SWAN RIVER TRUST
AND
CITY OF SOUTH PERTH

Draft
South Perth Foreshore
Management Plan

Swan River Trust
Report No 21
1994

CITY OF SOUTH PERTH

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DRAFT SOUTH PERTH FORESHORE MANAGEMENT PLAN

Prepared by the Swan River Trust in conjunction with the City of South Perth

Swan River Trust
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Report No 21,
December, 1994

Acknowledgements

Many people have had input or assisted in the preparation of this document. Those who must be acknowledged include Jon Rowdon who prepared the initial draft of the plan, Brett Harrison who prepared the maps, Caroline Seal for desktop publishing and Beverley Thurlow for editing.

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FOREWORD

The South Perth Foreshore is one of the most heavily used recreation areas on the Swan River and adjoining river system. In addition it exists in close proximity to areas of dense residential development and adjacent shallow areas of the river have value as a fish nursery and for amateur prawning.

These varying pressures have resulted in the need for this draft plan. The plan allows consideration and discussion of the issues associated with foreshore use, development and the need to protect the foreshore environment.

In 1988 the Government of Western Australia released the Swan River Management Strategy which has become its policy for the Swan and Canning River. The Strategy contains a number of recommendations suggesting the preparation of detailed management plans for particular areas of foreshore including South Perth.

The Swan River Trust has been systematically implementing these recommendations since 1989. In 1992 the Trust and City of South Perth began considering the proposal to develop a cafe/kiosk on the foreshore near Coode Street Jetty and Council expressed the view that any approval of the cafe should occur in the context of an overall management plan which would identify acceptable levels of development and use for the area. The Trust agreed to prepare a draft report in consultation with Council officers.

This draft plan is available for public comment but has not been adopted by the Trust or Council. After a public comment period a final plan will be prepared for adoption by both bodies. The plan will provide a framework for management, development and use of the South Perth foreshore until it is reviewed in the year 2000.

How can I make a submission

Public submissions on the Draft South Perth Foreshore Management Plan are now invited. All public submissions will be considered before preparation of the final management plan.

If you would like to make a submission towards preparation of the final document please comment on any part of the document you agree or disagree with. A tear out form is provided on the following page for this purpose. Send this to the Swan River Trust by March 31, 1994 at the address provided on the top of the form. Please note that submissions do not have to be confined to the length or layout of the form provided.

If more information is required prior to making your submission, officers of the Swan River Trust will be available to discuss any aspect of the draft plan.

Where can I get other copies of this document

Further copies of the draft management plan are available from:

- Swan River Trust
  216 St Georges Terrace
  Perth WA 6000
  Ph (09) 327 9700

- City of South Perth
  Sandgate Street
  South Perth WA 6151
  Ph (09) 474 0777

Draft South Perth Foreshore Management Plan
Public Submission Form

Project Officer
Draft South Perth Foreshore Management Plan
C/- Swan River Trust
216 St Georges Terrace
Perth WA 6000

Name:.....
Title:.....
Organisation:.....
Addresss:.....
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I would like to make the following comments on the Draft South Perth Foreshore Management Plan and would like them considered in the preparation of the final management plan.

Comments:.....

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I would also like a copy of the final management plan sent to the above address on its completion.

Signed

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CONTENTS

1. INTRODUCTION

1.1 Purpose of the plan

The South Perth foreshore including Sir James Mitchell Park and the reserve around Mill Point, and associated waters of the Swan River have significant recreational, social and conservation values. These values are coming under increasing pressure because of the popularity of the area for recreation development and increasing urban development in neighbouring areas.

The Swan River Trust (SRT) and the City of South Perth (SPCC) have prepared this draft management plan to integrate the regional recreational use of the park and foreshore with local management issues and to make specific recommendations on future management of the foreshore area.

1.2. Current management arrangements

Current management of the foreshore area is largely concerned with maintenance of existing facilities and upgrading of Sir James Mitchell Park in accordance with the Sir James Mitchell Park Development Plan (SJMPDP).

The SJMPDP has been implemented in part, and tree planting has been completed. A schedule of works drawn up in 1985 is being implemented as funds become available. The program includes landscaping, improved facilities, walkways and dual use paths.

Council staff are responsible for the maintenance of lawns, gardens and chairs, rubbish collection and general repairs. The SRT conducts beach clean-ups and renourishment and repairs the river retaining walls on a cost share basis with Council.

The City of South Perth monitors the water quality of the lakes located on the foreshore. Testing of temperature, pH and nutrient levels is carried out on a monthly basis. Photographs are also taken to monitor the visual condition of the lakes.

1.2.1 Existing plans

Council has adopted a number of detailed plans which are relevant to the study area. These include the:-

- Mends Street Precinct Streetscape Plan which provides for the enhancement of Mends Street between Mends Street and the river.
- Mends Street and Perth Zoo Precinct Study which provides for the enhancement of the area between Mends Street and the river.
- Sir James Mitchell Park Landscape Plan which makes provision for the landscaping and development of the Park over a period of several years (see Figure 6).
- Kwinana Freeway Plan which provides for the landscaping of the Freeway and the adjoining foreshore reserves.

This plan endorses the above documents and supports their implementation.

1.3. Aim of the management plan

The South Perth foreshore is an area of regional significance because of its proximity to Perth Water. It is highly prized for its social, recreational, natural and aesthetic values. The foreshore area is under increasing pressure from competing land uses, especially recreation and commercial development.

The aims for this management plan are to:-

- relate planning for parkland on the South Perth foreshore to other regional assets including Perth Water, Heirisson Island, Central Perth Foreshore and the South Perth Zoo.
- provide for legitimate uses of the area at an acceptable level without adversely affecting its conservation value or the Swan River ecosystem.
- enhance the social and recreational values of the South Perth foreshore between Ellam Street and Mill Point, while maintaining the health of the river.
- provide for the use of the area and a river transport focus.
- define an acceptable level of commercial development for the area.

2. THE STUDY AREA

2.1 Location and landownership

The study area comprises the South Perth foreshore. The foreshore is the southern shoreline of Perth Water directly across the Swan River from the City Centre.

The study area extends from near Mill Point to Ellam Street where it joins Perth City Council's McCallum Park. The study area includes Sir James Mitchell Park (see Map 1). The width of the foreshore varies from 250 m at Ellam Street to about 20m near Point Belche.

The study area is comprised of a number of Land Act reserves, a small area of vacant Crown land and freehold land owned by the City of South Perth. The details relating to this land are shown in Table 1 below. The location of the various parcels of land are shown on Maps 2 and 3.

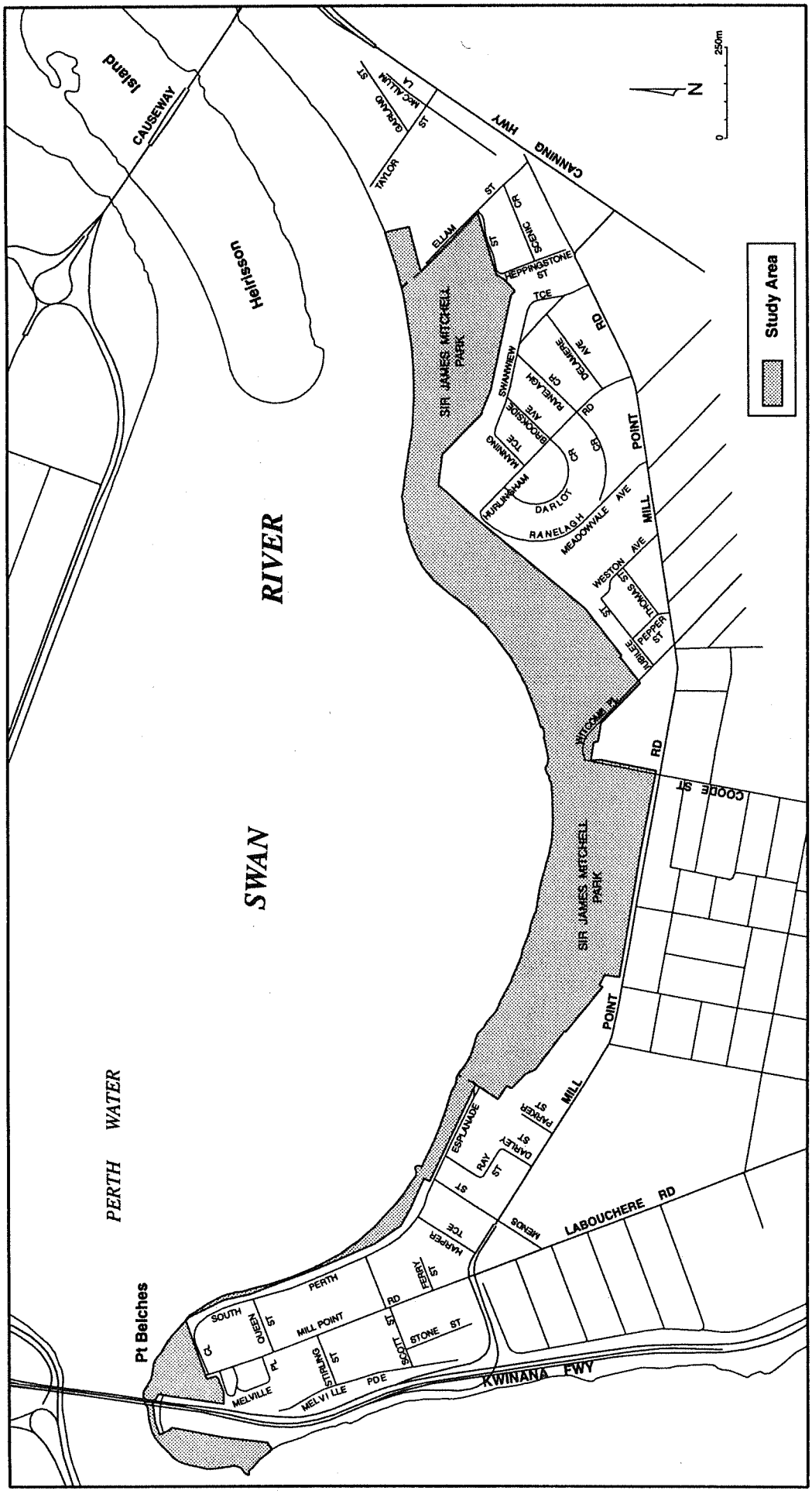
Other important regional assets in the vicinity include Perth Zoo, Milyu Nature Reserve, McCallum Park and Royal Perth Golf Club.

