide input into the development of Fisheries Management Strategies that apply to commercial fishing within the Little Manly and Spring Cove areas.		Responsibility: MC – NRM & NSWF Priority: High and ongoing	MC & NSWF	
F5. Continue to provide input into the North (Sydney) Harbour Aquatic Reserve Management Plan and encourage NSW Fisheries to undertake studies assessing the impact of commercial fishing on the marine ecology (including seagrass beds) of the Aquatic Reserve.	Refer to recommendation AE7	Responsibility: MC – P&S, NRM Priority: High	N/A	
F6. Lobby Fisheries to ensure that the hauling closure over <i>Posidonia</i> beds in NSW becomes a regulation tightly enforced by Fisheries officers.	Fisheries to provide commercial fishers and regulatory staff with seagrass maps to assist in identification of <i>Posidonia</i> locations.	Responsibility: MC – NRM and MEC Priority: High	MC	
F7. Undertake monitoring of fish stocks as required under the Recovery Plan for the endangered population of little penguins at Manly.	Refer to F8 .	Responsibility: NSWF Priority: High and ongoing	NSWF	

F8. Investigate the possibility of integrating an assessment of the impact of commercial and recreational fishing on fish stocks in and around Little Manly and Spring Coves into the monitoring of fish stocks as required under the Recovery Plan for the endangered population of little penguins at Manly.	The Recovery Plan also identifies that data is to be collected on commercial fishing efforts and catches of bait fish (of importance to the Little Penguin) in Sydney Harbour and adjacent ocean waters. Refer to F7	Responsibility: NSWF Priority: High	NSWF	
F9. Continue to authorise/delegate and train MC rangers as fisheries officers to regulate certain fishing regulations.	Arrange training for new rangers.	Responsibility: NSWF Priority: Ongoing	NSWF	
F10. Install concise fishing regulations signage near the informal access route in Manly Peace Park. Ensure that fishing regulations associated with the aquatic reserve, IPA and little penguin critical habitat are included.	Include brief IPA and Aquatic Reserve information and notify that bag limits apply. Include, information regarding the impacts that fishing may have on the penguins and suggesting that fishing should not be undertaken in the area.	Responsibility: NSWF Priority: High	NSWF	
F11. Lobby NSWF to extend the North Harbour net and trap fishing closure to include Little Manly Cove.	Liaise with NSW Fisheries to ensure that the regulations stipulate the parameters of each type of trap to avoid fish traps being marked as lobster pots.	Responsibility: MC - NRM, NSWF Priority: Medium	N/A	

F12. Encourage NSWFW to inject further funds to improve policing of fishing regulations.		Responsibility: MC - NRM, NSWF Priority: High	NSWF to fund improved policing.	
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Maritime Operations <u>Objectives / Performance Targets:</u> <input type="checkbox"/> The highest level of environmental protection and safety for Little Manly and Spring Coves with regard to the impacts of maritime operations.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
MO1. Ensure that MC rangers are aware of spill response procedures for both on-water and off-water incidents.	Liaise with SPA, WA and NSW EPA.	Responsibility: MC – NRM Priority: High	N/A	
MO2. Encourage MC staff and the community to report marine pest sightings to NSW Fisheries and Sydney Ports Authority.		Responsibility: NSWF, SPA & MC – NRM and MEC. Priority: High & ongoing	N/A	

Boating

Objectives / Performance Targets:

- ☐ To provide a long term safe and accessible local public boat ramp facility, which provides minimal disturbance to residents and other recreational groups.
- ☐ To improve the sustainability of boating activities in Little Manly and Spring Coves.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
B1. Educate boat ramp users about the impacts of flushing their motors in a non-contained environment through the development of a boat ramp code of conduct sign and information sheet.	Integrate into MC's Starboard Right and Green Education Program.	Responsibility: MC - MEC Priority: High	MC & WA Waterways WADAMP Grant.	
B2. Liaise with Waterways Authority requesting that where they do publicly identify the Little Manly Boat ramp, that they also identify that the facility has limited parking and a local road network unsuitable for large vehicles and large boats.		Responsibility: MC – NRM Priority: Medium	N/A	

<p>B3a. Undertake boat ramp improvements in a staged approach as follows:</p> <p>Stage 1: Reconstruct the boat ramp, within the present boat ramp footprint although extended to just below mean spring low tide mark.</p>	<p>Refer to Little Manly Boat Ramp Task Force Position paper (2002).</p> <p>Adopt a new design, including new slope and material.</p> <p>Liaise with NSW Fisheries and Waterways Authority.</p> <p>Ensure that construction does not interfere with little penguin breeding or nesting periods.</p>	<p>Responsibility: MC – NRM and US</p> <p>Priority: High</p>	<p>MC</p> <p>Waterways WADAMP Grant.</p>	
<p>B3b. Stage 2: Provide adequate 'passive' boat access to Little Manly Beach.</p>	<p>Refer to Little Manly Boat Ramp Task Force Position paper (2002).</p> <p>Investigate the possibility of designating a holding bay (5 minute zone) for unloading passive craft. To be considered through the development of the landscape masterplan.</p>	<p>Responsibility: MC – NRM and P&S to design, US to implement approved works</p> <p>Priority: Medium</p>	<p>MC</p> <p>Waterways WADAMP Grant</p> <p>Sharing Sydney Harbour Access Program (DIPNR)</p>	
<p>B3c. Stage 3: Investigate the possible construction of a floating pontoon system (fixed board dock or alternate module) to improve safety and accessibility.</p>	<p>Refer to Little Manly Boat Ramp Task Force Position paper.</p> <p>The location is to be dependent on design factors and safety, with consideration being given to the extreme western side of the reconstructed boat ramp.</p>	<p>Responsibility: MC – NRM</p> <p>Priority: Low</p>	<p>MC</p> <p>Waterways WADAMP Grant</p> <p>Sharing Sydney Harbour Access Program (DIPNR)</p>	

B4. Develop and implement a boat ramp code of conduct/etiquette leaflet and associated education project.	Use MC's existing Starboard Right & Green education program.	Responsibility: MC – NRM and MEC Priority: Medium	MC – Environment Levy	
B5. Encourage residents to report misuse of the boat ramp to Council rangers.	Develop an information pack to distribute to residents informing them of appropriate procedures for the use of the boat ramp and for reporting misuse. Liaise with the Little Manly Precinct and Council rangers.	Responsibility: MC – NRM Priority: Medium	MC	
B6. Encourage residents to report all non-compliance with waterways regulations to the Waterways Authority.		Responsibility: MC – NRM, WA Priority: High & ongoing.	N/A	
B7. That the Manly Coastline Management Committee invite Waterways to nominate a representative to act as a Waterways adviser and to attend committee meetings as relevant issues arise.		Responsibility: MC – NRM Priority: High	N/A	
B8. Install a code of conduct sign for the dinghy storage area.	Owners of inappropriately stored boats to be issued a warning.	Responsibility: MC – NRM and US Priority: Medium	MC Sharing Sydney Harbour Access Program (DIPNR)	

B9. That MC refuse any request to develop a public wharf facility in Little Manly and Spring Cove areas.	Refer to B12	Responsibility: MC Priority: High	N/A	
B10. Liase with Waterways to ensure that the use of bilge blankets is included as a condition in all recreational boat licences.		Responsibility: MC – NRM and WA Priority: Medium	N/A	
B11. That MC continue to clean the boat ramp using the most sustainable and best practices available.	Continue to seek out more sustainable methods of cleaning through SCCG and SAP. Continue to undertake cleaning in accordance with current best practice.	Responsibility: MC – CS and NRM Priority: High & ongoing	MC	
B12. Investigate the designation of a public wharf in an appropriate location within the Manly LGA eg: Manly Cove.	Liaise with WA and local Precincts. Refer to B9.	Responsibility: MC - P&S, NRM, WA Priority: High	MC, WA Sharing Sydney Harbour Access Program. Waterways WADAMP Grant.	

