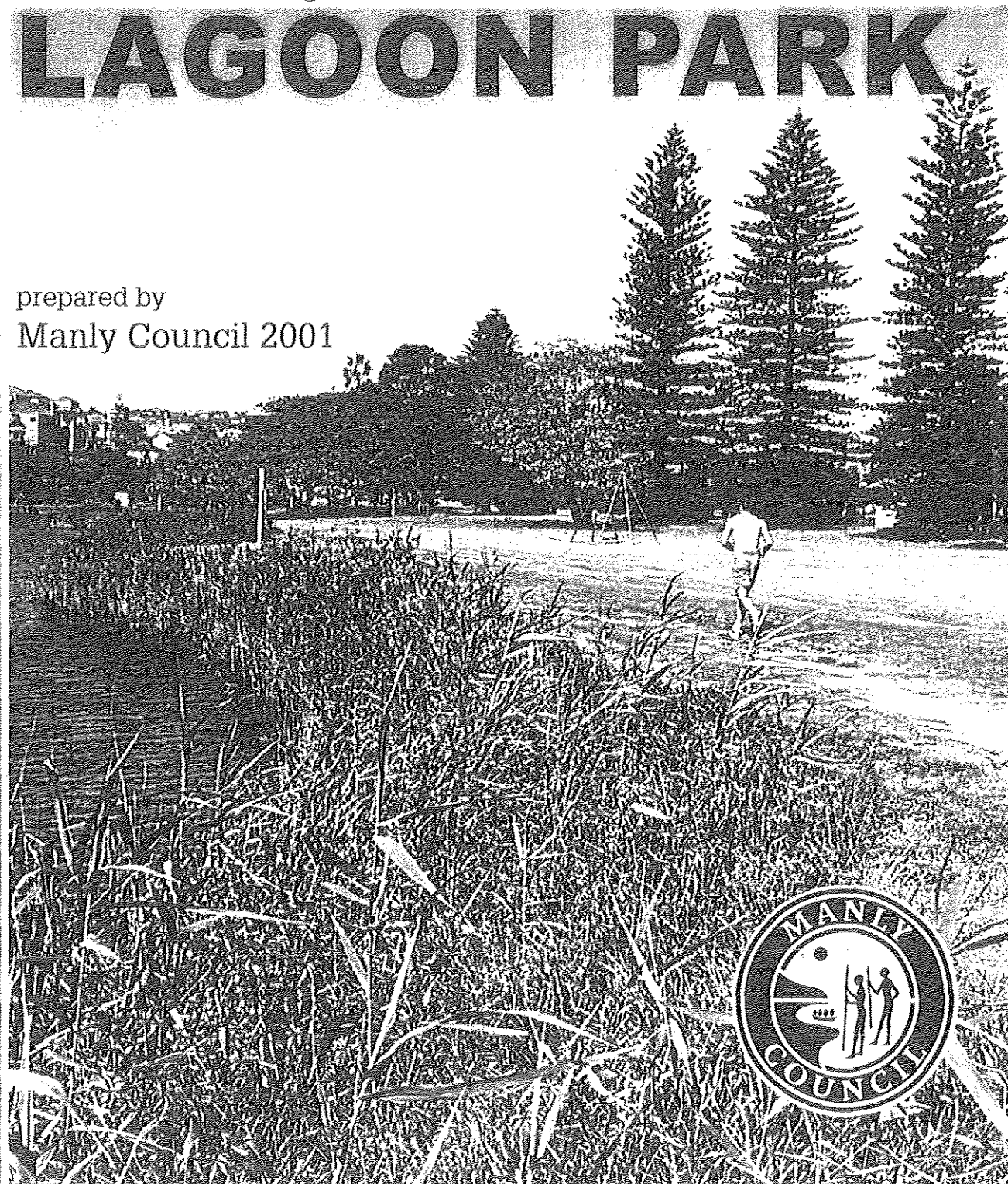


Plan of Management for Community Lands

LAGOON PARK

prepared by
Manly Council 2001





Manly Council

PLAN OF MANAGEMENT FOR COMMUNITY LANDS

(Part 2, Division 2 of the
Local Government Act, 1993)

LAGOON PARK

between Pittwater Rd to the west &
North Steyne to the east

Date of Adoption—12 March 2001

Prepared by
Planning Design & Environment Group
March 2001

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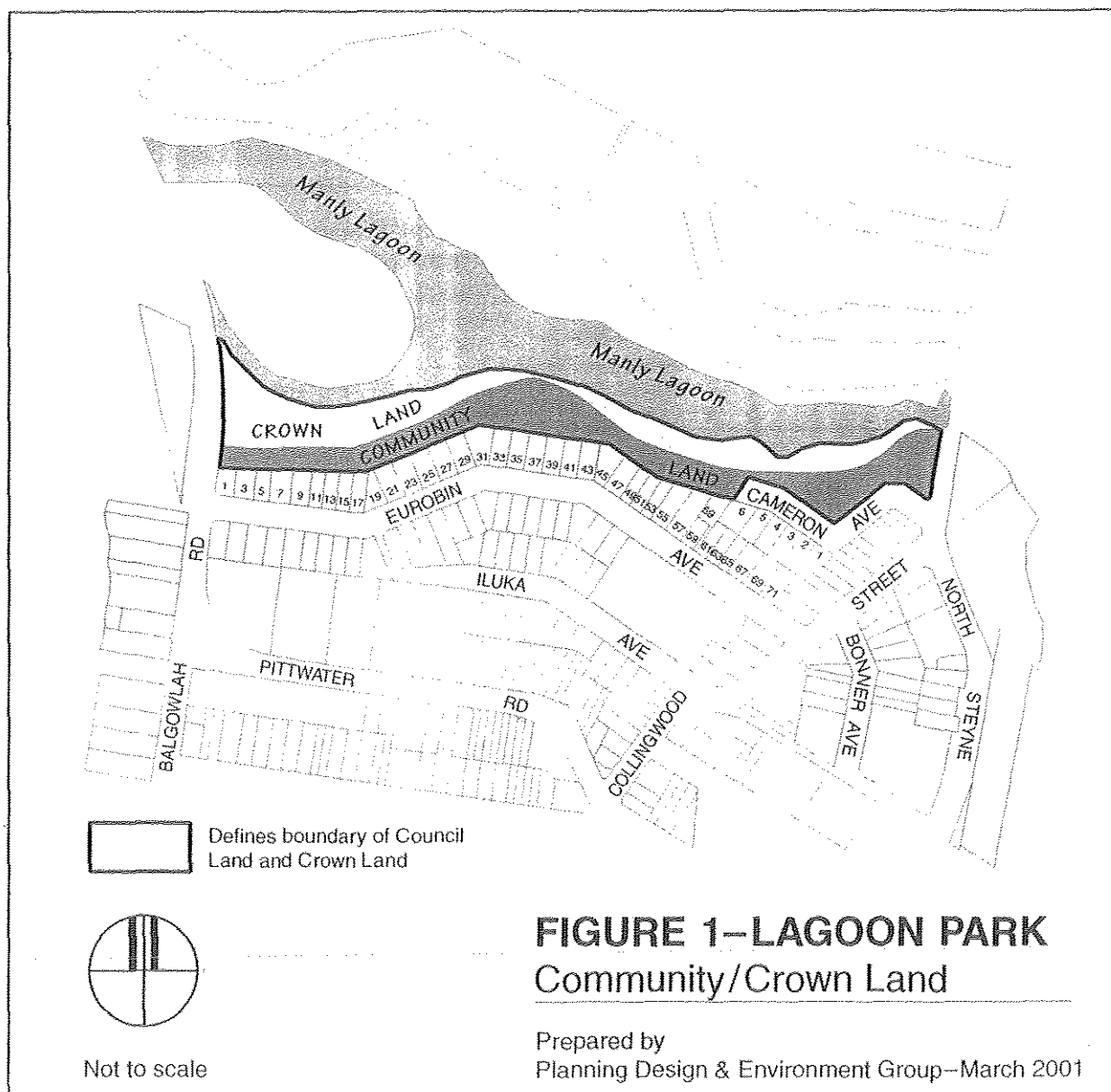
1. INTRODUCTION

This Plan of Management applies to the area of community land known as Lagoon Park. This land lies along the southern side of Manly Lagoon between Pittwater Road in the west and Queenscliff Bridge in the east. Refer to Figure 1. The Plan of Management has been prepared to ensure that Council's objectives for this land are achieved and its management complies with the provisions of the Local Government Act, 1993.

Lagoon Park covers an area of 3 hectares. The park boundaries are Manly Lagoon to the north, Cameron Avenue and private residential properties to the south, North Steyne to the east, and Pittwater Road to the west.

The land is part Community Land, in the ownership of Manly Council, and part Crown Land, under the ownership of the Department of Land and Water Conservation. However, Council has care, control and management of the Crown Land.

A workshop was held in July 1998, with the local community. The draft plan has been prepared to meet the requirements of the Community Land Provisions of the Local Government Act, 1993, but also to address the issues and the values identified by the community.

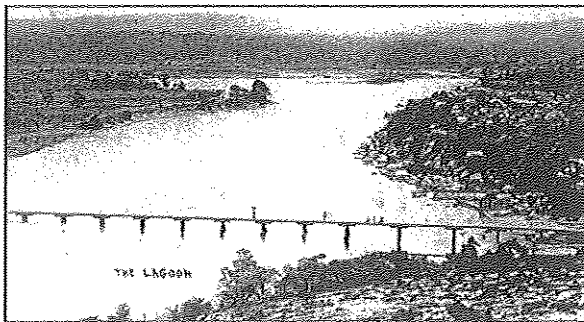


2. BACKGROUND

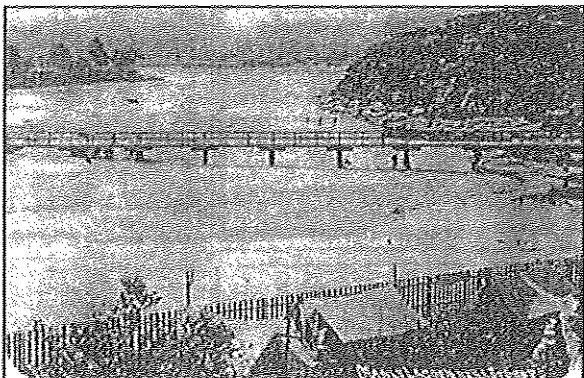
Manly Lagoon was known as Curl Curl Lagoon in the 1800's. Prior to European settlement the area surrounding the lagoon would have comprised Casuarina and Melaleuca wetland. The area surrounding the eastern section of the Lagoon was known as Woodbourne, the residence of Mr W. H. Rolfe. This property was described as one of the most charming retreats in the suburbs of Sydney. It had extensive frontage to Manly Lagoon, where rowing, fishing and bathing could be safely indulged. Offered for sale in February 1879, Woodbourne was eventually purchased by the Roman Catholic Church, part of the property is still used by the Stella Maris College for school purposes.

The construction of the Queenscliff footbridge across the Lagoon mouth in 1885 meant that crossing was not only restricted to low tide. The bridge was later replaced with the Queenscliff Road Bridge.

