Coastal Zone Management Plan for the Town Beach Coastline

February 2010
ADDENDUM

1. Port Macquarie Hastings Council has prepared this document with financial assistance from the NSW Government through the Department of Environment, Climate Change and Water. This document does not necessarily represent the opinions of the NSW Government or the Department of Environment, Climate Change and Water.

2. For the purposes of the report the “Coastal Zone Management Plan for the Town Beach Coastline” is called “the Coastline Management Plan”.

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1.0 INTRODUCTION

Town Beach, situated immediately to the south of the entrance to the Hastings River and the Port Macquarie central business district, is central to the character of the City (see Figure 1.1). The beach has historical connections to the earliest years of European settlement in the district and has been a focus of local community recreation and family holidays for generations. The beach is the natural face of Port Macquarie, providing both safe ocean swimming and good surfing breaks. It is backed by extensive foreshore reserves, combining sea side open space, scenic outlooks along the coast, and natural areas which have a remarkably remote feel for an urban coastline.

Port Macquarie Hastings Council (Council) recognises the iconic social value of Town Beach in the local community and also recognises the important contribution that the beach, attractively presented, makes and will continue to make to the city’s economy. The scenic coastal outlook has encouraged extensive redevelopment of prime coastal land adjacent to the beach. The connectivity of the beach to the business district of Port Macquarie and the recreational opportunities along the foreshore of the Hastings River entrance make the beach particularly valued by visitors to the area and by businesses that provide services to those visitors.

Council has prepared a Master Plan for Town Beach (GeoLink 1995) which reflects its natural beauty, the community value, and socioeconomic potential (see Figure 1.2). Implementation of this Plan has commenced, with construction of a timber wall and improvements to parking, lighting, seating, shade and cafeteria facilities at the southern end of the beach. Further planned improvements include the redevelopment of the sea rescue station and kiosk, improvements to stormwater drainage and parking and provision of an amenities/shower block to service the northern end of Town Beach. Concept Plans for the new Sea Rescue/Beach Patrol Facility are shown on Figures 1.3 to 1.6.

This Coastline Management Plan includes a detailed assessment of coastal erosion hazards (SMEC 2005, see Appendix 1) and presents a strategy to integrate effective management of long term coastal processes with the further realisation of the recreational and economic potential of Town Beach and associated coastal reserves. With an integrated Coastline Management Plan in place, Council will be able to move forward to develop partnerships for design, funding and development of community recreation facilities at the northern end of Town Beach.

1.1 SCOPE AND CONTEXT OF THE TOWN BEACH COASTLINE MANAGEMENT PLAN

The area addressed by this Coastline Management Plan (CMP) is Town Beach at Port Macquarie with the study area extending from the southern breakwall in the north to Flagstaff Hill in the south. The spatial extent of the study area is illustrated in Figure 1.1.

The northern section of Town Beach has been the subject of ongoing erosion since approximately the 1980s. Indications are that the construction of the northern breakwater at the entrance to the Hastings River at Port Macquarie has altered the near shore wave climate along Town Beach. This has lowered the offshore ocean bar, resulting in larger waves reaching the shore than would have done so previously. As a consequence, sand is being eroded from the beach, causing recession of the back beach escarpment and undermining part of the southern breakwall. Analysis shows that the back beach escarpment at the northern end of the beach is now approximately 30 metres landward of its 1980 position. In addition, the low back beach escarpment is occasionally overtopped by storm wave runup, inundating the reserve lands behind the beach.
Coastal Zone Management Plan for the Town Beach Coastline

Introduction

Figure 1.5
Proposed Sea Rescue/Coastal Patrol/Public Facilities
Town Beach, Port Macquarie

Source: David Broun & Associates Architects & Urban Planners
Coastal Zone Management Plan for the Town Beach Coastline

Introduction

Figure 1.6
Proposed Sea Rescue/Coastal
Patrol/Public Facilities
Town Beach, Port Macquarie

Source: David Bromley & Associates Architects & Urban Planners

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Port Macquarie’s Town Beach is highly valued by local people and is an integral part of tourism planning in the City, attracting large numbers of regional, interstate and international visitors. The scenic natural character and accessibility of the beach have already been augmented by improved pedestrian linkages to the central business area of the City, and the area is clearly a “destination” recreational walkers, surfers and swimmers.