Water Quality

Objectives / Performance Targets:

- ☐ To reduce sediments entering the aquatic environment from stormwater drains.
- ☐ To reduce discharges from sewage overflows entering Little Manly and Spring Coves.
- ☐ To improve overall water quality in the study area.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
WQ1. That an evaluation of the effectiveness of stormwater improvement actions undertaken in the Little Manly Cove catchment be included in an overall assessment/evaluation of stormwater improvement actions implemented through the original SMP.	Refer to updated Stormwater Management Action Plans.	Responsibility: MC – NRM Priority: Medium	MC - Environment Levy EPA Stormwater Trust Grants.	
WQ2. That MC continue to liaise with Sydney Water to ensure that all sewage overflows are sealed and redirected to the Northside Storage Tunnel.	Continue participation in the Sydney Water Partnership.	Responsibility: MC – P&S, NRM and US & SW Priority: High & ongoing	N/A	

WQ3. That information regarding appropriate boating waste disposal (sewage and rubbish) be included on the boat ramp code of conduct sign and handout.	<p>Ensure that adequate and convenient waste disposal facilities are provided for use.</p> <p>Include location of the closest sewage pump-out facility.</p> <p>Appropriately managed waste disposal is planned as one of the key educational objectives of Starboard Right and Green. Information regarding the location of pumping stations will be included in the program.</p>	<p>Responsibility: MC – NRM, WA, US to implement approved works</p> <p>Priority: High</p>	MC, WA Waterways WADAMP Grant.	
WQ4. Continue to maintain regular emptying of the Gross Pollutant Trap located within Little Manly Cove, especially after heavy rains.		<p>Responsibility: MC - CS</p> <p>Priority: High & ongoing</p>	MC	
WQ5. Encourage Sydney Water to identify the sewage pumping station structure (located within the vicinity of the boat ramp) as a sewage pumping station through the use of clear simple signage.		<p>Responsibility: MC – NRM & SW</p> <p>Priority: Medium</p>	N/A	
WQ6. Liaise with Sydney Water regarding the feasibility of undertaking SewerFix work in the Little Manly area, in consultation with the community, to identify and fix sewage mains and areas where property owners' pipes connect to the sewer mains.	Liaise with Sydney Water and local residents through the Precinct.	<p>Responsibility: MC – NRM, SW</p> <p>Priority: High</p>	SW & participating residents	

WQ7. Encourage property owners in the Little Manly area to undertake pipe investigations into their properties' sewer pipes and maintain in accordance with the findings of those investigations to reduce the number of sewage overflows that occur.	Consider a LGA wide approach.	Responsibility: MC – NRM & SW Priority: Medium & ongoing	MC, SW & participating residents.	
WQ8. Ensure that Little Manly study area is included in the LGA wide hydraulic assessment to determine the condition of stormwater pipes and appropriate responses.		Responsibility: MC - US Priority: High	MC	
WQ9. Regulate the cleaning of fish in Little Manly Reserve and adjacent Craig Ave car park.	Encourage honorary rangers and local residents to report fish cleaners that do not remove their wastes and/or place them in the bins provided.	Responsibility: MC - ES Priority: High & ongoing.	MC	
WQ10. Amend the Manly Sustainability Strategy to include a recommendation to facilitate establishing Manly as a plastic bag free LGA. To assist with the reduction of plastic bags along the foreshore.	Liaise with local business and Precincts.	Responsibility: MC – NRM Priority: Medium	MC	
WQ11. Ensure that education about boating water pollution continues to be integral to the Starboard Right & Green education program.	Seek cooperation from WA.	Responsibility: MC - MEC Priority: High & ongoing.	MC – Environment Levy	

WQ12. SW and MC to work together to find a solution to alleviate problems associated with the sludge truck movements from North Head Sewage Treatment Plant.		Responsibility: MC – P&S, NRM and SW Priority: Medium	SW	
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Coastline Hazards & Seawall Stability A. Planning for Coastal Hazards <u>Objectives / Performance Targets:</u> <input type="checkbox"/> To effectively plan for potential coastline hazards and their likely impacts on private and public lands and human safety.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
CH1. Review the findings of the Little Manly Coastline Hazard Definition Study and incorporate the findings as a layer(s) for use on MC's GIS system.	<p>Consideration should be given to at least two time frames; present day and a future planning period which should not be less than 50 years.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p>	<p>Responsibility: MC – P&S, NRM</p> <p>Priority: High</p>	<p>MC</p> <p>DIPNR - Coastal Management Program</p>	

CH2. Review existing planning controls to ensure they have regard to the coastline hazards outlined in the Little Manly Coastline Hazard Definition Study.	Refer to Little Manly Coastline Hazard Definition Study (2003). Develop Coastal Hazards Plan or provisions for inclusion in Council's DCPs to ensure coastal hazards are regarded in planning decisions.	Responsibility: MC – P&S, NRM Priority: High	MC	
CH3. Where individual properties are impacted by coastline hazards, include notes on the property Section 149(2) Certificates.	Refer to Little Manly Coastline Hazard Definition Study (2003).	Responsibility: MC – P&S, NRM Priority: High	N/A	
B. Beach Erosion and Shoreline Recession Objectives / Performance Targets: <ul style="list-style-type: none"> ❑ To reduce to an acceptable Level, the risk of damage to existing development as a result of beach erosion and shoreline recession. ❑ To ensure the effects of shoreline recession do not adversely impact on beach amenity. ❑ To ensure further development is compatible with the erosion and recession hazard. ❑ To ensure any protective works minimise impact on beach amenity and access, and where practical improve existing amenity and access. 				
CH4. Develop and implement a natural shoreline and shoreline structure monitoring program: <ul style="list-style-type: none"> ▪ Review existing monitoring programs; ▪ Inspect the existing seawall for signs of movement at regular intervals not exceeding six months and after significant storm wave activity and rainfall 	Liaise with DIPNR. Refer to Little Manly Coastline Hazard Definition Study (2003).	Responsibility: MC – US and NRM Priority: Medium & ongoing	MC DIPNR - Coastal Management Program.	

<ul style="list-style-type: none"> ▪ Undertake photogrammetric analysis of Little Manly Beach roughly once every 3 years (utilise DIPNR's aerial photography, which is undertaken roughly every 3 years). ▪ Conduct beach profile surveys at a minimum of six locations along the beach following significant wave activity (to monitor beach recovery). 				
CH5. Assess the likelihood of damage to the existing seawall based on the available sand volume on the beach, the predicted storm demand (25m ³ /m) and the toe level of the seawall.	<p>This assessment should take place at regular intervals not exceeding three years, unless it becomes evident that the rate of shoreline recession is significantly less than the conservative value predicted.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p>	<p>Responsibility: MC – NRM, US</p> <p>Priority: Medium & ongoing</p>	<p>MC</p> <p>DIPNR - Coastal Management Program.</p>	
CH6. Revise the assessment of coastline hazards as required based on the findings of the monitoring program.	Refer to Little Manly Coastline Hazard Definition Study (2003).	<p>Responsibility: MC – NRM</p> <p>Priority: Medium as required.</p>	<p>MC</p> <p>DIPNR - Coastal Management Program.</p>	
CH7. Should the risk of damage to the seawall due to the effects of beach erosion and shoreline recession in the future become unacceptable, evaluate the following management options:	<p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Investigation into the beach nourishment option should</p>	<p>Responsibility: MC – NRM</p> <p>Priority: Medium as required.</p>	<p>MC</p> <p>DIPNR - Coastal Management Program.</p>	