In the 1920's a garbage tip was established in the eastern section of the Park. Residents' complaints resulted in the closure of the tip. The Manly Golf Committee raised the level of the Manly Golf Course adjoining the Lagoon in 1923 by several feet to minimise flooding. Alderman



Manly Lagoon in the 1890's



Manly Lagoon c. 1900—view to Queenscliff footbridge

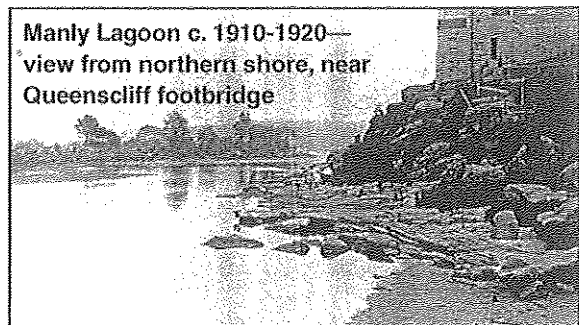
Keirle, who was the Mayor at the time supplied free of charge the quantities of sand needed using his pumping plant on the Lagoon.

Photographs taken in the late 1930's show considerable residential development along Eurobin Street and Cameron Avenue. Also shown are newly planted Norfolk Island pine trees upon the southern boundary of the park. Today these pines form an important visual feature and are listed items of environmental heritage.

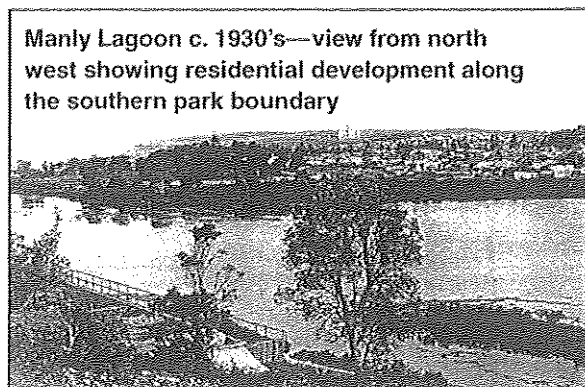
The environment surrounding Manly Lagoon and the Lagoon itself has changed significantly.

The environment surrounding Manly Lagoon itself has changed significantly over time. It is noted that the *Independent Inquiry into Coastal Lakes* (Oct 2000) has classified the Lagoon in the highest category of natural sensitivity, linking it as 'extreme'.

The Lagoon Estuary Management Study (March 1995) stated that: "The aesthetic and recreational values of Manly Lagoon have been severely reduced by a number of pollution problems."



Manly Lagoon c. 1910-1920—
view from northern shore, near
Queenscliff footbridge



Manly Lagoon c. 1930's—view from north
west showing residential development along
the southern park boundary

3. LEGISLATIVE REQUIREMENTS

The use and management of Lagoon Park is subject to the provision of the Local Government Act, 1993 and the Crown Lands Act, 1989, the NSW Heritage Act, 1976, and the Environmental Planning & Assessment Act, 1979.

4. CROWN LANDS ACT

Lagoon Park includes parcels of Crown Land. The Crown Lands Acts, 1993 applies to these areas, and provides for the preparation of management plans for Crown Lands dedicated or reserved for public purposes. The use of Crown Reserves must be consistent with the purpose of the reservation.

Management principles governing Crown lands are as follows:

- environmental protection principles be observed in relation to the management and administration of Crown land
- the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible
- public use and enjoyment of appropriate Crown land be encouraged
- where appropriate, multiple use of Crown land be encouraged
- where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity
- 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 that satisfies the Local Government Act will satisfy the Crown Lands Act if the following points are addressed:

- the plan and its outcomes must incorporate the Crown Land Act's principles for land management
- any proposed uses, developments and management practices must conform to the public purpose for the reserve or dedicated land
- as well as incorporating the requirements of s36 of the Local Government Act, the plan must address any matters required by the Minister responsible for the Crown Lands Act
- submissions about the draft plan will need to be referred to both the Ministers responsible for the Crown Lands Act and the local council for consideration prior to adoption.

It is proposed that this Plan of Management apply to the parcels of Crown Land as well as the Community Land.

5. LOCAL GOVERNMENT ACT 1993

The land includes parcels of land classified as Community Land under the Local Government Act, 1993. Council manages community land in accordance with the community land provisions of the Local Government Act. This land must not be sold and leases for its use must accord with the intended uses and management objectives for the land as detailed in this Plan of Management.

The Local Government Act requires that community land have a management plan that includes the following elements:

- the community land category
- objectives and performance targets for the management of the land
- means of achieving the objectives and performance targets and measuring Council's performance in managing the land and implementing the Plan
- the condition of buildings and other improvements, their existing and future permitted uses, and the scale and intensity of those uses and development.

6. OBJECTIVES FOR PLANS OF MANAGEMENT

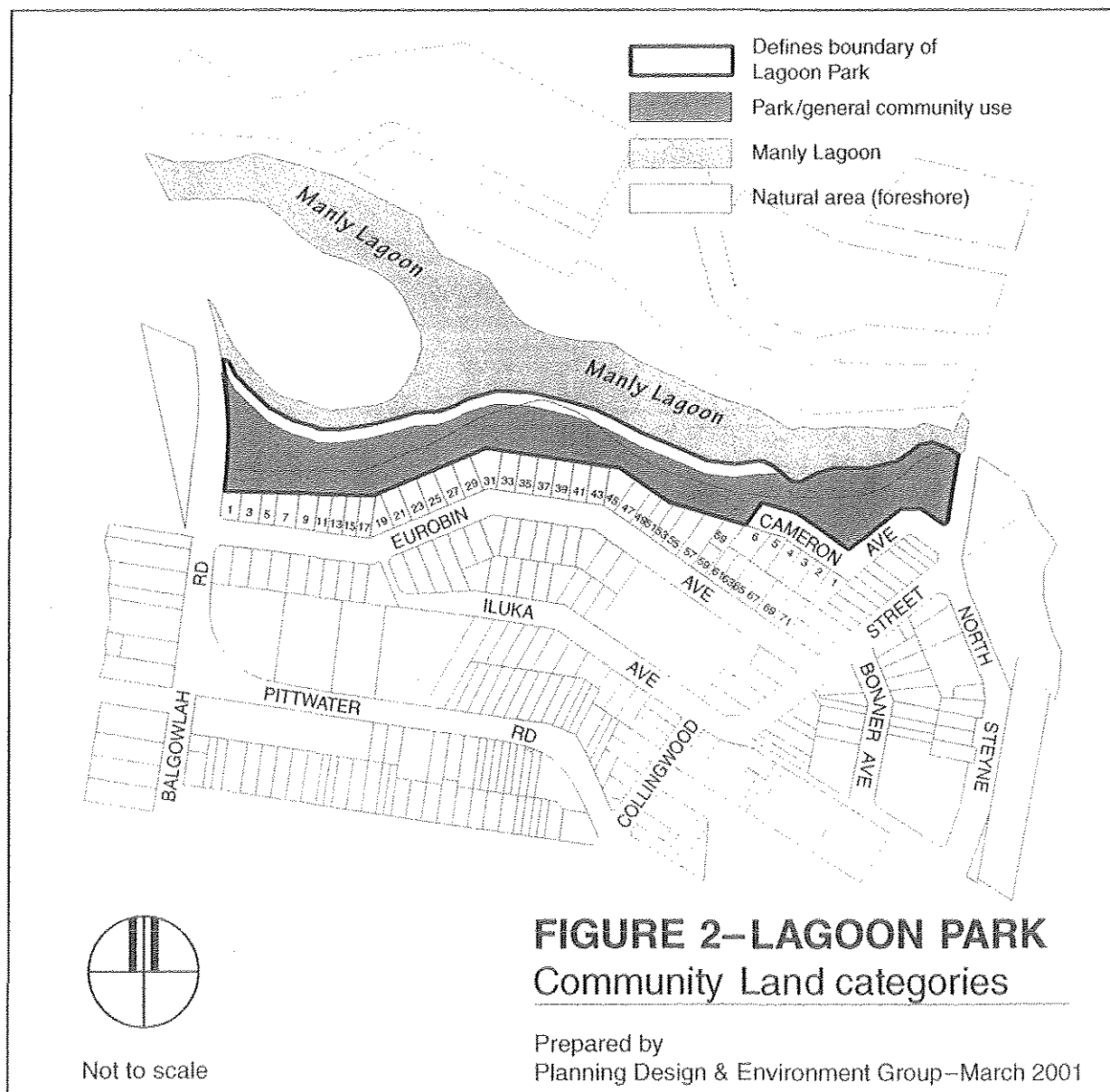
6.1 Core objectives

6.1.1 Introduction

The Local Government Act, 1993 contains core objectives for the different categories of community land. The land in this Plan of Management is categorised as PARK, GENERAL COMMUNITY USE and NATURAL AREA (FORESHORE) (see Figure 2).

6.1.2 Objectives for management of land classified as PARK are as follows:

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



6.1.3 Objectives for management of land classified as GENERAL COMMUNITY USE are to promote, encourage and provide for the use of land, and to provide facilities on the land, to meet the current and future needs of the local community and of the wider public.

- in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public
- 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).

6.1.4 Objectives for management of land classified as NATURAL AREA (FORESHORE)

- to conserve biodiversity and maintain ecosystem function in respect of land, or the feature of habitat in respect of which the land is categorised as a natural area
- to maintain the land, or that feature of habitat, in its natural state and setting
- to provide for the restoration and regeneration of the land
- 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
- to assist in the facilitate the implementation of any provisions restricting the use and management of 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
- 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
- to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.

6.2 Manly Local Environmental Plan 1988

6.2.1 Zoning

The land is zoned Open Space (Zone No. 6) under Manly Local Environmental Plan (LEP) 1988. The LEP has provisions relevant for this Plan of Management. These provisions are detailed below.

6.2.2 Objectives of the Open Space Zone

These include:

- (i) To ensure there is provision of adequate open space to meet the needs of all residential and provide opportunities to enhance the total environmental quality of the Manly Council area.
- (ii) To encourage a diversity of recreation activities suitable for youths and adults.
- (iii) 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 or aesthetic significance of the water's edge.
- (iv) To facilitate access to open areas, particularly along the foreshore, to achieve desired environmental, social and recreation benefits.
- (v) To conserve the landscape, particularly at the foreshore and visually exposed locations, while allowing recreational uses of those areas.

6.2.3 Permissible uses

Uses that are permissible without consent, with Council consent, or are prohibited, are outlined in the table below.

- (i) **Without development consent**
Landscaping, gardening, bushfire hazard reduction.
- (ii) **Only with development consent**
Agriculture, boating facilities, carparking, car parking ancillary to a use permitted in this item, childcare centres, drainage, forestry, golf courses, marinas, parks, public baths, public dressing pavilions, racecourses, recreation areas, refreshment rooms, roads; sports clubs, sports grounds, surf life saving clubs, tennis courts, utility installations other than gas holders or generating works or both.
- (iii) **Prohibited**
Any purpose other than a purpose included in (i) or (ii).

6.2.4 Foreshore Scenic Protection Area

The land is within the Foreshore Scenic Protection Area under the Manly LEP 1988, requiring consent for any development within that area. Council must be satisfied that proposed development does not impact on the amenity of the Foreshore Scenic Protection Area.

6.2.5 Heritage

Additional provisions of Manly LEP 1988 apply to development in the vicinity of, or directly affecting a heritage item.