Table 1: South Perth foreshore landownership

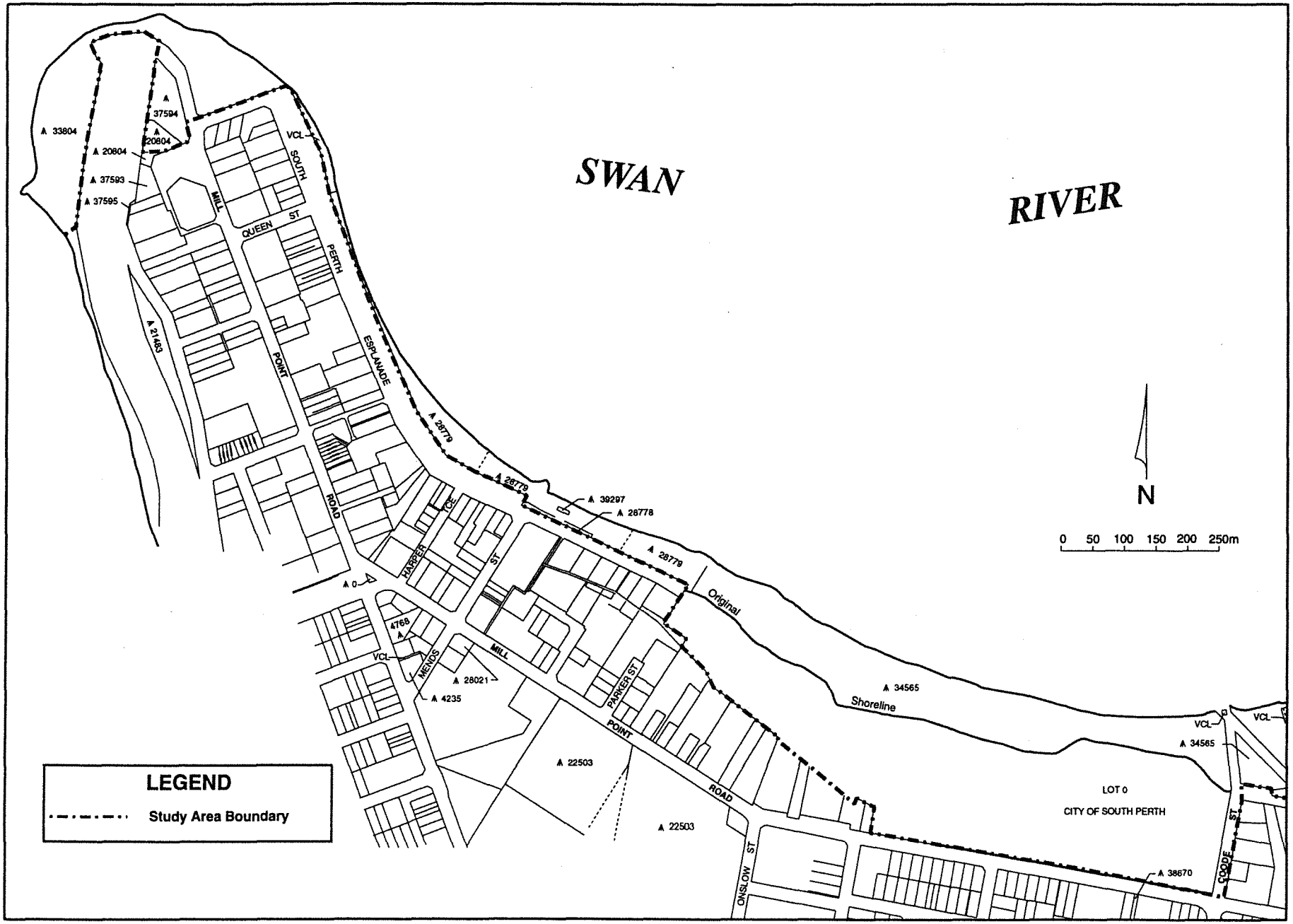
Reserve Number	Area (ha)	Purpose	Vesting body
33804	4.40	Recreation	City of South Perth
37594	0.50	Park and recreation	City of South Perth
20804	0.24	Public recreation	National Parks and Nature Conservation Authority
37593	0.15	Park and recreation	City of South Perth
37595	0.01	Public access way	City of South Perth
28779	1.98	Public recreation	City of South Perth
39297	0.01	Sewerage pump station	Water Authority of WA
28778	0.05	Parking	City of South Perth
34565	14.03	Recreation	City of South Perth
21889	8.05	Recreation	City of South Perth
25831	0.22	Requirements Dept Fisheries	Minister for Works
25823	0.59	Govt requirements	Minister for Works
Lot O	various	Freehold land	City of South Perth
Lot 198	3.38	Freehold land	City of South Perth
Lot 199	0.87	Freehold land	City of South Perth

It should be noted that portions of Reserve 33804 are not in the study area.

