

Final Saratoga Recreation Area and Wetland Plan of Management



Prepared by :



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Photo: Existing playground equipment on the northern part of oval. Looking north west over Brisbane Waters.

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Executive Summary

Saratoga Point, or “Andersons Point” as it should be called is an important area both for its recreational sportsground, sailing and tennis court facilities, but also for its relatively pristine wetland comprising saltmarsh and mangrove habitat. The value to the people of Saratoga and the wider community is seen through its importance as a recreation amenity for young Australian Rules Football players, cricketers, sailors, tennis players, cyclists and as a place of relaxation, scenic and environmental qualities for naturalists, bush-walkers and bird watchers. The area is also a refuge for endangered species such as the Bush Stone Curlew and migratory waders.

Wetland ecology is being impacted upon by major issues including sea level rise, vandalism, pollution, alterations to the hydrology regime, water quality changes and predation of the endangered Bush Stone Curlew by foxes and dogs. The Draft Plan of Management recommends protection of the wetland from further filling and aims to protect parts of it through supporting Gosford Councils rezoning of the land to 6(b) under the draft LEP. This will stop development in this area on those privately owned Lots which are currently mapped as SEPP 14 wetland. The long term viability of the saltmarsh is threatened by the above factors, in particular sea level rise. The saltmarsh could be gone in 50 years if no retreat areas are available. Additionally stormwater pipe outlets are recommended to have trash racks installed, and a sediment trap for Willaroo Road.

The Draft Plan of Management allows for human use and access to the wetland through a boardwalk through the mangrove wetland connecting Marian Street with the “Andersons Point” sportsground. Interpretative signage will educate the local community on the history of the area (Aboriginal and European), as well as the ecological aspects of the wetland and saltmarsh.

The Draft Plan of Management calls for the oval to be made more user friendly by raising the level up to 0.5 metre and rerouting surface drainage waters from the surrounding catchment around the oval. This will have negligible effects on local birdlife, including the Bush Stone Curlew (pers. comm. Alan Morris, 2003). Users will be able to enjoy a well drained oval nearly all year round.

1.0 Introduction

The following Plan of Management has been prepared in accordance with the Crown Lands Act 1989 and Local Government Act 1993, as amended. This plan of management regulates the management and use of the Saratoga Recreation Area and Wetlands for the entire Reserve for Public Recreation R674760 – not just the SEPP 14 Wetland (Gosford City Council (GCC), 2002). This plan includes a Wetland Management Plan, Recreation Plan, and Acid Sulphate Soils Management Plan within its framework. These different plans have been integrated together in a holistic manner due to their intrinsic overlap and affect on each other. This plan should be interpreted from this perspective.

1.1 Background

The City of Gosford covers an area of 1028 sq kilometres with an expanding population of over 160 000 people. The area is characterised by an abundance of open space which accounts for around 35 000 hectares or 33% of the Gosford Local Government Area. Approximately 0.5% (200 hectares) of this open space is classified as structured recreation (GCC, 2002).

Reserve R64760 for Public Recreation is an area of Crown Land situated on the extreme western tip of the Saratoga-Davistown peninsula (Figure 1,2 and 3). With an area of approximately 14 hectares, the reserve extends some 650 metres North-South and 300 metres East-West. It is bordered on the East by residential allotments and elsewhere by Brisbane Water.

In the northeast of the reserve is a recreation area that occupies an area of approximately three hectares of former wetland. It contains Saratoga Oval, Saratoga Tennis Courts and Saratoga Sailing Club. To the southwest of the recreation area is an unused sand filled area of approximately one hectare. The remaining area of approximately ten hectares is partly degraded estuarine wetland. A small area of the SEPP 14 wetland also extends into the residential allotments.

Adjoining reserve R64760 are five smaller reserved areas that are generally considered as an integral part of that reserve

- 1) A waterfront reserve, 30.48 metres wide, north of the adjoining residential area
- 2) Reserve, Lot 52 in DP 263582
- 3) Reserve, Lot 53 in DP 263582
- 4) A waterfront reserve, 30.48 metres wide, south of the adjoining residential area
- 5) A recreation reserve, being Lot 54 in DP 263582

(Skinner, unpub 2002: 1)

A smaller island (Saratoga Island) that was a by-product of dredging the Saratoga channel many years ago also exists within Brisbane Water and is accessible from the north-west of the reserve at low tide (Skinner, unpub 2002: 1). This island is controlled and managed by the National Parks and Wildlife Service (now DEC) and is subject to a separate Plan of Management currently under development.

Saratoga Oval was entirely estuarine wetland when first declared reserve for public recreation on 14 September 1934 (Figure 3). Proposals for plans of management date back to the 1960's when a recreation area was envisaged for the entire reserve. During the 1980's in accordance with Council's development plan, parts of the wetland

Figure 1: Site location (from NRMA map)



Figure 2: Topographic Map of site (from Gosford 1:25 000 Map Sheet)

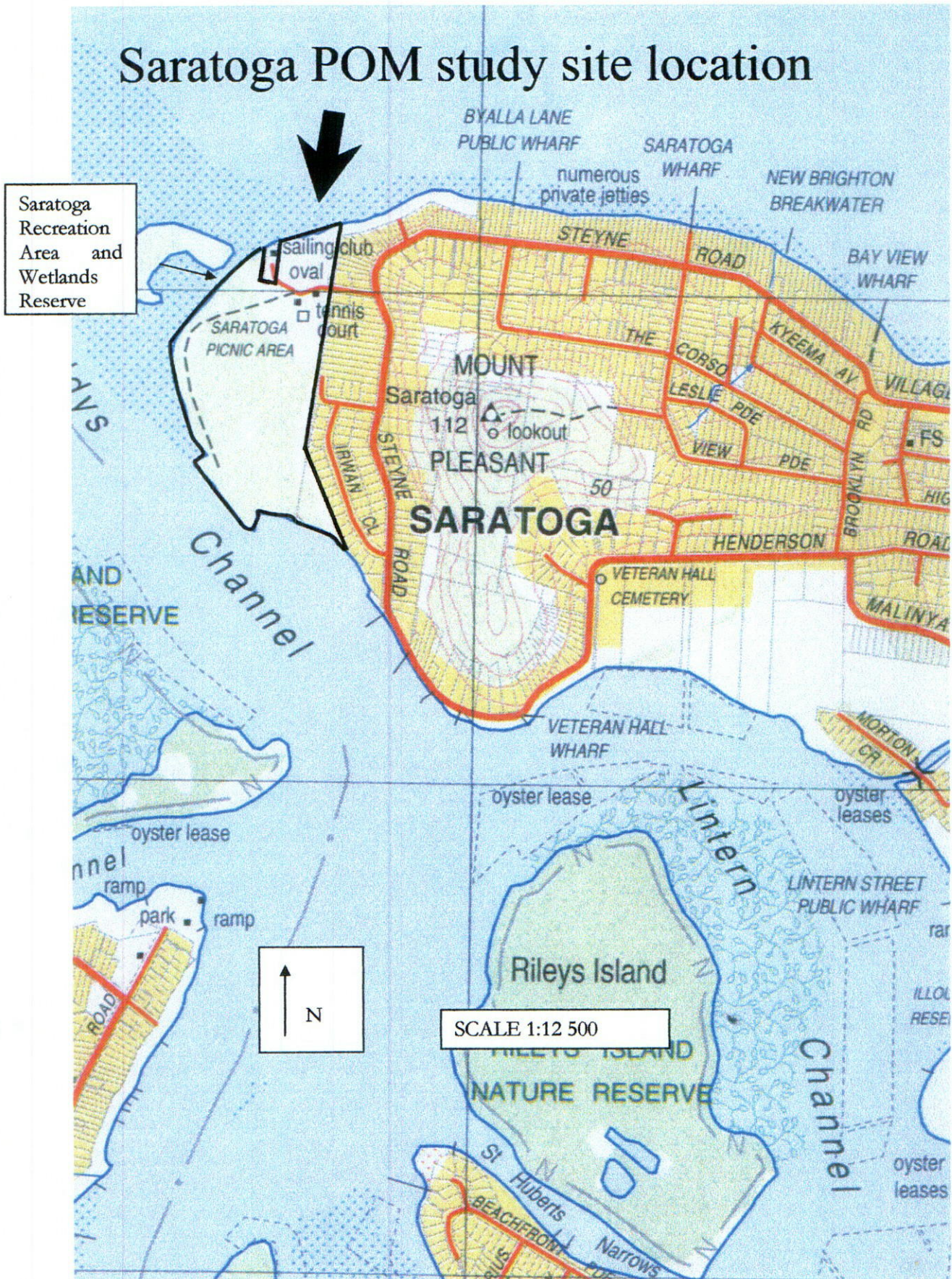


Figure 3: Gosford City Council Ordinance Zonings

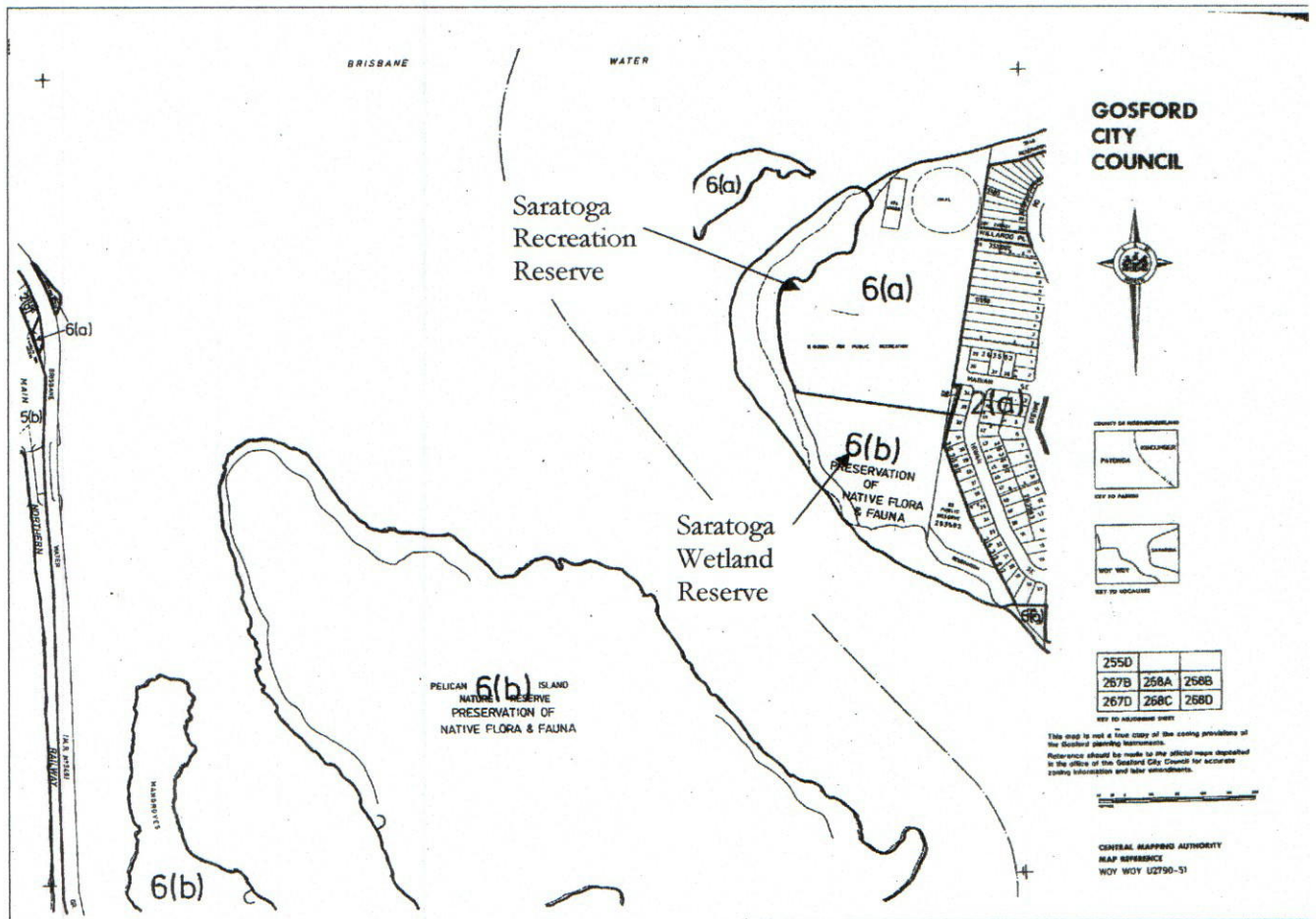


Figure 4: Tennis Courts prior to construction 1976 looking west (courtesy of Alan Skinner)



were filled in and tennis courts, oval and sailing club were erected as the first stage. The filling was stopped in the early 1980's following legislative changes.

A number of masterplans and plans of management were proposed during the 1990's but none were approved by Council until the year 2000, when the Saratoga Oval Masterplan for the recreation area was approved (Appendix 1).

The current SEPP 14 boundary is inaccurate as it includes an area of non-wetland. This discrepancy is due to the fact that the boundaries were determined from aerial photographs taken in 1981. Council undertook significant filling in the area between 1981 and 1984 that destroyed some areas of SEPP 14 wetland (Figure 3).

An EIS was required in the development application process of the masterplan, as some development was proposed on land that is clearly not wetland but still technically SEPP 14 Wetland due to the inaccuracy of the determination process. It considered all parts of the masterplan and was submitted with the development application which was approved on 13 February 2002. The following condition of consent required the development of this plan of management:

"A Wetland Management Plan (WMP) shall be prepared by Gosford City Council for State Environmental Planning Policy No 14 Wetland No 931 within 6 months from the date of consent as an element of the Plan of Management required by condition No 8 of this consent. The Plan of Management shall be prepared in consultation with NSW Fisheries, The Department of Land and Water Conservation, National Parks and Wildlife Service and to the satisfaction of the Director-General."

(GCC, 2003: 2-3)

1.2 Purpose of Plan of Management

The purpose of this Plan of Management was to prepare a document for adoption by Council and the Minister for Land and Water Conservation in Accordance with the Local Government Act and the Crown Land Act. (GCC, 2003).

In order to contribute towards Council achieving its strategic goals, vision, mission and strategic outcomes, this Plan of Management uses a values based approach to land planning and management. This ensures that values may be protected and enhanced and that threats to these values may be identified.

While the plan was prepared in an environment of consultation with the community and key stakeholders, the management outcomes remain based on values rather than driven by issues. At an organisational level, the plan has evolved through a team approach with the direction from a Stakeholder Group including key Council staff, representatives of the Department of Infrastructure, Planning and Natural Resources (DIPNR), NSW Fisheries, National parks and Wildlife Service and Department of Lands and a number of key community stakeholders. They are all identified in section 5 of this plan.

1.3 Objectives

From a review of the existing condition of the Saratoga Recreation Area and Wetland and review of the approved Masterplan, the objectives of the study are:

- To preserve and enhance areas of cleared open space of Saratoga Recreation Area, mainly for public recreational use.

- To ensure the identification and reinforcement of the distinctive characteristics of the recreation area.
- Importantly, to include a "Statement of Significance" which will;
 - Establish the natural/active/passive significance of the Saratoga Recreation Area and Wetland individually and as a whole.
 - Incorporate an assessment of significance in all facets, i.e. historic, aesthetic, social, scientific, recreational and environmental.
 - Consider the precinct as a whole, and in terms of its components.
- To provide policy and management recommendations for;
 - Short and long term management of the Saratoga Recreation Area and Wetland.
 - The broad future for the Saratoga Recreation Area and Wetland.
 - Procedures for compliance with statutory instruments. (Opportunities for integration with Catchment Blueprint strategies should also be explored).
- To identify and protect the biodiversity, conservation and ecological values of the Saratoga Oval Wetlands, with a particular reference to the hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of these wetlands.
- To identify and plan for the restoration and enhancement of degraded wetland areas in the Saratoga Oval Wetlands to achieve a net gain in the extent of the healthy and productive wetlands through a detailed Action Plan.
- To facilitate community education in relation to the Saratoga Recreation Area and Wetland and manage the community use of the entire area, without compromising the ecological values.
- To provide an opportunity for the continued existence of the recreation area on the site while maintaining the ecological values of the adjoining wetland system. Public access should be maintained in line with the principles of Crown Land Management. (GCC, 2003: 4)

2.0 Statutory Considerations

2.1 Crown Land Management

The *Crown Lands Act 1989* requires that:

- this Plan of Management must be prepared in accordance with the principles of land management under the *Crown Lands Act 1989*;
- existing and proposed uses, developments, leases and management practices must be consistent with the dedicated public purpose of the reservation;
- the Plan must address any matters required by the Minister responsible for *Crown Lands Act 1989* – Land and Water Conservation;
- there must be a public exhibition of the draft Plan for a minimum of 28 days and submissions must be referred to the Minister (responsible for the *Crown Lands Act 1989*) within a further 14 days prior to adoption; and
- once adopted by Council and the Department of Land and Water Conservation, the Plan of Management process moves into the implementation stage.

Section 11 of the *Crown Lands Act 1989* provides a set of principles for Crown Land Management 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 a sustainable manner;
- Crown Land to be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles.

(*Crown Lands Act, 1989*)

2.2 Local Government Act

On the commencement of the *Local Government Act 1993* on 1 July 1993, Councils were required to classify all of its land holding into either “operational” or “community” land and prepare Plans of Management for Community Land. According to this Act, Community Land is land which should be retained for use by the general public and Operational land refers to areas which need not be retained for public use (Appendix 3).

Section 35 of the *Local Government Act 1993* provides that community land can only be used in accordance with –

- a) The Plan of Management applying to that area of community land and,
- b) any law permitting the use of the land for a specified purpose or otherwise regulating the use of land and,
- c) the provisions of Division 2 of Chapter 6 of the Act.

(*Local Government Act, 1993: Section 35*)

The Act does allow more than one area of land to be covered by a single plan of management (*Local Government Act, 1993: Section 36(2)*)

On 1 January 1999, The Local Government Amendment (Community Lands Management) Act 1998 came into force and this legislation has significant implications for the way in which Council manages its community land assets. One of the major requirements arising out of this act is for Councils to - “...review any plan of management in force for its area on 1 January 1999 to determine whether or not the plan of management complies with sections 36E – 36N of the Act”.

This plan of management should be developed to ensure compliance with these requirements, ensuring that all areas of the community land are categorised appropriately and future management of those areas is consistent with the core objectives as set down by the Act (See Appendix 3). (GCC, 2002: 5)

2.3 Other Acts and Policies

The following statutory instruments and legislation may affect Saratoga Recreation Area and Wetland:

Relationship to Coastal Open Space System

The coastal open space system refers to land set aside as having environmental protection values and is zoned 7(a) under Gosford’s Local Environment Plan. The closest portion of land in the Coastal Open Space System is to the south east along Macmasters Ridge approximately three kilometres away.

1) Gosford Planning Scheme Ordinance

The Saratoga Recreation Area and Wetland is zoned 6(a) Open Space (Recreation) and 6(b) Open Space (Special Purposes) Preservation of Native Flora and Fauna, under the Gosford City Council Local Environment Plan. Refer to Figure 3 which displays a zoning map of the area. Plans are underway to discuss private land rezoning at the rear of Lots 2-11 DP 17958 to 6(b) to protect the SEPP 14 Wetland (pers.comm. Peter Freewater, GCC).

The objective of Zone No 6(a) according to the Gosford Planning Scheme Ordinance, is to identify and make provisions for land for the purposes of leisure and recreation to promote community benefits and contribute to the amount and distribution to public open space areas at acceptable levels and at standards which meets the needs of the community.

The Objective of Zone No 6(b) is to identify land for open space purposes, being land that is not able to be appropriately included in other open space zones (GCC).

2) Leases and Licenses with the Department of Infrastructure, Planning and Natural Resources (DIPNR)

The sailing club is leased from the Department of Infrastructure, Planning and Natural Resources, the lease number is 474 DP 40408.

3) Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* provides for the protection of the environment and the conservation of biodiversity for those aspects of the environment that are matters of national environmental significance.

Matters of environmental significance under this Act fall under the following categories:

- World Heritage Properties
- Wetlands of International Importance
- Listed Threatened Species and Ecological Communities
- Listed Migratory Species
- Nuclear Actions
- Commonwealth Marine Environment
- Commonwealth Land
- Land Clearing

If any future Development Applications for Saratoga Recreation area and Wetlands have the potential to impact upon any of the above mentioned aspects, a referral to Environment Australia will be required for Commonwealth approval.

4) National Parks and Wildlife Services Act 1974

The National Parks and Wildlife Service carry out such works and activities for the preservation and protection of:

- a) national parks, historic sites, state recreation areas and regional parks;
- b) for the conservation and protection of nature reserves, state game reserves, key conservation reserves and wildlife (including threatened species, populations and ecological communities, and their habitats)
- c) for the preservation, protection of and prevention of damage to regions, relics and Aboriginal places in national parks, historic sites, nature reserves, state game reserves, Aboriginal areas, protected archaeological areas, state recreation areas and regional parks, for the exploration of lands with the object of discovering relics and in relation to conservation agreements and conservation areas.

All Aboriginal sites are protected under the NSW National Parks and Wildlife Act, 1974.

The NPWS is therefore required to make an assessment of the potential impacts of any future proposal within Saratoga Recreation Area and Wetlands. They will assess the impacts on cultural heritage for any future development within Saratoga Recreation Area and Wetlands and recommend safeguards on a site-specific basis. Consultation has occurred with NPWS local rangers, Head Office (Aboriginal Site Registry) and local Land Council representative David Pross. No sites were identified.

5) Environmental Planning and Assessment Act 1979

Any future development proposals are subject to the provisions of the *Environmental Planning and Assessment Act, 1979* and the *Environmental Planning and Assessment Regulations 1994*. This is the main planning and development statute in New South Wales.

The Provisions of Part IV and Part V of this Act will be applicable to any future development proposals. Once the Plan of Management is adopted, most improvements listed would fall within the definition of a "recreation area" which is exempt development under the Gosford Planning Scheme Ordinance (GPSO). In these cases, consent from Council under Part IV of this Act would not be required, however, Part V environmental assessments would still need to occur for those not requiring consent, as under Part V, a duty remains to consider environmental impacts. This is done by preparing an environmental impact assessment of the proposed development to assess the nature of the potential impacts and how these may be mitigated or safeguarded against before development may proceed. Other authorities may need to approve or concur with the proposal under the integrated development provisions of this Act. Council should be consulted before any development proceeds, for the correct environmental assessment required under this Act.

6) Native Vegetation and Conservation Act 1997

For any future development within Saratoga Wetlands and Recreation Area, any proposed destruction or removal of native vegetation will require compliance with this Act and liaison with the DIPNR.

The objectives of this Act include:

- a) to provide for the conservation and management of the native vegetation on a regional basis;
- b) to encourage and promote native vegetation management in the social, economic and environmental interests of the State;
- c) to protect native vegetation of high conservation value;
- d) to improve the condition of existing native vegetation;
- e) to encourage the revegetation of land and the rehabilitation of land with appropriate native vegetation;
- f) to prevent the inappropriate clearing of vegetation;
- g) to promote the significance of native vegetation; all in accordance with the principles of ecologically sustainable development.