7. LOCAL POLICY FRAMEWORK

7.1 ✓ Manly Council Plan of Management for Community Lands: Objectives

The Manly Council Plan of Management for Community Lands was adopted in 1996 and presents objectives for community land in Manly. Objectives from that plan that are relevant to this Plan of Management include the following:

- manage 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
- include heritage conservation and cultural identity matters in design criteria when designing and maintaining reserves
- choose planting types consistent with the idea of a future Manly-side "Botanic Garden"
- provide a major open space linkage connecting: harbour and ocean foreshores, creek and lagoon edge, and the National Parks—connect this linkage to other Council area
- 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 spaces lands for special events or projects and for future activities or structures if need becomes apparent
- improve management of open space in Manly.

These general objectives are addressed by the Plan of Management.

8. EXISTING CONDITIONS

8.1 Land use and environment

The land is located on the southern side of Manly Lagoon foreshore area. It has a gentle slope with sandy soil. The area has been modified through earlier dredging but retains its role as an open space buffer along the edge of the lagoon.

The following table details the existing uses and conditions of the land and buildings.

NAME/LOCATION	USE	CONDITION
Grassed park area	General recreation picnics, Special events	Good
Cycleway	Active recreation	Good
Play equipment –swings	Children's recreation	Area under swings is badly eroded
Seating	Passive recreation	Fair
BBQs	Community use	1 Good

8.2 Land tenure and management

The reserve is part Community Land and part Crown Land. Council is Trustee for the Crown Land and is responsible for its care, control, and management. Ownership details are given in the table below.

Title: -
Area: 1.33 ha
Owner: Crown
Asset Management No.: -

Title: Lot 1 DP 178410
Area: 1.5 ha. (approx.)
Owner: Manly Council
Asset Management No.: 290

8.3 Native Title

The land to which this Plan of Management applies is affected by a claim under the Native Titles Act. Registration of a claim means that it has been accepted for mediation but does not mean native title has been granted. The matter has yet to be determined.

8.4 Visual features and aesthetics

Lagoon Park includes expanses of open grass adjoining the foreshore and waters of Manly Lagoon.

Attractive visual features of the land include:

- natural, tranquil waterway
- vistas along Manly Lagoon, to Hinkler Island and Queenscliff
- mature Norfolk Island Pine trees, adjacent to Cameron Avenue
- grassy open space between adjacent housing and the lagoon.

Visual features detracting from the area include:

- open stormwater drains
- areas of weeds
- litter and pollution in lagoon
- lack of shade trees
- bare patches in grass
- isolated, single BBQ devoid of seating facilities.

8.5 Recreation and use

The land is extensively used for a variety of recreational activities. It's proximity to the Ocean Beach and adjoining a residential area, results in heavy use throughout the week. The primary uses of the land is as a park for the surrounding residents. It is also part of the shared cycle and pedestrian network, linking the park with the Ocean Beach, Keirle Park and beyond.

Recreational activities conducted in the area include:

- walking
- running
- cycling
- rollerblading
- picnics and BBQs
- informal games and playing
- children's play.

8.6 Heritage

The row of mature Norfolk Island Pine trees is listed under Manly LEP 1988 as a heritage item (Schedule 4—Items of the environmental heritage). The area is also adjacent to a group of residential flat buildings in Eurobin Street (northern side—from Pittwater Road to Collingwood Street, Manly) that are listed as heritage items.

8.7 Licences and leases

Council is the Trustee of this Crown Land but all leases require approval of the Minister for the Department of Land and Water Conservation.

9. COMMUNITY VALUES AND FUNCTION OF THE LAND

9.1 Values and function of the land

The area has a range of values and functions:

- it provides an attractive, accessible open space area allowing for a variety of recreational uses by a wide range of community groups and individuals
- it serves as a natural buffer zone between adjacent urban areas, the foreshore and water of Manly Lagoon
- it assists in maintaining the health of the natural environment including the lagoon—the revegetated foreshore assists in reducing erosion and provides for wildlife habitat.

9.2 Plan of Management

The Plan of Management aims to improve the condition of the natural environment, enhance the passive recreational experience of visitors, and the visual amenity of the park, as experienced by visitors and the surrounding residents.

VALUE AND FUNCTION	SIGNIFICANCE						
	Local	District	Regional	Metropolitan	State	National	International
Natural	■	■					
Visual	■						
Social	■						
Recreational	■	■					
Cultural							
Educational	■						
Future Generational	■						
Heritage	■						

Values and function of the land
Manly Lagoon

10. MANAGEMENT AND IMPLEMENTATION

10.1 Means of achieving objectives

This Plan of Management is intended to guide the future use, planning, development, management and maintenance of Community and Crown Lands at Lagoon Park. The Plan seeks to ensure that the management objectives for the land are achieved and in doing so protect its values and functions.

This Plan of Management is concerned with:

- natural environmental conservation
- heritage conservation
- landscape character
- access
- built environment
- land use and activity
- leases.

10.2 Specific objectives

The objectives of this Plan of Management include core objectives for management of community land under the Local Government Act 1993 (referred to in section 2.2), general objectives derived from the Manly Council Plan of Management for Community Lands (referred to in section 3.1), and specific objectives for Lagoon Park.

The specific objectives are to:

- maintain in good condition the Community and Crown Lands and their improvements for the purposes for which each category of land is intended or reserved
- conservation of the natural environment
- improve environmental standards in water pollution, waste removal, erosion control, and the management of stormwater and weed infestation.
- protect and conserve items of heritage significance
- retain the existing low intensity atmosphere of the open park area
- maintain the access to the park and foreshore of the lagoon for all in the community, for recreation and general community use
- maintain the shared cycleway and pedestrian path to provide access to the park and links to surrounding open space.

1

OBJECTIVE—natural environment conservation

- To protect and improve the natural environmental of Lagoon Park.
- To conserve biodiversity and maintain ecosystem function.
- To restore and regenerate the land.
- To maintain the foreshore as a transition area between the aquatic and terrestrial environment.
- To facilitate ecologically sustainable use of the foreshore.

PERFORMANCE TARGETS FOR OBJECTIVES

- Adoption of a Plan of Management and Landscape Masterplan for Lagoon Park.
- Implementation of the Plan of Management and Landscape Masterplan commencing 2001.
- Expand the foreshore riparian zone.
- Introduce "soft engineering" techniques on existing stormwater lines and outlets.
- Increase the area of endemic native vegetation in the park.
- Remove exotic weeds and trees, and replace with endemic native plants.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGETS

- Public consultation and Council endorsement of Plan of Management including Landscape Masterplan.
- Implementation of Landscape Masterplan commencing 2001.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- Plan of Management and Landscape Masterplan are implemented, commencing 2001
- annual review by Council confirms the successful implementation of the Plan of Management and Landscape Masterplan.

2**OBJECTIVE—heritage conservation**

To protect the identified items of environmental heritage in Lagoon Park.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- the Norfolk Island Pines are conserved for the enjoyment of present and future generations.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- the Norfolk Island Pines are identified in the Landscape Masterplan as items of environmental heritage
- plantings of new Norfolk Island Pines in the gaps between existing pines at similar spacings to the existing trees.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- annual review by Council confirms that the regular maintenance program in Lagoon Park recognises the heritage significance of the Norfolk Island Pines and maintains the health of existing and new Norfolk Island Pines.

3

OBJECTIVE—landscape character

To enhance the landscape character of the new park.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- the Landscape Masterplan specifically addresses this issue, while maintaining visual amenity for adjoining residential properties.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- implementation of the Landscape Masterplan commencing 2001, will permit this work to be staged as funding, including grants, etc, permit.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- annual review by Council confirms implementation progress.

4

OBJECTIVE—access

To facilitate and improve access to Lagoon Park, especially the shared cycleway and pedestrian path which crosses the land from east to west.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- access to the Park and throughout the Park is enhanced, including access for disabled people. Opportunities to increase accessibility are incorporated in the Landscape Masterplan.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- The Landscape Masterplan specifically addresses this issue—Masterplan is implemented, commencing 2001.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- Council review confirms implementation of Masterplan, and improved access.

5
OBJECTIVE—built environment

- To ensure that all existing buildings and structures are well maintained.
- To provide three new picnic shelters and one new BBQ, subject to satisfactory design.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- existing structures, eg. toilets, playground, BBQ, tables/benches, shared cycle/pedestrian path and other facilities, etc. are maintained in good condition
- new facilities proposed including three modest picnic shelters and one new BBQ.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- the Landscape Masterplan specifically addresses this issue. Masterplan is implemented, commencing 2001.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- annual review confirms good condition of buildings and facilities
- Landscape Masterplan is implemented commencing 2001.

6**OBJECTIVE— land use and activity**

To encourage the use of Lagoon Park for appropriate passive recreational purposes.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- The provision of picnic shelters, BBQs and other landscape infrastructure encourages the use of Lagoon Park for informal and passive recreation—this is supported by regular maintenance of buildings, landscape works, etc.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- Council maintains and improves existing buildings, structures, facilities and landscape infrastructure to enhance visitor experience.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- annual review confirms that facilities, structures and landscaping are well maintained, and visitor complaints do not increase.

7

OBJECTIVE—leases, licences and other estates

- To ensure that all leases, licences, and other estates entered into by Council are compatible with the core objectives for management of Lagoon Park, ie. core objectives for natural area foreshore, park and general community use.

PERFORMANCE TARGETS FOR OBJECTIVE/S

- the core objectives for the management of Lagoon Park, and the provisions of this plan of management are addressed prior to granting any leases, licences or other estates.

MEANS TO ACHIEVE OBJECTIVES AND PERFORMANCE TARGET

- Land, buildings, structures, facilities to which this plan applies may only be leased or licensed or otherwise used under terms which are consistent with the objectives of this Plan of Management.

MANNER TO ASSESS PERFORMANCE OF OBJECTIVES AND PERFORMANCE TARGETS

- review of leases, licences, and other estates confirms that Council has given consideration to the objectives of the Plan of Management in reaching a decision.

10.3 Leases, licences and other estates

All leases, licences and other estates must be compatible with the core objectives for the category of land concerned. No lease is to exceed a period of more than twenty-one years (including options).

Under the Local Government Act 1993 leases and licences and other estates are permissible on Community Land with Council's consent for:

- a purpose specified as a core objective for the category of land concerned
- certain short term casual purposes set out in 6JF Local Government (General) Regulation
- residential housing owned by Council
- providing underground pipes/connections of adjoining premises to utilities situated on Community Land
- providing public utilities and works associated with or ancillary to public activities (POM authorisation not required)
- activities appropriate to the current and future needs of the community in relation to wide public purposes such as public recreation and cultural development
- public roads
- for a purpose prescribed in s.36E-36N as a core objective of the land's categorisation
- for the provision of goods, services or facilities, or the carrying on of activities appropriate to the current and future needs within the Local Community and of the wider public in relation to:
 - (i) public recreation, or
 - (ii) the physical, cultural, social, and intellectual welfare of persons including, but not limited to maternity or infant welfare centres, kindergartens, nurseries, childcare or family day care centres, surf life saving clubs.

Subleasing may be permitted with Council consent but only for the same purpose as the original lease.

10.4 Landscape Masterplan

A Landscape Masterplan has been included in the Plan of Management.

This incorporates:

- Landscape Masterplan
- Sections
- Perspectives 1-6.

to help clarify the intent of the Landscape Masterplan. (See drawings that follow.)