<ul style="list-style-type: none"> ▪ Do nothing and repair/reconstruct the seawall in the event of damage; ▪ Undertake seawall stabilisation works to prevent or minimise damage to the seawall in the event of a severe storm; ▪ Beach nourishment to restore the volume of sand on the beach so that the seawall would not be damaged in the event of a severe storm. 	include a thorough assessment of impact on the marine environment.			
CH8. In the evaluation of the above management options, consider the benefits of beach nourishment for beach amenity	<p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Investigations into beach nourishment are to include an impact assessment on the marine environment and coastal processes. Studies are to specify and assess sand sources.</p>	<p>Responsibility: MC – NRM</p> <p>Priority: Medium as required.</p>	<p>MC</p> <p>DIPNR - Coastal Management Program.</p>	
CH9. Review the results of the beach profile surveys and assess the implications for recreational beach amenity.	Refer to Little Manly Coastline Hazard Definition Study (2003).	<p>Responsibility: MC – NRM</p> <p>Priority: Medium as required.</p>	<p>MC</p> <p>DIPNR - Coastal Management Program</p>	
CH10. Should the impact of shoreline recession on beach amenity become unacceptable, eg: excessive loss of beach width, consider undertaking beach nourishment.	Refer to Little Manly Coastline Hazard Definition Study (2003).	<p>Responsibility: MC – NRM</p> <p>Priority: Low as required.</p>	<p>MC</p> <p>DIPNR - Coastal Management Program.</p>	

CH11. Control new development so that it is appropriately sited and is not adversely affected by the erosion and recession hazards over a suitable planning time frame (minimum 50 years).	<p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Develop Coastal hazards Plan or provisions for inclusion in Council's DCPs.</p> <p>Refer to GIS layers indicating potential hazard zones and amended planning controls (CH2) (once developed – refer to CH1).</p>	<p>Responsibility: MC – P&S, NRM and ES</p> <p>Priority: High & ongoing</p>	MC – P&S and ES	
CH12. Ensure any redevelopment and public facilities are compatible with the erosion and recession hazard and do not adversely affect coastal processes.	<p>Incorporate into designs of proposed changes of the landscape masterplan.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p>	<p>Responsibility: MC – P&S, NRM and ES</p> <p>Priority: High & ongoing</p>	MC	
CH13. Develop design guidelines, for inclusion in existing DCPs, for any structures located within areas subject to coastline hazards, which address matters such as: <ul style="list-style-type: none"> ▪ Siting; ▪ Foundation design; and ▪ Materials. 	Refer to Little Manly Coastline Hazard Definition Study (2003).	<p>Responsibility: MC – P&S, NRM</p> <p>Priority: High as required.</p>	MC DIPNR - Coastal Management Program	
CH14. Should risk to the seawall stability in the future become unacceptable and stabilisation works or a new seawall are required, design any stabilisation works or new seawall at Little Manly Beach to	Refer to Little Manly Coastline Hazard Definition Study (2003).	<p>Responsibility: MC – NRM</p> <p>Priority: High as required.</p>	MC DIPNR - Coastal Management Program	

<p>minimise impact on coastal processes, minimise impact on beach amenity and access, improve habitat values, and where practical improve existing amenity and access:</p> <ul style="list-style-type: none"> ▪ Ensure any new seawall is as far landward as possible; ▪ Ensure any stabilisation works at the toe of the seawall involve minimum encroachment onto beach in front of seawall ▪ Consider inclusion of steps, and/or access ramp, stepped seawall and seating, in design of any new seawall ▪ Consider use of coloured concrete for any new seawall to match the colour of the beach sand. 				
<p>C. Slope and Cliff Instability</p> <p>Objectives / Performance Targets:</p> <p>❑ To reduce to an acceptable Level, the risk to property and life as a result of slope and cliff instability.</p>				
<p>CH15a. Undertake recommendations as identified in the Little Manly Coastline Hazard Definition Study and annexed geotechnical report for items 3, 4, 5, 6, 7, 8, 9, 10, 11. Priorities to be according to the level of risk identified in the report.</p>	<p>These items relate to private properties and therefore the information is confidential and can not be disclosed in this CMP.</p> <p>Refer to the Little Manly Coastline Hazard Definition Study (2003) for item locations and recommendations.</p>	<p>Responsibility: MC - P&S, NRM</p> <p>Priority: High</p>	<p>Property owners.</p>	

CH15b. Install signage to indicate potential geotechnical hazards along Little Manly Cove's western rock platforms only for those areas accessible to the public access.	<p>In consultation with private property owners.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Refer to CH22.</p>	<p>Responsibility: MC - NRM and P&S to design,, US to implement approved works</p> <p>Priority: High</p>	<p>MC</p> <p>DIPNR - Coastal Management Program</p>	
CH16. Item 19, as identified in the Little Manly Coastline Hazard Definition Study, undertake stabilisation works in the form of a stepped sandstone block wall as described in Hassell (2001).	<p>Works to consider penguin breeding and moulting season.</p> <p>Works to consider Little Manly Point's contamination issues.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Refer to CH22.</p>	<p>Responsibility: MC - NRM and US to implement approved works</p> <p>Priority: High</p>	<p>MC</p> <p>DIPNR - Coastal Management Program</p>	
CH17. Item 25, as identified in the Little Manly Coastline Hazard Definition Study, undertake further assessment (clearing of vegetation will be required). Post a warning regarding the stability of the stairs.	<p>Any stabilisation measures are likely to involve concrete or masonry piers.</p> <p>Refer to Little Manly Coastline Hazard Definition Study (2003).</p> <p>Refer to CH22.</p>	<p>Responsibility: MC - NRM and US to implement approved works</p> <p>Priority: Low</p>	<p>MC</p> <p>DIPNR - Coastal Management Program</p>	

CH18. Item 21, as identified in the Little Manly Coastline Hazard Definition Study, monitor the condition of the underpins. If condition deteriorates, assess if stabilisation works are required, which may comprise concrete or masonry piers.	Refer to Little Manly Coastline Hazard Definition Study (2003). Refer to CH22.	Responsibility: MC – NRM and US Priority: Low	MC DIPNR - Coastal Management Program	
CH19. Item 22, as identified in the Little Manly Coastline Hazard Definition Study, monitor the condition of the overhang. If condition deteriorates, assess if stabilisation works are required, which may comprise concrete or masonry piers.	Refer to Little Manly Coastline Hazard Definition Study (2003). Refer to CH22.	Responsibility: MC - NRM and US Priority: Low	MC DIPNR - Coastal Management Program	
CH20. Item 30, as identified in the Little Manly Coastline Hazard Definition Study, contact NSW NPWS to erect a warning sign on Collins Beach regarding the potential for rock falls on the beach.	Should more rock falls be observed, advise NPWS to undertake further stability assessment to more accurately define risk to life and appropriate management measures. Refer to Little Manly Coastline Hazard Definition Study (2003).	Responsibility: NPWS & MC - NRM Priority: High	NSW NPWS	
CH21. All future works in geotechnical risk areas (as identified on the GIS layer to be undertaken in CH1) shall not be undertaken without geotechnical involvement.	Works requiring geotechnical involvement shall include (but not be limited to) landscaping, steps, stone removal, stormwater diversion and/or pipe work within known risk areas. Refer to CH22.	Responsibility: MC – NRM, US & ES. Priority: Ongoing	MC	

CH22. Prior to undertaking any stabilisation works the impact of those works on the amenity, geoheritage and physical environment of the area should be determined and weighed against the level of risk before the works proceed.	Refer to G1.	Responsibility: MC - NRM, US Priority: As required.	MC	
D. Climate Change Objectives/ Performance Targets: <input type="checkbox"/> To take into account the potential for future climate change to affect the magnitude of coastline hazards.				
CH23. Ensure there is an up-to-date understanding of future climate change and the implications of these changes for the magnitude of coastal hazards. Liaise regularly with the appropriate State government authority to obtain the latest predictions for future sea level rise and other predicted impacts of climate change.	Refer to Little Manly Coastline Hazard Definition Study (2003).	Responsibility: MC - NRM and DIPNR Priority: Low & ongoing	N/A	
CH24. Based on the up-to-date figures obtained in the recommendation above (CH23): <ul style="list-style-type: none"> ▪ Reassess the magnitudes of each of the coastline hazards; ▪ Review seawall stability; ▪ Amend information in MC's GIS, as required; ▪ Amend information in planning controls and Section 149 Certificates, as 	Refer to Little Manly Coastline Hazard Definition Study (2003).	Responsibility: MC - NRM, US Priority: Low as required.	MC DIPNR - Coastal Management Program.	