As no vegetation is planned to be removed this Act is not relevant.

7) Threatened Species and Conservation Act 1995

For any future development proposal within Saratoga Recreation Area and Wetlands, the threatened species that were identified in Section 4.7 will require a detailed survey and habitat assessment before development can proceed. In complying with this Act, an 8 part test on the Bush Stone-curlew and a Species Impact Statement has been undertaken.

The objects of this Act are as follows:

- a) to conserve biological diversity and promote ecologically sustainable development;
- b) to prevent the extinction and promote the recovery of threatened species, populations and ecological communities;
- c) to protect the critical habitat of those threatened species, populations and ecological communities that are endangered;
- d) to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities;
- e) to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed; and
- f) to encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

No works are planned which will remove and destroy any habitat and therefore no surveys or 8 part tests are needed.

8) Noxious Weeds Management Act 1993

In any rehabilitation proposal for Saratoga recreation Area and Wetlands, the Noxious Weeds Management Act (1993) must be complied with. The objects for this Act are set out below:

- a) to identify noxious weeds in respect of which particular control measures need to be taken;
- b) to specify those control measures;
- c) to specify the duties of public and private landholders as to the control of these noxious weeds;
- d) to provide a framework for the State - wide control of these noxious weeds by the Minister and local control authorities.

(GCC, Draft Plan of Management Template for Wetlands)

There are weeds on this reserve such as lantana and bitou bush which will need controlling.

9) Fisheries Management Act 1994

NSW Fisheries have the duty to take care and control of any development proposal that is below the high mean watermark. The Act that they administer has the following objects:

- a) to conserve fish stocks and key fish habitats;
- b) to conserve threatened species, populations and ecological communities of fish and marine vegetation;
- c) to promote ecologically sustainable development including the conservation of biological diversity and consistency with these objectives.
- d) to promote the viable commercial fishing and aquaculture industries
- e) to promote quality recreational fishing opportunities, and
- f) to appropriately share fisheries resources between the users of those resources.

Under Section 201 of the *Fisheries Management Act 1994* it is an offence to 'dredge/reclaim' in any waters'. The definition of 'waters' includes the marine areas of Saratoga Recreation Area and Wetlands. Any dredging or reclamation activities within marine areas of Saratoga Recreation Area and Wetlands would require permits from NSW Fisheries. Any application for a permit would need to address Section 201 of the *Fisheries Management Act 1994*, the *NSW Fisheries Policy and Guidelines Aquatic Habitat Management and Fish Conservation 1999* and the *NSW Fisheries Habitat Protection Plans No.'s 1 & 3*. In considering whether or not to grant a permit, NSW Fisheries would require further detailed information (eg. marine vegetation maps for areas below the Astronomical Highest Tide).

No dredging is anticipated, with only some minor mangrove removal and post holes being dug to cater for the boardwalk. These works will need approval from NSW Fisheries under this Act.

10) Rural Fires and Environmental Assessment Legislation Amendment Act 2002

Councils are required to assess and control new developments in bushfire prone areas under this act. This land has been assessed as being part of a Bushfire Prone Area as mapped by Gosford Council. It is therefore subject to this new legislation. It should be noted that under Section 100B and 79AB of the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* requires Councils to be satisfied that single dwellings, subdivisions and other multiple occupancy developments in Bushfire Prone Areas.....comply with "Planning for Bushfire Protection 2001" guidelines before granting development consent (NSW Rural Fire Service, 2002). When they are assessed as not complying (i.e. in the flame zone) a report is required showing how the risk may be ameliorated. This is then assessed by the Rural Fire Service (RFS) and their recommendations made to council for its final decision.

In this area houses being renovated, extended, new houses and dwellings which abut this natural vegetated area will be affected by this legislation. The onus is on those landholders to build within the required Level of Protection as prescribed under AS 3959 – 1999, and the "Planning for Bushfire Protection" guidelines. No clearing of Council land, or hazard reduction to provide the necessary Asset Protection Zones is allowable without the direct consent of council.

Gosford City Council however have an onus under The *Rural Fires Act 1997* to prepare Bush Fire Risk Management Plans which identify the level of risk across Gosford City Councils shire. This includes Saratoga.

11) Disabilities Services Act 1993

Facilities such as boardwalk and cycleway should be designed to allow disabled users.

12) Occupational Health and Safety Act 2000

Appropriate safety measures are taken with construction of works by Council workers, as well as adequate designs to prevent any possible harm occurring to the general public. The boardwalks are to have railings, and signage erected telling people that it is a shared route.

13) DLWC: State Rivers and Estuaries Policy

Adoption of the *NSW State Rivers and Estuary Policy* means that the sustainability of the river and estuarine resources and their biophysical functions will be given explicit consideration in resource management decision making. The NSW Water Resources Council will oversee the implementation of the Policy at State level.

The objectives of the *NSW State Rivers and Estuary Management Policy* are:

To manage the rivers and estuaries of NSW in ways which

- a) Slow, halt or reverse the overall rate of degradation in their systems,
- b) Ensure the long-term sustainability of their essential biophysical functions, and

- c) Maintain the beneficial use of these resources.

A comprehensive set of component policies exist, committing agencies to the review and modification of related regulatory and operational activities, and to the support of rehabilitation and cooperative management programs. Progress on the development and implementation of these component policies must be reported annually to the NSW Water Resources Council.

(DLWC, 1996)

14) DLWC: State Wetlands Policy

The *NSW Wetlands Management Policy* is one of the component policies of the *NSW State Rivers and Estuary Policy* and provides guidance on wise use, best management practice and rehabilitation of wetlands.

The goal of the *NSW Wetlands Management Policy* is the ecologically sustainable use, management and conservation of wetlands in NSW for the benefit of present and future generations. The policy aims to minimise any further loss or degradation of wetlands and where possible restore degraded wetlands.

To achieve this goal, the Policy adopts the following nine principles for the sustainable management of wetlands:

- a) Water regimes needed to maintain or restore the physical, chemical and biological processes of wetlands will have formal recognition in water allocation and management plans.
- b) Land use and management practices that maintain or rehabilitate wetland habitats and processes will be encouraged.
- c) New developments will require allowance for suitable water distribution to and from wetlands.
- d) Water entering natural wetlands will be of sufficient quality so as not to degrade the wetlands.
- e) The construction of purpose-built wetlands on the site of viable natural ones will be discouraged.
- f) Natural wetlands should not be destroyed, but when social or economic imperatives require it, the rehabilitation or construction of a wetland should be required.
- g) Degraded wetlands and their habitats and processes will be actively rehabilitated as far as practical.
- h) Wetlands of regional or national significance will be conserved.
- i) Representation of all wetland types within the reserve system will be secured to conserve biodiversity.

15) Coastal Protection Amendment Act 2002

The objects of this Act are to provide for the protection of the coastal environment of the State for the benefit of both present and future generations and in particular:

- a) to protect, enhance, maintain and restore the environment of the coastal region, its associated ecosystems, ecological processes and biological diversity, and its water quality,
- b) to encourage, promote and secure the orderly and balanced utilisation and conservation of the coastal region and its natural and man-made resources, having regard to the principles of ecologically sustainable development,
- c) to recognise and foster the significant social and economic benefits to the State that result from a sustainable coastal environment, including:
 - (i) benefits to the environment,
 - (ii) benefits to urban communities, fisheries, industry and recreation,
 - (iii) benefits to culture and heritage, and
 - (iv) benefits to the Aboriginal people in relation to their spiritual, social, customary and economic use of land and water.

- d) to promote public pedestrian access to the coastal region and recognise the public's right to access,
- e) to provide for the acquisition of land in the coastal region to promote the protection, enhancement, maintenance and restoration of the environment of the coastal region,
- f) to recognise the role of the community, as a partner with government, in resolving issues relating to the protection of the coastal environment,
- g) to ensure co-ordination of the policies and activities of the Government and public authorities relating to the coastal region and to facilitate the proper integration of their management activities, and
- h) to establish the Coastal Council to advise the Minister in relation to the matters referred to in paragraphs (a)--(g) and, in particular, to develop policies in relation to the planning and management of the coastal region. (*Coastal Protection Amendment Act 2002.*)

16) NSW Coastal Policy

The NSW Coastal Policy administered by Planning NSW applies to all land within a 1 kilometre distance of the coast. This site is affected by this policy, but no parts of the policy preclude recommendations made within this report.

17) SEPP 14 (Coastal Wetlands)

This policy aims to ensure that coastal wetlands are preserved and protected in the environmental and economic interests of the state. The Saratoga wetland is mapped as a SEPP 14 wetland and therefore is covered under this legislation and so certain development may be subject to restrictions under the legislation. The boundaries of the Saratoga SEPP 14 wetland were determined from aerial photographs taken in 1981, Figure 5 shows the extent of the SEPP 14 wetland at Saratoga. Note the intrusion of SEPP 14 wetland onto private land.

18) SEPP 19 (Urban Bushland)

This Policy refers to bushland in urban areas which means vegetation on land which is either a remainder of the natural vegetation of the land, or if altered is still representative of the structure and floristics of the natural vegetation. The vegetation that exists within the Saratoga Recreation Area and Wetlands is outlined in the Section 4.7 of this plan of management.

19) SEPP 71 (Coastal Protection)

This policy aims to protect and manage the natural, environmental, cultural, recreational and economic attributes of the NSW coast while improving existing public access and ensuring new opportunities for public access. The policy also aims to preserve and protect aboriginal heritage, marine, beach, and rock platform environments and ensure visual amenity. Saratoga oval is classed as being a coastal foreshore, a coastal zone and a sensitive coastal location under the SEPP 71 and so may be subject to certain requirements.

20) Australian Standards

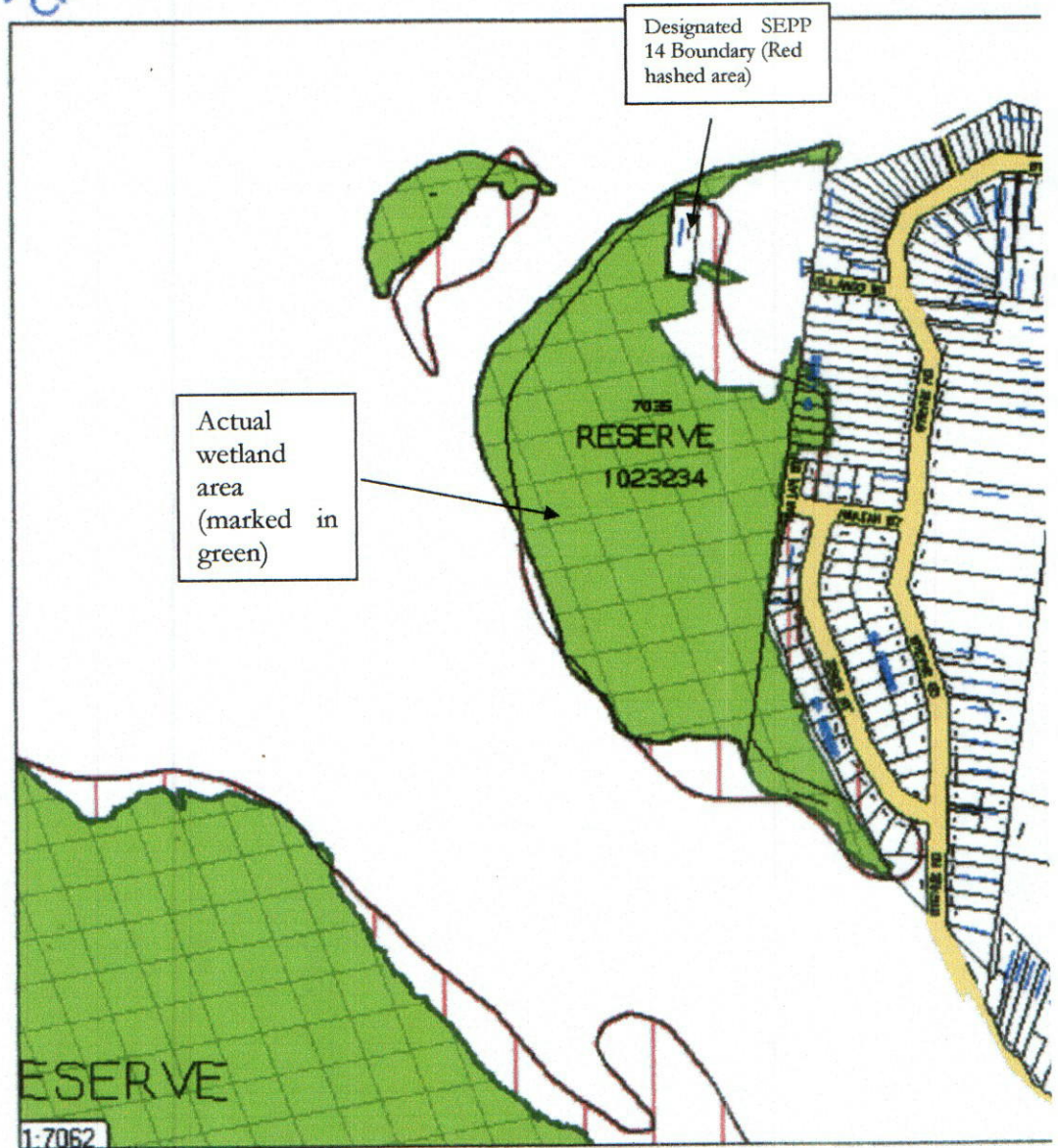
Australian Standards are required for all design and construction. The redevelopment of any part of Saratoga Recreation Area and Wetlands must take into consideration the requirements with respect to people with disabilities. The Construction of the proposed cycleway and boardwalk must meet Australian Standards concerning access and mobility for people with disabilities and tactile ground surface indicators.

Figure 5: SEPP 14 Boundary



Gosford City Council

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Disclaimer: Council expressly disclaims all liability for errors or omissions.
This plan has no legal standing.

<http://atlas/iwc/print/print.asp?print=rasdump1377.bmp&iScale=0>

22) Gosford City Council Policies

A number of Council Policies affect the use of the land within the defined area. These include:

(i) Plan of Management Community Land

Community land is required to be used and managed in accordance with:

- plan of management applying to the land,
- any law permitting the use of the land for a specified purpose or otherwise regulating the use of the land, and
- Section 2.2 of the Local Government Act.

(ii) Landscape and Vegetation Management Policy

This policy aims to achieve a physical environment that capitalises on the landscape qualities of the natural topography and vegetation while accommodating appropriate development. The policy utilizes the provisions of the EP&A Act 1979 to achieve an appropriate level of landscaping in the consideration of development proposals by imposing certain conditions of consent and by utilizing Tree Preservation Orders to control unnecessary clearing and damage to native vegetation.

(ii) Tree Preservation Order

A Tree Preservation Order may prohibit the ring-barking cutting down, topping, lopping, removing, or wilful destruction of any tree or trees specified in the order except with the consent of the responsible authority. It may relate to any tree or trees or to any specified class, type or description of trees on land described in the order. (GCC, 2003: 59).

(iii) Sportsground Plan of Management – Draft Review

This Plan of Management has followed the principles laid down under the Sportsground Plan of Management Draft Review so that the Saratoga Recreation Area and Wetlands may be improved for recreational use whilst its ecological integrity will be managed sustainably.

(iv) Wetlands Management Policy

This Plan of Management was designed to meet the objectives of this policy so that the Saratoga Recreation Area and Wetlands can be used in a sustainable manner.

The objectives of this policy are to:

- a) Protect existing healthy wetlands in the City of Gosford, according to the principles of ecological sustainability.
- b) Restore and enhance existing degraded wetlands to achieve a net gain in the extent of healthy and productive wetlands within the City of Gosford.
- c) To educate the community regarding the environmental and economic values of wetlands so that wetlands will be valued and respected by the community.

(v) Environmental Policy

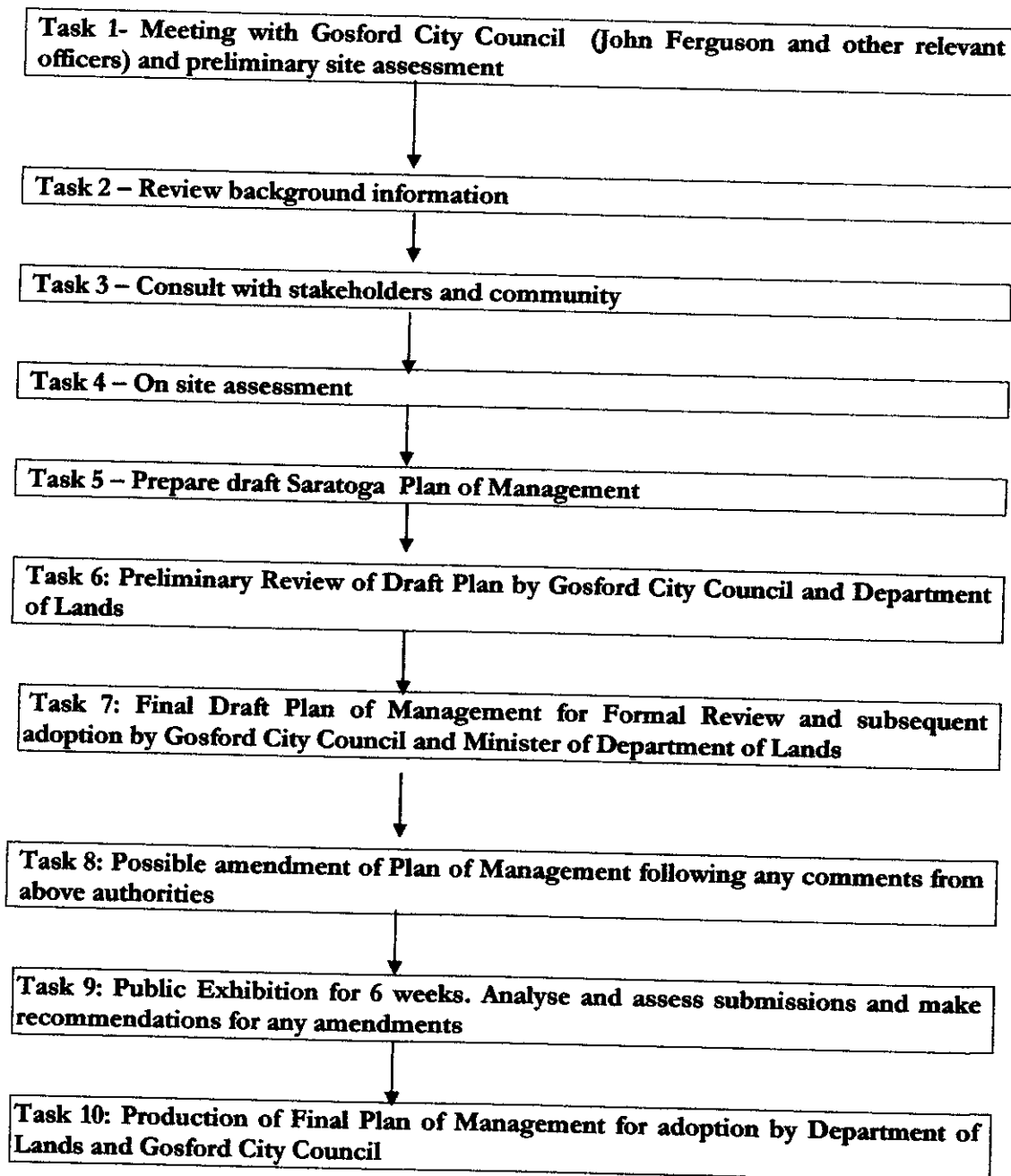
This Plan of Management has followed the objectives laid down under the Council's Environmental Policy, which are to effectively integrate the principles of ecological sustainability into all Council and community functions so as to achieve a clean, healthy environment and healthy and ecologically sustainable environment for the city of Gosford.

3.0 Methodology

3.1 Process

The process to compile the Saratoga Recreation and Wetlands Plan of Management has been as follows:

Flow Diagram of Saratoga Recreation Area and Wetland Plan of Management Preparation approach used by Consultant:



Fieldwork was conducted which involved a survey around the entire site taking into account stormwater outlets, wetland condition/ type/ problem areas, , pollutants, flooding levels, vegetation condition/ type/ and communities present, water quality (visual and through aquatic organisms present), erosion, marine hydrological conditions , soil types, elevation and topography, landuse of

catchment (urbanised/ industrial/natural), cultural significance, community uses, and any other pertinent factors which may affect the wetlands and recreational areas. Relevant information was mapped and is shown in this document.

This site assessment also relied on supporting background information from the EIS (Payne, 2001) and Master Plan, REMS vegetation maps, Soil Landscape Maps, Acid Sulphate Soil Risk Maps, Geology Maps, Flood Studies, and Water Quality results where available being made available to the consultant.

3.2 Consultation

This was an important task and determined to a large degree the final priorities and major objectives of the Plan. To ensure that consultation was thorough the following methods were undertaken:

- Letterbox drop to all local Saratoga residents near the reserve and businesses and major stakeholders detailing the proposed plan, allowing input through a Gosford City Council telephone number and notifying them of a public meeting, (Appendix 8)
- Face to face meetings/ interviews or phone interviews depending on their availability with all major stakeholders (approx 30mins / major stakeholder – longer in some cases – Appendix 5)
- Public meeting with media invited to attend. Public meeting had council representation (Coordinator Recreation Facilities, Natural Resources Officer and the Mayor)

3.3 Research

Review information, and source additional relevant information through a literature search, and through community/ stakeholder consultation. All references are shown at the rear of this document.

4.0 Site Assessment

4.1 Anthropogenic

4.1.1 European History

Geoff Potter, Local Studies Librarian, was approached about the history of the site and supplied the following information:

“R64760, situated on the extreme western tip of the Saratoga Davistown peninsula for Public Recreation was notified on 14th September 1934. A 1901 Brisbane Water County of Northumberland map shows the inscription "salt marsh" on what would later become the Reserve.

Resident Robert Henderson (died aged 73 on 11th November 1869) owned 50 acres (Portion 71, Parish of Kincumber) adjoining what is now the Reserve. Henderson's Portion 71 went from one side of the Point, and would have effectively cut off public access to the marshes. Access to the marshes would either be by boat, or through Henderson's property. The point is believed to have traditionally been called "Anderson's Point". The name Anderson's Point is probably derived from Henderson by people dropping the 'H' from his name.

The Point, which became the Reserve, appears never to have been alienated from Crown Land. In the eyes of early settlers, salt marsh land would probably have been regarded as of

little use. On various early maps the land remains devoid of any inscription. It is possible that early lime burners may have used the Point both as an encampment and source of shells. This activity would date mainly from the 1840s to the 1870s and would require the presence of either natural shell-banks or Aboriginal Middens.

In 1885, the Gosford Model Farms subdivision booklet describes that at Anderson's Point: "...a great deposit of shells exists. These shells are quarried and loaded into vessels for conveyance to spots where there are lime kilns, for these ancient shells make the best lime when calcined..."