10.5 Park

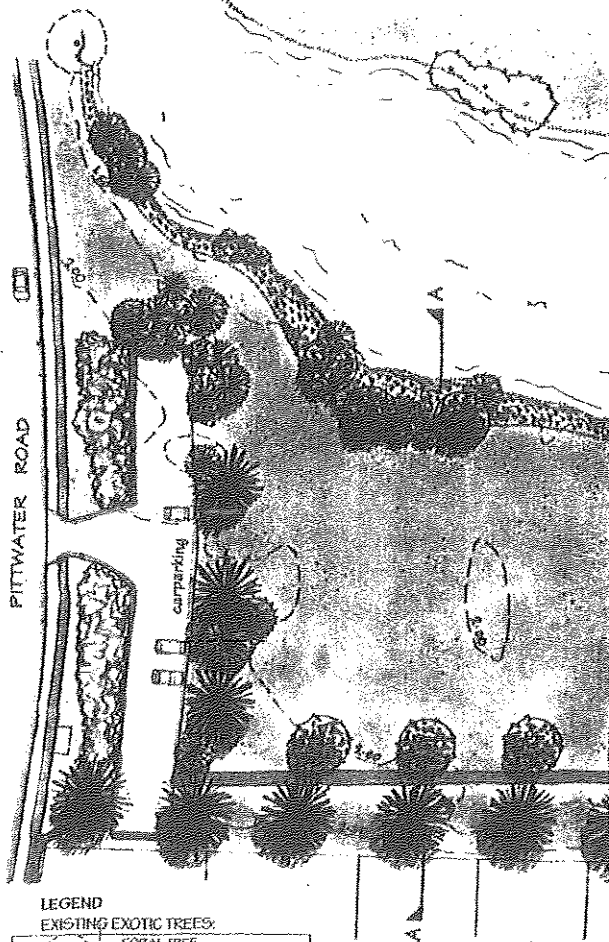
The area categorised as park can be leased only for uses that are compatible with the core objectives for that land category. The following activities are hereby expressly authorised by lease, licence or other estate subject to Council consent:

- community events
- sporting events
- ceremonies
- corporate functions, exhibitions and receptions
- commercial filming and photography

10.6 General community use

The areas categorised as general community use can be leased only for uses that are compatible with the core objectives of that land category. Leases, licences or other estates for the following activities are hereby expressly authorised by lease, licence or other estate subject to Council consent:

- community events
- sporting events
- ceremonies
- corporate functions, exhibitions and receptions
- commercial filming and photography.



LEGEND

	Existing barbeque
	New barbeque
	New picnic shelter
	New seat
	New bollards off Cameron Ave (to replace timber barriers)
	Shared path
	Existing shared path section removed/ re-aligned
	New solar light poles

LEGEND
EXISTING EXOTIC TREES:

	CORAL TREE <i>Erythrina X tykesii</i> (to be removed in longer term)
	NORFOLK ISLAND PINE <i>Araucaria heterophylla</i>

PROPOSED EXOTIC TREES:

	NORFOLK ISLAND PINE <i>Araucaria heterophylla</i>
--	---

EXISTING NATIVE PLANTS:

	SWAMP OAK <i>Casuarina glauca</i>
	COASTAL BANKSIA <i>Banksia integrifolia</i>

PROPOSED ENDEMIC NATIVE PLANTS:

	SWAMP OAK <i>Casuarina glauca</i>
	COASTAL BANKSIA <i>Banksia integrifolia</i>
	BROAD-LEAVED PAPERBARK <i>Melaleuca quinquenervia</i>
	SWAMP MAHOGANY GUM <i>Eucalyptus robusta</i>

MASS PLANTED BEDS
-mixed native species



NEW MASS PLANTED BEDS
Banksia integrifolia
Casuarina glauca
Cornus alba
Eucalyptus robusta
Hebecladia scandens
Melaleuca quinquenervia
Myoporum parvifolium

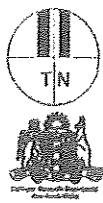
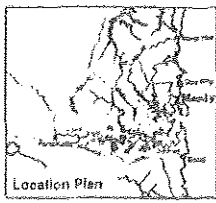
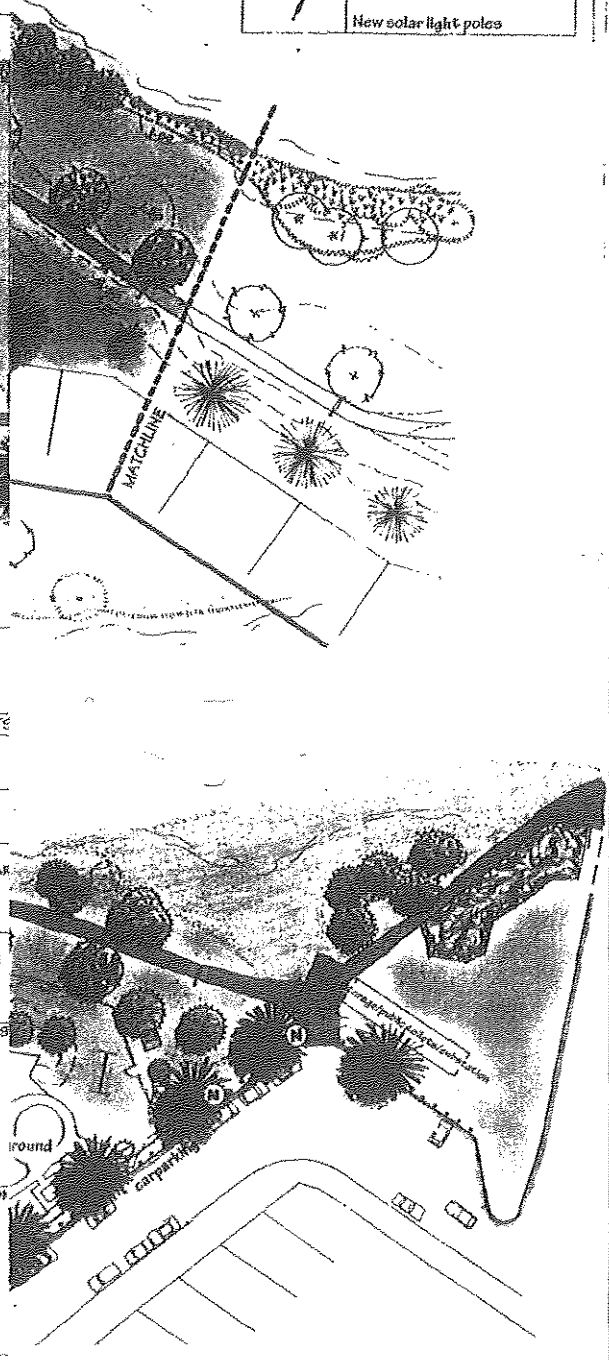


RIPARIAN ZONE

	<i>Carex pumila</i> <i>Crinum pedunculatum</i> <i>Cyperus laevigatus</i> <i>Isolepis nodosa</i> <i>Juncus kraussii</i> <i>Leptocarpus longipes</i> <i>Phragmites australis</i> <i>Tylocladus stratum</i>
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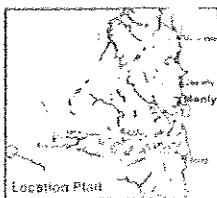
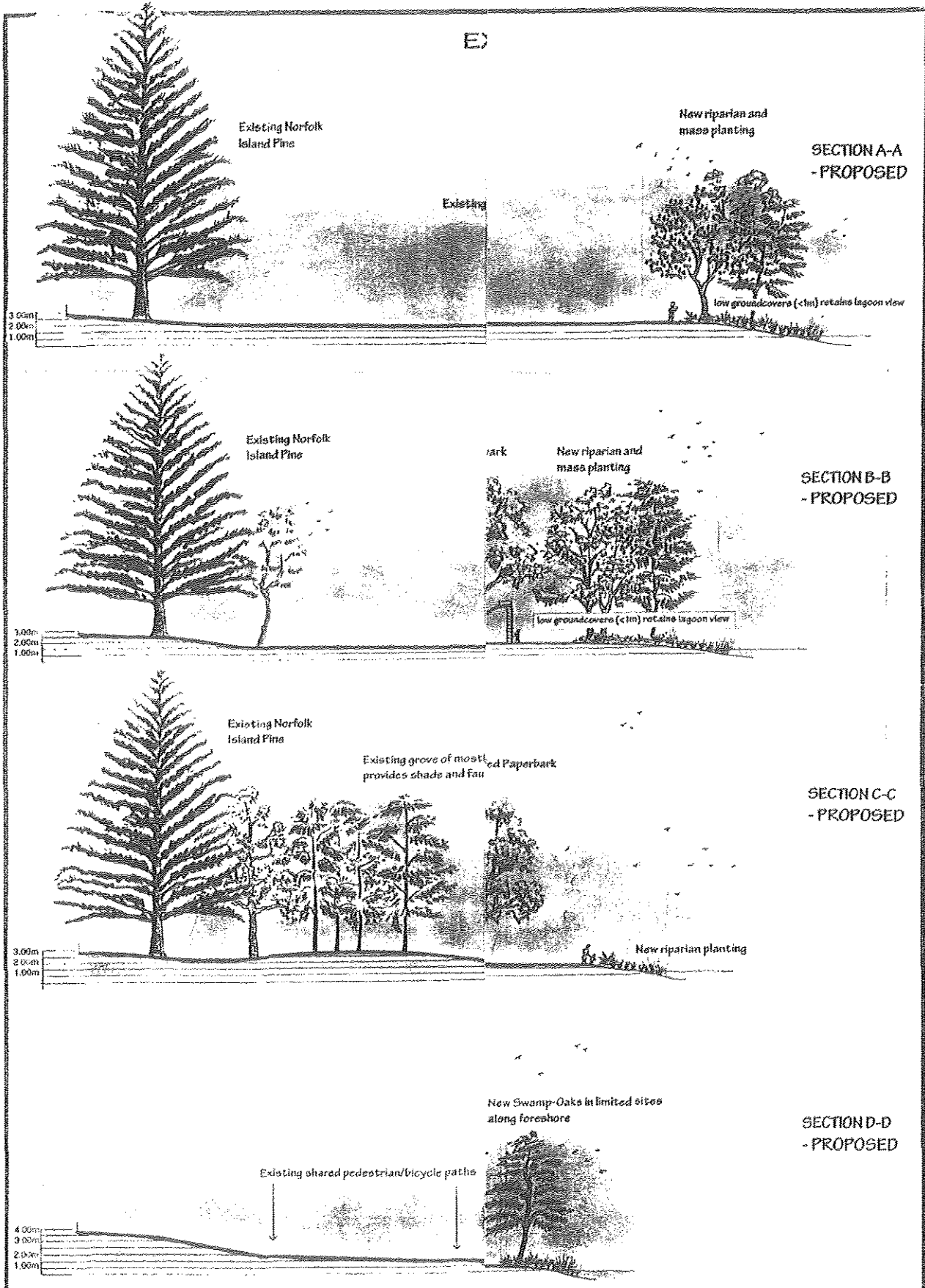
RIPARIAN ZONE EXTENSION