required; and ■ Review recommended management actions in the Coastline Management Plan.				
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TERRESTRIAL ISSUES – ACTION PLAN

Terrestrial Ecology

Objectives / Performance Targets:

- ❑ To maintain native communities and habitats and provide suitable habitat for endangered populations.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
TE1. That all parks and reserves within the study area remain as, or be declared as on-leash areas for companion animals.		Responsibility: MC - NRM Priority: Medium & ongoing	MC	
TE2. Undertake a trapping program on Little Manly Point Park and the unnamed reserve adjacent at Spring Cove to reduce the occurrence of feral cats and their threat to the area's endangered populations.	Liaise with NSW NPWS and local residents.	Responsibility: MC - NRM & NPWS Priority: Medium	MC	
TE3. Investigate methods of fox control that do not utilise poison baits for the control of foxes within the study area. Implement appropriate fox control program.	Liaise with NSW NPWS and local residents.	Responsibility: MC - NRM & NPWS, US to implement approved works Priority: Medium	MC	

TE4. Investigate the potential of establishing a cat curfew in and around the study area.	Encourage local residents to keep their cats inside at all times.	Responsibility: MC - NRM Priority: Medium	N/A	
TE5. Control exotic birds and rabbits as part of a North Head or MC wide program.	Liaise with NPWS.	Responsibility: MC - NRM, US Priority: Medium	MC	
TE6. Check for the presence of rabbits annually. Control rabbit numbers as required.	Liaise with NPWS	Responsibility: MC - NRM, US Priority: High & ongoing	MC	
TE7. Continue to liaise with NSW NPWS to finalise the draft recovery plan for the North Head long-nosed bandicoot population.	Implement those actions of the adopted Recovery Plan assigned to MC.	Responsibility: NPWS & MC – P&S, NRM Priority: High	N/A	

<p>TE8a. Implement recommendations identified in the Recovery Plan for the endangered little penguin population at Manly, relevant to the responsibilities of Manly Council. Support NPWS in the implementation of those recommendations for which the NPWS are responsible for.</p> <p>TE8b. Educate and provide advice to the community regarding management of threats to little penguins (NPWS, MC). Continue to implement the Penguin Aware education program.</p> <p>TE8c. Provide advice to residents on how to manage vegetation including lantana on their properties without threatening penguin habitat. Community consultation will continue in educating users to be responsible about activities and threats.</p>	<p>TE8c. Any disturbance in areas of threatened species, populations and ecological communities would require a licence from the NPWS (now DEC) under provisions of the TSC Act. The licence application would require an SIS where proposed in areas of critical habitat.</p>	<p>Responsibility: NPWS & MC – P&S, NRM and MEC</p> <p>Priority: High</p>	NPWS & MC	
<p>TE9. Erect appropriate signage regarding little penguin critical habitat and management.</p>	<p>Recommendation identified in the Recovery Plan for the endangered little penguin population at Manly</p>	<p>Responsibility: MC - NRM and CS</p> <p>Priority: High</p>	NPWS & MC	<p>Completed. Funded, designed and delivered by the DEC (Threatened Species Unit) & installed by MC.</p>

<p>TE10. Investigate the access issue to Manly Point foreshore area with a view to discouraging access from Manly Peace Park to the surrounding rock platforms to minimise disturbance of little penguins.</p>	<p>Investigate the improvement of fencing and plantings at Manly Peace Park.</p> <p>Consult provisions of the TSC Act where disturbance is proposed in areas of threatened species, populations or ecological communities and critical habitat.</p>	<p>Responsibility: MC - NRM to investigate, US to implement approved works</p> <p>Priority: Medium</p>	<p>MC</p>	
<p>TE11. Manage nesting habitat for little penguins through appropriate bush regeneration and community education.</p>	<p>Recommendation identified in the Recovery Plan for the endangered little penguin population at Manly.</p> <p>Implement through the landscape masterplan and regeneration of Manly Peace Park foreshore.</p> <p>Any disturbance in areas of threatened species, populations and ecological communities would require a licence from the NPWS (now DEC) under provisions of the TSC Act. The licence application would require an SIS where proposed in areas of critical habitat.</p> <p>Refer to CL2.</p>	<p>Responsibility: MC - NRM and US</p> <p>Priority: Medium</p>	<p>MC</p>	

TE12. Protect habitat of the little penguin population at Manly through the environmental planning and assessment process namely Manly's LEP 1988, the residential DCP etc.	Recommendation identified in the Recovery Plan for the endangered little penguin population at Manly.	Responsibility: MC - P&S and ES, WA, NSW Priority: High & ongoing	N/A	
TE13. Increase bush regeneration works within remaining bushland areas (especially in the 12 months following fire).	Refer to Little Manly Natural Environment Assessment Report (2003). Ensure appropriate provisions of the TSC Act are followed when conducting regeneration works in areas of threatened species and populations eg: Licence requirements. Refer to CL2 .	Responsibility: MC - US Priority: High as required.	MC	
TE14. Remove the dead pampas grass clumps near the western end of the unnamed reserve at Spring Cove (end of Stuart Street). Replant with native species suitable for bandicoot habitat.	Note that this is likely bandicoot habitat and should be checked for the presence of bandicoots and bandicoot nests prior to removal. Liasie with NPWS prior to removal regarding bandicoot habitat.	Responsibility: MC - US Priority: High	MC	
TE15. Encourage the regeneration of <i>Kunzea ambigua</i> in Little Manly Reserve.	Include in plantings proposed by landscape masterplan.	Responsibility: MC - P&S, US Priority: Medium	MC	

TE16. Lobby the State Government to amend section 36A of the <i>Local Government Act 1993</i> so that separate Plans of Management do not have to be prepared for land to which critical habitat or a Recovery Plan applies.	Propose that integrated management would be more suitable in the case that either generic or specific regional PoMs are prepared.	Responsibility: MC - P&S Priority: High	N/A	
TE17. All plantings on public land within the study area should include native species listed in Appendix D of the Natural Environment Assessment for Little Manly.	<p>Include in plantings proposed by the landscape masterplan.</p> <p>Residents should be informed in advance of new plantings including information about maximum vegetation heights.</p> <p>Refer to CL2.</p>	<p>Responsibility: MC - US</p> <p>Priority: High</p>	MC	
TE18. Improve habitat value of disturbed areas within the study area, such as the lawns and informal gardens, by replanting with native species where possible.	<p>Appropriate species are listed in Appendix D of the Natural Environment Assessment report for Little Manly.</p> <p>Include in plantings proposed by the landscape masterplan.</p> <p>Plantings to break up the grass at Manly Peace Park using low native thicket forming grasses.</p> <p>Refer to CL2.</p>	<p>Responsibility: MC - US</p> <p>Priority: High</p>	MC	