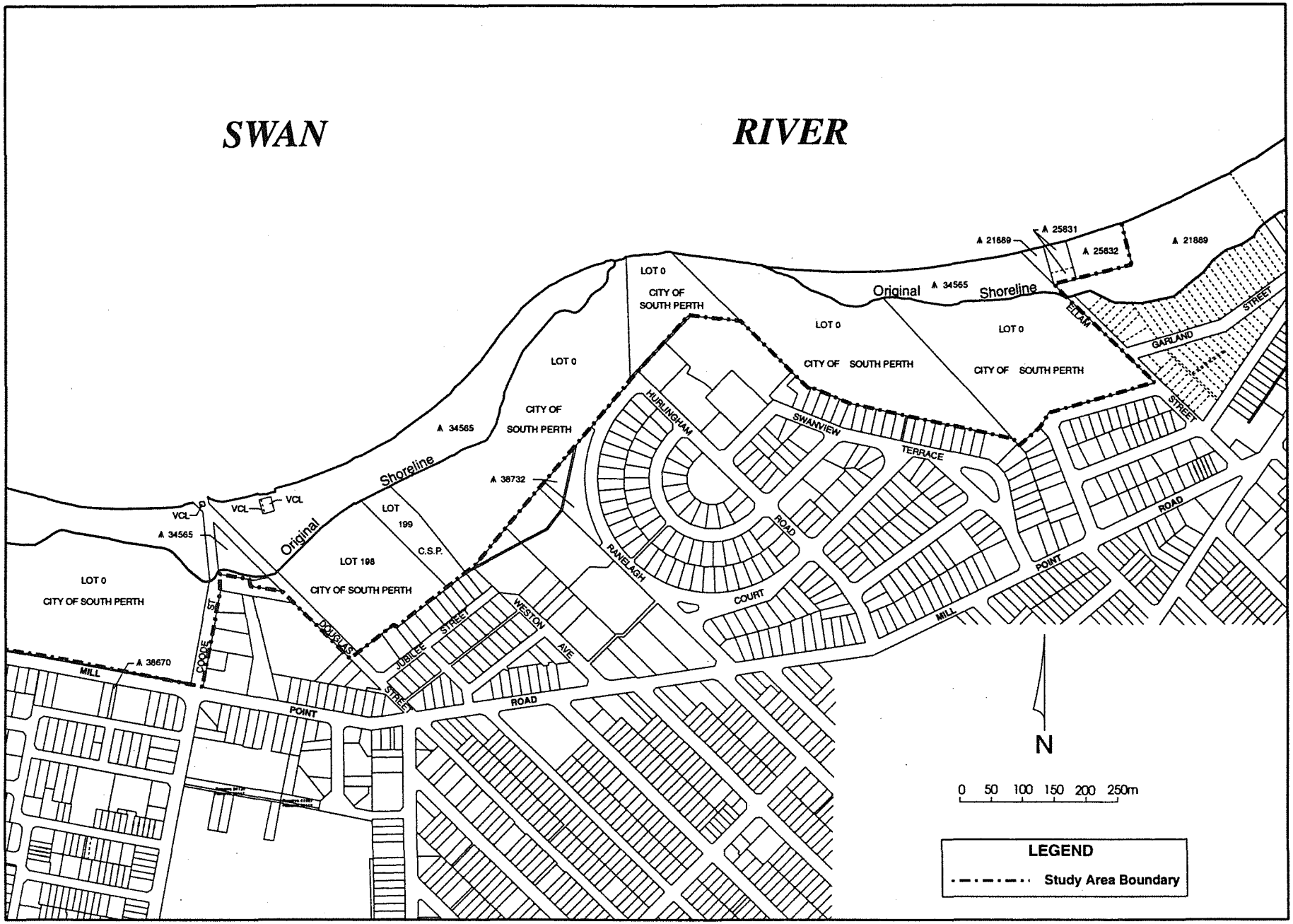
MAP 1 : STUDY AREA



MAP 2 : SOUTH PERTH FORESHORE LAND OWNERSHIP



MAP 3 : SOUTH PERTH FORESHORE LAND OWNERSHIP



2.2 Physical environment

2.2.1 Landform

The South Perth foreshore is low lying, ranging between 2 and 4 m AHD. Reclamation and land filling, which took place between 1939 and 1966 extended the original shoreline approximately 50 m into the river. This work was undertaken when spoil dredged from the navigation channels was used to fill wetlands along the foreshore. The location of the original shoreline is shown on Maps 2 and 3.

In adjacent Perth Water the river bed is rocky and stable. Its waters are shallow for the most part, in the vicinity of 0.5 m deep in relation to low water. In the middle of the river downstream from Heirisson Island it becomes very shallow and mud flats are occasionally exposed. Actual depth varies with the tide between 0.6 m and 1.5 m.

Navigation channels have been dredged in Perth Water (see Map 6). These channels vary in depth between 1.0 and 1.5 m below low water mark.

2.2.2 Geology and soils

The geological formations of the South Perth foreshore are made up of Quaternary deposits of unconsolidated or partly lithified sediments which are related to erosion and deposition processes during the Pleistocene and Holocene (DCE 1980).

The Aeolian deposits of the Karrakatta soil unity (deep yellow sands over limestone) and the marine deposits of the Vasse unit (mixed layers of recent estuarine deposits) are both present along the foreshore. The sediments off-shore are made up of a sandy medium with marginal sand flats and fossil shell beds.

2.2.3 Hydrology

The geological formations below the South Perth foreshore contain extensive confined aquifers up to 1000 m deep and unconfined aquifers recharged directly from rainfall and leakage from superficial sediments. Low salinity groundwater can be extracted from the upper part of these formations.

The hydrological status of the river is principally determined by the volume of inflow and is subject to seasonal variation. High rainfall in winter leads to fresh water. The water in holes and basins in the river is stratified, with the saline water below the fresh. In shallow waters mixing occurs as winds agitate the exposed waters. Salinity is lowest in winter but increases with reduced run off and high evaporation in summer. The winter flush of fresh water also brings lower temperatures and increased turbidity.

Hydrological change also results from tidal movements, tides vary throughout the year, ranging between 0.15 m and 1.0 m AHD, but meteorological conditions may cause variations of up to 0.3 m. Some of the foreshore is below the 100 year flood level.

Three artificial lakes are located on the foreshore between Coode Street and Hurlingham Road (See Map 4).

2.3 Biological environment

2.3.1 Terrestrial flora

The foreshore area is largely grassed (Kikuyu and couch) with scattered trees. There is a small community of *Melaleuca rhaphiophylla* with an understorey of exotic species.

The lakes contain little emergent vegetation. The largest lake has some fringing rushes in clumps 1 - 2.m deep (*Typha* with some *Baumea*). The other lakes have no fringing vegetation, however there are sizeable willows on an island in the smallest lake.

A tree planting program has been commenced in accordance with Sir James Mitchell Park Development plan as shown on Map 5. Consultation with the community has resulted in some small variations from the plan.

2.3.2 Aquatic flora

Seagrasses do not occur in Perth Water, however there are numerous species of algae, the presence of which is determined by the seasonal hydrology. Populations are highest in Autumn when the water is most saline (Thurlow et al. 1986, Allendale 1981). While the macroalgae are considered to play a relatively minor part in the estuarine food web, phytoplankton are clearly very important (Hillman 1984). Aquatic vegetation is a vital part of the estuarine ecology and its survival depends on maintenance of the water quality of the estuary.

2.3.3 Aquatic invertebrate fauna

Estuaries are known for their high biological productivity with aquatic fauna abundant in areas of aquatic vegetation where complex food webs are established.

The sandy, shallow river bed along the foreshore provides a favourable habitat for invertebrate fauna. Planktonic invertebrate species generally feed on phytoplankton or smaller zooplankton, while benthic species are often detritivores. The invertebrates in turn provide an important food supply for estuarine fish and wading birds.

2.3.4 Fish

The majority of fish in the Swan River estuary are carnivorous and live in the water column as opposed to being bottom feeding. Perth Water has an unusually high number of individuals and species (Thurlow at al 1986, Chubb 1979). The greatest population and diversity of estuarine fish usually occurs when salinity is high.

2.3.5 Birds

The artificial lakes located on the foreshore attract a wide variety of birds many of which have had their normal habitat reduced. They include herons, moorhens, ibis, egrets, ducks, swans, terns, seagulls, coots and darters. They feed on the algae and aquatic plants and the invertebrate fauna found in the shallow lake waters and fringing reeds. Some species have nested in the fringing reeds. There is a movement of birds between the lakes on the foreshore and the lakes in the zoo.

Outbreaks of botulism *Clostridium botulinium* have occurred in response to lowered water quality caused by high temperatures, low oxygen and high nutrients levels. In 1989 ninety two birds were reported to be affected and seventy two died (Payne 1990). On the estuary, birds such as darters, pelicans, seagulls, cormorants and terns forage for fish. The gulls are scavengers and occur over the estuary and around the lakes and foreshore.

2.4 Human use

Little evidence remains in the park of the period from early settlement to the Second World War when the South Perth foreshore was the site of a number of productive activities including dairying, market gardening, fruit growing and fishing (Gothard 1988). Large scale development of South Perth began after the War. The Old Mill and the South Perth Zoo are tangible reminders of early days; with Sir James Mitchell Park they are now the foci of a large popular recreation area.

The Swan River was the major transport route for the early settlers. The Narrows Bridge, Kwinana Freeway and the Mends Street Jetty are evidence that South Perth is still an important transport corridor, though the old tramway has gone (Crowley 1962, Riggert 1978).

The first plan for the South Perth foreshore was prepared in 1975 and included a proposal to sell a portion of the park which is owned in freehold title by the South Perth Council. Local ratepayer's strongly opposed this proposal and the use of the area for active recreation and passive open space became the accepted land use.

2.4.1 Adjacent landuse

The foreshore area is bordered by land zoned Urban under the Metropolitan Region Scheme (MRS) and largely residential under the City of South Perth Town Planning Scheme (TPS). There is a small area zoned Special Zone at Mends Street and a section of controlled access highway at Mill Point.

The Milyu Nature Reserve adjoins the western end of the study area.

2.4.2 Recreation

The open grassed areas along the foreshore are popular for activities such as picnics, barbecues, walking, bird-watching, painting, reading and playing. On the foreshore and offshore, water based activities include water skiing, sailing (largely surfcats), wind surfing, parasailing, fishing, swimming, canoeing and crabbing. On land, jogging and cycling are active pursuits.