	<i>Carex pumila</i> <i>Crinum pedunculatum</i> <i>Cyperus laevigatus</i> <i>Isolepis nodosa</i> <i>Juncus kraussii</i> <i>Leptocarpus longipes</i> <i>Phragmites australis</i> <i>Tylocladus stratum</i>
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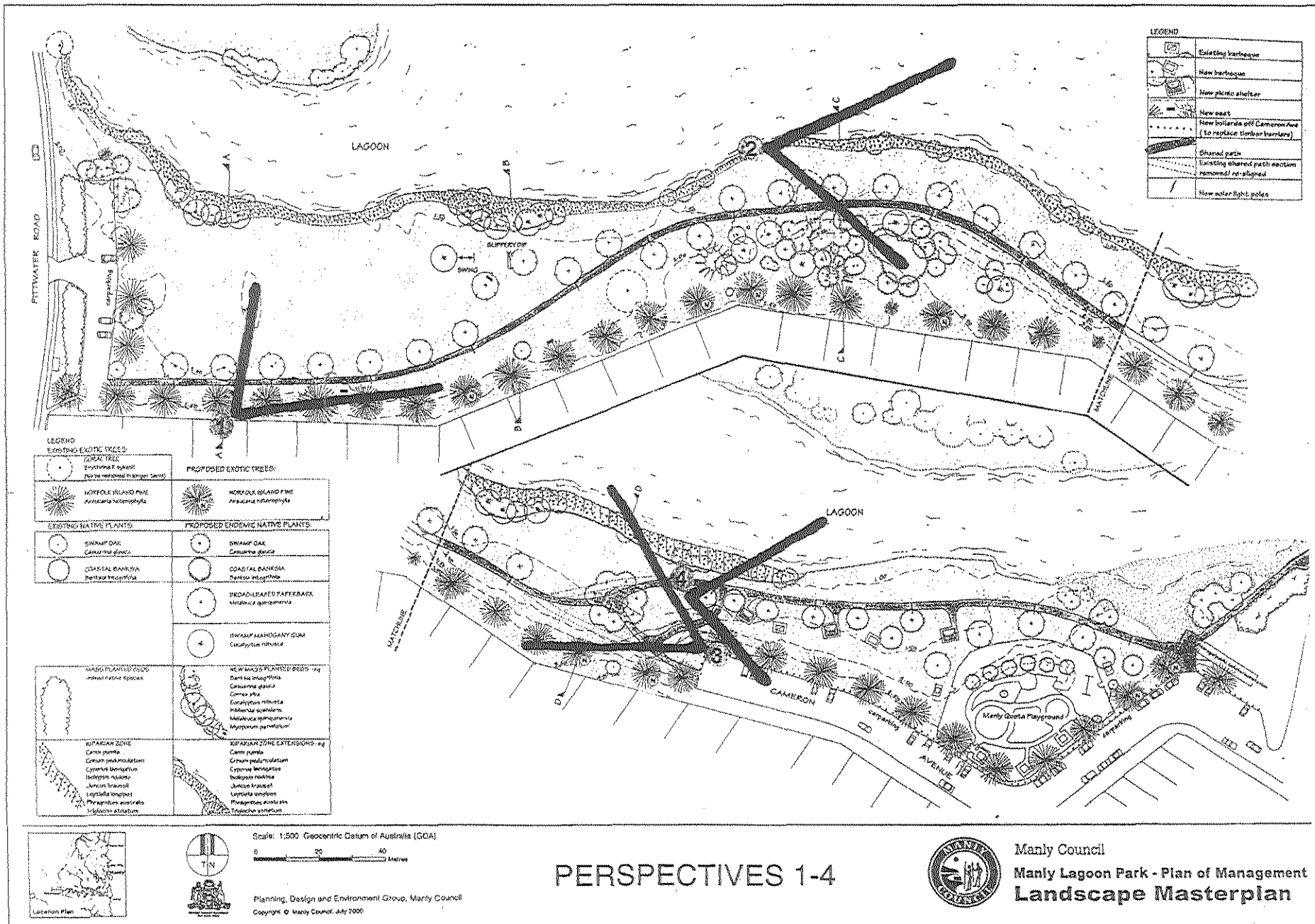
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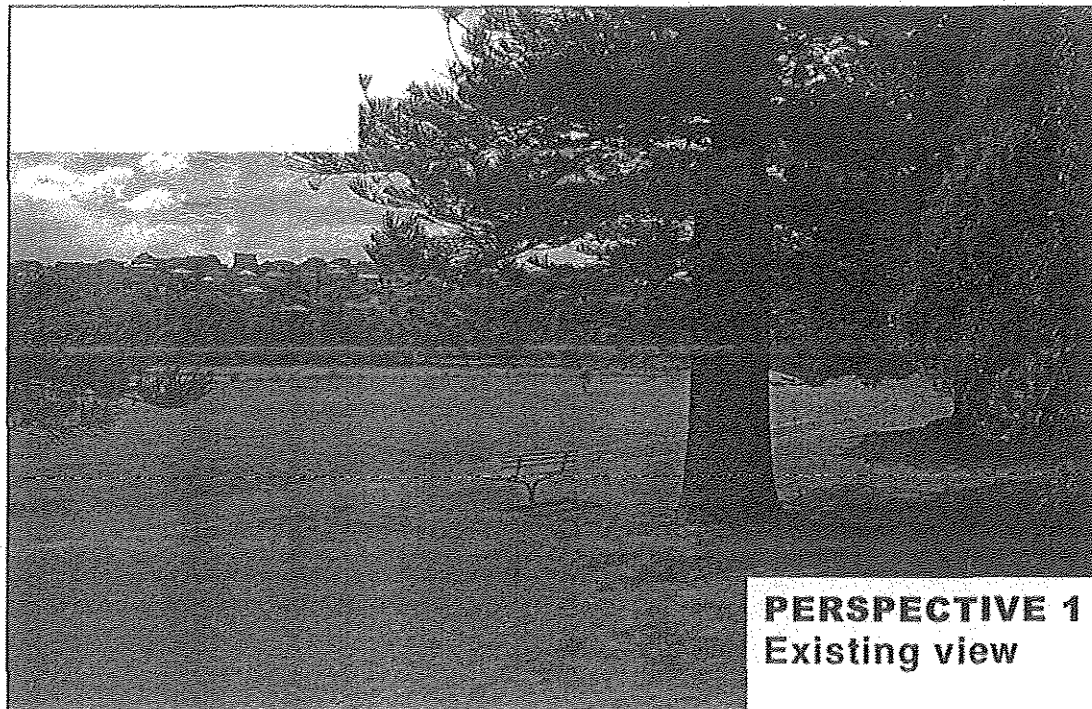


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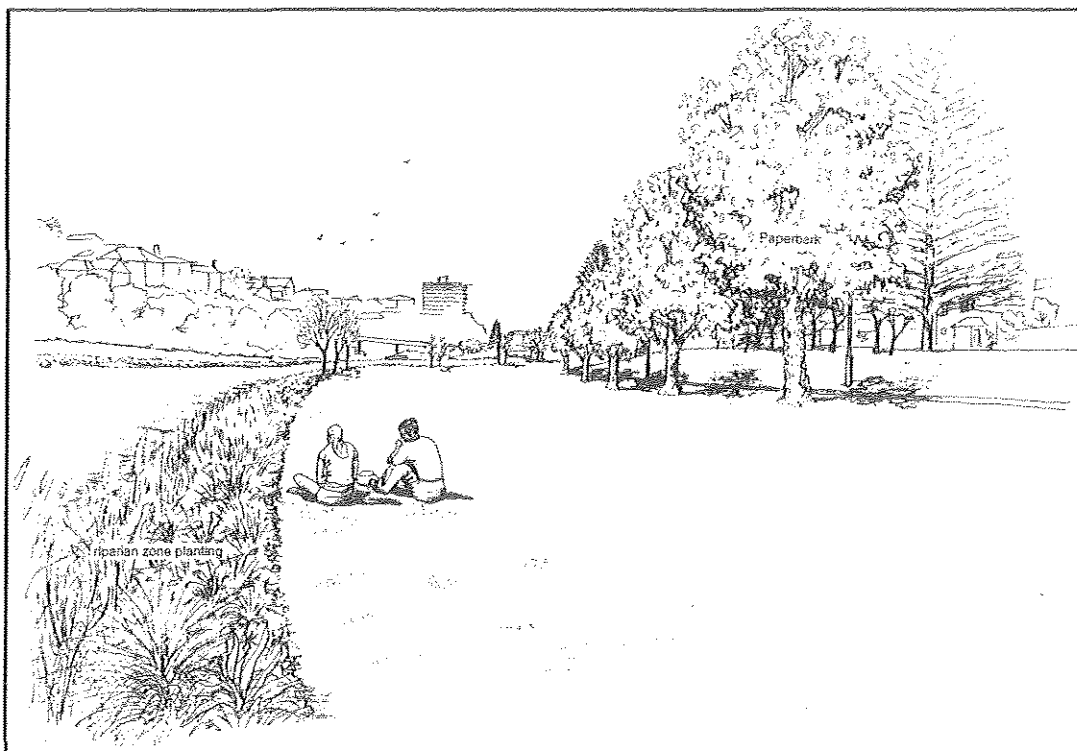
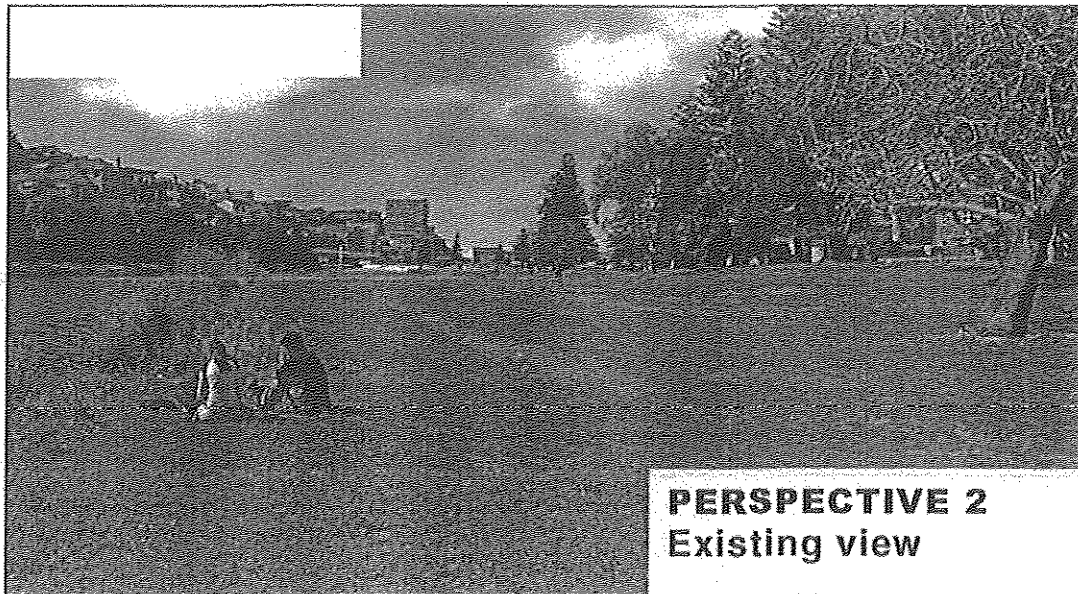
**Manly Lagoon Park - Plan of Management
Actions**