<p>TE19a. Bush regeneration in the study area should include the unnamed reserve at Spring Cove and the foreshore area of Manly Peace Park in MC's bush regeneration program.</p> <p>TE219b. Control weeds using appropriate bush regeneration methods to minimise disturbance to the environment.</p> <p>TE19c. bush regeneration should consider the need to maintain habitat for endangered populations.</p> <p>TE19d. Ensure that bush regeneration techniques used do not harm transient or resident native fauna.</p>	<p>Refer to CL2.</p> <p>Ensure appropriate provisions of the TSC Act are followed when conducting regeneration works in areas of threatened species and populations eg: Licence requirements.</p>	<p>Responsibility: MC – US and CS</p> <p>Priority: Medium & ongoing</p>	MC	
<p>TE20. An appropriate fire regime of between 12 to 18 years with patches being burnt alternatively is recommended to keep the ecosystem from becoming senescent and requiring high levels of maintenance.</p>	<p>The patch of vegetation adjacent to the foreshore to the south of Little Manly Beach should have an ecological burn within the next two years.</p> <p>Location of burn areas shown in map 2 of the Natural Environment Assessment Report for Little Manly.</p>	<p>Responsibility: MC - US</p> <p>Priority: Medium</p>	MC	
<p>TE21. Assess the area's bushland to determine whether it meets SEPP 19 definition of state significant bushland.</p>	<p>Liaise with DIPNR.</p>	<p>Responsibility: MC - US</p> <p>Priority: Medium</p>	MC	

TE22. Remove weeds located along the foreshore of Manly Peace Park in a staged approach allowing regeneration of the area. Where the soil's natural seed bank is not effective in regenerating, then revegetate the area with suitable native plants.	Refer to Appendix D of the Natural Environment Assessment: Little Manly. Ensure appropriate provisions of the TSC Act are followed when conducting regeneration works in areas of threatened species and populations eg: Licence requirements.	Responsibility: MC - US Priority: High	MC	
TE23. Install edging between all bushland areas and lawn areas and between all gardens, to provide a clear edge to mow up to and to prevent rhizomatous grasses and other plants from invading the bushland and gardens. The remnant native trees that currently occur in the mown areas need to be incorporated in the edged bushland areas to prevent ringbarking by whipper snippers during maintenance.	Note the 1m capping layer at Little Manly Point Park – this must not be penetrated without EPA approval.	Responsibility: MC – US Priority: Low	MC	
TE24. Remove the grass and fill/soil to reveal the bedrock shelving in the grassed areas north west of Little Manly Point Park adjacent to Stuart Street, and in Manly Peace Park.	Locations are illustrated in map 2 of the Natural Environment Assessments and include areas where soil is less than 15 cm deep. Investigate whether or not this soil	Responsibility: MC – P&S to investigate, US to implement approved works Priority: Low	MC	

	<p>is contaminated as a result of the former gas works site located on the adjacent Little Manly Point prior to carrying out this action. Only pursue this recommendation where no contamination is found.</p> <p>Plant <i>Kunzea ambigua</i> in the pockets of soil between the rock shelves.</p> <p>Any disturbance in areas of threatened species, populations and ecological communities would require a licence from the NPWS (now DEC) under provisions of the TSC Act. The licence application would require an SIS where proposed in areas of critical habitat.</p>			
TE25. During all proposed landscaping, dead trees should be cut and the logs left on the ground for fauna habitat.		<p>Responsibility: MC - US</p> <p>Priority: High as required.</p>	MC	
TE26. No weeding in areas adjacent to the study area's foreshore is to be permitted during the penguin breeding season.	Penguin breeding season is from July 1 through to February 28.	<p>Responsibility: MC - US</p> <p>Priority: High as required.</p>	N/A	

TE27. <i>Cynodon dactylon</i> should be removed as part of bush regeneration efforts except where it is stabilising the soil.		Responsibility: MC - US Priority: Low	MC	
TE28. Ensure all future fill (soil or topsoil) to be added to this area or gravel is to be used in drainage, is to be weed and phytophthora free and should contain no blue metal or other igneous rock.		Responsibility: MC – US and CS Priority: High as required.	N/A	
TE29. Monitor the study area's intertidal environment to detect impacts from terrestrial activities.		Responsibility: MC - NRM Priority: Medium	MC	
TE30. Investigate and implement suitable integrated control measures on the eastern side of Little Manly Point to control the population of <i>Rattis rattis</i> .	Program should target the introduced species and avoid harm to the native water rats. Consider provision and maintenance of bins, maintenance of picnic facilities and the implementation of a control program.	Responsibility: MC - NRM, US Priority: High and ongoing	MC - US	
TE31. Encourage NSW NPWS to establish a 'penguin sanctuary' at Collins Beach.		Responsibility: MC - NRM, P&S Priority: High	N/A	

Geodiversity

Objectives / Performance Targets:

- ☐ Conserve the significant geodiversity elements of the area's coastline

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
G1. Undertake a detailed inventory study of the area's geodiversity elements with recommendations identified for conservation and management of those elements determined as significant.	Refer to study by Osborne & Osborne (1999) - full reference in support document.	Responsibility: MC - NRM Priority: Medium	MC	

Recreational Facilities & User Groups

Objectives / Performance Targets:

- ☐ Maintenance of Little Manly recreational areas and walking tracks.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
TREC1. Maintenance to be undertaken on the walking track from Stuart Street to Collins Beach to address problem areas.		Responsibility: NPWS & MC - US to implement approved works. Priority: High	NPWS	

TREC2. That chemical spraying of bindies only be undertaken where necessary and where no other effective and more sustainable method is available.	<p>Where spraying is required, this should be undertaken earlier in the season than in the past and in appropriate environmental conditions to reduce the impacts on the surrounding environment.</p> <p>Any disturbance in areas of threatened species, populations and ecological communities would require a licence from the NPWS (now DEC) under provisions of the TSC Act. The licence application would require an SIS where proposed in areas of critical habitat.</p>	<p>Responsibility: MC - US</p> <p>Priority: High & ongoing.</p>	MC	
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Landscape <u>Objectives / Performance Targets:</u> <input type="checkbox"/> An aesthetic, safe and accessible open space area for people's recreation and enjoyment.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
L1. Identify the area's significant trees. Seek appropriate protection for significant trees identified through liasing with Energy Australia and inclusion on landscape masterplan.		<p>Responsibility: MC - P&S, NRM</p> <p>Priority: Medium & ongoing</p>	N/A	

L2.Develop, adopt and implement the Little Manly Reserve Landscape Masterplan.	Include the adopted landscape masterplan as an Appendix to this Coastline Management Plan.	Responsibility: MC - P&S, NRM, US (to implement approved works), CS Priority: Staged according to availability of funds.	MC General Revenue and Environment Levy. Sharing Sydney Harbour Access Program (DIPNR) DIPNR - Coastal Management Program.	
L3. That the Little Manly Precinct be advised prior to any future plantings on public land within the study area.	Where plantings are to be undertaken that do not directly relate to implementation of the adopted Landscape Masterplan, consultation with the Precinct should be undertaken prior to the plantings. The Precinct has expressed interest in helping to plant and maintain the plantings. Consider view maintenance.	Responsibility: MC - NRM Priority: High as required.	N/A	
L4. All earthmoving machinery to be cleaned before entering the area to prevent soil containing pathogens and weed seeds from entering the area and written into all MC's briefs which require the use of this machinery.		Responsibility: MC - US Priority: High as required.	N/A	

L5. Gravel used in landscaping and drainage must be inert material such as quartz or sandstone. No blue metal or granite or other igneous material is to be used.		Responsibility: MC - US Priority: High as required.	N/A	
L6. Fertilisers, insecticides, herbicides or detergents are to be used only as a last resort in the construction or maintenance of the area.		Responsibility: MC – US and CS Priority: High as required.	MC	
L7. Only mulch certified to be from native trees should be used, otherwise large infestations of willows, camphor laurel, privet and other noxious species can be introduced into the area.		Responsibility: MC – US and CS Priority: High as required.	MC	
L8. Use of permeable surfaces over impermeable surfaces where appropriate and feasible is recommended to increase absorption of rain and stormwater.		Responsibility: MC - P&S to design , US to implement approved works Priority: High as required.	MC	
L9. Investigate the stability of the retaining wall behind the hard stand and BBQ area on the south eastern side of Little Manly Point and implement appropriate stabilisation works.		Responsibility: MC - US Priority: Medium	MC	