(Source: Boyd & King: The Farmer's and Settler's Guide to the Gosford Model Farm Blocks, 1885.

While it is unlikely that Lime burners left any evidence of their visits, the area may be of considerable Aboriginal significance as a Midden site. Mary Dallas, in the 'Gosford City Aboriginal Heritage Planning Study 1989', shows that the Reserve may be an archaeologically sensitive area, however the Aboriginal Heritage Information System claims that there are no recorded sites of cultural significance.

A map based on Aerial photographs from 1964 shows no development of any kind on the Point. Further research is recommended into the history of the Point. Assuming that it was known traditionally as "Anderson's Point", then it has been suggested that this name, together with interpretive plaques outlining the history of the Point, should be reinstated."

According to Alan Skinner, Ballast heaps can be found at many locations within Brisbane Water, and are remainders of the times when commercial vessels regularly sailed the waterway. They are usually found where there is deep water close to the shoreline or a mudflat. A ballast heap can be found in the southern section of the reserve and would have some minor historical importance, but it abuts deep water and so is popular with shore-based fisherman. Access to the ballast heap is possible for walkers along the shoreline from both the recreation area to the north, from the Reserve Lot 54 DP263582 to the east, and from the rear of some residential lots in Irwin Street. (Skinner, 2002: 14)

As part of his proposed (unofficial) Plan of Management for Saratoga Recreation Area and adjoining wetland, Alan Skinner provides a history of the development of this reserve as follows.

"Recreation Reserve Lot 54 DP263582 is located on the waterfront and is an area of former wetland that was filled and dedicated as recreation reserve during the subdivision construction at Marian /Irwin St. The outward tidal flow of the SEPP 14 area of private land has been restricted since this subdivision and ponding now occurs.

The residential land between Marion St and Willaroo Road was first subdivided by DP17958. The lots are narrow and long. At the time when many of the present houses were built, they were intended as weekenders. Access to Saratoga was usually by ferry and vehicle access was considered unnecessary. Many of the houses still have no vehicular access.

In the late 1970's, Marian Street was configured to allow further subdivision of the rear lots in question. The configuration had been imposed on the Irwin Street/Marian Street subdivision GCC, the intention being to end Marian Street as a cul-de-sac within the private property that is now subject to SEPP 14. Contrary to popular belief, Marian Street was not intended to link with Willaroo Road.

To the south west of the recreation area is a sand filled area of approximately one hectare, the result of a failed attempt to fill the wetlands by dredging the nearby island in the 1960's. The original mangrove vegetation was destroyed in the process and swamp oaks have now established themselves as the predominant plant on the bare sand fill. Remnants of the estuarine wetland that originally covered the entire reserve are to be found to the west and south of the recreation area."

There has been an estuary management committee formed for Brisbane Water. They are in the process of developing an Estuary Process study. At present no estuary management plan exists (Pers comm, Neil Kelleher DIPNR).

Foreshore protection works were completed by GCC in 1994 for the Northern Saratoga Oval Area (Cover photo). No further foreshore protection works for the area are planned (Brisbane Water POM, 1995)

4.1.2 Aboriginal History

The Aboriginal Heritage Information System has no recorded significant aboriginal heritage sites in the area (Appendix 3). However the Gosford City Aboriginal Heritage Planning Study 1989 suggested the site could be a archaeological sensitive area. David Pross a Darkinjung Land Council Chairperson and Heritage Officer suggested that aboriginal middens are probably covered by fill and that the area should be left as is because the fill protects any middens that may be buried. David Pross inspected the site and found no Aboriginal heritage site on the surface. As noted earlier this site has been highly disturbed from the dumping of sand from dredging operations and so therefore many of the existing Aboriginal heritage items may be buried.

4.1.3 Land Tenure and Land Use

The Saratoga Recreation Area and Wetland is zoned 6(a) Open Space (Recreation) and 6(b) Open Space (Special Purposes) Preservation of Native Flora and Fauna, under the Gosford City Council Planning Scheme Ordinance. Refer to Figure 3 which displays a zoning map of the area.

The objective of Zone No 6(a) according to the Gosford Planning Scheme Ordinance, is to identify and make provisions for land for the purposes of leisure and recreation to promote community benefits and contribute to the amount and distribution to public open space areas at acceptable levels and at standards which meets the needs of the community.

The Objective of Zone No 6(b) is to identify land for open space purposes, being land that is not able to be appropriately included in other open space zones (GCC, PSO, 2003)

4.1.4 Landuse

Use of the oval is generally restricted to summer sports such as junior or low grade cricket and sailing. Junior Australian Rules Football sides play when they can in winter. According to many residents and key stakeholders, poor drainage and lack of facilities such as car parks prevents regular use of the oval, especially in the winter. Australian Rules Football is played on Saturdays but play is often prevented as the ground is too wet. It is common opinion within the community that the grounds usability needs to be improved as there is shortage of such recreational facilities in the whole of the Gosford area.

Fill was put in the early 1980's to build tennis courts. Since then they have been operating under flood lights at night, which are automatically turned off at 9:00pm, there have been few complaints from residents or players concerning this practice and it appears to have no effect on the activities of the Bush Stone-Curlew. More fill was brought in to construct a sailing club in 1980. It is heavily trafficked by vehicles and pedestrians. The club must access the oval for rigging and launching purposes. The hauling of boats from the club has resulted in a worn dirt track only a few metres from the wetland and the foreshore. The same access point is used by Steyne Road residents(Skinner, 2002).

During the community consultation process residents expressed their desire to improve picnic and barbeque facilities in the area as they are currently limited to two sheltered tables at the northern end of

the tennis courts and are regularly used. One of the top priorities identified by the community was to move the playground to a safer area so that it may be more frequently used. Relocation of the cycleway was well supported, as was the construction of a boardwalk across the wetlands to improve pedestrian access.

4.1.5 Traffic

Traffic can access the area through Willaroo Road. There is a car park behind the tennis courts with a capacity of approximately 6 cars at present. The Sailing Club also has a car park which is regularly used and has a capacity of approximately 20 cars.

On Saturday mornings junior cricket and junior tennis coaching takes place. There are usually about 20 parked cars in the area associated with this activity, with other cars coming in and out to drop off passengers. The same number of vehicles can be associated with Saturday afternoon sport. Increased traffic movement occurs when junior football or one off events are held in the area. (Skinner, 2002:5). According to residents, up to 80 cars could be associated with sporting events at the oval. On Saturday mornings when Australian Rules Football is played, there is increased traffic and the number of players is expected to grow from 40 up to 65 in the next five years with up to 50 families involved. (pers. Comm. Mark Kentwell)

Vehicular access to the wetlands has been recently blocked off. The access track to the rear of residential properties has also been excluded.

During the community consultation process, many residents expressed their concern about dangerous traffic conditions at the top of Willaroo/Steyne Rd. This is outside of the scope of this plan, but Councils Traffic Committee are aware of this issue. The community have also expressed the need for more parking. Some of the key stakeholders expressed their desire to restrict access to wetland areas in order to protect native species and habitat. Council concur with this.

4.2 Topography, Soils, Acid Sulphate Soils, Geology, Landforms

4.2.1 Topography

The levels and contours for Saratoga oval are detailed below in figure 6. As can be seen the topography is level to gently undulating, with a relief of approximately 3 metres and low water tables with water occurring within 2 metres of the surface (Murphy, 1993). The effect of topography on hydrology is discussed in Section 4.4.

4.2.2 Soils

The results for the soil test for Saratoga Oval are shown below in Table 1. The soil test was conducted on the oval. The soil is not the native soil and consists of sandy fill imported to the site for the development of the oval. Therefore there is no obvious soil profile that has developed. The water table resides approximately half a metre below the surface. As can be seen in Table 1 the pH of the soil is higher in the lower soil profile which suggests that the ground water is saline.

Table 1: Saratoga Oval Soil Testing Results

Soil Depth	pH	Texture	Structure
Upper soil profile	6	Sand	Apedal
Lower soil profile-	9	Sand	Apedal

approx 40cm down			
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Over the SEPP14 wetland soils are predominantly sand that dries to a yellow/grey or a greyish/yellow brown colour. The soils pH is pre-dominantly neutral with a slight to moderate smell of acid sulphate. The area does have a small potential for acid sulphate development. (Payne, 2001)

4.2.3 Acid Sulphate Soils

Acid sulphate soils is the general name given to soils that contain iron sulphides. These soils occur in every coastal estuary of the NSW coast. When acid sulphate soils are exposed to oxygen and dry out the soil material oxidizes and sulphides form sulphates. When the soil becomes wet again sulphuric acid can form which is very acidic and can cause harm to flora and fauna in aquatic environments and wetlands. From every tonne of sulfidic material that oxidizes 1.6 tonnes of pure sulphuric acid can be produced. Impacts can be short to long term and have large environmental and economic impacts on fisheries, tourism, aquaculture, sugarcane, tea tree, dairy and grazing (ASSMAC, 1998).

The acid sulphate soil map as produced by DLWC (now DIPNR) as shown in Figure 7 grades areas on the probability of soils becoming acid sulphate. It can be seen that the entire wetland area, oval and the island is mapped as class 2 and so requires planning instruments for works which are below ground surface and works which are likely to lower the water table. Payne (2001) found that soils sampled in the wetland and tested for acid sulphates were found to have a high potential acid sulphate risk, but actual acidity was low. As works are proposed for works below ground level an Acid Sulphate Soil Management Plan is required. This is shown in section 8 – The Draft Plan of Management.

4.2.4 Geology

The geology of the Saratoga Recreation and Wetland area consists of "Holocene sediments of predominantly coarse to fine quartz sand with shell fragments and occasionally silt" (Murphy, 1993 :97). These sediments are derived from estuarine deposition and are still accreting by observation of the beach build up along the western foreshore of the wetland.

4.3 Climate

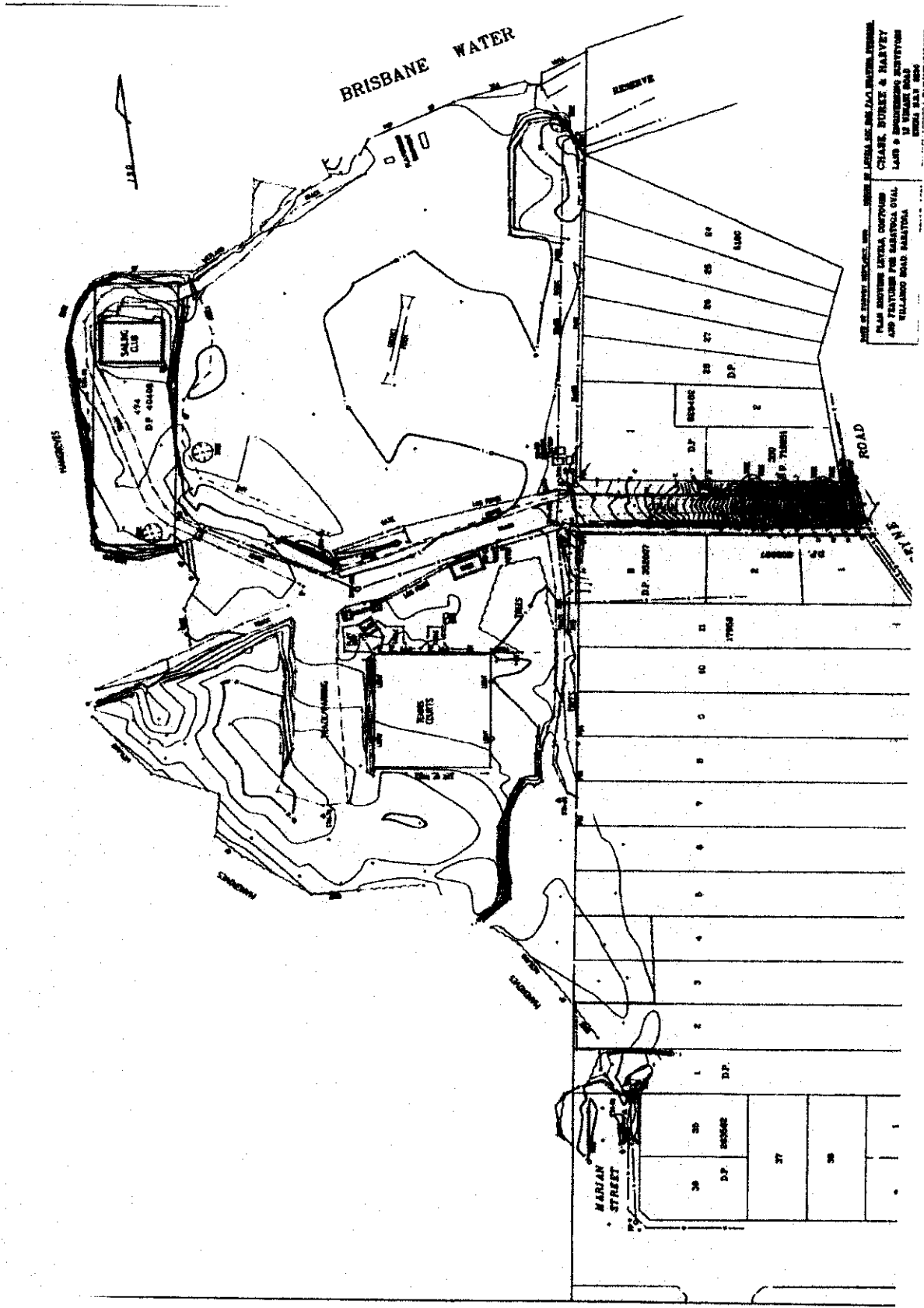
Gosford Shire experiences a mild temperate climate with an average annual temperature of 28°C in the summer and 18°C in the winter. The average annual rainfall is around 1200mm, falling year round with a slight summer high (Bureau of Meteorology, 2003). During winter the prevailing wind direction is from the south west, whilst south easterlies prevail in spring and early summer. Late summer is dominated by north easterly sea breezes.

Global warming also has a direct bearing on all coastal land through the resultant sea level rises. The sea level rise is estimated by Mitchell, et. al. (2000) to be 1.8mm/year for Newcastle. This has a profound effect for estuarine wetlands when 10 mm can be the difference between the habitat of saltmarshes and mangroves.

4.4 Hydrology and groundwater

Hydrology of the Saratoga wetlands has been significantly altered over the years from infilling, dredging and dumping of spoil in previous wetlands, construction of access roads and illegal 4WD use, pedestrian tracks, high runoff from urban developments, stormwater pipe outlets, natural accretion of beach, natural realignment and sedimentation of seaward end of former creek entrance (southern end of reserve). The result of these alterations to the hydrological regime has been a change in flora and fauna distribution and abundance which has generally favoured mangrove invasion over saltmarsh. An important natural factor is also operating – sea level rise. Although views differ on the rate of sea level

Figure 6: Topography - detailed (from GCC Survey)



rise it is generally believed to be in the order of 1.18mm/year (Mitchell, et al 2000) . This could possibly have a marked effect on Saratoga as it is generally very low land (< 0.5 metre- see Figure 6).

This means that even little changes in sea level will have a big impact on the ecology of the area. Generally this will favour the invasion of the mangrove community over the saltmarsh community.

Groundwater is generally saline in the tidal areas, with fresh water groundwater intruding from the land and through stormwater and overland flow of fresh water runoff from the surrounding catchment. The groundwater table was observed to be in the vicinity of 0.5 metre deep on the oval during soil testing. Water was brackish. This is very shallow and is typical of the whole recreation area. Wetlands areas are often under water.

The importance of tidal flows and tidal heights is critical to the ongoing ecology of the area. It is important that tidal inflows and outflows are left as are. Figure 10a shows a natural break through in a man made channel which is strongly influencing the ecology of Saratoga wetlands. In the future further hydrological research may have to be considered to save the saltmarsh which will gradually be at risk from saltwater intrusion and drowning. Consideration may have to be given to protecting it by building low berms or the like around it to prevent further saltwater drowning, and mangrove invasion.

4.4.1 INFILLING

The infilling of the former estuarine wetland (see Figure 10) at Saratoga from the 1960's to the early 1980's to form Saratoga oval, the sailing club, tennis courts, Marian Street subdivision, carpark, dredged spoil areas including the "ballast heap" and construction of a vehicle access track in the 1960's to fill this area, resulted in a profound change in hydrology. Effectively tidal inundation was prevented in those areas in-filled, and water velocity, quality and channels all changed in the remaining wetland area.

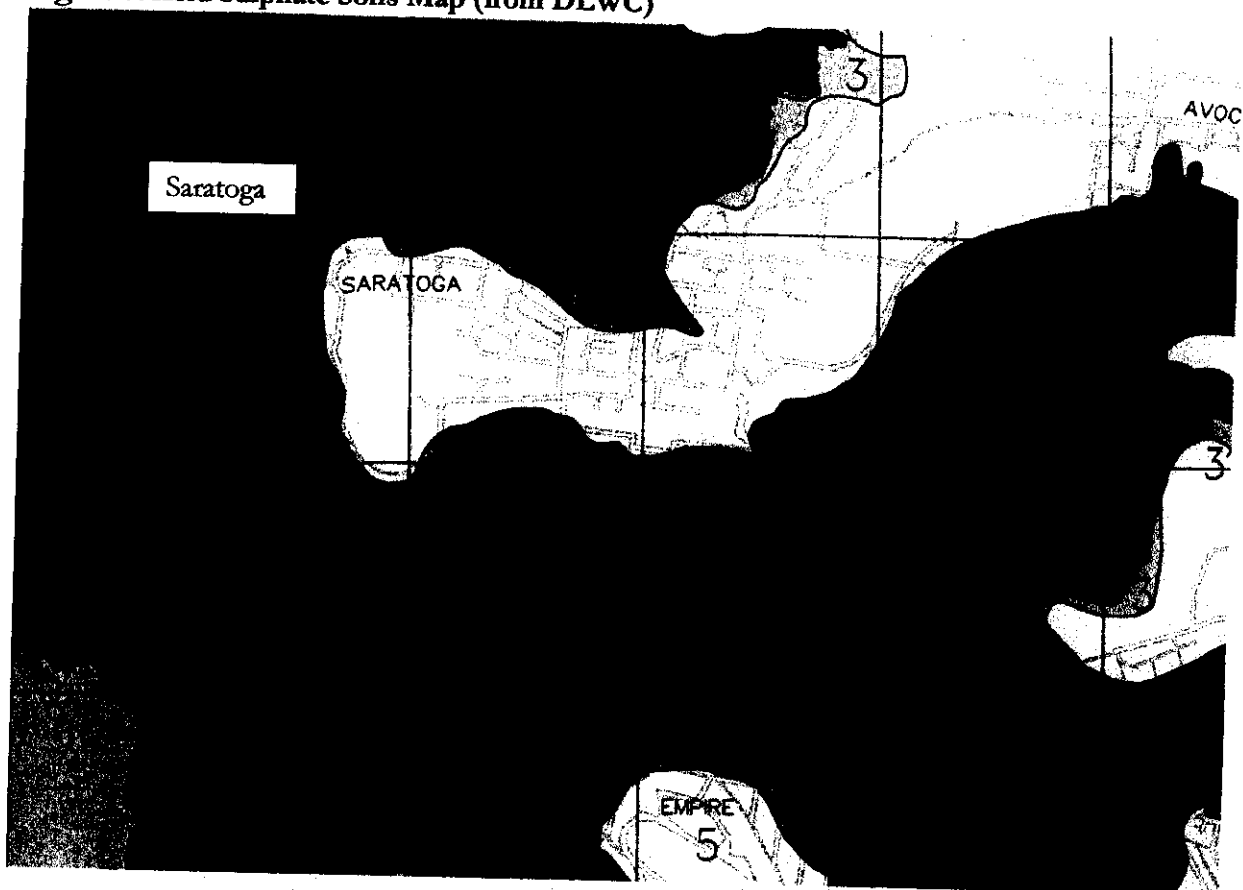
Since infilling a small break through channel approximately 3 metres wide in the spoil heap access track has provided an opening for active tidal flows into and out of the wetland (see Figure 10a). This is the key hydrological issue in terms of the northern wetland ecology. If it is left as is then mangroves will continue to thrive and slowly expand their range. If filled in then mangroves may die back, and saltmarsh may reinvade, but this is uncertain due to overland water flow occurring from other low points in the barrier beach and the effects of future sea level rises. Additionally urban runoff is higher in nutrients and favours mangrove development (Harty and Cheng, 2002). If this break through channel is formalised into a large channel then water flows, tidal flushing and greater salt water intrusion will occur favouring further mangrove expansion into saltmarsh areas. Current hydrology has been summarised in Figure 10. It shows that the areas dominated by mangroves have distinct tidal flows, regular inundation every high tide, and water quality is generally more stable than the saltmarsh areas in terms of temperature, dissolved oxygen, pH, conductivity and salinity (Payne 2001). The major sources

of tidal inundation at present for the wetland are through the break through channel, low land inflow south of the dredged *Casuarina glauca* dominated spoil heap, and through the former creek channel to the south of the wetland. These areas are all dominated by mangroves. The middle of the wetland and fringes where land levels are marginally higher approximately 0-0.2m above the Mean High Watermark are dominated by saltmarsh, and areas > 0.5 metres above the Mean High Watermark are dominated by *Casuarina glauca*. These areas have restricted tidal flows and many saltmarsh areas are not regularly inundated.

The Marian Street subdivision also has significantly altered former hydrology patterns. The former creek has been piped, and now outflows through three different stormwater pipes. The former creek channel (see Figure 10) is virtually a relict channel now, and is slowly infilling from marine sand at the seaward end and sediment from the landward end. Stormwater pipe outlets are polluted with rubbish,

silt and nutrients and tend to be incised, allowing sea water to back up them favouring mangrove colonisation.

Figure 7: Acid Sulphate Soils Map (from DLWC)



ACID SULFATE SOIL PLANNING MAP

CLASS	WORKS FOR WHICH PLANNING INSTRUMENT APPLIES
	Any Works
	Works below the ground surface; Works by which the watertable is likely to be lowered.
	Works beyond 1 metre below the natural ground surface; Works by which the watertable is likely to be lowered beyond 1 metre below natural surface.
	Works beyond 2 metres below the natural ground surface; Works by which the watertable is likely to be lowered beyond 2 metres below natural surface.
5	Works within 500 metres of adjacent class 1,2,3or4 land which are likely to lower the watertable below 1 metre AHD in class 1,2,3or4 land.

The hydrology of the area is also affected by marine tidal currents and wave action acting on the fringes of the wetland from Brisbane water, particularly Paddy's Channel. Currents are strong in this area, with a significant flood tide delta intruding into Brisbane Water at the northern lake end of Paddy's Channel. The wetland is protected from these currents and to some extent wave action from passing boats by the accretion of a sand beach and mature mangroves. It appears that this beach is actively accreting, providing some protection to this wetland from ongoing sea level rises, and increased urban runoff.