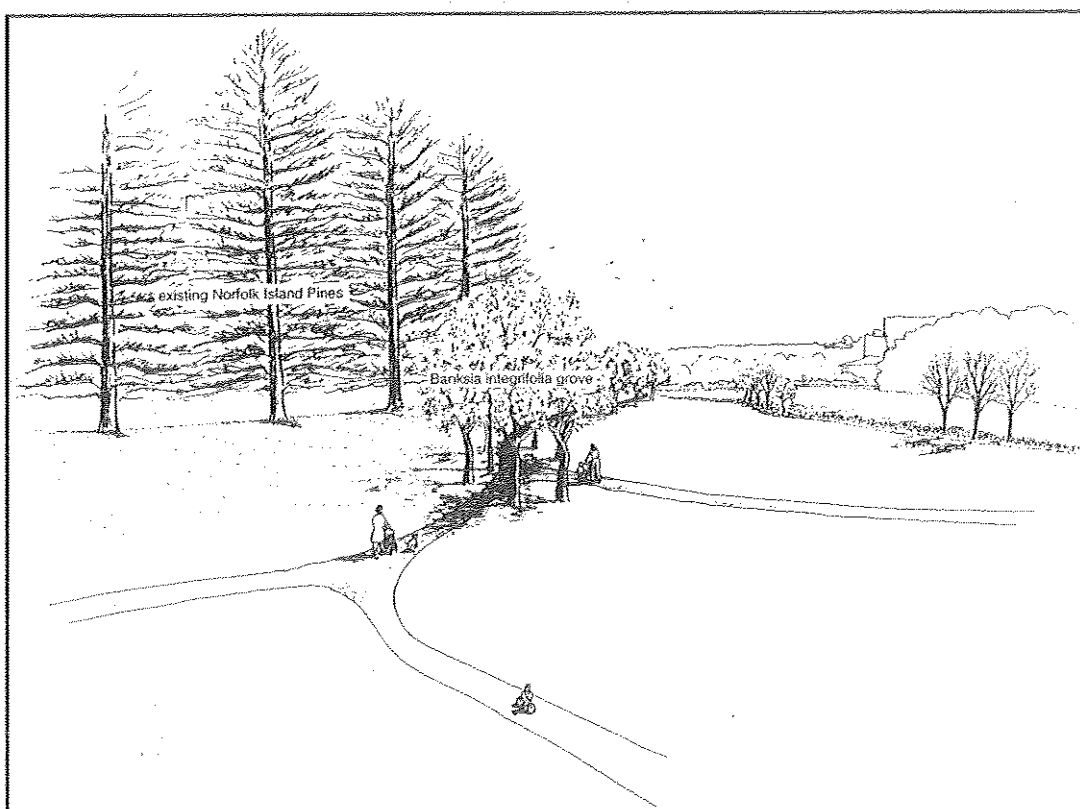
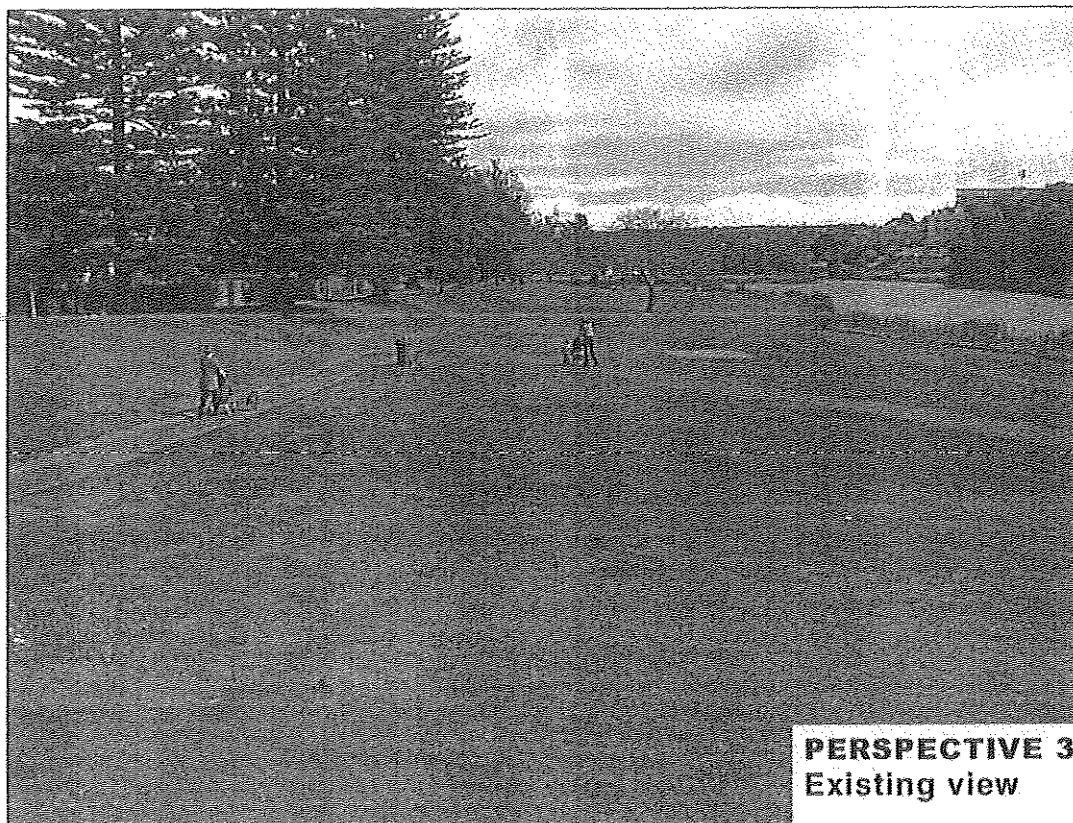


PERSPECTIVE 1

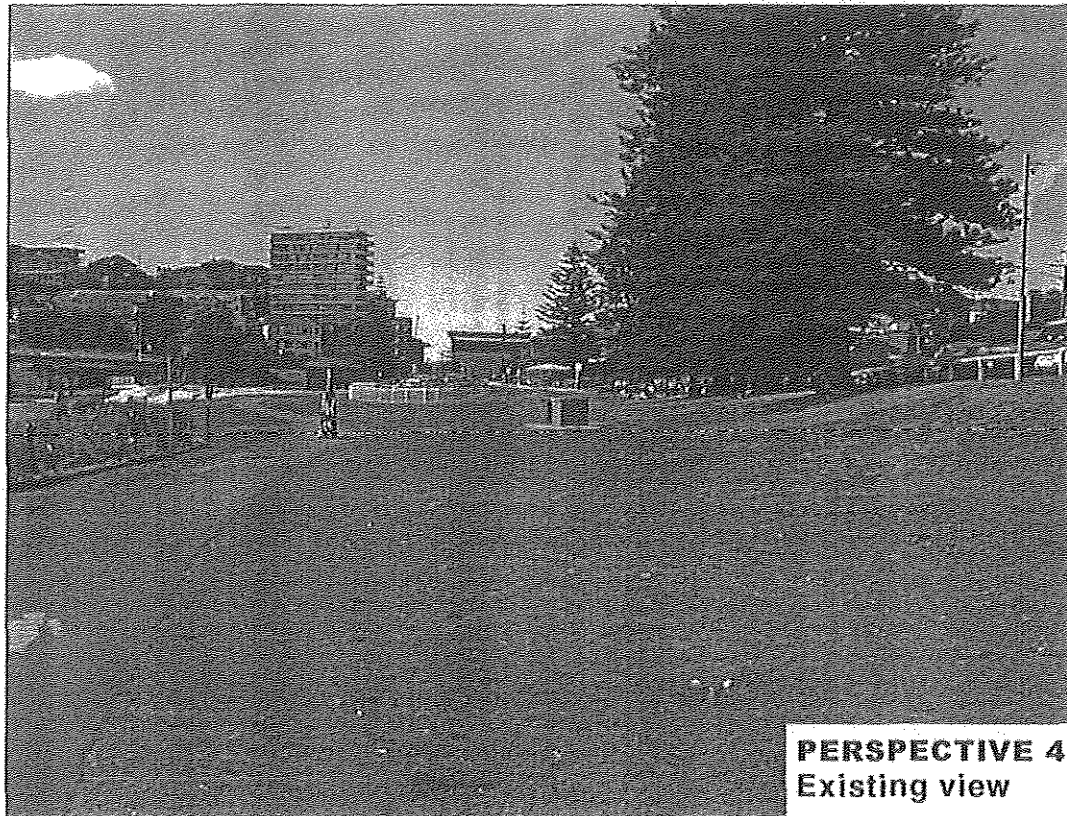
Views retained through gaps in Norfolk Island Pines/new shade/habitat Paperbark trees and solar lights



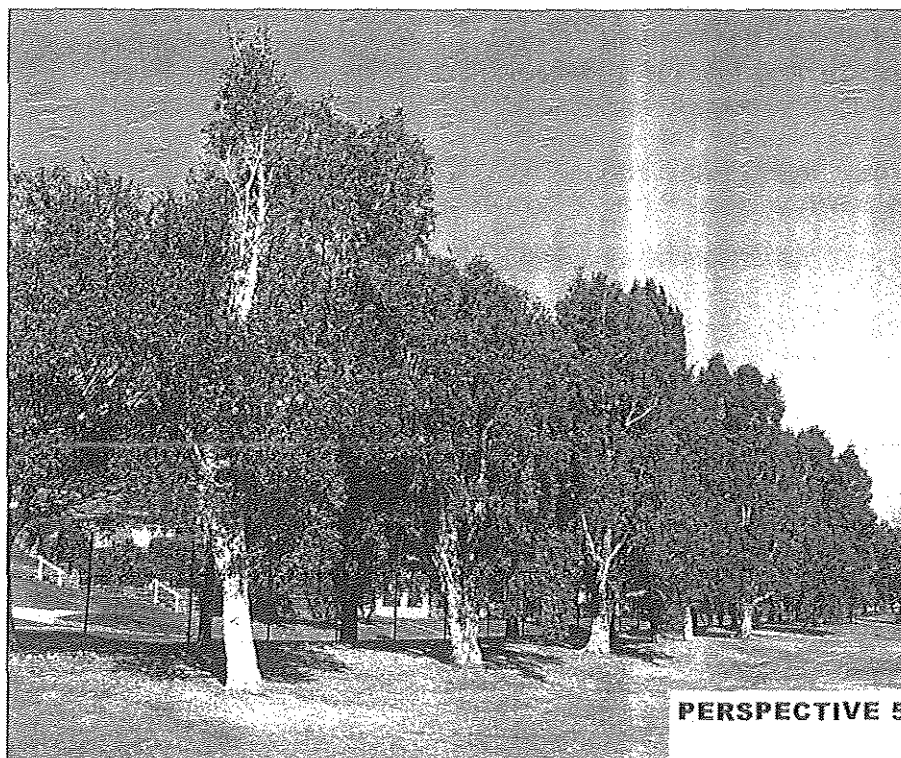
PERSPECTIVE 2
Re-graded lagoon embankment, riparian zone extension and Paperbark shade/habitat tree planting



PERSPECTIVE 3
New shared cycle path junction, with Banksia grove (from Cameron Avenue)