Air Quality & Noise

Objectives / Performance Targets:

- ☐ Reduced localised air pollution.
- ☐ Acceptable levels of noise.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
TA1. Continue educational efforts to inform the community about the responsible use and maintenance of woodfire heaters.		Responsibility: MC – ES and NRM, EPA. Priority: High & ongoing	MC & EPA	
TA2. Encourage residents to report incinerator use and illegal backyard burning activity to MC.		Responsibility: MC – ES and NRM Priority: High & ongoing.	N/A	
TA3. Encourage local residents, through the Precinct, to report all excessive or unreasonable noise pollution to either MC or the Police.		Responsibility: MC - P&S, Police. Priority: High & ongoing	MC	

Contaminated Land Management A. Stuart Street Properties <u>Objectives / Performance Targets:</u> <input type="checkbox"/> To ensure that the reserve at the end of Stuart Street is remediated to be suitable for recreational landuses.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
CL1. Evaluate remediation and stabilisation works by undertaking on-site testing of contaminants and stability.		Responsibility: MC - NRM Priority: High & ongoing	MC	
B. Little Manly Point Park <u>Objectives / Performance Targets:</u> <input type="checkbox"/> To ensure that impacts of pollutants from the former gas works site on the health and safety of people and the environment are minimised and managed in accordance with EPA standards and in consultation with the community.				
CL2. Continually monitor the planting of new park flora. Maintain control over the type of plant species planted on the capping area to ensure the underlying clay layer remains protected and to prevent root penetration of the cap.	Refer to Little Manly Point Park Environmental Control Plan (1997) Consider view maintenance.	Responsibility: MC - US Priority: High & ongoing.	MC	

CL3. Visually monitor the health and condition of plants growing on the site every 6 months.	Refer to Little Manly Point Park Environmental Control Plan (1997) Plant health will be a good indicator of soil contaminant levels.	Responsibility: MC - US Priority: High & ongoing	MC	
CL4. Inspect the stability of the ground surface across the site every 12 months. Walk the entire site checking for any erosion or other signs of impacts to the ground surface.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) and Ongoing.	MC	
CL5. Flow rate monitoring of eastern collection tank. Measure flows into the eastern collection tank in accordance with Sydney Water Trade Waste Licence Agreement conditions. Monitoring is to take place every 2 months.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High & Ongoing.	MC	
CL6. Clear the eastern collection tank of all sludge, sediment, iron growths and general rubbish every 24 months or as necessary beforehand.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC – US and CS Priority: Medium (every 2 years) & ongoing	MC	

CL7. Jet clean the eastern collection tank including the dry well chamber every 24 months or as necessary beforehand.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC – CS Priority: Medium (every 2 years) & Ongoing	MC	
CL8. Maintain non-return and isolating valves of the eastern collection tank pumps by removing, inspecting and replacing all mechanical parts and seals where necessary. To be undertaken every 24 months or as necessary beforehand.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC – US and CS Priority: Medium (every 2 years) & Ongoing	MC	
CL9. Ground water collection and disposal system - western collection tank; visually examine the pipe every 12 months and check for evidence of significant water flows.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) & Ongoing	MC	
CL10. Ground water collection and disposal system - western collection tank; where, upon the 12 monthly visual inspection, liquid depth in the wet well of the western collection tank is found to exceed 1.0 metres, arrange for the tank to be pumped dry.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) & ongoing	MC	

CL11. Jet clean the entire stormwater drainage system including collection pits, cover gratings and drains every 12 months to remove all leaf mulch, silt, sediment and general rubbish.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - CS Priority: High (annually) & Ongoing	MC	
CL12. Visually examine the eastern and western cliff lines every 12 months for water seeps and any resultant staining of the rock face.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC – US and NRM Priority: High (annually) & Ongoing	MC	
C13. Visually examine the eastern heritage listed retaining wall every 12 months for water leaks.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) & Ongoing	MC	
CL14. Every 12 months visually examine and note evidence of the effectiveness of the concrete gully at the foot of the retaining wall to control the resultant leaks from the wall.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) & Ongoing	MC	
CL15. Every 12 months visually examine the eastern and western cliff lines to check for water seepage causing staining to localised areas of rock outcrop. Any evidence of staining should be recorded and addressed.	Refer to Little Manly Point Park Environmental Control Plan (1997)	Responsibility: MC - US Priority: High (annually) & Ongoing	MC	

CL16. That supplementary remedial works be undertaken to address the aesthetic issues of the stained rock faces and to provide a higher level of protection to the marine environment.	<p>Recommendation resulting from dry weather contamination investigations undertaken by SKM (Media Release 2 January 2003).</p> <p>Design of works to be commenced without delay – for example the erection of a sandstone block wall across stained areas.</p> <p>Design works on this action are proceeding and construction of remedial measures are proposed for later in 2003/2004.</p>	<p>Responsibility: DIPNR (formerly PlanningNSW)</p> <p>Priority: High</p>	DIPNR	
CL17. Redesign and modification of the leachate collection system on the western side of the site (which was identified as not working effectively). The Community Reference Group agreed that the work should include the construction of a supplementary cut-off sub-soil drain and leachate disposal system near the base of the western slope.	<p>Recommendation resulting from dry weather contamination investigations undertaken by SKM (Media Release 2 January & 12 February 2003)</p> <p>Design works are underway by SKM as engaged by DIPNR.</p>	<p>Responsibility: DIPNR (formerly PlanningNSW)</p> <p>Priority: High</p>	DIPNR	
CL18. Monitor the redesign and modification works of the western leachate collection system. Ongoing environmental monitoring of the remedial works to be undertaken following completion of the works.	<p>Recommendation resulting from dry weather contamination investigations undertaken by SKM (Media Release 2 January 2003)</p>	<p>Responsibility: MC - US</p> <p>Priority: High & Ongoing</p>	MC	

CL19. Effect repairs to the southern seawall, the removal of stained and malodorous soil from rock ledges along the western foreshore, and the removal of small amounts of waste materials from some remote locations as identified by SKM.	Recommendation resulting from dry weather contamination investigations undertaken by SKM (Media Release 2 January 2003). Design works are underway by SKM as engaged by DIPNR.	Responsibility: DIPNR (formerly PlanningNSW) Priority: Medium to High	DIPNR	
CL20. All the proposed works are to be designed so they do not impact the heritage or recreational values of the park. Investigations have been proposed for the design of these works and to assess the feasibility of additional remedial technologies.	Recommendation resulting from dry weather contamination investigations undertaken by SKM (Media Release 2 January 2003) Works by the consultant have commenced.	Responsibility: MC - P&S and US & DIPNR (formerly PlanningNSW) Priority: High as required.	MC & DIPNR	

Heritage <u>Objectives / Performance Targets:</u> <input type="checkbox"/> To maintain and preserve natural and cultural heritage (both Aboriginal and Non-Aboriginal) in Little Manly Cove and Spring Cove.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
H1. Continue to liaise with NSW NPWS for the provision of the Aboriginal Heritage database.		Responsibility: MC - P&S, NRM & NPWS	N/A	

H2. Identify Aboriginal and Non-Aboriginal Heritage in the study area.	<p>Liaise with Council's Heritage Planner, Council's Aboriginal Heritage Officer and NSW NPWS.</p> <p>Obtain NPWS Aboriginal heritage database (H1).</p>	<p>Responsibility: MC - P&S and NPWS</p> <p>Priority: Low</p>	MC, NPWS	
H3. Undertake a Heritage Impact Assessment before proceeding with works that may impact on any heritage items within the study area.	<p>Refer to the NPWS Heritage Impact Assessment Guidelines.</p> <p>Liaise/consult with Council's Heritage Advisor and P&S division, also liaise with Council's Aboriginal Heritage Officer.</p>	<p>Responsibility: MC – P&S</p> <p>Priority: High as required.</p>	MC	
H5. Ensure consultation with the Metropolitan Aboriginal Land Council, NPWS and other local Aboriginal Groups in the management of Aboriginal heritage.		<p>Responsibility: MC - P&S</p> <p>Priority: ongoing</p>	N/A	