In addition the foreshore and river provide a venue for special events like the Triple M Sky Show. Large numbers of people gather on the foreshore for such special events.

Most recreational activities occur downstream from Hurlingham Street, with Mends Street particularly busy because of its association with the Perth Zoo and the ferry service.

Cycling occurs on the dual use path, the length of the foreshore with two loops toward the southern boundary.

Water skiing is restricted to specific zones on the Swan River (see Map 4). Parasailing operates on a commercial basis during summer and is confined to the water ski area west of Mill Point. Surfcats are popular in the shallow waters and there are hire facilities at Coode Street between September and May. Line fishing, prawning and crabbing occur mainly at Mill Point.

The use of jet skis is common on Perth Water. This activity can cause problems because of the noise produced and the mode of operation.

2.4.3 Commercial enterprises

As the South Perth foreshore is heavily used by the public for recreation purposes it is also attractive to a variety of commercial operators.

There are two companies which hire out surfcats at Coode Street. Both companies have 18 boats. In addition parasailing and water ski hire operators conduct their business near Mill Point. There are also a number of itinerant vendors operating in the area.

Transperth operates a passenger ferry service between Mends Street in South Perth and Barrack Street in Perth. The service is heavily used by commuters and tourists.

A small temporary kiosk operates adjacent to the surfcat operators at Coode Street.

2.4.4 The Old Mill and Perth Zoo

The Old Mill is vested in the National Parks and Nature Conservation Authority (NPNCA) and is listed on the Register of Heritage Places. The City of South Perth, NPNCA and National Trust are working together to prepare a conservation plan for the site.

The redevelopment of the Perth Zoo which is currently underway is likely to bring increased numbers of people to the area.

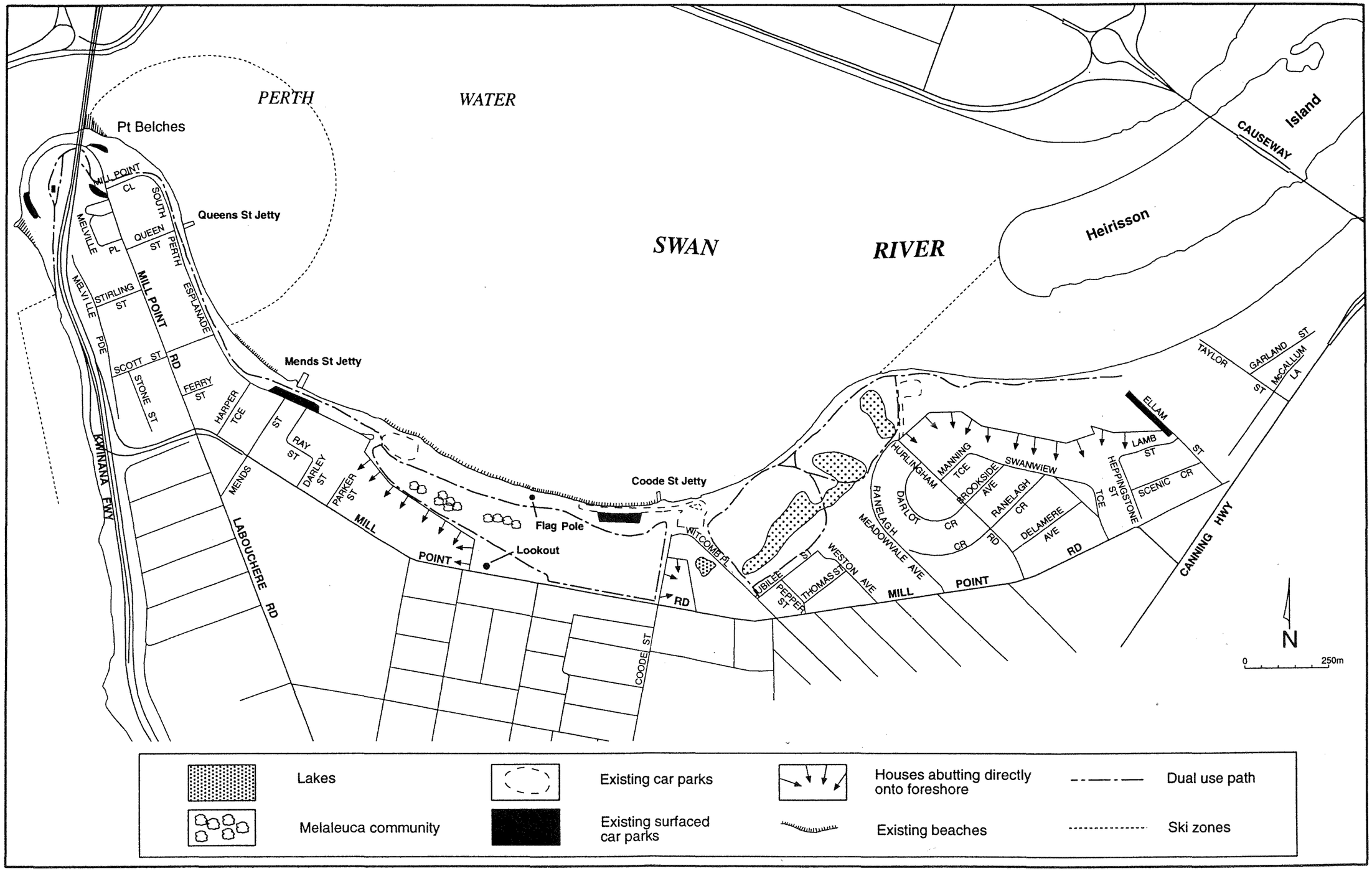
2.4.5 Drainage

Numerous drainage outlets have been installed to manage run off from residential development and roads on the landward side of the foreshore area. These outlets have been fitted with silt traps to minimise the entry of pollutants into the river.

The artificial lakes receive stormwater run off and drain into the river. The smallest lake takes the overflow from the largest and is used to supplement the reticulation system. Recent rationalisation of the drains has reduced their number and visual impact. All residences in the area are connected to deep sewerage.

A passenger ferry service links the South Perth foreshore within the Perth city centre.

MAP 4 : EXISTING FEATURES OF THE STUDY AREA



3. MANAGEMENT ISSUES AND OBJECTIVES

3.1 Management issues

During preparation of the management plan management issues which need to be addressed were identified. These issues are discussed in detail in Section 4 of the management plan. A list of the issues is provided below:

- Lakes
- Public facilities
- Commercial development
- Vegetation and tree planting
- Nuisance animals
- Beaches and retaining walls
- Recreation
- Education

3.2 Management objectives

Prior to addressing the issues listed above, it was necessary to decide what was to be achieved by the plan. A set of objectives was developed to cover each of the issues. The objectives are listed below. Listing of the objectives does not indicate order of priority.

- **Lakes**

  To maintain and enhance the lakes as a habitat for birds while providing for controlled public access and their use as compensating basins and nutrient traps.

  To investigate the feasibility of reintroducing Black Swans to the river in the vicinity of Perth water.

- **Public facilities**

  To encourage a variety of uses along the foreshore while maintaining the natural and social values of the area.

- **Commercial development**

  To provide for the establishment of appropriate commercial enterprises along the foreshore. Such operations should be consistent with the primary recreational focus of the foreshore.

- **Vegetation and tree planting**

  To maintain and enhance the landscape and natural values provided by the vegetation of the foreshore.

- **Nuisance animals**

  To monitor and control the detrimental effects of pest species and domestic pets on the foreshore.

- **Beaches and retaining walls**

  To provide the public with access to Perth Water and protect the river shoreline from erosion.

- **Recreation**

  Maintain a variety of recreational opportunities on and near the foreshore and minimise conflicts between users.

- **Education**

  To inform the local community and other foreshore users about the South Perth Foreshore to increase public awareness of the area and assist in its management.

4. MANAGEMENT RECOMMENDATIONS

The management issues identified for the study area are discussed in detail below. Thirty three recommendations for future management of the area have been formulated. Agencies responsible for the implementation of each recommendation are identified in the brackets following each recommendation.

4.1 Lakes

Objective

To maintain and enhance the lakes as a habitat for birds while providing for controlled public access and their use as compensating basins and nutrient traps.

To investigate the feasibility of reintroducing Black Swans to the river in the vicinity of Perth water.

The decline of the wetlands in the Perth metropolitan area has increased the importance of the artificial freshwater lakes to birds. These lakes are also appreciated by the public for their aesthetic, educational and recreational values.