4.4.2 EXISTING TRACKS

Existing vehicle and pedestrian tracks in some areas are providing easy access for saltwater intrusion to occur. This can be seen by invasion of mangrove seedlings along some of the former vehicle tracks in the middle of the saltmarsh. These tracks should be rehabilitated. Another area of human disturbance is at the southern end of the reserve where a number of private residences have made their own paths across the saltmarsh and mangrove areas. This is affecting tidal flows. These structures should be removed.

4.5 Flora and Fauna

The flora and fauna of the area has been surveyed by Robert Payne and is detailed in the Environmental Impact Statement for the Saratoga Oval Upgrading. The area supports three main vegetation communities Estuarine Mangrove complex, Saltmarsh and Swamp Oak Forest that provides habitat for a variety of flora and fauna.

4.5.1 Flora

Figure 8 shows Flora as mapped by the consultant with reference to REMS Vegetation maps. The Estuarine mangrove complex is dominated by the Grey Mangrove (*Avicennia marina*) with emergent River Mangroves (*Aegiceras corniculatum*). There are two main vegetation structures in the mangrove complex: Low Open Woodland and Open Forest. The Low Open Mangrove Woodland covers the majority of the SEPP14 Wetland and consists of 3-5 metre trees with 5 % canopy cover and a 1-2 metre understorey with 30% cover. The ground cover consists of herbs, grasses and reeds including *Sporobolus virginicus* and, *Juncus kraussii*, up to 0.5 metres high with a 90% coverage (Payne, 2001).

The Open Mangrove Forest only occurs along the foreshore fringe of the Broadwater. The structure consists of a dense to semi-dense coverage of mangroves 3-4 metres high. The ground cover is very sparse and consists mainly of *Sarcocornia quinqueflora* up to 0.5 metres high with a cover abundance of 0-10% (Payne, 2001).

Saltmarsh is interspersed among the mangrove forests and in areas of higher salinity where there is insufficient tidal flushing. The dominant species of the saltmarsh are Samphire (*Sarcocornia quinqueflora*) and Seablite (*Suaeda australis*) which grow up to 80cm high and cover 100% of the area (Payne 2001).

The Swamp Oak Forest (*Casuarina glauca*) is the least extensive vegetation type in the area found in small pockets amongst the mangrove forests and saltmarsh. Reeds such as *Juncus kraussii* and *Phragmites australis* may be interspersed in the understorey. Some weeds occur including Asparagum fern.

Fill areas are currently weed infested , particularly with kikuyu. They will need eradicating during any regeneration/ landscaping program.

The Saratoga wetland has been recognised by many notable researchers (i.e. Harty and Cheng, Santilan) as an important remnant area of wetland within Brisbane Water. Saltmarshes and fringing wetlands are important in the cycling of nutrients in coastal estuaries and are considered to provide important habitats for birds, fish, invertebrates and a range of macro fauna (Roberts and Chapman, 2003). Studies by Harty and Cheng (2002) have showed that Brisbane Water estuary has seen a decline of saltmarsh by 78.2% between 1954 and 1995. At the same time mangrove distribution has increased by 3.7%. There has been a marked migration of mangroves into saltmarsh areas. Saratoga wetland itself has seen a decline in saltmarsh by 4.9% over this period and a slight decrease (0.3%) in mangroves. Mangrove

development is occurring within the saltmarsh area at Saratoga. It is very likely that this trend is continuing at Saratoga.

It has been found that higher temperature, salinity, nutrient and lower turbidity, pH and dissolved oxygen levels were recorded for saltmarshes compared to mangroves, reflecting the lower frequencies of tidal inundation, influence of freshwater runoff from adjacent land areas, and the influence of shade in keeping temperatures lower in mangrove areas. The interplay between water content or the frequency of waterlogging and soil salinity levels is a significant factor in determining mangrove saltmarsh distribution and zonation (Harty and Cheng, 2002).

4.5.2 Fauna

The main fauna occupying the SEPP14 Wetland are bird species with 45 species being recorded from the oval and adjoining wetlands. In particular waders and waterbirds are common in the area. There is a number of rare and endangered species listed under the *Threatened Species Conservation Act 1995* that utilize the area. These include the Terek Sandpiper (*Xenus cinereus*) and the Pied Oystercatcher (*Haematopus longirostris*) listed as "vulnerable" and the Bush Stone Curlew which is known to breed at this site listed as "Endangered". Also of regional importance is the Mangrove Gerygone (*Gerygone levigaster*) which is at the southern extreme of its distribution and uncommon throughout the Brisbane Water wetlands. It is also possible that the Osprey (*Pandion haliaetus*) feeds along the foreshore due to there being a nesting site for this species nearby at Bensville. There is also a number of migratory birds that utilize this reserve at different times of the year like Eastern Curlews (*Numenius madagascariensis*), Whimbrels (*Numenius phaeopus*) and Bar-tailed Godwits (*Limosa lapponica*) (Payne, 2001). Surrounding regional wetlands and their linkages are considered important. Figure 9 shows these linkages (Courtesy of Bill Evans). It is important to recognise the role these surrounding wetlands play for foraging and breeding habitat, and refuges from people, and feral species such as foxes and cats which inhabit or disturb many mainland wetland communities.

The aquatic fauna of the reserve is utilized by local fisherman who advise they catch Mullet, Whiting and Schnapper. There is large population of soldier crabs (*Sesarma spp.*) and Jelly blubbers (*Aurelia spp.*) are commonly seen on the high-tide fringe. Macro-invertebrates studies have also been undertaken by Robert Payne and the highest diversity was found in pools on private property compared to the high tide ponds and foreshore area. The main species recorded were oligochaete worms, beetle larvae, marine snails and aquatic worms (Payne, 2001).

Microbats have been seen flying around the lights of the tennis courts on warm nights. There is also 2 frog species that have been recorded in the area, the Bleating Tree Frog (*Litoria dentata*) and the Brown-striped Marsh Frog (*Limnodynastes peroni*) (Payne, 2001).

A species recovery plan has been written by NPWS for the Bushstone Curlew. Additionally an on site meeting has been held with NPWS to discuss measures that can be put in place to protect the bird at this site. They have recommended habitat to be protected and rehabilitated where feasible. In this area there are a number of potential areas that work can be done to achieve some bird protection and these are included in the Draft Management Action Plan (Section 8) and current nesting site is shown in Figure 8.

Figure 8: Vegetation Map of site



Key: 1 – Interpretative signage needed
2 – Existing tracks/picnic areas

3-Weeds

5- Saratoga oval

4- Illegal accesses destroying veg.

6- Planted trees

Figure 9: Regional wetland linkages (from Bill Evans) . Yellow arrows represent wetland bird species possible routes

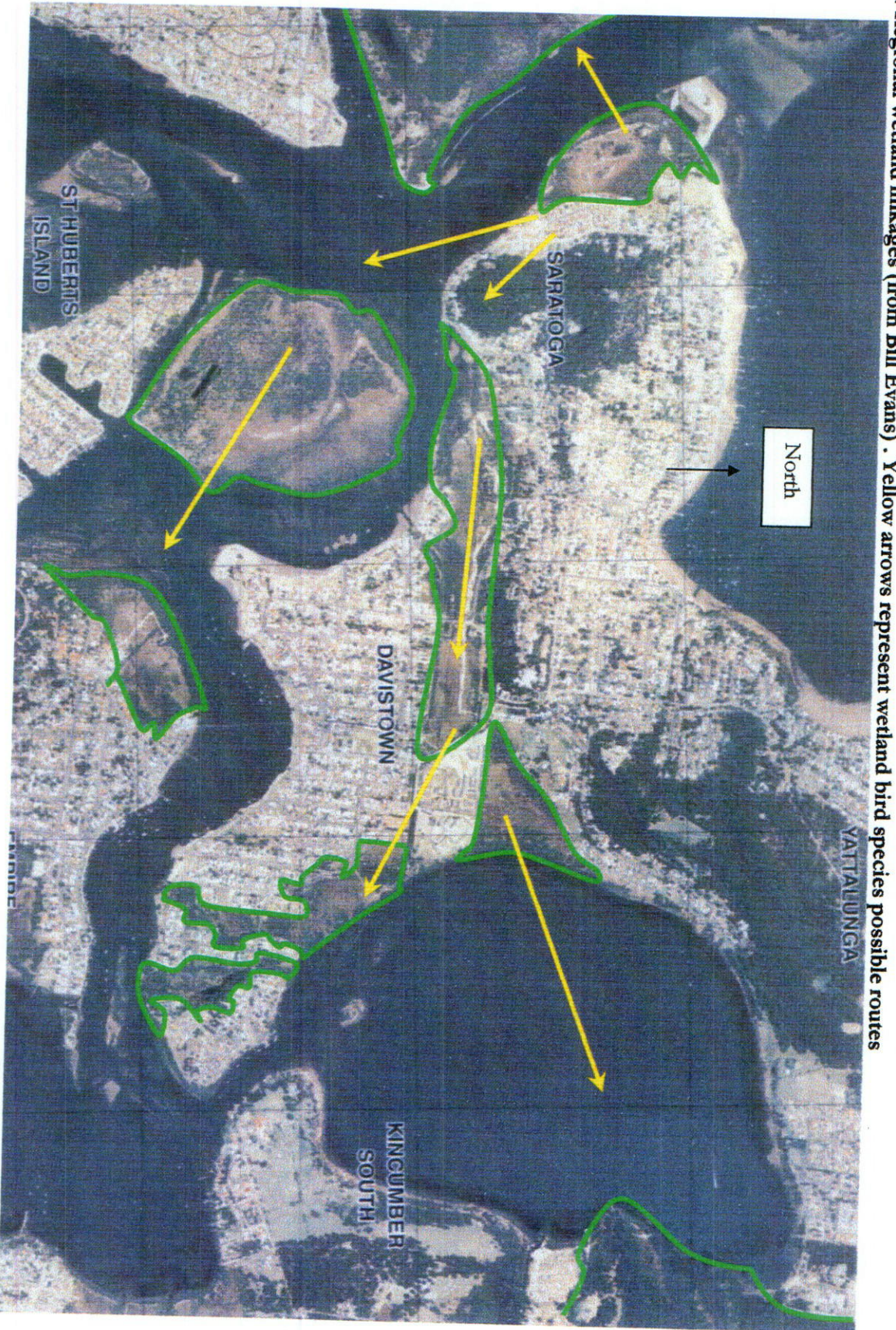


Figure 10: Hydrology map



Figure 10a: Nick point through existing track linking tidal flows between the north and south of site



4.8 Scenic and Visual Analysis

The Saratoga Recreation Area and Wetland is situated at the tip of the Saratoga-Davistown peninsula. It covers an area of approximately 14 hectares, and extends 650 metres North-South and 300 metres East-West .

Mount Pleasant overlooks the low-lying wetland which contains some unique and very valuable native species of flora and fauna. Historical features add to its visual appeal, including the ballast heap found on the southern section of the reserve.

The north of the reserve looks out on to Brisbane Water and Paddy's Channel lies to the west. These are both frequently used for recreational activities such as Sailing.

4.9 Services and Utilities

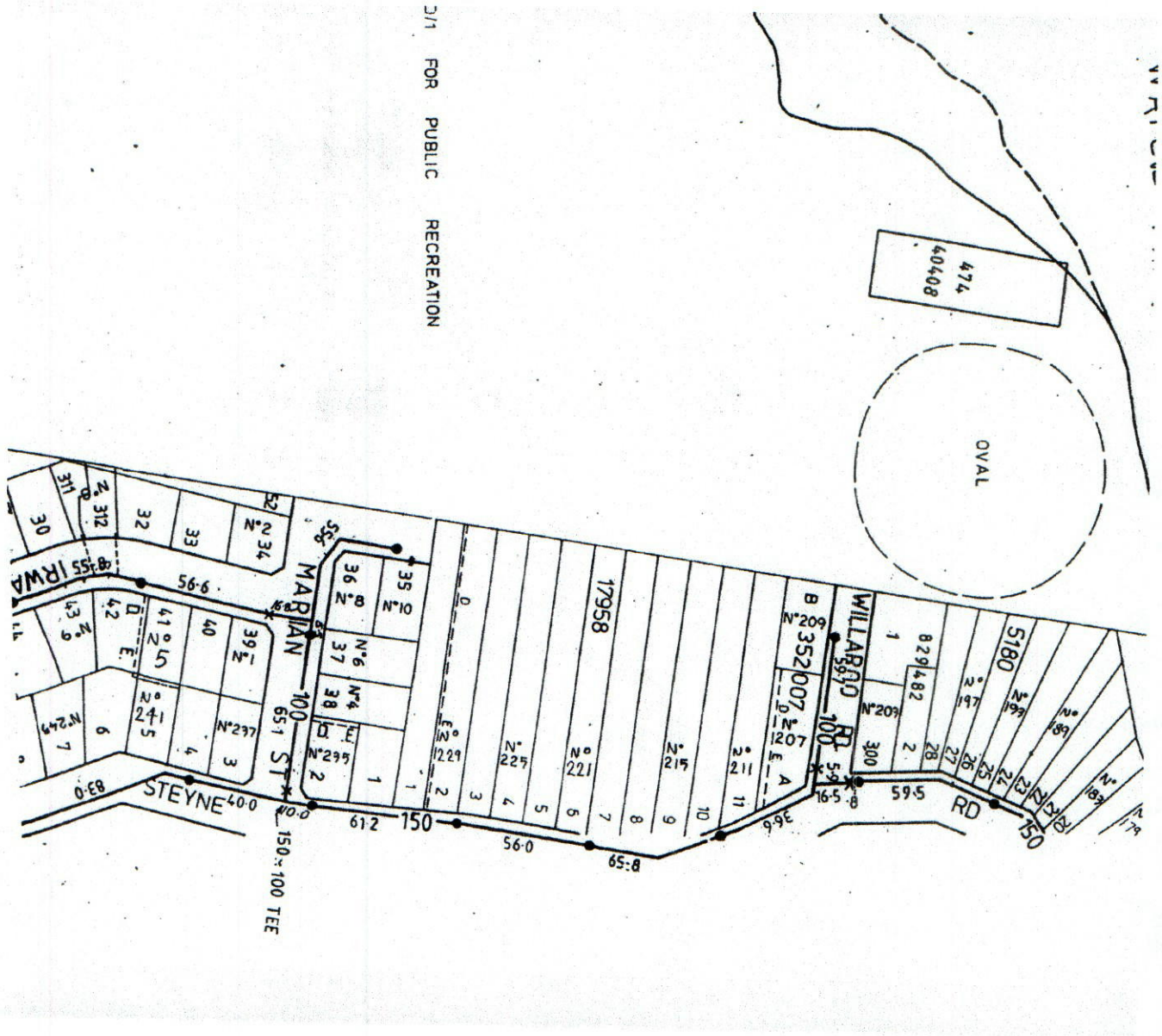
4.9.1 Water

Water services are shown in Figure 11. They occur underground along all the roads including Willaroo, Marian and Irwin. There is no shown water pipe extending to the new amenities block constructed and sailing club. This needs further investigation to check before any digging works begin in the area.

4.9.2 Sewer

A sewer service runs along the eastern edge of Saratoga Oval extending to Lot 11 DP 17598 and a spur line going down to the sailing club and new amenities block. (Figure 12). This sewer also runs behind Lots 1-11 DP 17598.

Figure 11: Water Services



4.9.3 Electricity

Electricity overhead wiring and timber poles occur along Willaroo Road. No line is shown to the sailing club but this exists and needs further investigation on its location (it may go underground). Figure 13 shows electricity services locations.

Figure 12: Sewer Services

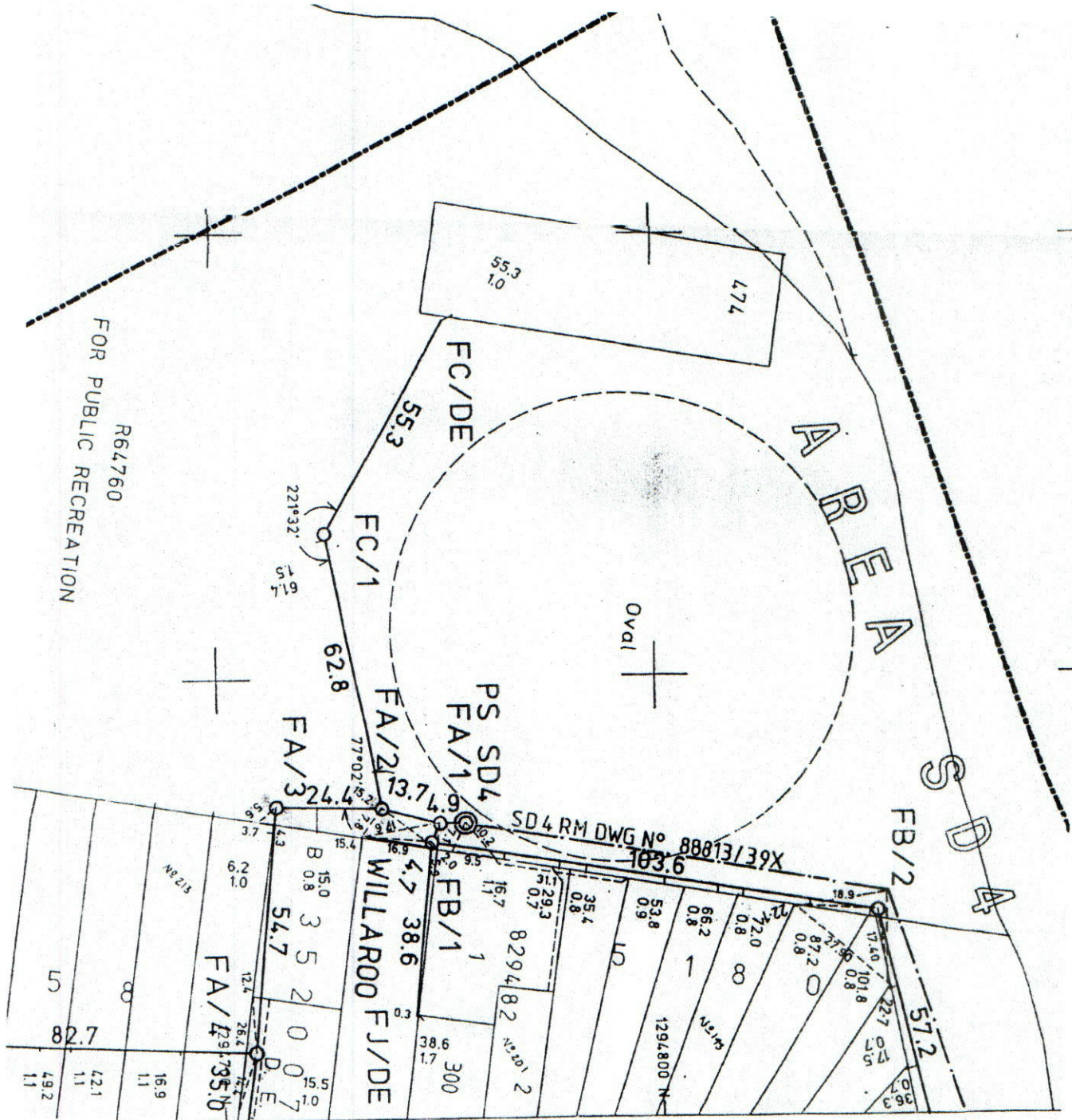
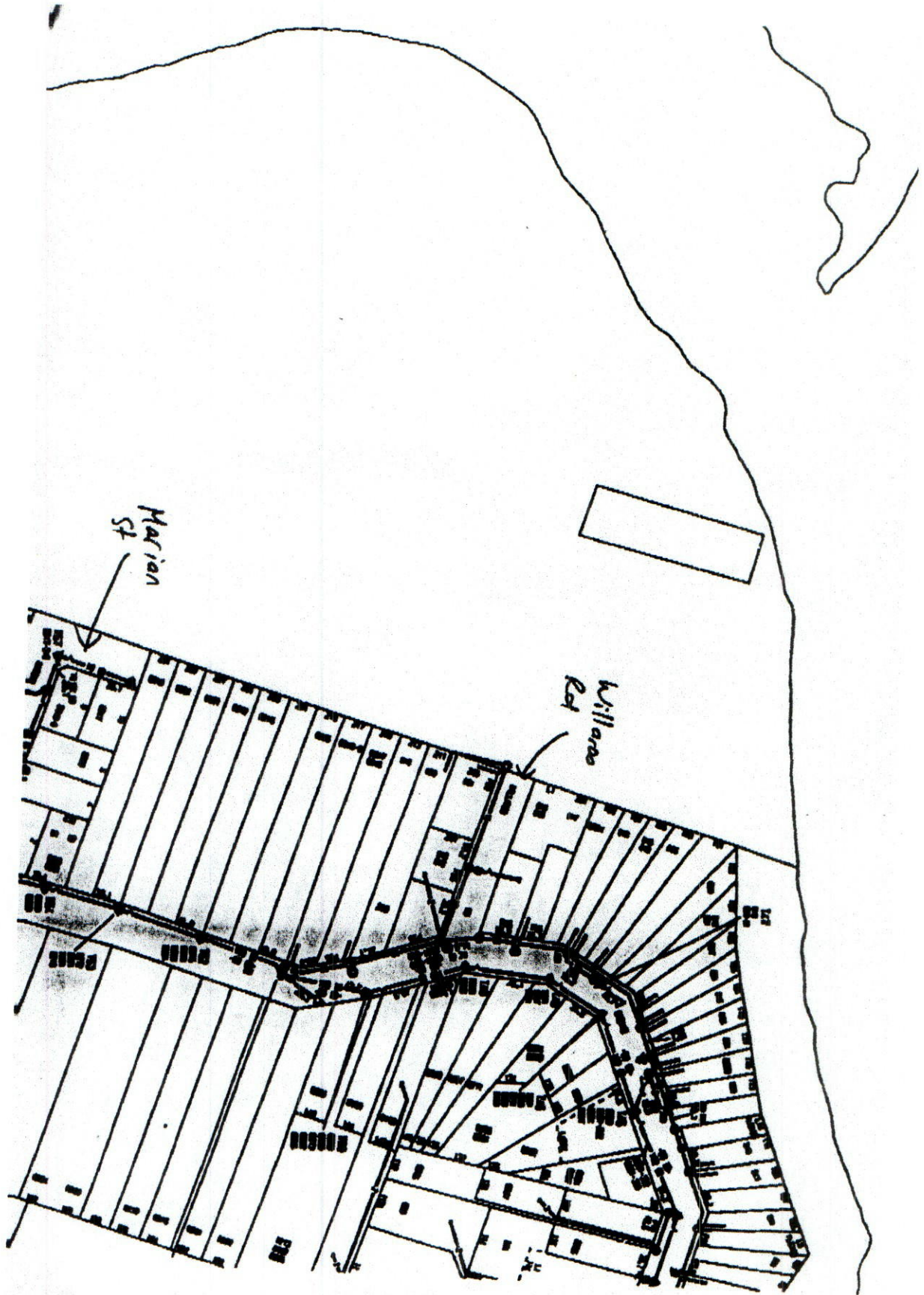


Figure 13: Electricity cable location



4.9.4 Stormwater

Stormwater location is shown in Figure 14. Note stormwater outlets occur directly into the wetland area at the end of Marian Streets, halfway along Irwin Street (between Lot 25/26 DP 263582) and at Henderson Road. Another outlet occurs at the base of Willaroo Road and although not shown on this map another pipe outlet occurs on the north-eastern point of Saratoga Oval approximately below Lot 23 DP 5180. Stormwater at present is not treated in any way, and all these outlets contribute significant amounts of sediment, nutrients, pollution and high water velocity and volume during heavy rainfall events. This has impacted on the wetland with rubbish evident, sediment, particularly along the carpark at the base of Willaroo road where drains are blocked with sediment regularly (Figure 15), and pollution and weed invasion.