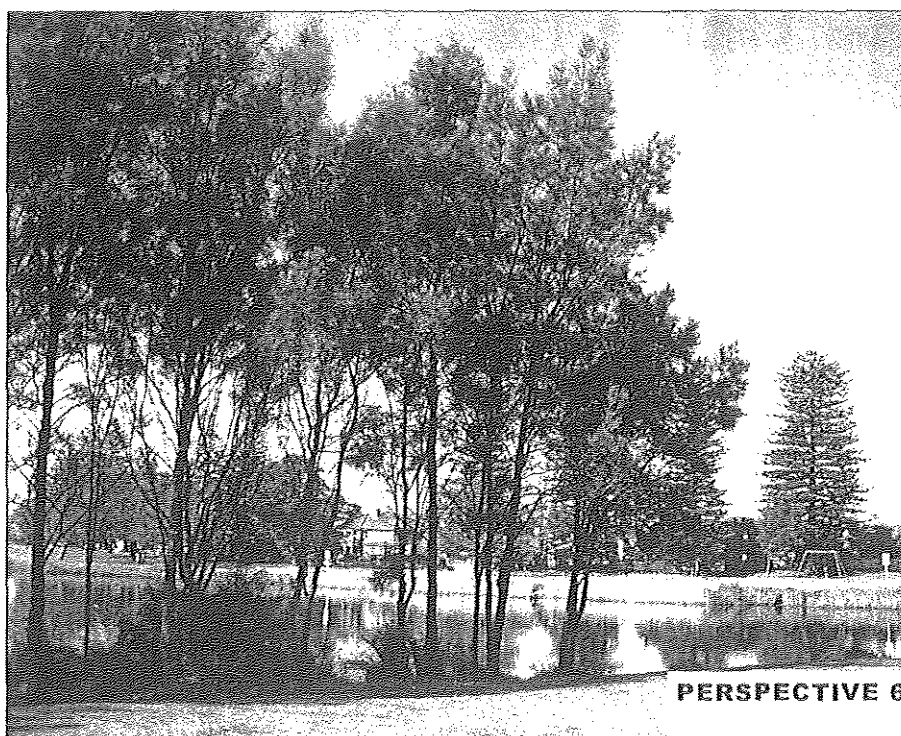


PERSPECTIVE 4
New solar lighting, picnic shelters, Banksia planting and riparian zone extension



PERSPECTIVE 5—L.M. Graham Reserve

Example of *Melaleuca quinquinervia* (Broad-leafed Paperbark) row showing clear view between trees. Note that the *Melaleuca*'s shown here are at closer centres (10-12m) than the proposed trees along the shared cycleway (15m) in Manly Lagoon Park.



PERSPECTIVE 6—Hinkler Island

Example of filtered views through *Casuarina glauca* (Swamp Oak). Note that the trees shown here are at closer centres than the proposed trees (in limited locations) along the Lagoon edge.

10.7 Natural Area (Foreshore)

The areas categorised as natural area (foreshore) are subject to special limitations, because of their environmental sensitivity. Leases, etc are limited to structures which assist in public enjoyment of the land.

NAME/LOCATION	SCALE + INTENSITY OF USE
Grassed park area	Temporary / short-term use
Cycleway	n/a
Play equipment – swings	n/a
Seating	n/a
BBQs	n/a
Public toilets	No increase in floor space
Garage	No increase in floor space

11. LANDSCAPE ANALYSIS AND PROPOSALS

—playground equipment, park furniture, vegetation, pollution issues, shade, access and lighting

PROBLEMS:

1. Lagoon embankments vegetation/ water quality
Exotic grasses and weeds covering the steeper Lagoon edge embankments west of the existing "riparian zone*" plantings are difficult to maintain, unsightly and restrict views of the Lagoon.

* - refers to lagoon edge.

Nutrient loading caused by dog fouling is contributing to Lagoon water pollution.

PROPOSED SOLUTIONS:

1. Riparian buffer zone plantings
Riparian zone plantings to be extended west of existing plantings along the entire Lagoon edge, varying in width from 3-4m to approximately 10m.

It is worth noting that the Department of Land and Water Conservation guidelines on buffer zones recommend that to improve the quality of sub-surface and surface run-off a buffer zone of 20m or greater is provided around natural watercourses is preferred.

The plants that inhabit this Lagoon foreshore are recognised for their ability to assimilate nutrients and other pollutants. The Common Reed (*Phragmites australis*) is an emergent plant that will significantly reduce the impact of nutrients associated with dog faeces within the Park and also provide habitat for the organisms that contribute to the "filtering" of the water.

There may also be improvements over time within the Lagoon as the plant populations increase. These plants have been used successfully in water quality improvement facilities throughout Australia.

...continued on page 32

PROBLEMS:

PROPOSED SOLUTIONS:

...continued from page 31

Some further points regarding the proposed extensions to the Lagoon edge riparian zone:

- proposed trees have been sparsely spaced in clusters to enable filtered views through trunks and foliage to the lagoon with areas devoid of trees to maintain significant open vistas from park and adjacent residences on the southern boundary
- understorey groundcover plant species that reach <1.0m have been selected to maintain views across the water
- the removal of spoil off site and regrading of the existing steep embankments to gentle profiles will increase the attractiveness of the water edge by making it more visually prominent and accessible.

PROBLEMS:

2. Structure shade tree planting

With the exception of the heritage listed Norfolk Island Pines (*Araucaria heterophylla*) along the southern boundary, and grove of mainly endemic trees in the middle of the Park, there is inadequate shade cover throughout the Park. In particular there is no relief from the sun during the hottest hours of the day along the main east/west shared cycle route. On hot days, people cluster around the Norfolk Pines when in the vicinity of the playground, and around the exotic Coral (*Erythrina spp.*) trees when nearer the Lagoon.

It is necessary to balance the need for new shade tree provision with the desirability of maintaining sunlight to adjacent southern residences, and significant views across the Park and Lagoon from both within the Park and from the residences.

PROPOSED SOLUTIONS:

2. New structure shade tree planting

New plantings of Broad-leafed Paperbark (*Melaleuca quinquinervia*) has been selected as the primary shade structure tree species along the main east-west shared cycle path. This has been supplemented by Coastal Banksia (*Banksia integrifolia*) in key locations.

Melaleuca quinquinervia is a fast growing, bird attracting shapely tree that grows to approximately 12m*, with beautiful thick, papery whitish bark and dull green leaves forming a shapely crown. It bears numerous cream bottle brush flowers in late Summer and Autumn, providing food (nectar) for many species of native birds (*the existing Norfolk Island Pines are typically 20m+ tall).

It is noted that in the "Manly Lagoon Exotic Vegetation Management Strategy" (N. Skelton, 1996) that "the Lagoon would (once) have been surrounded by Casuarina and Melaleuca forest".

Melaleuca quinquinervia - spacings and location

This species is a well-known avenue and park tree used very successfully in formal planting—eg. Manly Golf Course, Graham Reserve and in Centennial Park, Sydney.

The proposed Paperbarks have been positioned at regular 15m spacing as per the typical distances between the existing Norfolk Island Pine trunk centres. They have been positioned in front of the Pines in order to maximise retention of existing view corridors across the Park and to the Lagoon from residences along the southern park boundary.

The deliberate contrast in form, texture and colour to the Norfolk Island Pines will ensure that there will be no lessening of the strong visual impact of the heritage Pines.

...continued on page 34

PROBLEMS:

PROPOSED SOLUTIONS:

...continued from page 33

Norfolk Island Pines
(*Araucaria heterophylla*) -
spacing and location

It is proposed to supplement the existing heritage row of pines with 3 new pines along Cameron Avenue at spacings identical to the existing tree spacings. No additional planting along the southern park boundary abutting housing planned.

PROBLEMS:

3. Grove of mainly remnant native trees

Many specimens are becoming over mature through natural aging processes. There is a need to replace the endemic stock through substantial new plantings.

The integrity of the endemic native character of the grove has been undermined over time by various plantings of specimen exotic trees such as Coral trees (*Erythrina* spp.), Pines (*Pinus* spp.), Conifers, a Jacaranda and an Oleander shrub.

4. BBQs/ table and benches

There is only one functioning BBQ and no picnic shelters (incorporating table and bench set) associated with the BBQ.

PROPOSED SOLUTIONS:

3. Grove of mainly remnant native trees

It is proposed to restore integrity to the remnant grove of native trees in grass in the middle of the Park by:

- Progressive new plantings of appropriate endemic native tree species (eg *Casurina glauca*, *Banksia integrifolia*, *Eucalyptus robusta*) to replace aging (senescent) individuals.
- Progressive removal of senescent native species and all exotic species as appropriate to enable vigorous growth of replacement new endemic plantings.

Regarding the existing Coral trees, it is recognised that these trees perform a valuable role in providing summer shade. It is intended that these be removed progressively as the row of *Melaleuca quinquinervia* develop a reasonable level of shade.

4. BBQs and picnic shelters

It is proposed to provide 3 new modest picnic shelters (each incorporating table and 2 benches), and one new BBQ with new paths enabling wheelchair access to the picnic shelters.

The BBQs and picnic facilities have been located close to Cameron Avenue parking and the very popular Manly Quota Playground for the following reasons:

- provides for ready access to carparking, as well as easy access to and from the playground and BBQs/shelters for park users
- this is the least visually sensitive area in relation to maintenance of significant Park/Lagoon views from adjacent residences, given the presence of the carparking and siting on ground below the carpark embankment.

PROBLEMS:

5. Individual play issues

In time, aging play equipment can become dangerous, necessitating removal. An example of this was the slippery dip located in the open grassed area in the west of the park. It was removed following a serious accident.

Quota playground: This popular area suffers from aging equipment and equipment inappropriate to the user age group. It would be desirable to increase the existing fenced off area to provide more 'run-around' space and opportunities for informal seating on grass.

6. Access and lighting issues

Access for prams and wheelchairs off the westerly end of Cameron Avenue down to the main shared cycle path is poor. Existing horizontal timber barriers demarcating the carpark impede pedestrian flow, while concentrating grass wear and creating localised erosion problems at the few available pedestrian park access points.

Lagoon Park lacks adequate lighting. It is recognised that any introduction of lighting is a sensitive issue, with the aim being to find a balance between providing safer conditions for park users, while not conversely encouraging greater use of the Park such that undesirable / antisocial behaviour results.

PROPOSED SOLUTIONS:

5. Individual play improvements

It is planned to replace ageing, dangerous and inappropriate play equipment as funding permits.

Quota playground: It is proposed to extend the existing fenced area north towards the existing bike path and eastwards, without adversely impacting on the park in general, when funding becomes available.