Management of artificial lakes should:

- Maintain the water quality of the lake by limiting the occurrence of algae and bacteria;
- Protect the lakes from disturbance from adjacent land uses; and
- Provide for appreciation of the aesthetic values of the lakes by visitors.

Three artificial lakes are located on the foreshore between Coode Street and Hurlingham Road (Refer Map 4). The lakes are exposed to disturbance by dogs, people, refuse (litter grass clippings, leaves, etc) and nutrients which may affect the bird life and adversely affect the water quality causing algal or bacterial problems. A bloom of the blue-green algae Anabena has recently occurred in the lakes. These lakes also create potential breeding sites for mosquitoes, however no problems have been experienced to date.

Little vegetation exists around the lakes. The establishment of fringing vegetation would provide a barrier against disturbance and improve the habitat for birds, thereby adding to the value of the foreshore. Vegetation would also act as a buffer against nutrient inputs. As the water level of these lakes is maintained throughout the year the fire risk associated with fringing vegetation in summer is minimal. The maintenance of the surrounding grassed areas and the extensive reticulation system provides additional security against fire.

Access to the lakes needs to be provided so that visitors are able to appreciate the lake environment and the associated bird life. Access should be design to minimise damage to the fringing vegetation.

The lakes are also potential sites for developing habitat which might promote the reintroduction of certain waterbirds to the Swan Canning System. The Black Swan, in particular has become scarce on the river system. The disappearence of the Swan can largely be attributed to the loss of suitable habitat in foreshore areas.

Swans prefer fresh water lakes and swamps but use the estuary fringes in the summer when many of these areas dry out. The change to a more marine environment with the construction of the Fremantle Harbour, filling of important saltmarsh areas and general disturbance to foreshore areas by increased development and recreational use has reduced areas suitable for these birds.

It is evident in the community that there is a desire to reintroduce the Black Swan to the river system. The artificial lakes on the South Perth Foreshore provide a potential site to develop habitat suitable for their needs. Modification or extension to the existing lakes may provide the habitat required, however detailed environmental investigations would need to be conducted prior to any decisions being made. In addition it may be necessary to limit power boat use of Perth water to make it more attractive to swans.

Recommendations

1. Undertake a program to establish fringing vegetation around the lakes, providing small areas for public access to the water's edge and viewing platforms where appropriate. (SPCC, SRT)

2. Monitor mosquito and midge breeding and, if necessary, undertake a control program in consultation with the Swan River Trust and the WA Health Department. (SPCC)

3. Carry out public consultation and necessary environmental investigations to determine the potential for modifying or extending lakes on the foreshore as habitat for Black Swans. (SRT)

4.2 Public facilities

Objective

To encourage a variety of uses along the foreshore while maintaining the natural and social values of the area

To cope with the pressure from increasing numbers of visitors to foreshore areas, available space must be carefully allocated to particular uses and appropriate facilities provided.

Management strategies to reduce the problems associated with visitor numbers should include:

- establishing zones for particular uses along the foreshore.
- providing appropriate facilities at intervals along the foreshore.

Within the study area there is an increasing demand for facilities associated with passive recreation. There is a high demand for facilities such as telephones, barbecues, drinking taps, shelter, seating, toilets, bins and children's equipment. The demand is largely focused at six locations namely Mill Point, Mends Street, the eastern end of the Esplanade, Hurlingham Street, Coode Street and Ellam Street. Existing facilities at Mill Point and Mends Street are crowded because of the lack of proper provision in other areas along the foreshore.

4.2.1 Parking

Car parks should only be provided to facilitate access to and use of the waterway. Parking for any other purpose should be outside the reserve boundary in locations which produce minimal disturbance to local residents.

To keep the river banks available for recreation, parking should be set back from the river's edge. Bays should be marked and parking regulations enforced. Car parks should be surfaced and run off disposed of on site to minimise erosion and contamination of the river.

Recommendations

4. Reconstruct car parks at the end of Ellam, Hurlingham, and Coode Streets in accordance with the Landscape Plan for Sir James Mitchell Park (Map 5). (SPCC)

5. Seal permanent parking areas on the foreshore reserve with the exception of overflow parking areas. Design drainage systems in accordance with the principals of water sensitive design. (SPCC)

4.2.2 Launching ramp and associated facilities

The boat launching ramp to the west of the Wesley boat shed is the only facility of its type along this section of the foreshore. This ramp can become congested during periods of peak use. Use of the boat ramp could be made more efficient by upgrading the parking area and associated roads. Overflow parking could be provided on grassed areas nearby.

In addition, small boat handling in the vicinity of the ramp could be assisted by the creation of a small beach immediately west of the ramp. This would enable boat owners to park their craft on the beach after launching and before retrieval. Such a beach could also provide for the launching and retrieval by hand of privately owned yachts and canoes.

Recommendations

6. Upgrade the parking area associated with the Coode Street Boat Ramp. Upgrading should include increasing the size of the facility and sealing the surface. The new car park should be set back 20 metres from the beach. (SPCC)

7. Create a beach for use by small craft owners immediately west of the Wesley Boat Ramp. (SRT)

4.2.3 Public toilets

At present toilet facilities are available at Mill Point, Mends Street and in Clydesdale Park. The Mends Street toilets receive particularly heavy use. The lack of toilets detracts from the amenity of the area. The Sir James Mitchell Park Plan provides for the provision of toilets near the Esplanade and at the end of Coode, and Hurlingham Streets. The construction of these facilities will improve the amenity of the area considerably.

Recommendations

8. Provide additional toilet facilities at the end of Coode Street as part of the commercial development proposed for the area. (SPCC)

4.2.4 Public telephones

For the safety and convenience of users of the foreshore public telephones should be located where visitors congregate and where existing public telephones are not readily accessible. They would be least intrusive if they were incorporated into an already existing or proposed structure. Possible locations include Mill Point (west of the Narrows), Mends Street and Coode Street.

Recommendations

9. Install public telephones in appropriate locations within the areas shown in Figure 6. (SPCC)

4.2.5 Rubbish bins

There should be sufficient rubbish bins along the foreshore to cope with the quantity of refuse disposed of within the reserve. Bins should be placed where they are readily accessible and designed to protect the contents from wind and rain, and prevent access by silver gulls.

Recommendations

10. Maintain and empty bins on a regular basis. (SPCC)

4.2.6 Lighting

As the foreshore is developed the need for street and general lighting within the area will increase. Lighting should be provided around parking areas, jetties, kiosks, toilet facilities and along pathways.

Recommendations

11. Ensure that all new structures are adequately lit and examine the Mends Street area with the view to improving the lighting in accordance with the Mends Street and Perth Zoo Precinct Study. (SPCC)

4.2.7 Traffic

There is some conflict between traffic on the Esplanade and the large number of pedestrians in the Mends Street area. However recent work undertaken in accordance with the Mends Street and Perth Zoo has alleviated this problem.

Recommendations

12. Monitor pedestrian and vehicle traffic within the precinct and make recommendations about future development of pedestrian access required. (SPCC)

4.2.8 Other facilities

Barbecues, seating, shelter (including rain-proof shelters), drinking taps and children's play equipment have been provided in accordance with the SJMPDP.

Recommendations

13. Maintain public facilities at a high standard. (SPCC)

4.3 Commercial development

Objective:

To provide for the establishment of appropriate commercial enterprises along the foreshore. Such operations should be consistent with the primary recreational focus of the foreshore.

The City of South Perth has a policy to limit commercial development on the foreshore reserve. The Swan River Management Strategy proposes provision of a kiosk associated with the hire and drive services in Sir James Mitchell Park (see Section 5.2.5 and Recommendation A83).

The Swan River Trust has received an application for the development of a kiosk and bicycle hire facility near the site of the old Coode Street Jetty. After discussing the proposal with the City of South Perth and advertising it for public comment the Trust recommended that the Minister approve the proposal.

In addition a temporary kiosk operates immediately west of the Narrows Bridge and it may be acceptable to upgrade this facility. Commercial developments may be considered favourably if they provide facilities or services related to approved uses of the area. When considering proposals Council and the Trust will consider parking requirements, impact on adjacent landowners, possible alienation of sectors of the foreshore and environmental concerns. Any commercial development must be approved by the Minister for the Environment.

This report does not support the approval of any more commercial developments which require the construction of additional buildings on the foreshore before this plan is reviewed.

The surf cat hire operators operate from mobile facilities which can be removed from the foreshore when not in use. These structures should be designed so that they are compact, tidy and appropriate for use on a prime river side location. Their design should be approved by Council and the Swan River Trust.

Strategies to manage commercial development include:

- identifying areas where commercial development would be appropriate.
- identifying the kind of commercial development which would be appropriate for particular areas of the foreshore.
- Opposing the approval of commercial developments which require the construction of additional buildings on the foreshore.