Figure 14: Stormwater diagram



Figure 15: Blocked drains with sediment



5.0 Management Values and Issues

5.1 Values

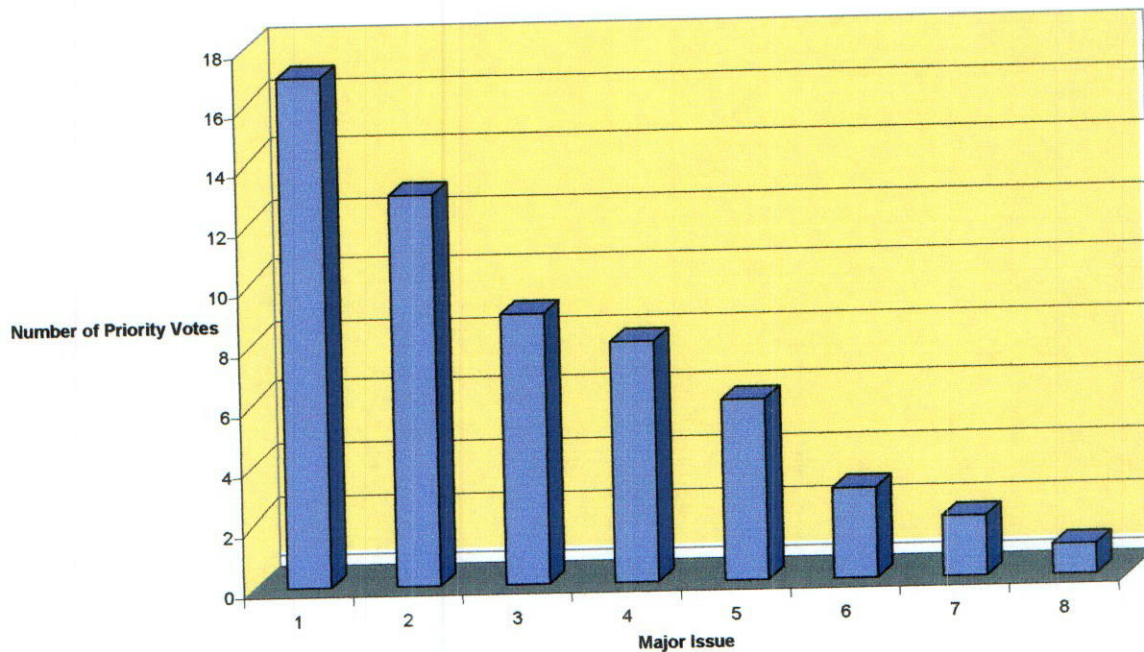
Community Consultation

A public meeting was held on the 16th June 2003 at 7pm. It was run by John Ferguson and Ted Smith. The Public had been notified of the meeting through advertisements in the local newspaper (see media release in (Appendix 6) and a letter box drop. The major stakeholders were notified by telephone. The Mayor Robert Bell was in attendance.

Results

Those who attended the meeting discussed the major issues of concern, and those issues were prioritized by a vote from the participants. Each person was apportioned three votes, and asked to nominate their top three issues of concern. The results of this vote are showed in Figure 16 below:

Figure 16: Saratoga Public Meeting Summary



KEY

1	Build boardwalk. Should also cater for cyclists. At present pedestrian access on Steyne Road is dangerous.
2	Top of Willaroo Road / Steyne Road dangerous
3	Drainage over the oval and road poor
4	Cycle track should go past sailing club on western edge of sports field, not where it is now
5	Move children's playground to the middle
6	Preservation of area behind the houses
7	Extend footpath around the wetlands
8	Parking

The other issues that were submitted by members of the public as a major concern, but were not voted as a top priority, are listed in table (1) below:

Table 2: Community Issues

• Pedestrian access down Willaroo Road is dangerous
• Storage of boats on reserve
• Tar road to sailing club
• Access to residents for boat launching, and property maintenance from rear of properties behind SEPP 14 Wetland past security gate
• Works timing – want to commence ASAP
• Mosquito control for wetlands
• Access for residents past security bollards proposed at north eastern edge of oval
• Residents getting access to reserve behind
• Arsons/ vandals breaking through the slip rails guards and vandalising the field
• SEPP 14 Boundary should be moved
• Changes in hydrology/increased development may impact on needs of wetland

ecosystem*
<ul style="list-style-type: none"> • Plant species used should be indigenous to the area • Habitat for endangered species in the area should be preserved

- There was a surprising amount of support for the preservation of the wetlands, however this issue was not voted as a priority

A submission was made to GCC – Recreation Services after the meeting had taken place, by resident Kari Arias. It can be found in Appendix 7.

5.2 Key Stakeholders

Table 3 lists the names of the stakeholders who were interviewed and their key values and major concerns for the area. Their full comments are shown in Appendix 5.

Table 3: Key Stakeholders Comments

Name/ Organisation	Comments
Mark Kentwell – President Aussie Rules Club	<ul style="list-style-type: none"> • Top priority – usability of football field, parking • Improve drainage • Safety Concerns – sediment trap, better security
Gosford Shire Wetlands Management Committee	<ul style="list-style-type: none"> • Bio-swale to be constructed with native plants rather than a concrete drain • Do not raise level of oval until effects of bio-swale and drainage bank can be seen • Restore wetland where feasible • Allow community access to wetland • Remove illegal walkways
Neil Kelleher DIPNR	<ul style="list-style-type: none"> • Create balance between recreational activity and ecological integrity. • Enhance and protect native and endangered species. • Make area usable for education and community groups.
Martin Dawson Reserves Office – Gosford Shire	<ul style="list-style-type: none"> • Activity must not impact negatively on the wetland • Consultation is important • Assess impact of Acid Sulfate Soils
Rohan Coleman Saratoga Sailing Club – President	<ul style="list-style-type: none"> • Improve drainage • Water front access for sailing club • Increase recreational use, block wetland access.
Alan Skinner Saratoga and District Sport and Recreation Association	<ul style="list-style-type: none"> • Decreasing number of birds as human use increases • Area is extremely important to Curlews – should be preserved. • Increased number of people and development – negative impact.
Bill Evans Wetland Management Committee	<ul style="list-style-type: none"> • Restrict access • Create community involvement in protection • Link Saratoga wetland with Davistown via wildlife corridor, provide endangered species habitat.
John Ferguson Gosford City Council – Coordinator Recreation Facilities	<ul style="list-style-type: none"> • Sustainable integration of natural areas and recreation. • Maximise usefulness of filled area. • Oval is one of two basic sportsgrounds in the area, should be protected.

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<p>Rachel Lonie Gosford City Council - Environment Officer</p>	<ul style="list-style-type: none"> • Fence dogs off on private properties • Eradicate foxes in local area to reduce predation on curlews • Acquire private SEPP 14 wetlands
<p>David Pross Darkinjung Land Council Chairperson – Heritage Officer</p>	<ul style="list-style-type: none"> • Middens are probably covered by fill • Keep eye out for shell material • Leave rest of area as is – fill protects middens
<p>Natalie McCarthy NSW Fisheries – Project Officer</p>	<ul style="list-style-type: none"> • Protect fish habitat • Remove traffic through wetlands • Ensure water movement under boardwalk
<p>Liz Phelps, Acting Area Manager, National Parks and Wildlife Service- Gosford District</p>	<ul style="list-style-type: none"> • No runoff or sedimentation into wetlands or Brisbane Water • Suitable habitat preserved for waders and other resident birds that inhabit the area • Preservation of saltmarsh and mangroves • Close access to Saratoga Island for camping purposes. May still allow pedestrian access depending on damage occurring to both the island and the access route in. Saratoga Island is currently being transferred to NPWS, and will be officially gazetted at the end of this year. • Interpretation signage – a good idea for both the board walk and formalised access walk around the perimeter of the wetlands site. National Parks and Wildlife Service pending availability of funding may look into part funding of
<p>Vicki Bennett Central Coast Community Environment Network – Landcare Officer</p>	<ul style="list-style-type: none"> • Promote wetland care group • Increase community involvement • CCCPN help support
<p>Danny Roberts Bio-Analysis - Marine Ecologist</p>	<ul style="list-style-type: none"> • Preserve saltmarsh • Remove some mangroves • No one has been managing saltmarsh
<p>Peter Freewater Gosford City Council, Environmental Planning Natural Resources – Natural Resources Officer – Water</p>	<ul style="list-style-type: none"> • Maintain ecological integrity • Reform wetland - concerned about hydrology • Increase native vegetation
<p>Brian Hill NSW Fisheries</p>	<ul style="list-style-type: none"> • Prefer no boardwalk • Protect saltmarsh • May have to remove some mangroves- will need a permit
<p>Alan Morris Retired Ornithologist - National Parks and Wildlife Service</p>	<ul style="list-style-type: none"> • Protect Bush Stone-Curlew habitat • Raising oval will not affect its use by birds • Protect saltmarsh
<p>Jeffrey Drudge-- Corridors Project Officer / Corridors Assistance Officer Gosford City Council/ Wyong Shire Council</p>	<ul style="list-style-type: none"> • Some of the species are not indigenous to the site. • All plants used should be grown from seed collected locally, to preserve the genetic integrity of the plant populations.
<p>Diane Dales- Gosford City Council Sports Council, Central Coast Cricket Association</p>	<ul style="list-style-type: none"> • Very valuable area as there is a lack of sportsfields in the Gosford Shire • No leases or licences should be placed on the oval (Section 355's) as it only ostracises the sporting community from use of the land)

	<ul style="list-style-type: none"> • Playing field should never be reduced in size, only increased • More lighting for winter codes • More parking would be good
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Summary

The most common issues raised were the poor drainage that currently exists, as well as the importance of promoting sustainable recreational use of the area. Most are concerned with the increasing number of people using the area and the possible adverse affects that their activity may have on the wetlands and its wildlife. Most people want the wetland to stay and flourish.

5.3 Statement of Significance

Saratoga Recreation Area and Wetland is a waterfront reserve of high regional ecological, scientific and recreational significance due to its large area of saltmarsh/ mangrove habitat being home to endangered species including the Bush Stone-curlew and migratory waders. The wetland and recreation areas are an important natural resource for the local community for passive recreation and active recreation including Aussie Rules, sailing, tennis and cricket. Saratoga provides a natural aesthetic buffer between the residential area and the water. The area has some historical value but prior dredging and wetland reclamation works and lime kiln shell removal operations have destroyed aboriginal midden sites and some wetland areas.

5.4 Opportunities and Constraints

Table 4: Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
<ul style="list-style-type: none"> • Greater recreational use of oval and wetland reserve 	<ul style="list-style-type: none"> • Increased environmental disturbance from wetland boardwalk access and oval filling
<ul style="list-style-type: none"> • Greater habitat restoration/protection from rezoning of private SEPP 14 land to 6(a) zoned land under the GCC Ordinance Scheme 	<ul style="list-style-type: none"> • Council approval • Funding to implement works • Landholder support • Sea level rise
<ul style="list-style-type: none"> • Better and safer access for pedestrians and cyclists between Marian Streets and Willaroo Road 	<ul style="list-style-type: none"> • Vandalism, dumping rubbish in wetland • Greater disturbance to birdlife and other fauna/ flora
<ul style="list-style-type: none"> • Enhanced Bush Stone Curlew habitat 	<ul style="list-style-type: none"> • Weed invasion • Dogs, cats, foxes
<ul style="list-style-type: none"> • Community education and appreciation of wetland ecology 	<ul style="list-style-type: none"> • Funding of signage and walks
<ul style="list-style-type: none"> • Protect and enhance biodiversity 	

6.0 Discussion of Options

There is broad scale support for wetland preservation, conservation and enhancement, and sustainable use of recreation facilities.

Most people believe conservation of wetlands, wildlife preservation and recreational use of Saratoga can all occur together. Options have been discussed at the public meeting and with stakeholders. Options have been discussed with most people as ideas have transpired. Due to the masterplan having

been approved after a long consultation period with the community it is expected that no major new changes, objections or other comments will occur with the recreation recommendations proposed in this POM.

A conflict has occurred with some private landholders who have SEPP 14 wetland occurring in their back yards reducing access to the rear of their lots. This has caused some damage to SEPP 14 wetland. Council are currently investigating options for the protection of this land allowing vehicle access from Steyne Road only.

The major issue for many stakeholders and community members is the preservation of the bushstone curlew. This has been a priority issue for Council and the NPWS who have a species recovery plan in place statewide for this species. Measures to protect it in this area have been discussed such as preventing people access to its core habitat area, eradicating foxes, limiting dogs to the wetland, providing more breeding habitat, eradicating weeds, and trying to encourage greater community awareness and education.

Hydrology is also an important issue which has to some extent gone unnoticed except for oval users who are increasingly concerned over water inundation over the oval. Many measures to combat the often negative effects of increasing water from both overland runoff from the catchment, and tidal intrusion and sea level rises are recommended. These have included a swale and berm to capture and redirect flood runoff around the oval, better stormwater drainage systems, filling of the oval, consideration given to saltmarsh protection through existing scarred vehicle track rehabilitation, berm construction and minimizing human disturbance, as well as leaving the current break through channels as they are for the present and monitoring mangrove/ saltmarsh distribution.

7.0 Plan of Management Options

7.1: Management Plan Options

There are many options with this reserve, but they are limited by their feasibility and current environmental legislation. The major values identified previously direct the range of possible options. These are:

Table 5: Planning Options

VALUES	OPTIONS (apart from those recommended in the Draft POM)	COMMENTS
Community Access and use of reserves		
<ul style="list-style-type: none"> Linking Marian Street with the reserve (via the mangrove boardwalk) 	<ul style="list-style-type: none"> Don't do Reroute access along Saratoga Channel fringe walk of wetland joining to Henderson St 	<ul style="list-style-type: none"> There is be broad scale community support for this boardwalk. A licence to remove mangroves will be required from NSW Fisheries under the Act before construction begins. It will help with public safety with people walking up Steyne Road and down Willaroo road. Community are already degrading these mangroves through improper access and destroying them Rerouting through wetland is longer, costlier, more impact on wetland, and does not connect Marian St.

VALUES	OPTIONS (apart from those recommended in the Draft POM)	COMMENTS
<ul style="list-style-type: none"> • Pedestrian Safety 	<ul style="list-style-type: none"> • Pedestrian/ cycle way path along Steyne Road and Willaroo Rd 	<ul style="list-style-type: none"> • Outside of the scope of the plan
<ul style="list-style-type: none"> • Provision of adequate car parking 	<ul style="list-style-type: none"> • More car parking behind tennis courts • Less car parking take out sailing club car parking if they don't agree to this 	<ul style="list-style-type: none"> • More car parking needed on Saturdays only. Sailing Club extra Carpark currently underutilized.
<ul style="list-style-type: none"> • Restriction of vandalism 	<ul style="list-style-type: none"> • Less lighting at night • More patrols • Locked gate restricting access • Better slip rails and vandal proof fencing to keep them off oval 	<ul style="list-style-type: none"> • Need some lighting for tennis and football training. Current arrangement seems to be working well with lights out at 9:00pm • Locked gate works well
<ul style="list-style-type: none"> • Restrict illegal private access use, camping and motorbike access. 	<ul style="list-style-type: none"> • Allow camping on the island and access • Allow motorbike access 	<ul style="list-style-type: none"> • Outside of the scope of this Plan of Management. • Most people don't want camping or illegal motorbikes in wetland
<ul style="list-style-type: none"> • Relocation of cycleway to accommodate sailing club and general community needs 	<ul style="list-style-type: none"> • Leave cycleway in current location along eastern side of oval • Construct new boat ramp and boat access track from club to boat launching area 	<ul style="list-style-type: none"> • Position of cycleway has been agreed in the masterplan and therefore will stay in its current location along eastern side of Saratoga Oval. • Feasible, and needed due to poor mud track currently existing. Ramp may affect sand drift on beach. Needs more research.
<ul style="list-style-type: none"> • Relocate cycleway to allow playground relocation 	<ul style="list-style-type: none"> • Don't relocate cycleway 	<ul style="list-style-type: none"> • Conflict between children and cyclists may occur. Recommend moving cycleway to western side of carpark to avoid conflict.
<ul style="list-style-type: none"> • Provide proper wetland walk around the fringe of the wetland connecting Henderson St with the reserve 	<ul style="list-style-type: none"> • Don't do – leave as is • Do • Rehabilitate and block off existing path 	<ul style="list-style-type: none"> • Community already use this track • Provides a good access to link the different areas of Saratoga • Damage has already occurred and formalization of track may help prevent further damage • Will impact further on the Bushstone Curlew and other species. Closing off will help these species and wetland ecology.
<p>Recreational Use</p>		
<ul style="list-style-type: none"> • Children's playground 	<ul style="list-style-type: none"> • Leave as is • Don't have 	<ul style="list-style-type: none"> • Most people want to see it moved for safety reasons, and its more central • Most people want a playground

VALUES	OPTIONS (apart from those recommended in the Draft POM)	COMMENTS
<ul style="list-style-type: none"> • Provide reasonable use of oval by sporting groups throughout the year 	<ul style="list-style-type: none"> • Don't fill oval, leave as is with very poor drainage 	<ul style="list-style-type: none"> • Drainage is likely to get worse with ongoing sea level rise, extreme climate events, and runoff from urban developments. Bio-swale, drainage diversion bank will help – raising oval will overcome problem with minimal impact on the Curlew and no impact on migratory wading birds which only use the mudflats for feeding (Alan Morris)
<ul style="list-style-type: none"> • Maintain oval's current size 	<ul style="list-style-type: none"> • Enlarge • Delete oval 	<ul style="list-style-type: none"> • Footy club want this but not enough room , likely impacts on surrounding neighbours • Not in the scope of this plan
Environment		
<ul style="list-style-type: none"> • Protection of all species, including threatened and endangered species, and enhancement of habitat. 	<ul style="list-style-type: none"> • Enhance habitat more by creation of a nesting habitat for Bushstone Curlew, and appropriate revegetation and protection from people and dogs • Rezone private wetland , fence off with dog proof fencing and rehabilitate this land • Close small nick point channel – this would favour saltmarsh development into existing mangrove areas due to lower tidal inundation • Widen it – would most likely lead to a more rapid migration of mangroves into saltmarsh areas 	<ul style="list-style-type: none"> • Both these options are good. No other options as recreational facilities are staying, apart from re-greening a wetland buffer zone which is recommended. Consider closing human access to wetland to protect bird, apart from boardwalk area. • Under consideration by Council • Hydrology should be kept as is due to uncertain effects of widening or closing. More research recommended.
<ul style="list-style-type: none"> • Balance between recreational activity and ecological integrity 	<ul style="list-style-type: none"> • All wetland • All recreation • Balance what is there now 	<ul style="list-style-type: none"> • Top two not an option, recommended balance shown in POM
<ul style="list-style-type: none"> • Planting of species indigenous to the area 	<ul style="list-style-type: none"> • Non Indigenous planting 	<ul style="list-style-type: none"> • Not recommended due to loss of habitat/ feed for fauna • New landscape plan does this and is approved by Council

VALUES	OPTIONS (apart from those recommended in the Draft POM)	COMMENTS
<ul style="list-style-type: none"> Control of Asparagus Fern infestation 	<ul style="list-style-type: none"> Don't control Do 	<ul style="list-style-type: none"> Will spread through all of the Casuarina fill area eventually and to other areas off the reserve through birds. Will benefit most species
<ul style="list-style-type: none"> Improve water quality 	<ul style="list-style-type: none"> Leave as is 	<ul style="list-style-type: none"> Water quality is not too bad at present but does need silt trapping at base of Willaroo Road and rubbish removed from wetland at end of pipes. Could do by hand rather than a trash racks. Less Effective.
<ul style="list-style-type: none"> Minimise potential acid sulphate soil oxidation 	<ul style="list-style-type: none"> Don't do any works 	<ul style="list-style-type: none"> Follow ASS Management Plan should be fine
<ul style="list-style-type: none"> Restrict illegal rubbish dumping 	<ul style="list-style-type: none"> Signage, patrols, community watch, more bins, improve natural aesthetics of area, locked gate 	<ul style="list-style-type: none"> All recommended
Education		
<ul style="list-style-type: none"> Knowledge in the local community and schools about the importance of wetland ecology, Aboriginal and European heritage and endangered species. 	<ul style="list-style-type: none"> Signage, walks, community leaflets, talking to all landholders directly affected by SEPP 14 wetland and engage their interest in rehabilitating it. 	<ul style="list-style-type: none"> Good opportunity for education about wetlands, history – European and Aboriginal and threatened species – particularly Bushstone Curlew Will need time and effort, but could enhance the long term maintenance and appreciation of the SEPP 14 land and minimize damage from residents.
Monitoring and Review of Plan		
<ul style="list-style-type: none"> Plan is reviewed as necessary 	<ul style="list-style-type: none"> Don't review 	<ul style="list-style-type: none"> Plans tend to evolve, will need regular review as its implemented. This might take the form of a public review every year or so, or talking regularly with stakeholders

VALUES	OPTIONS (apart from those recommended in the Draft POM)	COMMENTS
<ul style="list-style-type: none"> Monitoring of wetland ecology, particularly saltmarsh/mangrove interface 	<ul style="list-style-type: none"> Encourage university students, schools, Landcare, CCCEN, National Parks and Wildlife Service, locals to monitor the site 	<ul style="list-style-type: none"> Recommended
<ul style="list-style-type: none"> Illegal uses of reserve monitored, policed and reduced 	<ul style="list-style-type: none"> See plan 	<ul style="list-style-type: none"> Recommend ranger monitoring
<ul style="list-style-type: none"> Monitoring of endangered species 	<ul style="list-style-type: none"> As above with students, etc 	<ul style="list-style-type: none"> Strongly recommended. Alan Skinner has a wealth of knowledge on this topic
<ul style="list-style-type: none"> Encourage and support the establishment of a community Landcare type group to assist in caring for the reserve 	<ul style="list-style-type: none"> Encourage 	<ul style="list-style-type: none"> Will help with many of the above issues such as rubbish dumping, environmental rehabilitation and monitoring (Bushstone Curlew is already monitored), environmental education, vandalism reporting, etc

8.0 Draft Plan of Management

The preparation of the this Draft Plan of Management has been guided by the objectives stated below and taken into consideration all community and stakeholder views ,current available research, consultant views , relevant legislation and environmental policy, and amalgamated these views into a Draft Plan of Management . It has adopted a precautionary principle where inadequate information is available. This POM aims to address the key values of the site in line with the objectives of this Plan. As there have been many community meetings held already at Saratoga, and a Masterplan already exists which has been approved by council consensus has been achieved on most parts of this proposed management plan. The major area which needs attention is the management and restoration of the SEPP 14 wetland. Some dissension exists over the management of the area below Lots 1- 7 DP 17958 Steyne Road which has SEPP 14 wetland on private land. Council is in the process of reviewing options for the protection of this land.