The beach has a number of key features that contribute to its significance. These include:

- The Port Macquarie coastline generally is highly regarded as a holiday destination and more recently a pleasant retirement centre on the Australian east coast. Town Beach is located in the more densely populated part of Port Macquarie. It is the closest beach to the CBD and is within easy walking distance, along scenic coastal pathways. Visitors to Port Macquarie are naturally directed to Town Beach by the inherent design of the city. People from all over Australia and the world can be seen enjoying coastal views and breezes at Gaol Point on most days.

- The beach is valued by a regional population that extends well beyond the boundaries of Hastings local government area. Overlooking the beach and adjacent river side is a diverse range of holiday accommodation, including a caravan park with cabin accommodation, motels, hotels and holiday apartments. This accommodation has the advantage of proximity to urban services such as restaurants and shops. Much of the accommodation has outstanding coastal views and visitors can enjoy safe beach and scenic coastal walks without having to drive.

- Town Beach offers a diversity of coastal environments within a short distance. The beach itself is a wide sandy arc, dotted with rocky outcrop, that is contained between a prominent controlling headland at the south and the southern breakwall of the Hastings River at the north. A large area of public space is directly connected to the Port Macquarie CBD via the southern breakwall walkway/promenade. The southern headland provides elevated views across the wider embayment, and retains the natural coastal heath and casuarina landscape of the area. There is also an inter-tidal area associated with the southern headland, with steep rocky outcrop as well as small rock pools and benches.

- The diversity of coastal features also provides diverse recreational opportunities, including estuary, beach and rock platform fishing.

- Town Beach is a focal point of popular coastal walks from the urban centre of Port Macquarie to beaches, bluffs and historic sites to the south. It is enjoyed by recreational and fitness walkers from early in the morning until late at night.

These features also underpin the importance of developing a comprehensive plan for the sustainable management of Town Beach that has the support and commitment of the whole of the community.

### 1.1.1 Overview: Objectives of the Coastline Management Plan

The focus of the Town Beach CMP has been to provide management guidance to facilitate the sustainable development and conservation of Town Beach. Fundamentally, the project aims to:

- Understand and document the coastal processes occurring at Town Beach and to respond to their associated hazards by providing recommendations on appropriate attenuation measures to secure the long term stability and safe usage of the northern section of the beach;
Provide details about beach users in order to cater for their ongoing needs;

Consult with the community and other relevant stakeholders and to document their views on the future role and management of Town Beach;

Broadly discuss the coastline management framework and land use planning context relevant to the study area and the CMP;

Provide guidance on the use of open space behind the northern part of the beach, providing a strengthening of the links between the southern and northern components of the beach;

Document and integrate the management plans and other actions already adopted by Council to guide development and environment protection at Town Beach. In particular, the Coastline Management Plan includes a Concept Plan which integrates the management of coastal hazard issues with the concepts that were presented in the Town Beach Master Plan (GeoLink 1995).

1.2 STRUCTURE OF THE DOCUMENT

Section 2 overviews the current coastline management framework applicable to the study area.

Section 3 documents the local and use planning framework for the beach and adjacent areas.

Section 4 discusses/elaborates on the important values of Town Beach. It draws on consultation with community representatives, Council managers and State agency representatives, as well as a review of previous documentation of physical, ecological and cultural characteristics.

Section 5 provides an analysis of the key issues which require management at Town Beach. This section considers the results of the Hazard Definition Study and how these defined hazards relate to potential recreational uses of the northern part of the beach and associated coastal reserves. Section 5 also reviews proposals for new environmental and tourism infrastructure at Town Beach, highlighting the potential interactions between these proposals and the natural and social character of the study area. Council’s strategic direction for development of the Town Beach precinct is central to the evaluation of these proposals.

Section 6 outlines a range of management responses to address any conflicts or inconsistencies between beach values, ongoing coastal processes and existing or proposed development.
2.0 COASTLINE MANAGEMENT FRAMEWORK

2.1 1997 NSW COASTAL POLICY

The 1997 NSW Coastal Policy is firmly based on the principles of ecologically sustainable development. This policy provides a framework and guidance to decision makers for managing the competing demands of environment protection, population growth, conservation and economic development in a responsible, sustainable and systematic way.

2.2 RECENT INITIATIVES IN COASTAL ZONE MANAGEMENT

There have been several new State government initiatives relevant to the study area.