Recommendation 14 is adopted from the Swan River Management Strategy (1988) and provides the basis upon which all commercial developments near the river are to be assessed.

Recommendations

14. Commercial developments should only occur in suitable locations which are chosen after careful consideration of social, environmental and physical planning criteria, including:
    - Availability of the essential services required by the development including water, sewerage, electricity and telephone.
    - Likelihood of the development having an adverse impact on neighbouring residential areas because of noise, traffic and parking.
    - Intent of the local government authority TPS as it relates to adjacent areas.
    - Impact of the development on the amenity of the existing landscape and natural environment.

- Effect the development may have on the hydrology of the floodway and flood plain, and risk of flooding to the development.
- Every proposal for commercial development should be considered on its individual merits. It should also be considered in context to take into account cumulative impacts.
- Impact of the development on public access to the foreshore.

(SRT, SPCC)

15. Refer to all proposals involving over-water structures, developmental dredging or filling of the river to the Environmental Protection Authority (EPA) for assessment. (SRT)

4.4 Vegetation and tree planting

Objective:

To maintain and enhance the landscape and natural values provided by the vegetation of the foreshore.

Trees and shrubs along the foreshore improve the amenity and aesthetic appeal of the area and provide shelter for bird life. This part of the river is also an important part of the regional view scape to and from the City.

Strategies to improve vegetation along the foreshore include:

- Planting appropriate vegetation in areas along the foreshore.
- Removing and suppressing the weeds in the *Melaleuca* (Paperbark) community.

Landscaping of the Sir James Mitchell Park is shown in approved planning schedules, drawing numbers 11/85 3.7 and 11/85 3.8 (for tree planting details), 11/85 6.1 to 11/85 6.12 (for shrub planting details) and 11/85 1.3 (for overall planning and landscape design). A small scale copy of the plans are shown on Map 6 and large scale copies can be examined at the City of South Perth offices.

In addition landscape plantings are taking place in the vicinity of the Narrows Interchange in accordance with plans prepared by the Main Roads Department (MRD) in 1989 and revised in 1993. These plans have been approved by Council and the SRT.

Conflict may arise if planting appears to obstruct the views of local residents or raise concerns about security and the public should be involved in proposals to increase planting densities on the foreshore.

The *Melaleuca* community at the western end of Sir James Mitchell Park is the only significant stand of remnant vegetation on the foreshore. However it is degraded by weed species, and management is required to maximise its value.

The herbicide Roundup is used in a program to control *Typha* around the lakes and on the foreshore. Care must be taken as Roundup (glyphosate) breaks down slowly in the sandy soils and persistence of the chemical may inhibit the growth of other vegetation and can affect amphibians and other animal populations.

Recommendations

16. Landscape the foreshore in accordance with the plans described above, and undertake maintenance in accordance with an agreement between MRD and SPCC. Periodically review the landscape plans in consultation with the public. (SPCC)

17. Manually remove the larger weeds from within the *Melaleuca* community, taking care not to distribute their seeds. Undertake planting to reinforce the population with younger plants. (SPCC)

4.5 Nuisance animals

Objective:

To monitor and control the detrimental effects of pest species and domestic pets on the foreshore.

The seagull population along the foreshore is growing. Management action is required as the potential for spread of salmonella from these populations is high. The wide range and prolific breeding habits of the gulls make it hard to control numbers. The most effective local action would be to control potential food sources by preventing access to the bins and by educating visitors not to feed seagulls.

Many local residents exercises their dogs along the foreshore. Uncontrolled dogs can be a nuisance to picnickers and visitors who wish to relax or enjoy other forms of passive recreation. Dogs may also be dangerous and can damage or disturb flora and fauna. Council officers have received complaints about faeces left by dogs. Under the Dog Act 1976 dogs are only permitted on the foreshore north of the cycleway between Queen and Coode Streets if they are on a leash. Council has designated dog exercise area for the rest of the reserve, but dogs must be accompanied by a person capable of controlling them at all times. To ensure proper control dog owners must be made aware of their responsibilities and of the penalties for non-compliance with Dog Act By-Laws.

Recommendations

18. Monitor the seagull population and control their access to food. If further action is required it should be conducted in conjunction with CALM as part of a Silver Gull action plan. (SPCC, SRT)

19. Rescind the dog exercise area on the foreshore between Coode and Hurlingham Streets and in the vicinity of *Melaleuca* community at the western edge of Sir James Mitchell Park. (SPCC)

20. Change the designation of the foreshore between Coode and Wellington Streets and the area near the *Melaleuca* community at the western end of SJMP from dog exercise area to dog control area. (SPCC)

21. Install appropriate signposting in the vicinity of the proposed dog control areas. (SPCC)

4.6 Beaches and retaining walls

Objective:

To provide the public with access to Perth Water and protect the river shoreline from erosion.

As shown on Maps 2 & 3 a large part of Sir James Mitchell Park has been developed on land created when shallow areas of the river have been filled with dredge spoil. There is a natural tendency for wave action from the river to erode this artificial shoreline and retaining walls have been constructed to protect the filled areas. In some locations the retaining walls have begun to fail and require maintenance or replacement. In addition, the natural shoreline of Melville Water was filled to enable the construction of the Kwinana Freeway and the newly created shoreline is also eroding and has been protected using a series of walls and groynes.

In areas of lower wave energy beaches have developed or been created by human activity and natural river processes. A narrow sandy beach exists on the western side of Mill Point and it is renourished with sand transported from the south by wave energy generated by the south westerly sea breeze. Sand from this source and sand transported around the southern shoreline of Perth Water under the influence of easterly winds accumulates under the Narrows Bridge to form a large sand spit. This spit is used by boat operators using Perth Water but its growth should be limited. Periodically sand should be taken from the spit to renourish other beaches on Mill Point and Perth Water.

Immediately north west of the Mends Street Jetty a beach has been constructed in place of a river wall which existed there previously. This work was undertaken in 1965 on an experimental basis and it has been possible to maintain the beach with a limited amount of artificial nourishment. North west of Coode Street the shoreline is relatively stable and is not receding as a result of erosion. This beach has been renourished with sand dredged from Perth Water and trucked in from other locations. It provides a valuable recreational focus for sailing and other forms of boating.

Between the Wesley College Boatshed and the site of the old Coode Street Jetty the river wall is collapsing and should be removed. If the wall is not replaced the shoreline will retreat creating a shallow bay which could be the site of another experimental beach held in place by two small groynes. Such a beach would be of benefit to small boat operators using the Coode Street boat ramp.

Upstream of the Wesley Boatshed the shoreline is protected by a substantial wall which has recently been upgraded. If part of the wall was removed it would be possible to create another experimental beach. This possibility should be considered when the wall is in need of further maintenance.

Occasionally waves resulting from strong north westerly winds lift the wall capping causing damage to the retaining wall. As the water flows over the wall back into the river it takes the sand filling with it, undermining the wall. A more appropriate capping could be installed on top of the wall, to hold it in place.

The original Coode Street Jetty was demolished in 1989 because it had reached the end of its design life and become dangerous. The Department of Transport and Council have constructed a small jetty in its place providing a focus for development and activity on this section of the foreshore. It may be necessary to undertake some maintenance dredging around this jetty site but this work would require independent environmental assessment.

Recommendations

22. Undertake a program of experimental beach reconstruction and renourishment between the Wesley College Boatshed and the Coode Street Jetty. (SRT)

23. Maintain retaining walls where necessary. (SRT, SPCC)

24. Undertake maintenance dredging at the jetty site if required. (DOT)

4.7 Recreation

Objective:

Maintain a variety of recreational opportunities on and near the foreshore and minimise conflicts between users.

The diversity of recreational activity which occurs on the foreshore may cause conflict between foreshore users and between foreshore users and adjoining land owners unless activity is properly planned and managed. Noisy and disruptive activities may not be consistent with picnicking, relaxing and the residential use of neighbouring land.

4.7.1 Water Sports

At present foreshore recreation is generally associated with water based activities including sailing and other forms of boating which attract a large number of people. New activity can be discouraged if Council and the Trust do not approve additional commercial activity and do not provide facilities which attract new activities.

Large numbers of people recreate on the foreshore and the area continues to grow in popularity. It may be necessary to discourage new activities in the future if the existing amenity is to be retained. For example, crowding could occur if the area becomes popular as a sail board rigging area.

Jet skis are operated from the foreshore area and the noise associated with the activity causes annoyance to other foreshore users and neighbours. Jet skis make relatively little noise when operating at low speeds and existing marine regulations require a maximum of 8 knots on Perth Water.