Access

Objectives / Performance Targets:

- ☐ To provide an environment at Little Manly and Little Manly Point Reserves that is accessible to all people, including those with disabilities.
- ☐ All new facilities and buildings to be fully accessible to Australian Standards and the BCA.
- ☐ All existing facilities and buildings, when upgraded or improved, to be fully accessible to the Australian Standards and BCA.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
AC1. Trim trees in the Little Manly Point car park so that disabled parking signage is not obscured.		Responsibility: MC – US and CS Priority: High & Ongoing	MC	
AC2. That the two (2) hour time limit on the two disabled parking spaces in Little Manly Point Car Park be removed to be consistent with the parking conditions of the other parking spaces, which are not limited by time restrictions.	Ensure that parking signage is amended to reflect the change in parking time limits.	Responsibility: MC - US Priority: High	MC	
AC3. Repaint disabled parking symbol on the ground in the Little Manly Point car park.		Responsibility: MC - US, CS Priority: High	MC	

AC4. Mark the steps between Little Manly Point Park and Little Manly Reserve to provide adequate contrast as a safety requirement.		Responsibility: MC - US and CS Priority: High	MC	
AC5. Redesign the Little Manly Point Park BBQ area seating to allow for a person in a wheelchair to sit close to the table and provide adequate shade cover.	Implement as part of landscape masterplan to be developed.	Responsibility: MC - P&S Priority: Medium	MC	
AC6. Connect the footpath along Stuart Street with the Little Manly Point Park pathway, ensuring suitable access gradients where possible.	Implement through the Landscape Masterplan to be developed for the area. Ensure disabled access gradients where possible. Replace electricity pole to stabilise before laying concrete.	Responsibility: MC - P&S and CS Priority: Medium	MC Sharing Sydney Harbour Access Program (DIPNR)	
AC7. Investigate marking a ' <u>No Standing</u> ' area on Stuart Street (at Little Manly Reserve) to allow for set downs and pick-ups.		Responsibility: MC - P&S, NRM, US to implement approved works Priority: High	MC	
AC8. Continue to issue notices to private property owners requesting their assistance in pruning back overhanging vegetation in respect of properties along Stuart Street between Little Manly Beach and Craig Ave.	Notices should be issued after inspection in response to community complaint or register of observation. Where problem persists arrange on-site meeting with owner.	Responsibility: MC - US Priority: High and Ongoing	MC	

AC9. Disabled access to the amenities building to be provided.	Implement through the Landscape Masterplan to be developed for the area.	Responsibility: MC - P&S, US Priority: High	MC Sharing Sydney Harbour Access Program (DIPNR)	
AC10. Provide an accessible toilet at Little Manly Reserve.	Refer to INF8 and implement through the Landscape Masterplan to be developed for the area.	Responsibility: P&S to design, US to implement proposed works. Priority: High	MC	
AC11. Ramp access to the beach and access to the swimming enclosure to be investigated and where feasible addressed through the Landscape Masterplan, access to be suitable for use by people with disabilities.	Implement through the Landscape Masterplan to be developed for the area. Option for access to the swimming enclosure could involve the provision of wheelchairs able to be used on sand and into the water.	Responsibility: MC – P&S to design, US to implement approved works. Priority: High	MC Sharing Sydney Harbour Access Program (DIPNR)	
AC12. Investigate designating a pedestrian crossing/refuge area behind Little Manly Reserve (Stuart Street).		Responsibility: MC – P&S , US Priority: Medium	MC	

Traffic Management <u>Objectives / Performance Targets:</u> <input type="checkbox"/> A safe area for pedestrians and motorists.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
T1. Re-visit parking issues in the Craig Ave car park after reviewing the effectiveness of the 24hour parking limit 6 month trial period.		Responsibility: MC - US Priority: High	MC	
T2. That the community be encouraged to report illegal parking and speeding activity to Council Rangers or the Police.	Liase with Little Manly Precinct.	Responsibility: MC - ES Priority: High	N/A	
T3. Continue detailed investigation into alternate parking schemes to address parking problems within the area.	Investigate the potential of installing paid parking at Little Manly Point Car Park and the Craig Avenue Car Park (adjacent to the boat ramp). Continue to liaise with Little Manly Precinct.	Responsibility: MC – US Priority: Low	MC	
T4. Ensure that parking regulations are clearly defined and sign-posted in the study area.		Responsibility: MC - US Priority: High	MC	

T5. Refer the request to amend the speed limit along Stuart Street (from Addison Road to the South Eastern end of Stuart Street) from 50km/hour to 40km/hour to the RTA for investigation.	Refer issue to Manly Traffic Committee.	Responsibility: MC - P&S, US Priority: Medium	N/A	
T6. Install signs warning motorists of children crossing between Addison Road and the end of Stuart Street.		Responsibility: MC - P&S to design, US to implement approved works Priority: High	MC	

Interpretation & Signage <u>Objectives / Performance Targets:</u> <ul style="list-style-type: none"> ❑ The provision of up-to-date and useful regulation and interpretive signage suitable to the local environment and MC's signage requirements. ❑ To reduce visual clutter by reducing the number of signs and making signs multi-functional regarding the information provided. 				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
IS1. Undertake an evaluation of signage present within the study area and develop a signage inventory to control the area's signage.	The evaluation should be used to identify signage requiring up-date, to identify gaps in the information provided, and to identify more appropriate and strategic placement of signage within the area in consultation with the relevant agencies.	Responsibility: MC - NRM and relevant government agencies Priority: High	MC	

IS2. Whilst there is a need to provide regulatory information regarding permitted and prohibited activities in the park it is recommended that this be kept to a minimum and strategically located so as to be obvious but not visually obtrusive.	MC should liaise with the relevant state authorities regarding the replacement of signage with signs more appropriate to the area and to afford a more holistic signage system.	Responsibility: MC - NRM & state government agencies Priority: ongoing	MC & state government agencies.	
IS3. Update pollution signs regarding the recommended number of days after rain one should not swim in the area.		Responsibility: MC - NRM Priority: High	MC	
IS4. That all future signs be installed with a matt (rather than gloss) finish to reduce glare during the day and at night.		Responsibility: MC - P&S, CS & state government agencies Priority: ongoing	MC	
IS5. Ensure that all new signage in the area is developed in accordance with Council's signage masterplan.	Signage masterplan was being developed at the time that this Plan was adopted. Liaise with relevant State Government Agencies to ensure most suitable signage is developed for the area.	Responsibility: MC – P&S and CS Priority: High & Ongoing.	MC	

Infrastructure <u>Objectives / Performance Targets:</u> <input type="checkbox"/> Well maintained and useable infrastructure in MC owned/managed public lands.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
INF1. That a suitable cover be installed over the playground equipment at Little Manly Point Park to provide shade and protection from bird droppings.	<p>Note capping layer roughly 1m below the surface can not be penetrated without EPA permission.</p> <p>Consideration must be given to the area's designation as a foreshore scenic protection area under Manly LEP 1988.</p>	<p>Responsibility: MC – US</p> <p>Priority: Medium</p>	MC	Completed late 2003.
INF2. Implement recommendations of MC's playground assessment for Little Manly Point.	Refer to specific recommendations in the CMP Support document or refer directly to the playground assessment report.	<p>Responsibility: MC - US</p> <p>Priority: to be implemented according to priority rating identified in the playground assessment's inspection report</p>	MC	