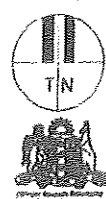
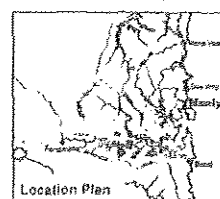
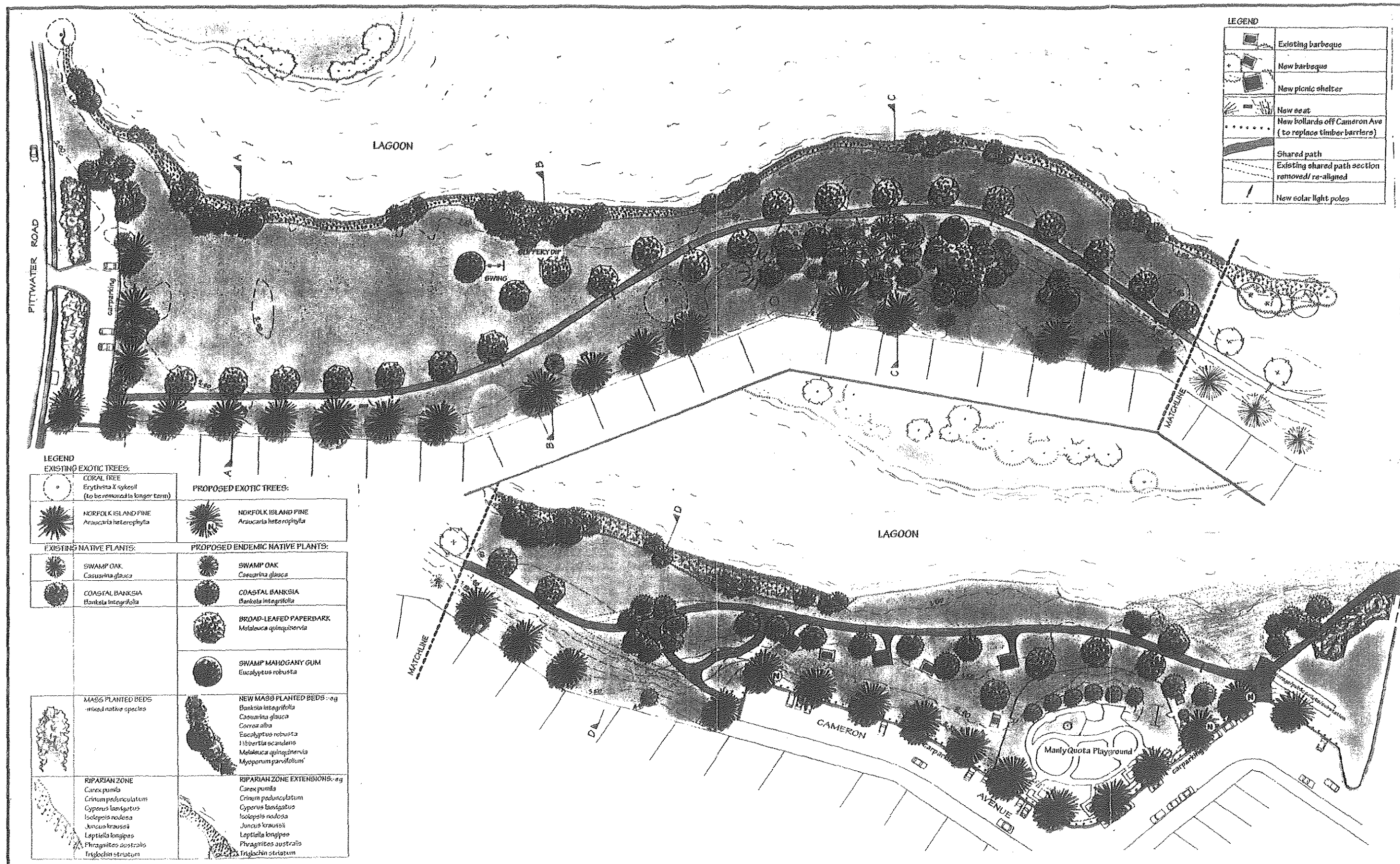
6. Access and lighting improvements

Path: The provision of a circuit path at the present junction of the shared cycle path/access path off Cameron Avenue will offer greater opportunities for younger bike riders and roller-bladders, while improving access to the BBQ/shelter area below the Cameron Avenue carparking.

Bollards: Removal of the timber barriers and replacement with suitable bollards will allow unimpeded access for park users from the carpark, as well as addressing grass wearing and soil erosion/compaction problems beneath the Norfolk Island Pines.

Lighting: Solar lighting along the main shared cycle path has been provided for. As with the Paperbark trees, these have been positioned to the north of the existing Norfolk Island Pines such that they do not interrupt resident views from the southern park boundary.

While solar lighting would be a positive addition to the park, new lighting is subject to the availability of special funding in the longer term.



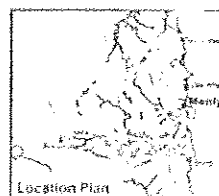
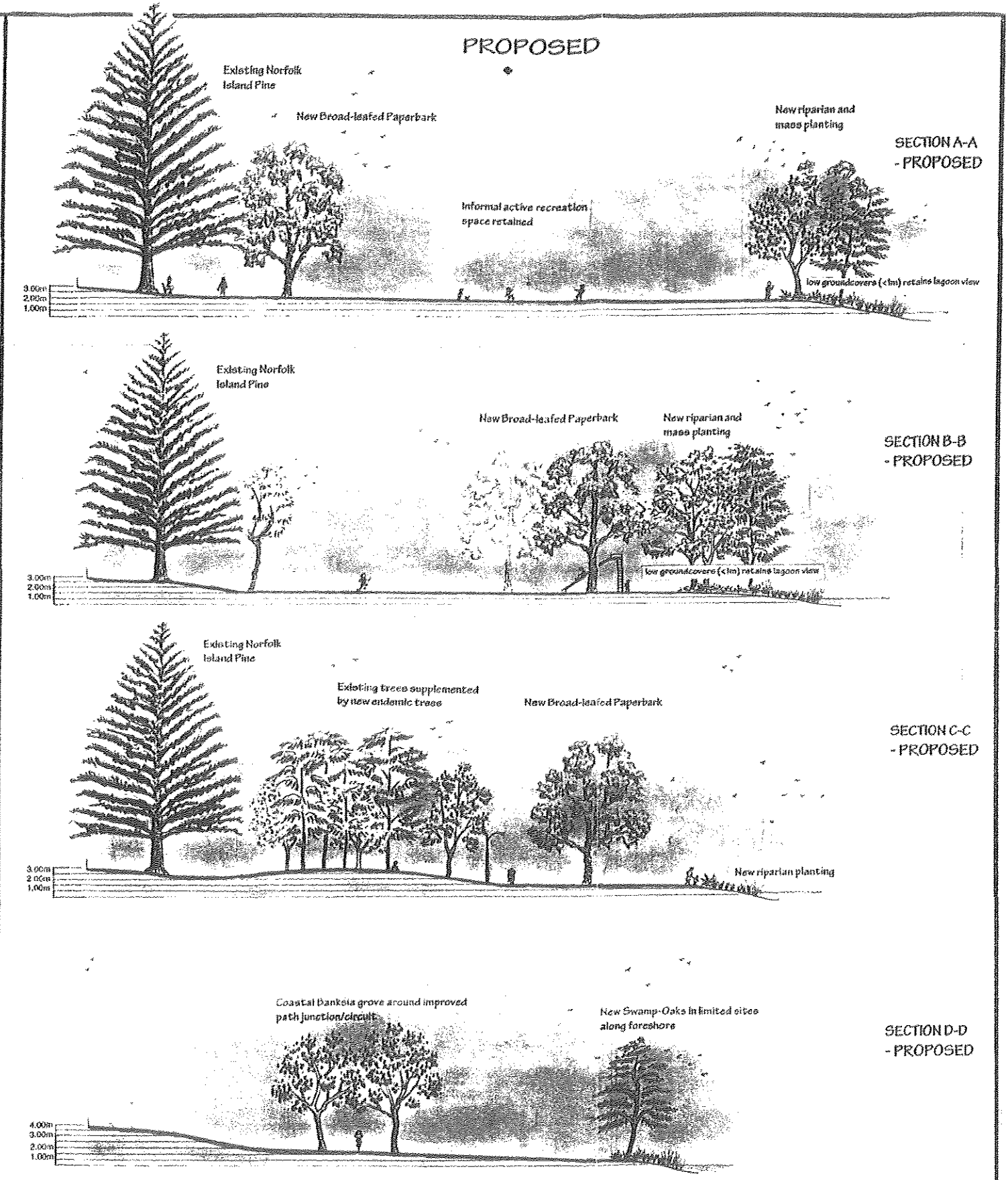
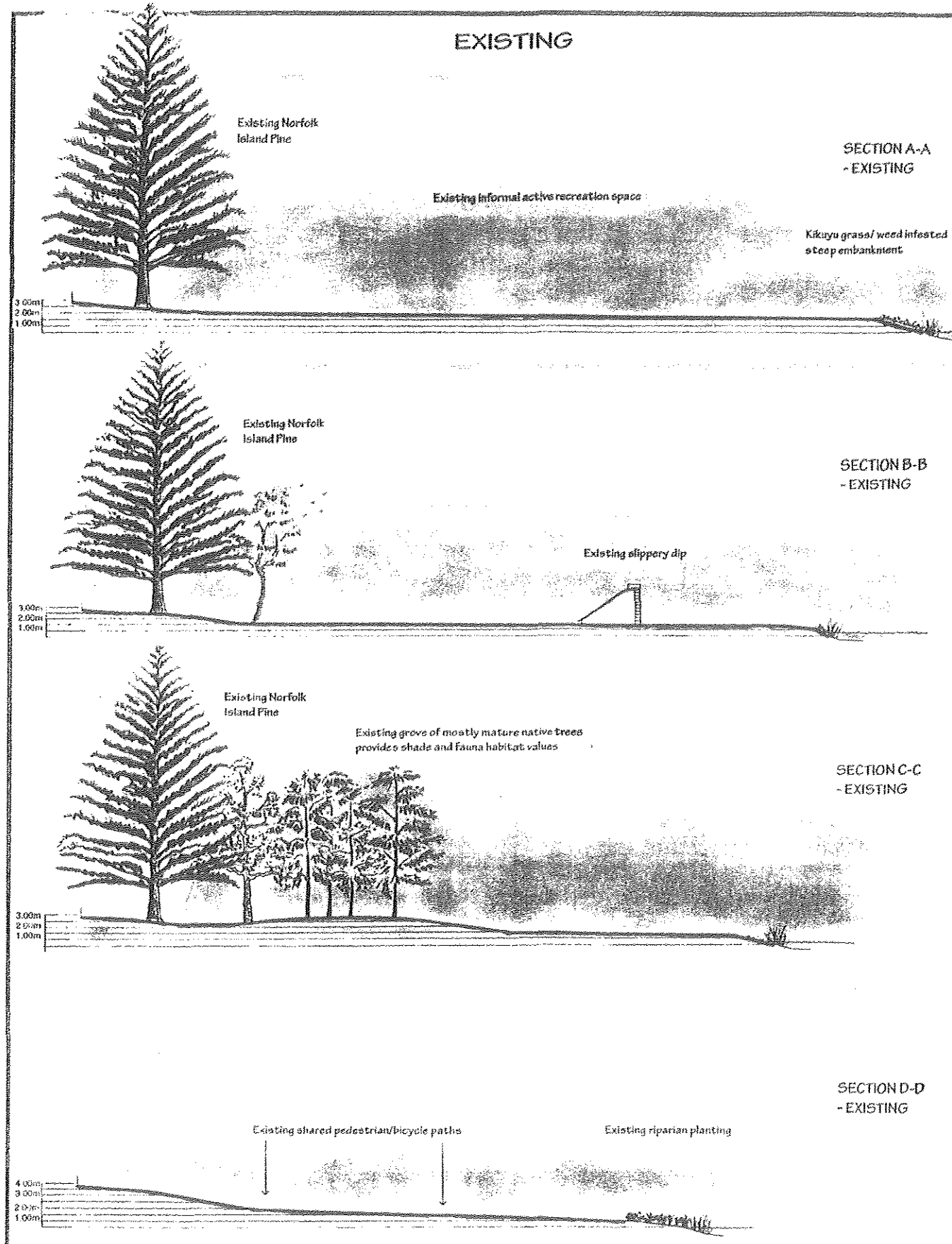
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