Recommendations

25. Enforce existing marine regulations to control the speed of jet skis and other power boats on Perth Water. (DOT)

26. Discourage new water based activity if it is likely to increase crowding on the foreshore. (SRT, SPCC)

4.7.2 Land Based Activities

Council has developed a system of dual use paths to meet the needs of cyclists, joggers and walkers. As in similar locations around the river there may be conflict between commuting cyclists who travel at relatively high speeds and other path users.

This difficulty can be reduced by encouraging commuters to use the road system or providing separate paths. Alternatively the paths could be widened to 3 metres and marked with a line to provide space for pedestrians. It may also be appropriate to impose speed limits for cyclists in the area.

There are two areas which could accommodate a higher level of activity. The first is the large area of open space west of Coode Street and the second is at Ellam Street. The land near Ellam Street adjoins residential land and so activity should be limited to avoid disturbance.

Recommendations

27. Upgrade the dual use path system in accordance with the Landcsape Plan for Sir James Mitchell Park (Map 5). (SPCC)

28. Retain the areas of clear open space west of Coode Street and at Ellam Street for active recreation. (SPCC)

4.7.3 Triple M Sky Show

Another activity which causes concern to some people is the Triple M Sky Show which is conducted on Perth Water on Australia Day each year. The crowding, littering and traffic congestion associated with the Sky Show are a source of concern to many people particularly neighbouring residents. However, the Sky Show is a major community function for Perth and is enjoyed by hundreds of thousands of people. The Trust and Council have supported continuation of the Sky Show under strict conditions to deal with the issues of concern to residents.

Recommendations

29. Monitor the Sky Show carefully to identify problems and work with relevant authorities to minimise its impacts. (SRT, SPCC)

4.8 Education

Objective:

To inform the local community and other foreshore users about the South Perth Foreshore to increase public awareness of the area and assist in its management.

The management of the South Perth foreshore and associated environment can be assisted if the public has a sound knowledge and understanding of that environment. Public involvement assists in identifying issues and ensuring equitable and appropriate use and management of resources.

Management costs can be reduced if members of the community contribute their time to the management effort. In addition if the community values the foreshore, problems associated with issues like vandalism and littering will be reduced.

Information can be provided in the form of interpretative signs and pamphlets and by contact between Council and Trust Officer and the public.

Recommendations

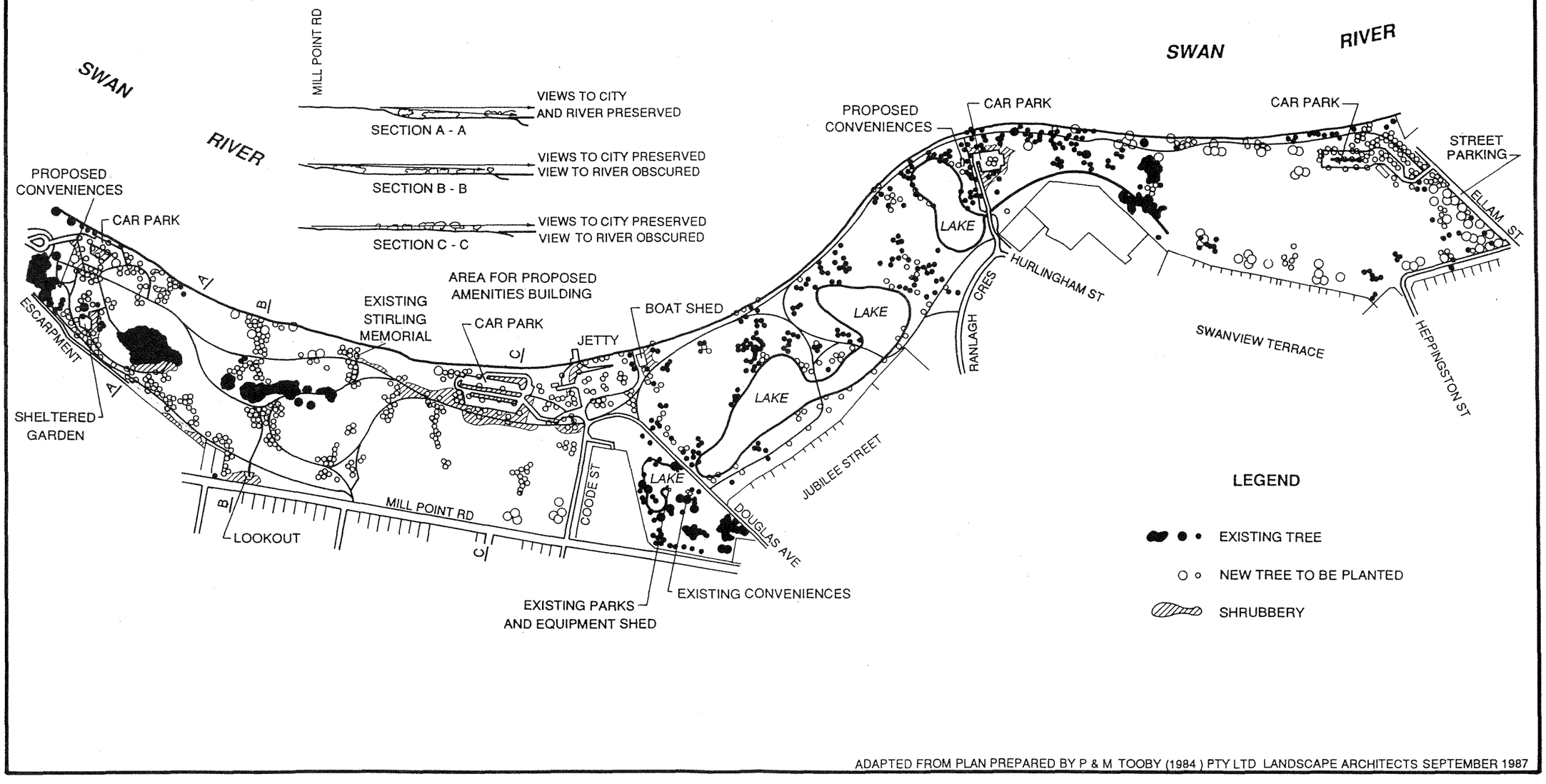
30. Prepare and distribute a pamphlet describing the history and environment of the area and adjoining river. The pamphlet should outline recreational opportunities associated with the park. (SPCC, SRT)

31. Develop a heritage trail to increase public knowledge of the area. (SPCC)

32. Establish information boards at the main access points to the reserve informing visitors of the natural values. (SPCC)

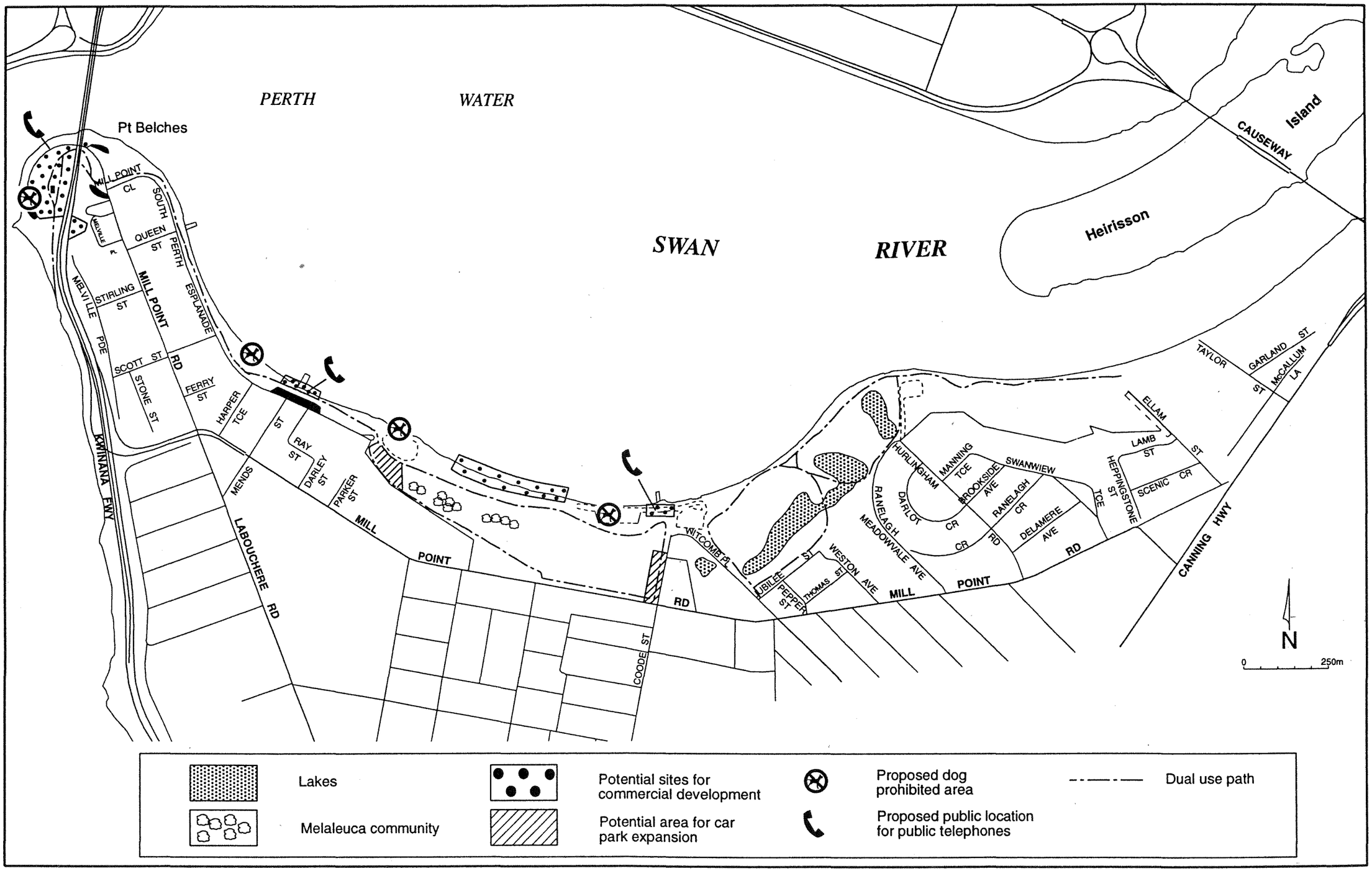
33. Encourage the visitors and the local community to participate in activities, monitoring and management of the reserve. (SPCC, SRT)