INF3. Replace the existing tap at the western end of Little Manly Beach with a spring loaded tap without hose access.		Responsibility: MC - US and CS to implement approved works Priority: High	MC Environment Levy	
INF4. That the light adjacent to the boat ramp be inspected regularly and maintained as required.		Responsibility: MC – US and CS Priority: High & ongoing	MC	
INF5. That a sign be erected on each BBQ instructing users to clean the hot plates after use.		Responsibility: MC - P&S to design, US to implement approved works Priority: High	MC	
INF6. Upgrade the BBQs at Little Manly Point from single burners to more efficient double burners and maintain to repair broken tiles.		Responsibility: MC - US Priority: High	MC	
INF7. Investigate installation of additional removable bollards on the access road near the species sign (adjacent to the car park at Little Manly Point Park).	Liaise with Council Rangers for locations.	Responsibility: MC – P&S Priority: High	MC	
INF8. Install an accessible toilet at Little Manly Reserve and ensure appropriate access to the facility is provided.	Refer to Access section recommendations	Responsibility: MC - P&S to design, US Priority: Low	MC Sharing Sydney Harbour Access Program	

INF9. Investigate the feasibility of installing a toilet and facilities at Little Manly Point Park.	Consideration to be given to a composting toilet.	Responsibility: MC: NRM Priority: Low	MC	
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Waste Management <u>Objectives / Performance Targets:</u> <ul style="list-style-type: none"> ❑ Reduced litter and a clean environment in Little Manly and Spring Coves ❑ To minimise waste and maximise recycling in the Little Manly area. 				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
WM1. Implement MC's Litter Avoidance Strategy in the Little Manly area.		Responsibility: MC - ES Priority: As outlined in the Litter strategy	MC	
WM2. Locate a bin along the access path to Collins Beach to encourage beach users to dispose of their rubbish appropriately.	Monitor the use of this bin to ensure that improper residential rubbish disposal is not being undertaken.	Responsibility: MC - US Priority: Medium	MC	

WM3. Replace existing bin facilities on the eastern side of Little Manly Reserve with recycling stations.	Investigate the feasibility of installing a paper recycling bin as an addition to the recycling station to be installed in the vicinity of the Little Manly Reserve Kiosk. Implement through the Landscape Masterplan to be developed for the area.	Responsibility: MC - ES Priority: High	MC	
WM4. Any bins to be added should have lids to prevent litter blowing out and prevent foraging by birds and possums.		Responsibility: MC - ES Priority: High	MC	
WM5. Undertake a program to label drains with anti-littering messages, as recommended by MC's Draft Litter Avoidance Strategy (A4)		Responsibility: MC - NRM and MEC Priority: Medium	MC	
WM6. Install signage near the Gross Pollutant Trap explaining what they are and why they are needed, as recommended by MC's Draft Litter Avoidance Strategy (A13).		Responsibility: MC - P&S to design, US implement approved works Priority: Low	MC	
WM 7. Support and assist precinct/community programmes to address littering issues, as recommended by MC's Draft Litter Avoidance Strategy (A14).		Responsibility: MC - ES Priority: Medium	MC	

WM8. Seek cooperation of the kiosk to ensure employees and patrons are aware of the anti-littering message. <ul style="list-style-type: none"> Promote litter free packaging Provide disposal facilities As recommended by MC's Draft Litter Avoidance Strategy (A15)		Responsibility: MC - NRM, ES Priority: High	N/A	
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Crime Prevention & Safety <u>Objectives / Performance Targets:</u> <input type="checkbox"/> Public areas in which patrons feel safe and are safe.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
CPS1. That lighting on the western and central sections of Little Manly Point Park be turned off for a 6 month to 1year trial period to address safety issues.	Encourage the community to report any crime or inappropriate behaviour incidents to Manly Police. Trial period to be reviewed in consultation with Manly Police's Crime Prevention Officer and further recommendations made.	Responsibility: MC - US Priority: High	N/A	
CPS2. That lighting be maintained and improved on the eastern side of Little Manly Point Park.		Responsibility: MC - P&S to design, US Priority: High & ongoing	MC	

CPS3. Encourage the community to report all illegal activities to the Police in order to formally register and monitor complaints.		Responsibility: Police & MC - ES Priority: High	N/A	
CPS4. That all vandalism of the Little Manly Point playground facility be addressed within 48 hours of its occurrence or as soon as resources permit.	The reporting of vandalism to MC should be encouraged.	Responsibility: MC - CS Priority: High & Ongoing	MC	

Land Ownership & Logistics <u>Objectives / Performance Targets:</u> <input type="checkbox"/> Increased public access to and community use of the foreshore of Little Manly.				
Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
LOL1. Facilitate the acquisition of Nos 38 and 40 Stuart Street for conversion into public access open space as identified in Manly's LEP 1988.	<p>Continue to seek State Government assistance for the acquisition of these regionally significant foreshore lands.</p> <p>Once acquired amend landscape masterplan to include plans for the properties.</p>	<p>Responsibility: MC – P&S</p> <p>Priority: High as funds and properties become available.</p>	MC & State Government.	

LOL2. Maintain the classification of Nos. 34 and 36 Stuart Street as operational until all or part of the remaining two properties (38 and 40 Stuart Street) earmarked for acquisition, have been acquired. Once these are acquired the lands be converted to Community Land.		Responsibility: MC – P&S Priority: As properties and funds become available.	N/A	
LOL3. Investigate the feasibility of using Section 94 funds to assist with the acquisition of these lands.		Responsibility: MC - P&S Priority: Medium	N/A	
LOL4. That the unformed public road at the end of Marshall Street be closed and dedicated as public (community) land.		Responsibility: MC - P&S Priority: Medium	N/A	
LOL5. Officially name the unnamed reserve at the end of Stuart St.	Consideration should be given to the area's heritage and natural values. Consult with the Church and Aboriginal Groups in the area.	Responsibility: MC - P&S Priority: High	N/A	

ADMINISTRATIVE MANAGEMENT – ACTION PLAN

Administrative Management

Objectives / Performance Targets:

- ☐ Adequate implementation, funding and review of the Coastline Management Plan.

Recommendations / Strategies	Additional Actions	Priority, Responsibility & Collaboration	Funding	Status
AD1. Include the implementation of the adopted Little Manly Coastline Management Plan into MC's Corporate Plan.		Responsibility: MC - NRM Priority: High	N/A	
AD2. Seek a Memorandum of Understanding or Statement of Intent (or similar) signed by stakeholders including government authorities and public interest groups to adopt and implement this Plan.		Responsibility: MC - NRM Priority: High	N/A	
AD3. Review the Coastline Management Plan Support Document every five (5) years and update on an as needed basis.		Responsibility: MC - NRM Priority: Low	MC	
AD4. Review the Coastline Management Plan Action Plan every two (2) years, or as required, to ensure that the Plan's strategies and priorities are kept up-to-date.		Responsibility: MC - NRM Priority: High	MC	

AD5. Establish a Committee for the implementation of Manly's Coastline Management Plans, to be serviced by MC.	This should be the Harbour Management Committee, or similar, which would represent an amalgamation of the existing smaller committees presently involved in management of harbour foreshore areas. The committee would address areas along Manly's harbour foreshore.	Responsibility: MC - NRM Priority: High	MC	
AD6. Develop a vision for the Coastline Management Plan.	The vision should be based on values identified by the Community, staff and the Implementation Committee. The vision and associated values should be used as a basis for developing indicators to monitor/evaluate the effectiveness of the action plan. Refer to AD7.	Responsibility: MC - NRM Priority: High (immediately following adoption of the Plan).	N/A	
AD7. Develop indicators to monitor/evaluate the effectiveness of the action plan's actions in achieving the CMP's vision, objectives and values.	This should be one of the first tasks of the implementation committee. Indicators should be developed with the CMP's vision, objectives and values in mind.	Responsibility: MC - NRM Priority: High (once Vision has been established).	N/A	