The NSW coastline has come under increasing pressure as it continues to attract many new residents and visitors seeking the lifestyle and environment of coastal living. Planning for coastal communities must balance the need to provide jobs, housing, facilities and transport for a growing population while maintaining the coast's unique qualities.

In June 2001 the NSW Government announced its Coastal Protection Package to protect the State's beaches, headlands and other coastal features for generations to come. Planning and development within the NSW Coastal Zone (as declared under the Coastal Protection Act 1979) is now subject to a Ministerial direction for coastal protection, NSW Coastal Policy, SEPP 71 - Coastal Protection, and the Major Projects SEPP (which identifies coastal development that will need the approval of the Minister for Planning).

The Minister has also issued a section 117 direction for draft LEPs that applies to the Coastal Zone. These are all key elements in implementing the Government’s Coastal Protection Package that was put in place to manage development in and around NSW coastal areas.

2.3 IMPLICATIONS OF THE NSW COASTAL POLICY AND SECTION 117 DIRECTION FOR LOCAL PLANNING

Clause 92 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) requires a consent authority to consider the NSW Coastal Policy in determining a development application for the purposes of section 79C(1)(a)(iv) of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The section 117 Direction No. 6 – Coastal Protection (reissued by the Minister on 30 September 2005) also lists matters that Council must address in drafting their LEPs. This includes having provisions to give effect to the NSW Coastal Policy, NSW Coastline Management Manual and the Coastal Design Guidelines.

(Department of Planning Circular PS 05-012, 22 November 2005)

2.4 IMPLICATIONS OF SEPP 71 FOR LOCAL PLANNING

State Environmental Planning Policy 71 (SEPP 71) aims to:

- foster a strategic and consistent approach to coastal planning and management;
- ensure that the coastal zone is managed and protected in accordance with ecologically sustainable development principles;
• facilitate the assessment of development proposals, and assess each proposal on its individual merits;
• set out matters for consideration by councils and consent authorities;
• develop a review process for significant coastal development proposals, which includes development proposed in sensitive locations;
• create a ‘master plan’ (now DCP) process to ensure developments involving particular types of subdivisions in the coastal zone are consistent with the SEPP's provisions.

The study area is subject to the provisions of SEPP 71. Further details as to the requirements of SEPP 71 are provided in Appendix 2.

2.5 IMPLICATIONS OF MAJOR PROJECTS SEPP FOR LOCAL PLANNING

The Major Projects SEPP identifies development of state or regional significance that will need the approval of the Minister for Planning and which are to be assessed under Part 3A of the EP&A Act.

Specifically, Schedule 2 of the Major Projects SEPP defines the development within the Coastal Zone that is to be dealt with as a Part 3A Project and includes:

• extractive industries, landfill, mining, marinas and other industries in the coastal zone or in sensitive coastal locations within the coastal zone (Sch. 2(1)(1) (a) to (e));
• certain recreational or tourist facilities (Sch. 2(1)(1)(f)), being recreational or tourist facilities (other than internal refits of, or minor alterations or minor additions to, existing facilities):
  (i) in the case of facilities wholly or partly in a sensitive coastal location outside the metropolitan coastal zone – that provide accommodation (or additional accommodation) for any number of persons, or
  (ii) in the case of facilities wholly or partly in a sensitive coastal location in the metropolitan coast zone – that provide accommodation (or additional accommodation) for 100 persons or more, or
  (iii) in the case of facilities outside a sensitive coastal zone location that are not connected to an approved sewerage treatment work or system – that provide accommodation (or additional accommodation) for 25 persons or more buildings or structures (Sch. 2(1)(1)(g)) (other than minor alterations or minor additions to existing buildings or structures) that are:

1 Amendments to Parts 3 and 4 of the EP&A Act, which commenced 30 September 2005, mean references in environmental planning instruments (EPIs) to master plans should now read development control plans (DCPs). DCPs are to be made according to the master plan procedures set out in the EPI (i.e. SEPP 71). They will need to comply with section 74C of the EP&A Act, and be consistent with EPIs. The Act amendments also allow submission of a staged development application instead of a DCP (section 83C) where an EPI such as SEPP 71 presently requires a master plan.