MAP 5 : EXISTING LANDSCAPE PLANS FOR SIR JAMES MITCHELL PARK



ADAPTED FROM PLAN PREPARED BY P & M TOOBY (1984) PTY LTD LANDSCAPE ARCHITECTS SEPTEMBER 1987

MAP 6 : MANAGEMENT PROPOSALS



Lakes

Melaleuca community

Potential sites for commercial development

Potential area for car park expansion

Proposed dog prohibited area

Proposed public location for public telephones

Dual use path

5. IMPLEMENTATION

The management plan outlines thirty three recommendations which are considered necessary for long term management of the South Perth Foreshore. Overall responsibility for the management of the foreshore rests with the City of South Perth, however other organisations and agencies have specific expertise or responsibilities which can aid in the implementation process. The City of South Perth should liaise with these bodies to encourage their participation. To identify those involved in the implementation process the key players have been listed in brackets after each recommendation. A list of abbreviations is provided at the back of the document for easy reference.

The recommendations developed in the final management plan will be implemented over a number of years depending on sufficient funding and resources being available. The table below divides the recommendations into two categories: one off projects or ongoing action and allocates a priority to their implementation.

The management plan is to be reviewed and revised after a five year period. This process will include further public consultation and a review of existing recommendations and implementation progress.

Recommendation	Project Type	Progress and Priority
1. Undertake a program to establish fringing vegetation around the lakes, providing small areas for public access to the water's edge and viewing platforms where appropriate.	One off Requires maintenance	Work underway High priority following investigations in Recommendation 3
2. Monitor mosquito and midge breeding and, if necessary, undertake a control program in consultation with the Swan River Trust and the WA Health Department.	Ongoing May require development of program	Work underway High priority
3. Carry out public consultation and necessary environmental investigations to determine the potential for modifying or extending lakes on the foreshore as habitat for Black Swans.	One off Requires maintenance	High priority Approval and funding required
4. Reconstruct car parks at the end of Ellam, Hurlingham, and Coode Streets in accordance with the Landscape Plan for Sir James Mitchell Park (Map 5).	One off Requires maintenance	Medium priority
5. Seal permanent parking areas on the foreshore reserve with the exception of overflow parking areas. Design drainage systems in accordance with the principals of water sensitive design.	One off Requires maintenance	Medium priority
6. Upgrade the parking area associated with the Coode Street Boat Ramp. Upgrading should include increasing the size of the facility and sealing the surface. The new car park should be set back 20 metres from the beach.	One off Requires maintenance	Low priority

7.	Create a beach for use by small craft owners immediately west of the Wesley Boat Ramp.	One off Requires maintenance	Low priority
8.	Provide additional toilet facilities at the end of Coode Street as part of the commercial development proposed for the area.	One off Requires maintenance	High priority when project gets underway
9.	Install public telephones in appropriate locations within the areas shown in Figure 6.	One off Requires maintenance	Low priority
10.	Maintain and empty bins on a regular basis.	Ongoing	High priority
11.	Ensure that all new structures are adequately lit and examine the Mends Street area with the view to improving the lighting in accordance with the Mends Street and Perth Zoo Precinct Study.	Ongoing	Low priority
12.	Monitor pedestrian and vehicle traffic within the precinct and make recommendations about future development of pedestrian access required.	Ongoing	Medium priority
13.	Maintain public facilities at a high standard.	Ongoing	High priority
14.	Commercial developments should only occur in suitable locations which are chosen after careful consideration of social, environmental and physical planning criteria, including: - Availability of the essential services required by the development including water, sewerage, electricity and telephone. - Likelihood of the development having an adverse impact on neighbouring residential areas because of noise, traffic and parking. - Intent of the local government authority TPS as it relates to adjacent areas. - Impact of the development on the amenity of the existing landscape and natural environment. - Effect the development may have on the hydrology of the floodway and flood plain, and risk of flooding to the development. - Every proposal for commercial development should be considered on its individual merits. It should also be considered in context to take into account cumulative impacts. - Impact of the development on public access to the foreshore.	Ongoing Relates to specific proposals	High priority when projects are being assessed.
15.	Refer all proposals involving over-water structures, developmental dredging or filling of the river to the Environmental Protection Authority (EPA) for assessment.	Ongoing Relates to specific proposals	High priority

16. Landscape the foreshore in accordance with the plans described above, and undertake maintenance in accordance with an agreement between MRD and SPCC. Periodically review the landscape plans in consultation with the public.	One off requires maintenance	High priority
17. Manually remove the larger weeds from within the *Melaleuca* community, taking care not to distribute their seeds. Undertake planting to reinforce the population with younger plants.	One off requires maintenance	Medium priority
18. Monitor the seagull population and control their access to food. If further action is required it should be conducted in conjunction with CALM as part of a Silver Gull action plan.	Ongoing	Medium priority
19. Rescind the dog exercise area on the foreshore between Coode and Hurlingham Streets and in the vicinity of *Melaleuca* community at the western edge of SJMP.	One off	Low priority
20. Change the designation of the foreshore between Coode and Wellington Streets and the area near the *Melaleuca* community at the western end of SJMP from dog exercise area to dog control area.	One off	Low priority
21. Install appropriate signposting in the vicinity of the proposed dog control areas.	One off	Low priority
22. Undertake a program of experimental beach reconstruction and renourishment between the Wesley College Boatshed and the Coode Street Jetty.	One off Requires maintenance and review	Medium priority
23. Maintain retaining walls where necessary.	Ongoing	High priority
24. Undertake maintenance dredging at the jetty site if required.	Ongoing	Medium priority
25. Enforce existing marine regulations to control the speed of jet skis and other power boats on Perth Water.	Ongoing	High priority
26. Discourage new water based activity if it is likely to increase crowding on the foreshore.	Ongoing	High priority
27. Upgrade the dual use path system in accordance with the Landcsape Plan for Sir James Mitchell Park (Map 5).	One off Requires maintenance	Medium priority
28. Retain the areas of clear open space west of Coode Street and at Ellam Street for active recreation.	Ongoing	High priority
29. Monitor the Sky Show carefully to identify problems and work with relevant authorities to minimise its impacts.	Ongoing May require oneoff projects	Highpriority

30.	Prepare and distribute a pamphlet describing the history and environment of the area and adjoining river. The pamphlet should outline recreational opportunities associated with the area.	One off	Low priority
31.	Develop a heritage trail to increase public knowledge of the area.	One off Requires maintenance	Low priority
32.	Establish information boards at the main access points to the reserve informing visitors of the natural values.	One off Requires maintenance	Low priority
33.	Encourage the visitors and the local community to participate in activities, monitoring and management of the reserve.	Ongoing	Medium priority

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