If any works outside of these approved works are carried out then an EIS may be required under Part V of the EP&A Act 1979. Works already approved under the Master Plan as shown in Development Consent (10869/2001 – Appendix 2) require the development of a Wetland Management Plan (Water Management Plan) and Acid Sulphate Soil Management Plan. These are included in this document.

As Trust Manager of the Reserve Gosford Council will be responsible for the implementation of this Plan. The reserve will form an integral part of Council Foreshore parks and Wetlands and hence come under Gosford City Councils Foreshore Parks Plan of Management, as well as Sportsgrounds Plan of Management and Wetlands Plan of Management. During development of this POM these different plans have been taken into consideration and a balance achieved which satisfies most people. Obviously there will always be some people who may not agree fully, but these management objectives listed below are what the majority of people want, and are in line with environmental policy.

8.1 PLAN OBJECTIVES

The management objectives for Saratoga have been grouped under key headings identified under values. These represent the key community, stakeholder and consultant areas of priority. For each major value actions, responsibilities and performance measures are listed. This plan should be used in consultation with Figure 17 to manage the wetland and recreation areas. The action plan also refers to the original objectives for this Plan of Management as designated by council. These are listed above under "Major Element of Plan of Management" and numbered. This links key values and actions with management objectives.

The high/ medium/ low priorities in the Draft Plan of Management Action Plan were worked out by a combination of:

- Stakeholder views and their relative weightings (from public meeting, stakeholder consultations).

It should be noted here that most items already approved under the Master Plan have not been re-discussed except where the community brought them up for rediscussion. Whilst it is understood that the masterplan has been approved, it specifically stated in the brief that a review of the Saratoga Recreation Area as well as wetland were to be carried out.

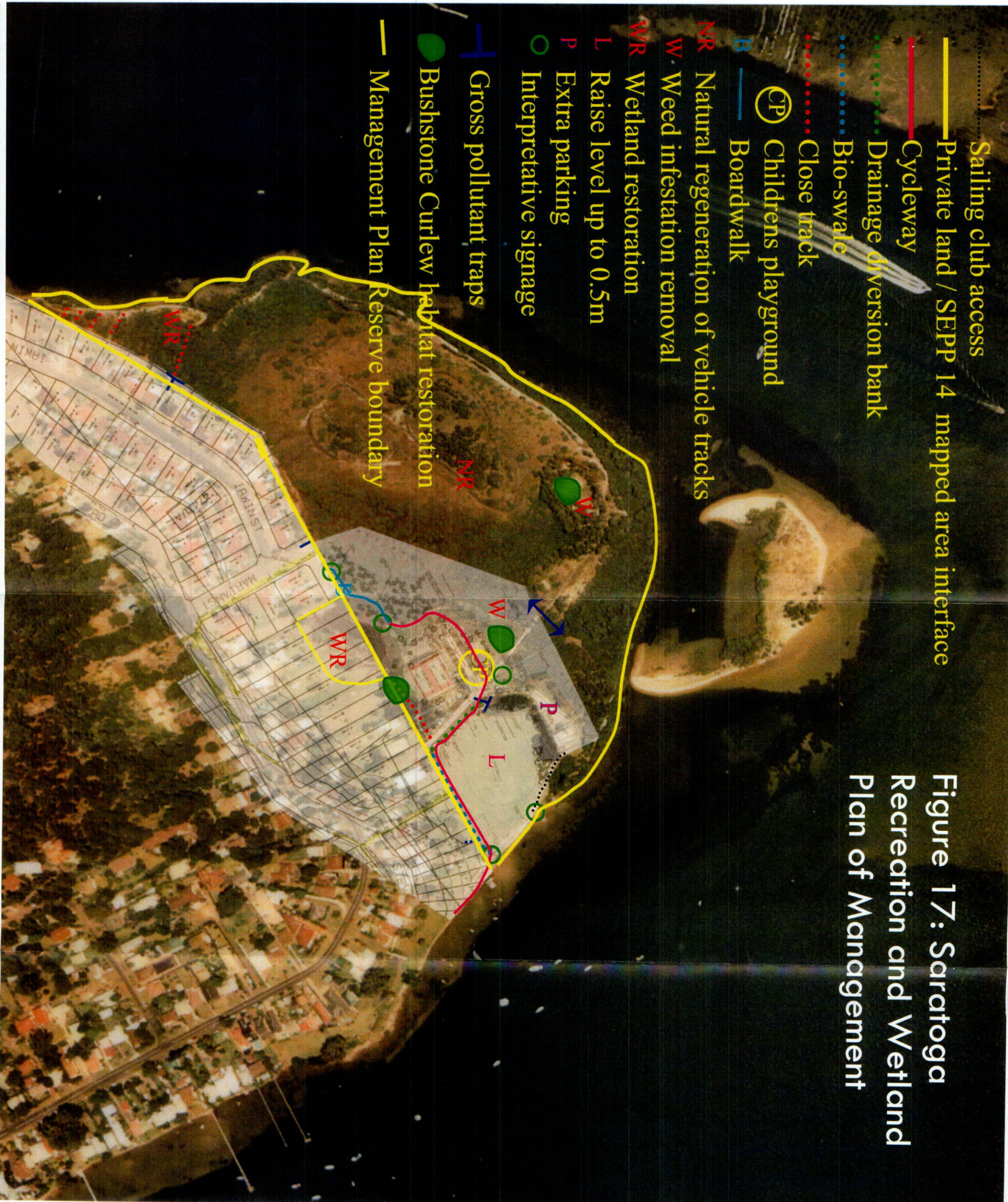
- Consultants professional opinion and interpretation of the site from my experience, knowledge and the information researched on the site
- Project managers (Mr J Ferguson - Gosford City Council) input and review comments
- Likely cost, and complexity/ feasibility of achieving the objective/action

Costings and timeframes have been deliberately left out due to the many variables involved. For example costings depend on what decision is made by council as to what will occur, materials that will be used, and what's available at the time etc. These variables are hard to quantify and could be unrealistic when the works are programmed.

OBJECTIVES

- 1. To preserve and enhance areas of cleared open space of Saratoga Recreation Area, mainly for public recreational use.
- 2. To ensure the identification and reinforcement of the distinctive characteristics of the recreation area.
- 3. Importantly, to include a "Statement of Significance" which will;
 - Establish the natural/active/passive significance of the Saratoga Recreation Area and Wetland individually and as a whole.
 - Incorporate an assessment of significance in all facets, i.e. historic, aesthetic, social, scientific, recreational and environmental.
 - Consider the precinct as a whole, and in terms of its components.

- 4. To provide policy and management recommendations for;
 - Short and long term management of the Saratoga Recreation Area and Wetland.
 - The broad future for the Saratoga Recreation Area and Wetland.
 - Procedures for compliance with statutory instruments. (Opportunities for integration with Catchment Blueprint strategies should also be explored).
- 5. To identify and protect the biodiversity, conservation and ecological values of the Saratoga Oval Wetlands, with a particular reference to the hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of these wetlands.
- 6. To identify and plan for the restoration and enhancement of degraded wetland areas in the Saratoga Oval Wetlands to achieve a net gain in the extent of the healthy and productive wetlands through a detailed Action Plan.
- 7. To facilitate community education in relation to the Saratoga Recreation Area and Wetland and manage the community use of the entire area, without compromising the ecological values.
- 8. To provide an opportunity for the continued existence of the recreation area on the site while maintaining the ecological values of the adjoining wetland system. Public access should be maintained in line with the principles of Crown Land Management. (GCC, 2003: 4)



..... Sailing club access

— Private land / SEPP 14 mapped area interface

— Cycleway

..... Drainage diversion bank

..... Bio-swale

..... Close track

Ⓢ Childrens playground

— Boardwalk

NR Natural regeneration of vehicle tracks

W Weed infestation removal

WR Wetland restoration

L Raise level up to 0.5m

P Extra parking

○ Interpretative signage

— Gross pollutant traps

● Bushstone Curlew habitat restoration

— Management Plan Reserve boundary

Figure 17: Saratoga
Recreation and Wetland
Plan of Management

8.2 SARATOGA RECREATION AREA AND WETLAND - DRAFT PLAN OF MANAGEMENT - ACTION PLAN

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBILITY	PRIORITY	PERFORMANCE MEASURE
1	COMMUNITY ACCESS AND USE OF RESERVES				
1.1	Linking Marian Street with the reserve (via the boardwalk)	<ul style="list-style-type: none"> Construct a boardwalk as shown on the Masterplan 	GCC	High	<ul style="list-style-type: none"> Pathway constructed and in use
1.2	Pedestrian Safety	<ul style="list-style-type: none"> Construct wetland boardwalk to a minimum of 3 m wide with safety signage indicating combined pedestrian/ cyclist use. Construct bollards at start and finish of wetland walk to prevent motorcycle/cycle use. Trash racks and sediment tracks covered. Install proper railings on boardwalk 	GCC GCC GCC GCC	High High High High	<ul style="list-style-type: none"> Boardwalk constructed and in use Bollards constructed and keeping motorcyclists out. Trash racks/ sediment traps covered Rails installed
1.3	Restriction of vandalism	<ul style="list-style-type: none"> Install signage. Ranger patrols. Neighbourhood watch. Installation of secure slip rail system to prevent vehicle access onto oval. Lighting to cease after 9pm. 	GCC GCC Local residents GCC GCC	High Medium Medium Medium High	<ul style="list-style-type: none"> Reduction in vandalism Reduction in vandalism Reduction in vandalism Reduction in vandalism Reduction in vandalism

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBILITY	PRIORITY	PERFORMANCE MEASURE
1.4	Restrict illegal private access use, camping and motorbike access.	<ul style="list-style-type: none"> • Install signage • Track closure to island and other illegal tracks • Track closure to rear of Lots 1-11 DP 17598 Steyne Road and rehabilitation of wetland • Ranger patrols (weekends/ school holidays only) • Bollards on all tracks 	<p>GCC</p> <p>GCC/NPWS</p> <p>GCC</p> <p>GCC</p> <p>GCC</p>	<p>High</p> <p>Medium</p> <p>High</p> <p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • Signs erected • Tracks closed and nobody using them • Already completed • Regular holiday patrols when needed to police dogs, camping, rubbish dumping, etc • Reduction in illegal use
1.5	Relocation of cycleway	<ul style="list-style-type: none"> • Construct 2.4m wide cycleway in location indicated on the management plan (eastern side of oval). 	GCC	High	<ul style="list-style-type: none"> • Cycleway constructed
1.6	Sailing Club access	<ul style="list-style-type: none"> • Upgrade sailing boat access down walkway near the club to the waterfront for boat launching 	GCC	Low	<ul style="list-style-type: none"> • Upgraded surface on accessway completed
1.7	Provision of adequate car parking	<ul style="list-style-type: none"> • Construct extra car parking bays as per masterplan • Sailing club and football club to liaise re: use of sailing club car park for football club events. • Asphalt sailing club car park and access road 	<p>GCC</p> <p>Sailing and Football Club</p> <p>Department of Lands, Sailing Club</p>	<p>High</p> <p>Medium</p> <p>Low</p>	<ul style="list-style-type: none"> • Car park constructed • Discussions held. Agreement reached on combined use of car park. • Asphalt car park constructed.

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBILITY	PRIORITY	PERFORMANCE MEASURE
2					
2.1	RECREATIONAL USE Children's playground	<ul style="list-style-type: none"> Construct in location shown on POM 	GCC	Medium	<ul style="list-style-type: none"> Constructed
2.2	Provide reasonable use of oval by sporting groups throughout the year	<ul style="list-style-type: none"> Raise oval level with clean sandy loam soil by up to 0.5m. Have a slight fall towards the sailing club swale. Construction of bio-swale in location indicated on POM Construction of 1 metre high drainage bank along Willaroo Rd in location indicated on POM. Clean out some plant debris from current swale near sailing club and ensure culverts are unblocked. Construction of appropriate lighting 	GCC GCC GCC GCC GCC GCC	High Medium Medium Low Low	<ul style="list-style-type: none"> Level raised Bio-swale constructed Drainage bank constructed Swale cleaned out Lighting installed
2.3	Maintain oval's current size	<ul style="list-style-type: none"> Allocation of ground should be made by Council with reference to the sport and the limitations of the ground and the close proximity of residences Do not fill areas outside existing oval area 	GCC GCC	High High	<ul style="list-style-type: none"> Only juniors playing Current oval size remaining the same

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBILITY	PRIORITY	PERFORMANCE MEASURE
3 ENVIRONMENT					
3.1	Protection of all species, including threatened and endangered species, and enhancement of habitat.	<ul style="list-style-type: none"> Install signage at entry to Reserve (near playground), Marian Street boardwalk entrance, on boardwalk, and at boat launching area and northern end of cycleway as indicated on Plan Eradicate foxes from area through baiting Limit dogs to leash only on the oval, and Marian St boardwalk and ban them from the wetland walk Ranger patrols Formation of a community 'wetland care group' Habitat enhancement as shown on Plan of Management, including habitat breeding enhancement areas for Bushstone Cutlew Planting of species indigenous to the area Control of Asparagus Fern infestation in <i>Casuarina glauca</i> forest Removal of illegal boardwalks crossing wetland 	<p>GCC</p> <p>GCC</p> <p>GCC</p> <p>GCC</p> <p>Local resident</p> <p>GCC</p> <p>GCC / Wetland Group</p> <p>GCC</p>	<p>Medium</p> <p>Medium</p> <p>High</p> <p>Medium</p> <p>Low</p> <p>High</p> <p>High</p> <p>Low</p> <p>High</p>	<ul style="list-style-type: none"> Signs erected Fox numbers reduced significantly No dogs found on wetland walk Regular patrols when needed Wetland care group formed Appropriate species planted and surviving (over 80% success rate). Increase in breeding success rate for Bushstone Curlew Eradication of all Asparagus Fern Removal of all illegal boardwalks

Saratoga Recreation Area and Wetland Plan of Management

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBILITY	PRIORITY	PERFORMANCE MEASURE	Lighting automatic controls functioning
3.2	Balance between recreational activity and ecological integrity	<ul style="list-style-type: none"> Implement POM Keep human access to formalised paths only in wetland areas 	GCC GCC	High High	<ul style="list-style-type: none"> Plan implemented No damage occurring off paths from people 	
3.3	Improve water quality	<ul style="list-style-type: none"> Construct sediment traps and trash rack at end of Willaroo Rd. Construct Trash racks at end of Marian St and Irwin St Increase servicing of drainage pits 	GCC GCC GCC	Medium Medium High	<ul style="list-style-type: none"> Traps built, maintained and catching rubbish Traps built and maintained and catching rubbish Pits never full of silt 	
3.4	Minimise potential acid sulphate soil oxidation	<ul style="list-style-type: none"> Implement acid sulphate soil management plan in POM 	GCC	High	<ul style="list-style-type: none"> No acid water runoff 	
3.5	Restrict illegal rubbish dumping	<ul style="list-style-type: none"> Install signage Ranger patrols/fines Neighbourhood watch Provide more litter bins 	GCC GCC Local residents GCC	High Medium Medium Low	<ul style="list-style-type: none"> Signs erected and people not dumping rubbish 	

KEY VALUE	Objectives (1-8)	ACTION	RESPONSIBLE AUTHORITY	PRIORITY	PERFORMANCE MEASURE
4	EDUCATION				
4.1	Knowledge in the local community and schools about the importance of wetland ecology and endangered species.	<ul style="list-style-type: none"> • Drain stencilling 'this drain leads to Saratoga wetland' in Saratoga catchment area. • Guided walks • Interpretive signage where indicated on Plan 	School Groups GCC/Environmental organisations GCC	Low Low High	<ul style="list-style-type: none"> • Drains stencilled • Walks occurring regularly by school groups, general community • Signs erected and being understood by community
4.2	Knowledge in the local community and schools about Aboriginal and European heritage	<ul style="list-style-type: none"> • Interpretive signage, particularly of the history both European and Aboriginal • Guided walks 	GCC GCC/Environmental organisations	High Low	<ul style="list-style-type: none"> • Signs erected where relevant • Occasional aboriginal guided walks
5	MONITORING AND REVIEW OF PLAN				
5.1	Plan is reviewed as necessary	<ul style="list-style-type: none"> • GCC to review as necessary 	GCC	High	<ul style="list-style-type: none"> • Regular review by council and community/stakeholders
5.2	Monitoring of wetland ecology, particularly saltmarsh/ mangrove interface	<ul style="list-style-type: none"> • Encourage community monitoring eg bird counts, vegetation distribution, weeds, etc 	GCC, community groups.	Low	<ul style="list-style-type: none"> • Level of information generated
5.3	Illegal uses of reserve monitored, policed and reduced	<ul style="list-style-type: none"> • Neighbourhood watch report incidents of illegal use 	Local residents	High	<ul style="list-style-type: none"> • Incidence reports • lower level of illegal use
5.4	Monitoring of endangered species	<ul style="list-style-type: none"> • Local community monitoring • National Parks Wildlife Service monitoring 	Local community National Parks Wildlife Service	High	<ul style="list-style-type: none"> • Level of information acquired • NPWS carrying out monitoring

8.2 ACID SULPHATE SOILS MANAGEMENT PLAN

An acid sulphate soils management plan currently exists for this site has detailed by Payne (2001). This plan relates to the masterplan works only. The following amended plan builds on Robert Payne's' Plan and is relevant for the whole recreation and wetland reserve. These recommendations are from ASSMAC (1998).

It is highly likely that Acid Sulfate soils will be encountered digging the footings of the boardwalks (if they are deeper than 0.5 metre), and sediment control pit at the end of Willaroo Road. The amount of soil disturbed is minor , however it still needs careful mitigation methods. No lowering of the watertable or drainage works will occur. Therefore the following actions should be taken:

- **Minimize disturbance**

Footing excavations and for that matter all boardwalk construction should be done by hand with no machinery . No vehicles or heavy machinery should enter the wetland. This will reduce impact to the wetland. Footings to be dug by hand and sub soil replaced within three hours back into the footing holes under the water table. Work to be carried out at low tide only. Stage project to carry out work during low tide periods (approx an hour each side of low tide depending on how low the tide is). Do not let flood tides come into contact with spoil stockpiles as they will wash and acid will spread in the water. Where feasible construct shallow footings. No soils to be stockpiled on the site as they will wash during high tide. Any excess spoil should be removed completely from the wetland.

- **Soil treatment**

- Excess spoil to be mixed with good quality fine agricultural lime at the arte of 12-15 kg/m3.
 - Lime must be mixed well
 - Dispose at relevant site such as the oval once treated
 - Limit any excavation to the minimum area possible. Treat walls and base of excavation with lime immediately after excavation where soil is not being replaced. Approximately 4-10m3 of soil may be removed from the sediment trap at Willina Road.
 - Spoil should be surrounded by silt fencing to reduce any chance of material washing away. Preferably cover with plastic sheeting to prevent rain wash.
- Building materials should be acid resistant such as treated Kopper logs

9.0 Conclusion

This draft plan is based on the views of the Saratoga community, major stakeholders, the Consultants experience and views and represents a plan designed to meet with the statutory and legal laws of the land. It represents a plan designed to meet the needs of the majority of people, both present and future generations, and the environment.