2 'Sensitive coastal location’ is defined in the Major Project SEPP and is consistent with the definition for sensitive coastal location defined in SEPP 71.
(i) greater than 13 metres in height, in the case of buildings or structures wholly or partly within a sensitive coastal zone location; or

(ii) greater than 13 metres in height, in the case of buildings in other locations outside the metropolitan coastal zone

- certain subdivisions of land not connected to sewerage works (Sch. 2(1)(1)(h)) being subdivision of the land where the future development will not be connected to an approved sewerage treatment work or system:
  
  (i) into more than 2 lots, if wholly or partly in a sensitive coastal zone location, or

  (ii) into more than 5 lots if in other locations (or into a lesser number of lots if the land proposed to be subdivided and any adjoining or neighbouring land in the same ownership in other locations could be subdivided into more than 5 lots).

- subdivision of land in a residential zone into more than 25 lots or in a rural-residential zone into more than 5 lots, but in the case of the metropolitan zone only if the land is wholly or partly within a sensitive coastal zone location.

Any development proposals within the study area which are included in these categories will require the approval of the Minister for Planning and will be assessed under Part 3A of the EP&A Act.

### 2.6 REVISIONS TO THE NSW COASTLINE MANAGEMENT MANUAL

The Coastal Protection Package, announced in June 2001, launched a review of the Coastline Manual, which was originally prepared in 1990. The review process will lead to the preparation of an integrated coastal zone management manual, covering aspects originally dealt with in separate Estuary and Coastline management policies and manuals. The Manual is a fundamental tool to assist coastal communities to make and implement sound decisions for sustainable management. It is understood the manual is current in draft form undergoing internal review.

Indications are that the new document is to be strongly issue focused, requiring Council based coastline planning committees to operate more firmly within an adaptive planning framework. The Manual is also likely to provide significantly more information on management tools than has previously been the case. It will, in part, be designed to demonstrate how new policies, regional and local planning instruments, strategic data (being developed through the CCA program), technical solutions (of local and regional scope), and community engagement/capacity building leading to management partnerships, fit together to deliver sustainable coastal zone management.

No draft of the revised coastline management manual is currently available.

### 2.7 COMPREHENSIVE COASTAL ASSESSMENT (CCA)

The Comprehensive Coastal Assessment is another key element of the NSW Government's Coastal Protection Package. The program was set up to identify, analyse and assess data and information on the physical, biological, social and economic values of the State's coastline. This program is ongoing.
3.0 LAND USE PLANNING FRAMEWORK

3.1 HASTINGS LOCAL ENVIRONMENTAL PLAN 2001: LAND ZONING AND SPECIAL PROVISIONS

The land-based component of Town Beach is zoned 7(f1) Environment Protection – Coastal pursuant to Hastings Local Environmental Plan 2001 (LEP). The zoning of the land is illustrated in Figure 3.1

The objectives of the 7(f1) Environment Protection – Coastal Zone are to:

(a) To identify and protect, from incompatible development, coastal foreshore areas which are environmentally sensitive, hazardous or visually significant; and

(b) To enable appropriate development where allowed with consent.

Land use identified in Table 3.1 to the 7(f1) Environment Protection – Coastal Zone.

Table 3.1 – Land Use in (f1) Environment Protection – Coastal Zone

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowed without development consent</td>
<td>Allowed only with development consent</td>
<td>Prohibited</td>
</tr>
<tr>
<td>Nil</td>
<td>Development for the purpose of: Advertisements Car parks Caravan parks Forestry Home businesses in existing dwellings Recreation areas Roads Single dwellings Utility installations (other than radio or television transmission towers) Demolition</td>
<td>Any development not included in Item 2.</td>
</tr>
</tbody>
</table>

The land immediately adjacent to the majority of the study area is zoned 2(t1) Residential Tourist (see Figure 3.1). The objectives of the 2(t1) zone are:

(a) To ensure that permanent residential development does not sterilise identified tourism precincts; and

(b) To permit and encourage tourist and ancillary residential development and associated services and facilities where such services and facilities are an integral part of the development and are of a scale appropriate to the needs generated by that development, or which are compatible with tourist and associated residential accommodation; and

(c) To enable appropriate development where allowed with consent.
The area shown hatched on the LEP map along William Street is designated as development for the purposes of shops or commercial premises (or both) where the shops or commercial premises:

(a) are constructed in association with residential or residential tourist accommodation, and

(b) have direct frontage to William Street and are located on the ground floor of the building in which they are situated, and

(c) enhance, in the opinion of the Council, the tourist experience of William Street.