Ted Smith BSc(Hons)
PEAK LAND MANAGEMENT PTY LTD

10.0 References

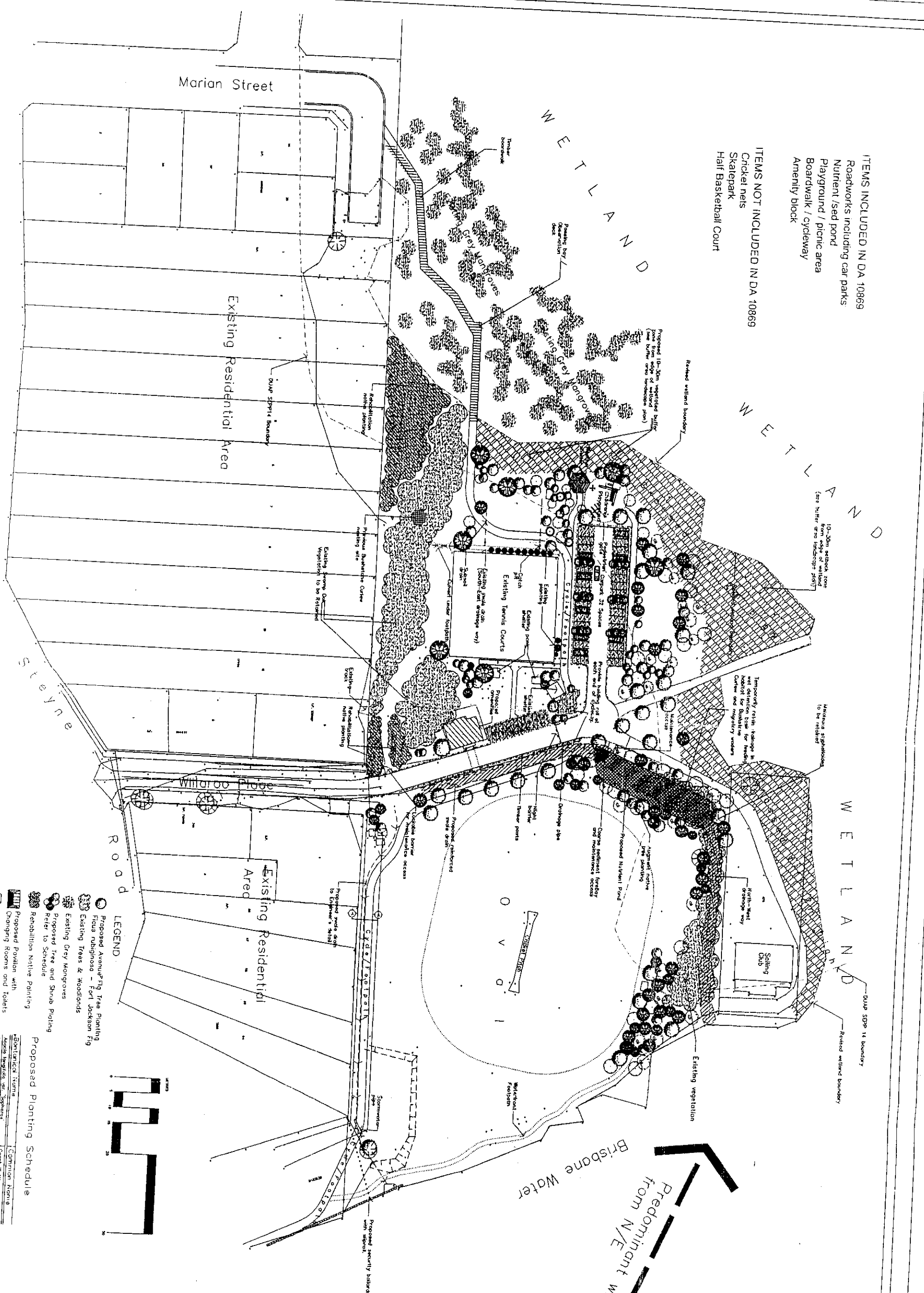
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11.0 Appendices

Appendix 1 : Approved Masterplan

- ITEMS INCLUDED IN DA 10869
- Roadworks including car parks
- Nutrient / sed pond
- Playground / picnic area
- Boardwalk / cycleway
- Amenity block

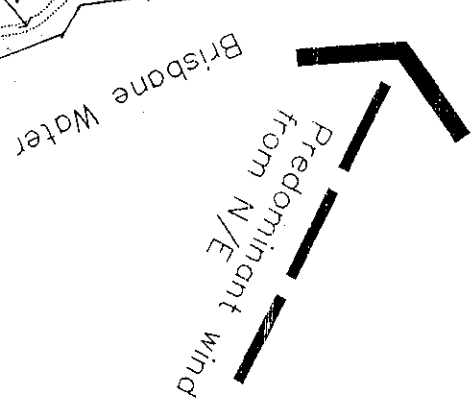
- ITEMS NOT INCLUDED IN DA 10869
- Cricket nets
- Skatepark
- Half Basketball Court



- LEGEND**
- Proposed Avenue/Fig Tree Planting
 - Ficus rubiginosa - Fort Jackson Fig
 - Existing Trees & Woodlands
 - Existing Grey Mangroves
 - Proposed Tree and Shrub Planting
 - Refer to Schedule
 - Rehabilitation Native Planting
 - Proposed Pavilions with Changing Rooms and Toilets
 - Picnic table/shelter
 - Timber Post & Rail Fencing
 - Retain Existing Drainage Swale
 - Proposed Nutrient Pond
 - 10-30m setback zone from edge of wall/foot
 - DUAP SPP14 Boundary

Proposed Planting Schedule

Planting Schedule	Planting Details
Planting Schedule 1	Planting Details
Planting Schedule 2	Planting Details
Planting Schedule 3	Planting Details
Planting Schedule 4	Planting Details
Planting Schedule 5	Planting Details
Planting Schedule 6	Planting Details
Planting Schedule 7	Planting Details
Planting Schedule 8	Planting Details
Planting Schedule 9	Planting Details
Planting Schedule 10	Planting Details
Planting Schedule 11	Planting Details
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Planting Schedule 45	Planting Details
Planting Schedule 46	Planting Details
Planting Schedule 47	Planting Details
Planting Schedule 48	Planting Details
Planting Schedule 49	Planting Details
Planting Schedule 50	Planting Details



Saratoga Oval

Gosford City Council

Figure 9 Landuse Masterplan

Urban Designers
John Christman & Associates
39 97th Avenue, Unit 2/12, Wetherill Park NSW 2157
Tel: (02) 9807 3432 Fax: (02) 9807 3433
www.christman.com.au

Landscape Architect
Urban Designers
John Christman & Associates
39 97th Avenue, Unit 2/12, Wetherill Park NSW 2157
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www.christman.com.au

SBP14 CONSULTING
4th Floor, 100 Pitt Street, Sydney NSW 2000
Tel: (02) 9212 1234 Fax: (02) 9212 1235
www.sbp14.com.au

Prepared by: JC, RP
Date: June 2001

DO NOT SCALE THIS DRAWING. ALL DIMENSIONS AND COORDINATES SHOWN ON THIS DRAWING ARE TO BE TAKEN FROM THE UNDERLYING DATA.
DRAWN BY: ADAM LAMARCA
CHECKED BY: ADAM LAMARCA
DATE: 12/06/01
127 Market Street, P.O. Box 527, Casanook NSW 2157
Tel: (02) 4891 7171

Appendix 2: Development Consent letter from Gosford City Council

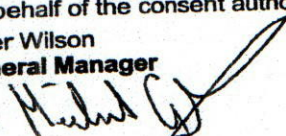
Gosford City Council

PO Box 21
GOSFORD NSW 2250

Tel: 02 4325 8862
Fax: 02 4324 8509

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION
issued under the
Environmental Planning and Assessment Act 1979 Section 81(1) (a)

Please Quote: Assessment Team 4/llc
Mr. M. C. Glenn Phone No. (02) 4325 8864

Development Application No	10869/2001
Applicant name	J Ferguson
Applicant address	C/- Recreation Services Gcc PO BOX 21 GOSFORD 2250
Land to be developed: address	RES 64760 WILLAROO ROAD SARATOGA
Proposed development	OVAL UPGRADE ON SARATOGA RESERVE
Building Code of Australia building classification	10(A)
Determination <i>Made on</i>	5 FEBRUARY 2002
Consent to operate from	5 FEBRUARY 2002
Consent to lapse on	<input type="checkbox"/> Consent granted unconditionally <input checked="" type="checkbox"/> Consent granted subject to conditions described below <input type="checkbox"/> Application refused <input type="checkbox"/> Consent granted for erection of temporary building
Details of conditions	Five (5) years from date of consent List of conditions commences on page 2
Reason for conditions	To ensure that the development is carried out in the public interest in accordance with those matters referred to in Section 79C of the <i>Environmental Planning and Assessment Act 1979</i> .
Right of Appeal	If you are dissatisfied with this decision Section 97 of the <i>Environmental Planning and Assessment Act 1979</i> gives you the right to appeal to the Land and Environment Court within 12 months after the date on which you receive this notice.
Signed	On behalf of the consent authority Peter Wilson General Manager
<i>Signature</i>	per: 
<i>Date</i>	13 February 2002

Development Application No. 10869/2001

- 1 The boardwalk shall be constructed in accordance with the design details and dimensions specified in the Environment Impact Statement (EIS).
- 2 A Wetland Management Plan (WMP) shall be prepared by the Gosford City Council for State Environmental Planning Policy 14 Wetland No 931 prior to the issue of a construction certificate. The WMP shall be prepared in consultation with NSW Fisheries, the Department of Land and Water Conservation, National Parks and Wildlife Service and to the satisfaction of the Director General, and shall consider restrictions in the access hours, and the preparation of a nutrient control strategy for the site.
- 3 The WMP shall make provision for measures to address temporary and permanent impacts to the wetland before, during and after construction. The WMP shall aim to minimise the impact to the existing State Environmental Planning Policy 14 wetland, its hydrology and biota. The Plan shall include but not be limited to the following provisions:
 - a control of non endemic plants within the wetland;
 - b the removal of rubbish from within the wetland;
 - c a soil and water management plan including provisions which identify and describe temporary and permanent erosion and sediment control measure to be employed as described in the EIS..
 - d environmental protection measures and compliance standards for direct and indirect impacts on habitat of flora and fauna; and
 - e an Acid Sulfate Soil Management Plan prepared in accordance with the NSW Government's Acid Sulfate Soil Manual (1998).
- 4 No filling of the wetlands is permitted under this application.
- 5 The swale area and fill against the retaining wall abutting the wetlands may release sediment into the wetlands if not carefully managed. The department requires that an Erosion and Sediment Control Plan be developed for the site, which encompasses soil management issues for the construction and operation of the site. This should be linked to an Acid Sulphate Soil plan for the site, should PASS soils be encountered during construction.
- 6 Permits under Section 201 'dredge/reclaim in any waters' and Section 205 'affect marine vegetation' of the Fisheries Management Act, 1994 will be required to carry out the proposed works.

These permits will be issued upon application (fees Dredge/Reclaim \$200, Marine Vegetation \$100) only if and when the DA consent is granted by Gosford City Council and the DUAP requirement for Site Management Plans are completed. Both permits will contain both generic and site specific conditions.

NB It is an offence to dredge/reclaim in any waters and/or to affect marine vegetation without permits from NSW Fisheries. Penalties of up to \$55,000 for an individual and/or up to \$110,000 for a company or LGA can apply plus full site remediation costs.
- 7 The plans submitted with the Construction Certificate shall include a gently graded batter heavily planted with transitional wetland species and placement of a suitable fence to clearly separate the oval facilities from the adjacent wetland.
- 8 The preparation of a Plan of Management for Saratoga Oval and affected adjacent wetlands shall be presented to Council for consideration of adoption within six (6)

0021DETERMCON.doc
Template Reg: No. 00/119

Appendix 3: National Parks and Wildlife Service Aboriginal Heritage Search for Saratoga Site

Your Ref: 7926
Our Ref: AHIMS #7926

Peak Land Management
P O Box 83
Merewether NSW 2291

Tuesday, 22 July 2003

Attention: Ted Smith

Dear Sir or Madam:

**Re: AHIMS Search for the following area at Saratoga Peninsula
Zone 56 Eastings: 345000-345500 Northings: 6294000-6295000**



**NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE**

ABN 30 841 387 271

I am writing in response to your recent inquiry in respect to Aboriginal objects and Aboriginal places registered with the NSW National Parks and Wildlife Service (NPWS) at the above location.

A search of the NPWS Aboriginal Heritage Information Management System (AHIMS) has shown that Nil Aboriginal objects and Aboriginal places are recorded in or near the above location. Please refer to the attached report for details.

The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.

The following qualifications apply to an AHIMS search:

- AHIMS only includes information on Aboriginal objects and Aboriginal places that have been provided to NPWS;
- Large areas of New South Wales have not been the subject of systematic survey or recording of Aboriginal history. These areas may contain Aboriginal objects and other heritage values which are not recorded on AHIMS;
- Recordings are provided from a variety of sources and may be variable in their accuracy. When an AHIMS search identifies Aboriginal objects in or near the area it is recommended that the exact location of the Aboriginal object be determined by re-location on the ground; and
- The criteria used to search AHIMS are derived from the information provided by the client and NPWS assumes that this information is accurate.

All Aboriginal places and Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* (NPW Act) and it is an offence to destroy, damage or deface them without the prior consent of the NPWS Director-General. An Aboriginal object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or
- It is located during an investigation of the area conducted for a development application.

If you considering undertaking a development activity in the area subject to the AHIMS search, NPWS would recommend that an Aboriginal Heritage Assessment be

Head Office
43 Bridge Street
PO Box 1967
Hurstville NSW
1529 Australia
Tel: (02) 9585 6444
Fax: (02) 9585 6555
www.npws.nsw.gov.au

undertaken. You should consult with the relevant consent authority to determine the necessary assessment to accompany your development application.

Yours Sincerely



David Gordon
Aboriginal Information Officer
Information Systems Unit
Cultural Heritage Division
Phone: (02) 9585 6513
Fax: (02) 9585 6094



List of Sites (List - Short)

Saratoga Peninsula

Grid Reference Type = AMG Zone = 56 Easting From = 345000 Easting to = 345500 Northing From = 6294000 Northing to = 6295000 Feature Search Type = AHIMS Features

Site ID	Site Name	Grid Ref Type	Zone	Easting	Northing	Site Features	Site Types (recorded prior to June 2001)	Recording (Primary)	Reports (Catalogue Num)
---------	-----------	---------------	------	---------	----------	---------------	---	------------------------	----------------------------

No recorded sites. *DH.*

Number of Sites :0

Page 1 of 1

21/07/2003 11:3

This information is not guaranteed to be free from error omission. The NSW National Parks and Wildlife Service and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix 4: The Local Government Amendment (Community Lands Management) Act 1998

36E. Core objectives for management of community land categorised as a natural area

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

- (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- (b) to maintain the land, or that feature or habitat, in its natural state and setting, and
- (c) to provide for the restoration and regeneration of the land, and
- (d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- (e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisberies Management Act 1994*.

36F. Core objectives for management of community land categorised as a sportsground

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

- (a) to encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games, and
- (b) to ensure that such activities are managed having regard to any adverse impact on nearby residences.

36G. Core objectives for management of community land categorised as a park

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

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

36H. Core objectives for management of community land categorised as an area of cultural significance

(1) The core objectives for management of community land categorised as an area of cultural significance are to retain and enhance the cultural significance of the area (namely its Aboriginal, aesthetic, archaeological, historical, technical or research or social significance) for past, present or future generations by the active use of conservation methods.

(2) Those conservation methods may include any or all of the following methods:

- (a) the continuous protective care and maintenance of the physical material of the land or of the context and setting of the area of cultural significance,
- (b) the restoration of the land, that is, the returning of the existing physical material of the land to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material,
- (c) the reconstruction of the land, that is, the returning of the land as nearly as possible to a known earlier state,
- (d) the adaptive reuse of the land, that is, the enhancement or reinforcement of the cultural significance of the land by the introduction of sympathetic alterations or additions to allow compatible uses (that is, uses that involve no changes to the cultural significance of the physical

material of the area, or uses that involve changes that are substantially reversible or changes that require a minimum impact),

(e) the preservation of the land, that is, the maintenance of the physical material of the land in its existing state and the retardation of deterioration of the land.

(3) A reference in subsection (2) to land includes a reference to any buildings erected on the land.

36I. Core objectives for management of community land categorised as general community use

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

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

(b) in relation to purposes for which a lease, licence or other estate may be granted in respect of the land (other than the provision of public utilities and works associated with or ancillary to public utilities).

36J. Core objectives for management of community land categorised as bushland

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

(a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and

(b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and

(c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and

(d) to restore degraded bushland, and

(e) to protect existing landforms such as natural drainage lines, watercourses and foreshores, and

(f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and

(g) to protect bushland as a natural stabiliser of the soil surface.

36K. Core objectives for management of community land categorised as wetland

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

(a) to protect the biodiversity and ecological values of wetlands, with particular reference to their hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of the wetlands, and

(b) to restore and regenerate degraded wetlands, and

(c) to facilitate community education in relation to wetlands, and the community use of wetlands, without compromising the ecological values of wetlands.

36N. Core objectives for management of community land categorised as foreshore

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

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

APPENDIX 5: Key Stakeholders Full Comments

Mark Kentwell – Vice President Aussie Rules Club

- Parking – up to 80 cars (more than 32 would be good)
- Drainage – Saturday Mornings – Oz kick, Aussie rules, Both at the same time
 - Could grow
 - 40 kids Oz kick next 5years + 10 – 15 kids
 - 50 families – 5 years time
- Use sailing car park on Saturdays – 20 car parks available, lockable gate
- DRAINAGE – Drainage bank extend to houses
- Base level of oval – support
- More than 3 days rainfall field is unplayable
- “If rained day beforehand wouldn’t bother”
- Can take week or so to drain infiltrate
- Had to stop game because of wet area in the middle
- Lengthening field (up to 15m) – under 14’s need 10m on width and 15m on length – DON’T DO IT YET
- Fishing net – game day only
- Lights – turn off at 9pm
- Use cycleway as flood swale
- Put cycle way as close to houses as possible, will almost encroach on the field now
- Better security system at the gates
- Only field usable in winter on regular basis on the peninsula (Davistown very low)
- No objectives to landfill/asphalt rock for sailing club
- Wetlands - Cleanup/kids/Landcare group/footy club can help
- FOOTY GROUND - Top Priority
- Yattalunga/ Davistown/ Saratoga – All one Community
- Letterbox drop – wider
- Safety Concern – Sediment trap, keeping kids out of bush as well
- Moving children’s playground here OK – safety, vandalism, more use

Neil Kelleher – DIPNR

- Acid Sulphate Soils - Selected area
- Ecological integrity
- Balance between recreational activity and ecological integrity
- Enhancement of the native vegetation
- Maximize public access to foreshore (coastal council – big thing)
- Acid Sulphate Soils – still actively oxidising? If yes – add lime then cap and re-vegetate
- Saltmarsh regenerated – maybe even remove mangroves in places where mangrove encroaching in salt marsh will consider removal
- State Rivers and Estuary Policy, Wetlands Policy – GOSFORD
- Fix up wall along foreshore (untidy) – already partly done
- Saltmarsh protected
- Weedy
- Selective fencing
- Signage

- Education - proposed boardwalk, schools use, interpretive signage
- Little fern? – Endangered Species

Martin Dawson – Reserves Office Gosford Shire

- Acid Sulphate Soils – effects, impacts. Check acid sulphate soils and Council operations
- Adjoining activity not impact negatively on the wetland
- measure in place to protect environment
- restore environment
- Adjoining development – problem – SEPP 14
- Close road to the reserve
- Weeds – Kikuyu, couch
- Signage – consultation important
- Four wheel drivers, Bikers
- Principles of Crown Land Management in report, not a collection of matched statements
- Action plans/Targets/Goals set/Real actions – Estimate of cost

Rohan Coleman – President of Sailing Club

- Drainage poor
- King tides flood part of oval
- Puddle of water
- Oval needs to come up 500m in middle with fall to fix drainage
- Drainage cant get away north of sailing club
- Mangroves could die
- Dumps filled up with silt overflows onto oval
- Asphalt on dirt track for boat launching
- Bank oval Sundays
- Move gate for sailing club up to Saratoga wetland sign, don't park in entrance to sailing club

VALUE

- All weather playing access (Sail/tennis/kids play on oval)
- Water front access for sailing club
- Block out access to wetland area
- Car dumping
- No BBQ's
- Children's playground

Alan Skinner – Saratoga SPORT/REC

- Happy with recreation area
- Wetland needs protection – four wheel drives, motorbikes
- Increasing numbers of people
- Playground move to end of Willaroo place
- Middle safer for kids playing
- Vandalism
- Lots of passive recreation – central to sailing clubs etc
- No BBQ's (vandalism, noise at night etc)
- Tennis – coast lights go off at 9:00pm

- Toilet lights go off at 9:00pm
- Dark then no problems, good for curfews
- BIRDS – over 100 in 5-6 yr period – 27 year time frame
- over 90 species permanent in a year
- every night used to see Bushstone Curlews – 5 yrs ago
- 12 months ago to now this year first time in 27 years not seen Bushstone Curlew, 1st January last seen. Have heard them twice since only (March). They breed August – October
- Why? – new owners using bottom access has impacted on their preferred open grass land during day roost area (bottom of houses)
- Dogs, cats, foxes – predators/ deterrents
- Big increase in people walking dogs in this area
- PREFER : Keep dogs on leash only, not let loose. New council policy on dogs, this area earmarked as day exercise area – no good! “No Dogs On Oval”

Values

- Wetland, important part of Brisbane Water – Curlews
- Quietness of area
- People don't appreciate this area – one of four semi natural reserves on the water: - Brisbane Water
- Aimed more towards recreation, linked to Brisbane Water and wetland
- Deserve to be preserved/ natural area
- Not over used for recreation
- Small oval – not suitable for adult cricket, baseball, soccer
- TRAFFIC PROBLEM – impact of recreational activity (Aussie Rules football) should be assessed – restrictions? – training ok (15 cars) – footy match – (3 matches, lots of cars and 40 kids on the loose) – on site effects.
- Tennis courts early 80's prior to then it was a lagoon fringed by mangroves
- Sailing club – all filled in
- Early 90's fill- changed hydrology etc
- Idea to – central wetland area (as per ... map) dredge sank and work stopped
- Island – formed by dredging early 1900's (1900-1910)
- Dredged channel
- Flood tide delta
- Tidal flow approximately 3 knots
- Saratoga Channel
- Creek – tidal
- Now filled in with silt
- Housing subdivision put in on top of it
- Built in 1980, all mangroves filled
- 1980 – filling in of tennis club area, was proposed to be all filled, but stopped
- 1990 – proposed for 2 footy fields/boat ramp
- Resident opposed and stopped it
- Oval - to wet in winter usually
- Oz Kick - junior Aussie Rules (winter only)
- Summer – cricket (junior and low grade senior cricket)
- Amenities block should be smaller (too late now) – LOWER PRIORITY
- See Alan's proposal
 -- public right of way
 - - compromise

Bill Evans – Wetland Management Committee

- Been here since 1975
- Weekender 1979
- Member of councils Wetland Management Committee (since mid 19996)
- Davistown/ Yattalunga/ Saratoga active in area
- Davistown / Saratoga wetlands support group
- Trying to set up wetlands Bush car / Landcare groups
- Davistown/Saratoga wetlands support group – 2 wetland groups area
- 19th July Saratoga wants to start wetlands group
- Louise Fee – Director Environment Section of council
- L. Milliken – Natural Resources officer assistant manager

Regional Conservation

- Link Saratoga wetland with Davistown via wildlife corridor
- Compliment each other
- Bush Stone Curlew and Green and Golden Bell Frog. Make provision for Green and Golden Bell frog habitat in Saratoga wetland area (Freshwater complex)

Wetland Management Committee

- Don't want adverse impact from increased usage of area
- Recommend stone wall as it clearly defines boundary – stops encroachment of clippings into the area and fill
- Fencing (unobtrusive) in wetland area to stop production

Bill Evans View

- Support Alan's proposal to protect SEPP 14
- Stop 4WD track around outside of land – barrier on both sides
- Cycle may not needed/ pedestrian path OK access down pier avenue very steep, 2.4m wide too wide?? (under legislation??)
- Personally don't want pedestrian access along Foreshore
- NPSW "the island" land, "No Camping" sign needed, step access to island

Values for Area

- Schools don't go there, neither do down town people
- Lowest level of traffic impact possible
- Minimum impact on residual wetland area (Very high conservation value)
- With POM enhance wetland values and protect it

Wetland POM

- Can use template

John Ferguson - Coordinator of Recreational Facilities, Gosford City Council

Key Values

- Sustainable integration of natural areas and recreation. Wants to see recreational facilities protected and not downgraded.
- Saratoga Oval is one of two basic sportsgrounds in the area. It fills a vital social need. Likewise with the tennis and sailing club (one of two sailing clubs Gosford and Saratoga). There is a shortage in the whole of Gosford of recreational facilities, and for the whole peninsula.

- Need to improve ground/drainage to make it more useful, wet for months. Maybe put a grate on it.
- Not a priority but it does need doing.
- Maximise usefulness of filled area.
- Area around tennis is wasted. It is not wetland and is not used - need to get best use of filled area.
- Extremities of the oval will still get ponding for the birds because the trees and roots prevent swales forming.
- The proposal of putting the cycleway through the sailing club causes conflict between cars and people. It wouldn't get approval as there is not enough width to fit both cars and a cycleway.
- Always going to be slow to drain oval.
- Value - maintain useable active recreational space. If cycleway goes around oval you have to be careful that it doesn't take up oval space.
- Good idea for AFL club to utilise sailing club parking.
- Put in a sediment trap in front of mangroves.
- Trash rack in other stormwater pipe at Marian Street.
- Keep lights similar to what's existing. Low priority but must follow Australian Standards.
- Ongoing management - not much you can do, prevent more degradation.

David Pross - Chairperson Darkinjung Land Council - Heritage Officer

- Wont find a midden in the mangrove area because its too wet.
- Recommend keep an eye out for shell material
- Leave the rest as is as the fill may protect the middens underneath and fill has some shell material in it which may have been in midden
- John Fenton - History - (through Potter) Central Coast Genealogy Society

Natalia McCarthy - Project Officer NSW Fisheries

- Fish Habitat
- Mangroves very important habitat
- Nursery Grounds
- Permits to trim or remove mangroves
- Adjacent sea grass beds in Broadwater need to be protected
- Movement of water through structure/ Boardwalk
- (2) NSW Fisheries Permit
- DUAP
- Mangroves need to be inundated with salt water
- Support removal of traffic through the wetlands
- MASTERPLAN: PO Box 21 Cronulla NSW 2230

Liz Phelps, Acting Area Manager, National Parks and Wildlife Service- Gosford District

- No runoff or sedimentation into wetlands or Brisbane Water
- Suitable habitat preserved for waders and other resident birds that inhabit the area
- Preservation of saltmarsh and mangroves
- Close access to Saratoga Island for camping purposes. May still allow pedestrian access depending on damage occurring to both the island and the access route in. Saratoga Island is currently being transferred to NPWS, and will be officially gazetted at the end of this year. Therefore it will be

included in the Plans Of Management currently being developed by NPWS for Rileys Island, Cockle Bay, and Pelican Island Nature Reserves.

- Interpretation signage – a good idea for both the board walk and formalised access walk around the perimeter of the wetlands site. National Parks and Wildlife Service pending availability of funding may look into part funding of signage as the wetland area plays an important role in educating people who may then appreciate the values of other surrounding wetlands such as Rileys Island, Cockle Bay, and Pelican Island nature reserves .

Vicki Bennett CCCEN Landcare Officer

- Her involvement - This Saturday landscaping Saratoga.
- Publicity - Integrity Bushcare/ Wetlands Care group
- Peter Reg and Carey Bull (43691838) - Landscape Saratoga Project Resident Association
- CCCPN - Help support the group - advice, publicity, getting grants
- Gosford Bushcare Officers

Dr Danny Roberts – Bio-analysis - Marine Ecologist

- Saltmarsh plays a vital role in nutrient cycling
- Saltmarsh is important fish habitat
- It has important ecological functions
- 85% Of Saltmarsh has been lost state-wide
- It is a threatened ecological community and will soon be listed as one.
- No one has looked after it – It is out of Fisheries and DLWC territories.
- Landfill, footy fields etc have contributed to its decline
- Should keep the saltmarsh that it there and remove some mangroves
- Can survive without tidal inundation for months at a time

Peter Freewater – Natural Resources Officer – Water Gosford City Council Natural Resources

- Maintain ecological integrity of the area
- Most of natural wetland reformed and rehabilitation done
- Concerned about hydrology of the area
- Enable hydrology to work so wetland can operate as a wetland
- Natural resource base/ environment improved and protected
- Recommends a bio swale (vegetated with natives, larger biomass)
- Access from houses stopped to the wetland
- Flora (reintroduced) not found locally
- Bushcare access to site
- Rehabilitation signage
- Boardwalk OK
- Mangrove encroachment may occur with sea level rise

Brian Hill – NSW Fisheries

- Doesn't like the idea of a boardwalk through the saltmarsh but its better to keep people on the boardwalk so they are not destroying everything
- Mangroves are invading the saltmarsh – it is important to protect the saltmarsh so some mangroves

may have to be removed. Fisheries have done some mangrove removal in other areas.

- As mangrove/saltmarsh community is SEPP14 you must get permission from DIPNR and then Fisheries for the removal of mangroves.

Alan Morris – Retired Orthinologist

- Raising the oval will not effect birds such as the Pied Oyster Catcher, Black Tailed Godwit and Terek Sandpiper because they don't actually use that habitat.
- The Bush Stone-Curlew is the only bird that does use it. There is a pair that live on the surrounding saltmarsh that feed on the oval at night.
- It would be a good idea to increase the amount of saltmarsh in the area as it is habitat for the curlew. There is not much else you can do to compensate for habitat as there is not much left. The mangroves are invading the saltmarsh and this is happening everywhere in NSW because of increased sediment and landfill. The water level is rising too high for saltmarsh to survive and it is more suitable for the mangroves.
- The Bush Stone-Curlew prefer open grass areas, wet or dry. They feed off these areas at night on insects walk across it at night that would not during the day during the day (cockroaches, weevils etc).
- They use the open space for calling and rituals. A number of the birds have been seen together on the oval at night.
- Raising the oval for drainage will not affect habitat for the Bush Stone-Curlew as long as the equipment used and activity involved does not affect the surrounding saltmarsh.

Jeffrey Drudge – Corridors Project Officer / Corridors Assistance Officer Gosford City Council/ Wyong Shire Council

Two problems

- Some of the species are not indigenous to the site, let alone Saratoga – Davistown.
- All plants used should be grown from seed collected locally, to preserve the genetic integrity of the plant populations. This is particularly important when revegetating areas adjacent to and even more so, amongst natural vegetation areas.

Diane Dales- Gosford City Sports Council. Delegate for Cricket Association.

VALUES

- Very valuable area as there is a lack of sportsfields in the Gosford Shire

ISSUES

- No leases or licences should be placed on the oval (Section 355's) as it only ostracises the sporting community from use of the eland)
- Playing field should never be reduced in size, only increased
- More lighting for winter codes
- More parking would be good

Flooding is not an issue, just very high tides.

Appendix 6: Community/ Resident Meeting Comments FROM PUBLIC MEETING, SARATOGA – 16TH JUNE, 2003

Present:

Name	Organisation	Address
Mick Carr	Saratoga Sailing Club	79 Greenhaven Drive, Umina
Rohan Coleman	Saratoga Sailing Club	132 Steyne Road, Saratoga, 2251
Kari Airas	Resident	84 The Corso, Saratoga, 2251
Beverley Andrews	Resident	189 Steyne Road, Saratoga, 2251
Kevin Andrews	Resident	189 Steyne Road, Saratoga, 2251
Sue Tuckwell	Resident	227 Steyne Road, Saratoga, 2251
Rex Malone	Resident	175 Steyne Road, Saratoga, 2251
A Kiely	Resident	217 Steyne Road, Saratoga, 2251
T Blyth	Resident to be	217 Steyne Road, Saratoga, 2251
B Cummins	Resident	150 Steyne Road, Saratoga, 2251
Alan Skinner	Saratoga Sport & Recreation	3 Willaroo Road, Saratoga, 2251
Frank Oxley	Resident	239 Steyne Road, Saratoga, 2251
Jim Stanton	Resident	152 Steyne Road, Saratoga, 2251
June Weller	Resident	152 Steyne Road, Saratoga, 2251
Grant Pavett	Karmalogic	20 Mundoora Avenue, Yattalunga, 2251
Bill Evans	Wetland Mgmt Committee	23 Alkoomie Close, Davistown, 2251
Ross Banning	Resident	10 Marian Street, Saratoga, 2251
Peter Sansom	Resident	117/231 Steyne Road, Saratoga, 2251
Karen Brown	Resident	211 Steyne Road, Saratoga, 2251
Stephen Brown	Resident	211 Steyne Road, Saratoga, 2251
Terry Shapter	Resident	191 Steyne Road, Saratoga, 2251

Proposed security bollards and sliprail at RHS of map would prevent immediate vicinity owners from accessing water ways with small craft (tinnies and canoes etc) (note – Watercraft is hand-pulled on small trolley – not pulled by cars).

Cycleway should follow water line until western side of oval, then follow perimeter of oval to roadway.

Council to construct boardwalk before cycleway from Pier Avenue as no access at the moment through wetlands and for safety will get walkers off Steyne Road.

Beverley and Kevin Andrews
189 Steyne Road
Saratoga, 2251
Ph: 43 698 819

Preservation of the whole reserve as a wetland and signage etc. At the entries to indicate the fact.

Protection of bush stone curlew and habitat.

Provision of private right of way to rear of Steyne Road granted from residents of Marian Street in return for preservation of bush stone curlew habitat.

Boardwalk from Marian Street.

Limitations on the use (ie Recreational use) of the reserve to minimise potential damage to wetlands.

Alan Skinner (President of Saratoga Sport & Rec / Tennis Courts)
3 Willaroo Road
Saratoga, 2251

Maintenance Access / Barrier can it be used by residents for use, of maintaining there backyards.

Tree / size.

Drainage of the tennis courts and the land fill which may swamp our backyards existing egg lines drain back onto our properties.

Resident

Can we have access to the maintenance access if we are doing any building or maintenance on our own backyards?

Skate Park? We do not want this.....

Extra people in the area means extra rubbish? What will happen here?

Hoods and young people having parties?

Main Issues

No Skate Park.

Cars at night racing up and down Willaroo Road doing doughnuts and burnouts.

The entry and exits of Willaroo and Steyne Road.

The echo effect of a handball / basketball court.

5. Why is a boardwalk / cycleway allowed over (Not completed)

Boardwalk should be built.

DUAP SEPP 14 boundary appears to be in the wrong place. It includes roads and properties: Happy – Maggies input.

Timing – When is it to be built.

Steyne Road _____ all the way to the shops.

Pier Road – no boardwalk – yes.

Playground – no use where it is.

Picnic Area?

Walkway through wet lands (wooden deck) where tracks currently are eg. Kakadu, Blue Mountains.

Grant Pavett
20 Mundoora Avenue
Yattalunga, 2251
Ph: 0418 673 758

Cycleway to go around west perimeter of oval not to extend along rear of properties – reason: The more you cycle the fitter you get also it will cause a drainage problem more than already exists.

Proper drainage to oval so that it can be used 12 months of year.

Tar seal road up to gates of Sailing Club.

Terry Shapter
191 Steyne Road
Saratoga, 2251

Rehabilitation native planting behind 227 Steyne? Why? Currently duckpond and mangroves. Inhabited by wading birds. What planting? Please explain?

Boardwalk construction – dredging? Cement pylons etc – danger to eco system. Needs to be eco-friendly construction.

Relocate children's playground closer to tennis courts – view by parents = safety!!

Use of area behind tennis courts after it has been landscaped????

Move cycleway to western side oval = more scenic.

Willaroo adjoins Steyne Road = dangerous!! Improve traffic conditions.

Sue Tuckwell
227 Steyne Road
Saratoga, 2251
Ph: 43 424 073 (H) 9244 5822 (W)

Reference to Barriers.

Main concern is the proposed security barrier in the n/e corner to stop any vehicular traffic onto the reserve water front.

Rex Malone
175 Steyne Road
Saratoga, 2251

Council movement of SEPP 14 Boundary – should not happen.

No filling of any more wetland.

Ross Banning
10 Marian Street
Saratoga, 2251

Proposal: A board walk around the wetlands

Extend the footpath on the shore of the oval to continue as a pedestrian boardwalks along the shoreline of the wetland.

This would allow access to the waterfront, provide a great walk around the peninsula for a great number of morning walkers that hit the road every morning.

Kari Airas
84 The Corso
Saratoga, 2251
Ph: 43 690 240

Species used should be species indigenous to this area. And plants should be grown from seed collected locally.

A number of species listed would not have originally grown on this site. These are excellent replacement species that are locally indigenous and available eg. Prachidenderon Prumosuru → Raponea Variable → Westringia Fructicisa → Goodenia Ovata → Myporum Acuminatua → Gladition Derdmendi

Slip rails and barriers are a city wide problem.

Compliance with conditions 2, 3, 4 and 5 of consent DA 10869 / 2001.

Provision of habitat for threatened species eg: G G B Frog, Bush Stone Curlew.

Traffic egress from Willaroo road onto Steyne Road.

Bill Evans
23 Alkoomie Close
Davistown, 2251

Changes in hydrology that may impact on the needs of wetland ecosystem.

Vegetated buffer? Vegetated with what? Lawn? Or wetland species / locally indigenous flora.

Beverley and Kevin Andrews
Alan Skinner
Grant Pavett
Terry Shapter
Sue Tuckwell

Rex Malone

The above mentioned people responded with names at the bottom of responses, 6 people responded but remained anonymous and 8 people didn't respond at all.

Appendix 7: Resident Submission

Attn. Mr John Ferguson

Boardwalk as an extension of the waterfront **footpath around the Wetlands** as part of **Saratoga Recreational Area**, submission to Plan of Management.

Dear John,

In the public meeting on the Plan of Management for Saratoga Recreation Area and Wetlands on 16th June I made a submission for a boardwalk to be built around the wetlands of the area. With this letter I would like to repeat my submission and give a short rational behind of it.

Saratoga, Davistown and Yattalunga area comprise a sub-peninsula, almost an island in Brisbane Water, where Saratoga forms a distinctive village type of residential precinct characterised by its proximity to the waterways. We all value the waterfront highly and it is an asset of enormous potential. Unfortunately, public access to the waterfront by the villagers of Saratoga is restricted to only a few spots, specifically in the main, west facing part of the village. Excluding those fortunate residents that own a waterfront property, the rest of the village only has the views and on the common roads, hardly even those.

As persons who exercise frequently by walking around Mt Pleasant we come across many similar people on the road every time, and there are more similar walkers later in the day and evening. Without having any statistical backup I assume there being tens of local residents that enjoy this kind recreational opportunities in Saratoga, every day. The numbers will add up in a couple of hundreds every week. So, walking is a major recreational feature in the village that possible outnumbers any other type of recreational activity. Currently, all this is restricted to share the street with other commuters, cars and busses included.

In the draft plan presented in the meeting a footpath is designed along the waterfront to the north of the oval. If the walkers on Steyne Rd could divert their way down to this footpath via Pier Rd and continue then on a boardwalk with one or two resting platforms around the Wetlands along the shoreline either directly to Henderson Rd or at least to Marian St, it would be a major addition into public assets of Saratoga. There are a number of great samples of successful boardwalks in other areas, one closer one from Putty Beach to Gerrin Point in Bouddi National Park.

This proposal is and should not be of any threat to the wetland and its habitats. The boardwalk can be built the way that the wetland will operate in an undisturbed way. The benefits of this arrangement do include an educational opportunity and enjoyment of the public to familiarise with the natural life of wetlands without interfering in its process of life.

This proposed footpath would really have an impact and a great improvement into living habitat of the Saratogans.

The cost of the boardwalk is not known to me. The inclusion it into the plan should not be prevented on the basis of the budget restrictions, but in the case of lack of funds it should be in the plan to find the financing in some later stage, There may be ways to finance the work.

Looking to the great future of my home village,

Kari Airas

Appendix 8: Community Press release



MEDIA RELEASE

SARATOGA OVAL AND WETLANDS MASTER PLAN PUBLIC MEETING

All residents and interested people are invited to attend a Public Meeting to be held at the Sailing Club, Saratoga on Monday 17th June at 7pm. The Saratoga Oval and Wetlands Council Reserve are currently being reviewed, and a Plan of Management (POM) developed to act as a guide for the future management of this area. PEAK LAND MANAGEMENT Pty Ltd has been contracted by Council to undertake the POM and will be acting independently to both facilitate the meeting allowing all comments made to be recorded, and building these views into the POM where feasible. All people with an interest in this area are encouraged to attend.

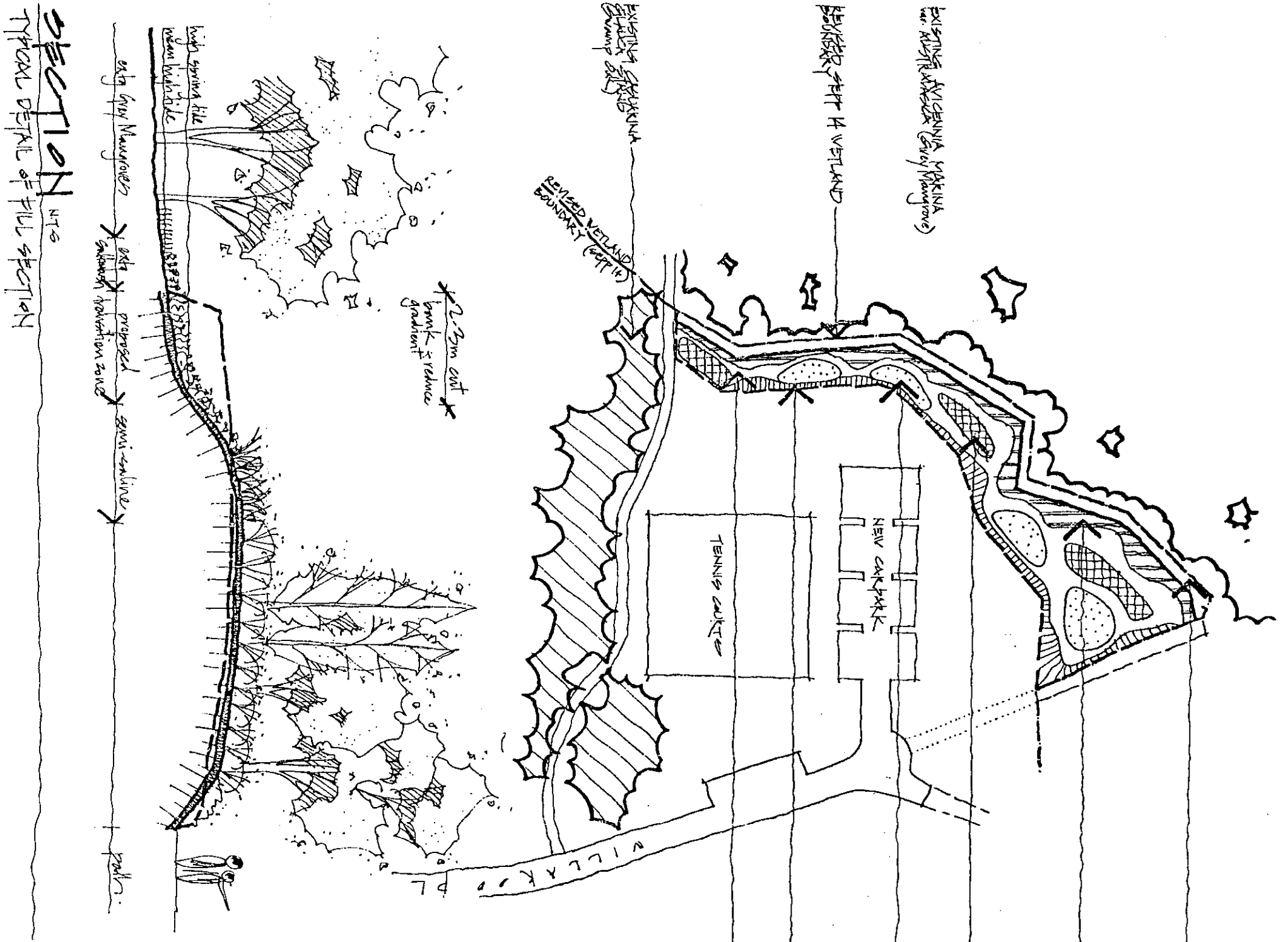
The Saratoga peninsula is home to important SEPP 14 listed wetlands, threatened birds such as the Bush Stone Curlew, as well as important recreational facilities such as the Saratoga Sailing Club, Saratoga Aussie Rules Club, and Cricket Association. Other environmental appreciation and preservation groups such as Davis town – Saratoga Wetlands Support Group also use this area and appreciate its uniqueness in terms of flora and fauna.

The meeting forms part of Councils obligations under the Crown Lands Act 1989 and Local Government Acts 1993 to hold proper public consultation. All houses in the immediate area will also be notified, and key stakeholders contacted. The Draft POM when completed will be on Public Display at Council. Any written correspondence should be addressed to Mr John Ferguson, Gosford City Council, or to Mr Ted Smith, PEAK LAND MANAGEMENT, PO BOX 83, Merewether NSW 2291.

-ENDS-

Queries – John Ferguson : 43 25 8430

Appendix 9: Approved Landscape Plan for buffer area at Saratoga Oval



REDUCE GRADIENT OF FILL BANK BY APPROX. 20m WIDTH TO CREATE AN INDIVIDUAL TRANSITION ZONE

- *Suaeda australis* (Sea Blite)
- *Sporobolus virginicus* (Sea Couch)
- *Tetrarrhena tetrasperma* (New Zealand Spinach) @ 200mm CENTRES

PIV SKUNK SPECIES

- *Chrysanthemum segetense* (Pigeon Weed)
- *Linum catharticum* (Sea Rush)
- *Tetrarrhena tetrasperma* (New Zealand Spinach) @ 400mm CENTRES

Chrysanthemum segetense (Pigeon Weed) @ 30m CENTRES WITH *LYNAKKA* LAKIPALIA (Matted Rush Grass) @ 750mm CENTRES

MIXED TREE SPECIES WITH *LYNAKKA* LAKIPALIA (Matted Rush Grass) @ 750mm CENTRES

- *Eucalyptus rostrata* (Swamp Gum)
- *Freycinetia banyanki* (Swamp Tree)
- *Chorizandra semiglobosa* (Swamp Tree)
- *Metrosideros typhalophora* (Pride of Launder Poplar)
- *Alnus pedunculata* (Swamp Alder) @ 30m CENTRES

Hippocrepis scabra (Snake Vine) @ 10m CENTRES

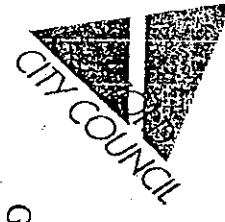
LYNAKKA LAKIPALIA (Matted Rush Grass) @ 750mm CENTRES

PLANT SCHEDULE FOR THE BUFFER AREA

Botanic Name	Common Name	Spacing	No.
TREES			
<i>Casuarina glauca</i>	Swamp Oak	3.0m	70
<i>Scalypus robusta</i>	Swamp Gum	3.0m	10
<i>Ocotelea frutescens</i>	Chinese Tree	3.0m	30
<i>Quercus semiglobosa</i>	Quince	3.0m	25
<i>Metrosideros typhalophora</i>	Pride of Launder Poplar	3.0m	15
UNDERSTOREY (Shrub and Grassland)			
<i>Carpodacus glaucus</i>	Pigeon	200mm	100
<i>Chamaecrista nuttalliana</i>	Swamp Lily	750mm	50
<i>Hibiscus scaberrimus</i>	Swamp Vine	1.0m	150
<i>Juncus tenuis</i>	Sea Rush	400mm	500
<i>Lomatium longifolium</i>	Matted Rush Grass	750mm	500
<i>Tetrarrhena tetrasperma</i>	New Zealand Spinach	200mm	200
<i>Sporobolus virginicus</i>	Sea Couch	200mm	190
<i>Suaeda australis</i>	Sea Blite	200mm	200

NOTE:

1. Rip subgrade to depth of 100mm
2. Use premium imported topsoil to depth of 100mm
3. Use Bluealypus leaf mulch to depth of 50mm
4. All plants to be substituted
5. Maintenance period: 4 months after Practical Completion
6. Regular maintenance: to be visited every 2 months between Spring and Autumn



**GOSFORD CITY COUNCIL
LANDSCAPE PLAN**

**BUFFER AREA AT SARATOGA OVAL
WETLAND WILLAROO PL, SARATOGA**