A small proportion of land between Munster and Hay Streets is zoned 3(t) Tourist Business (see Figure 3.1). The objectives of the 3(t) zone are:

(a) To permit development appropriate to the status and function of the particular business centre and

(b) To permit a range of tourist developments which take advantage of the tourism potential of the centre and

(c) To enable appropriate development where allowed with consent.

A school, zoned 5(a) Special uses, is also located to the south of Clarence Street.

The surrounding land and its associated residential and tourism-based land uses provide an important context to the study area. This context influences the nature of visits to the beach as well as providing a vibrant urban design backdrop when viewed from the beach, particularly at its southern end of the beach where new apartment buildings have provided a modern, up-market sense of place across from the beach.

The Concept Plan (see Section 5.0) for the study area capitalises on the renewed vibrancy along the beachfront and seeks to reinforce it through such measures as redevelopment of the kiosk area to kiosk/restaurant/outdoor dining and supporting the development of additional facilities to the north-west of Gaol Point.

The statutory provisions of Council’s environmental planning instrument are generally consistent with the objectives of the Concept Plan prepared for Town Beach.

### 3.2 LAND TENURE

Town Beach is Crown Land that is managed by Port Macquarie Hastings Council as Community Land. Rotary Park (Lot 7026 DP 1060950) is owned by the Crown and managed by the Council.

All land in the study area, therefore, is under the control of Council and management recommendations are able to be considered within the context of Council’s budget (including any successful grant application funding) and capital works programs.

Land Tenure is illustrated in Figure 3.2.

### 3.3 DEVELOPMENT CONTROL PLAN 46: TOWN BEACH PRECINCT

The Town Beach study area forms part of the land to which Development Control Plan No. 46: Town Beach Precinct (DCP) applies.
The DCP aims to provide a framework that will guide future development in the area to which it applies and delineates development criteria and urban design guidelines for various precincts.

The objectives of DCP 46 are generally consistent with the direction of the CMP. No amendments to DCP 46 are proposed. Relevant components of DCP 46 which have been considered include the following.

### 3.3.1 Public Consultation DCP 46: Community Vision

The community workshops conducted as part of the preparation of DCP 46 recommended that Town Beach should be:

- “An attractive, friendly area with minimum high rise, enhanced landscaping, with re-development to maintain view corridors, retention of tree corridors with modern clean environment and a low-speed tourist drive;

- A safe and friendly environment where people and wildlife can move freely in a landscaped setting, with sensitive development preserving our heritage; and

- A safe environment for young and old, maintaining the historical features but incorporating a sensible mix of tourist and residential facilities, aesthetic beauty, the continuation of pedestrian walks thus giving us a vibrant, exciting precinct”.

### 3.3.2 Public Open Space, Parks and Facilities

A large proportion of the Town Beach study area occupies land which is designated as formal open space (parks/reserves/recreation) in DCP 46 (see Figure 3.3). It is important, therefore, that the Town Beach Concept Plan embraces the need to enhance the connectivity and open space values of this land.

### 3.3.3 Town Beach Activity Area

The study area is situated within the area designated as ‘Town Beach Activity Area’

According to DCP 46 this area is presently dominated by motel style tourist accommodation. It is the focus for tourist activity in the study area, offering access and views to Town Beach and associated open space. The Town Beach Activity Area presently contains many of the highest buildings in Port Macquarie [up to 9 storeys]. Typically though, they are in the form of towers, bearing little relationship to each other or the urban structure of Town Beach.

The desired future character of the Town Beach Area is to become a vibrant mixed-use area, providing a mix of tourist accommodation, particularly short-term rental apartments, as well as permanent residences. Ground floor retail (particularly cafes and restaurants) is to be encouraged, on William Street opposite Observatory Park, activating the street edge and optimising views and aspect to the north.

The ‘Town Beach Activity Area’ is illustrated in Figure 3.4.
Source: Port Macquarie - Hastings Council, DCP 46

Legend
- Town Beach Activity Area Boundary

FIGURE 3.4
Development Control Plan 46:
Town Beach Activity Area
4.0 VALUES AND ASSETS

This section describes the main characteristics of Town Beach, including its ecological character, scenic assets, cultural heritage values (both Indigenous and historical), and perhaps most importantly the range of ways in which the community and visitors use and enjoy the beach and adjacent reserves. Information about the character of the beach and reserves has been drawn from review of previous studies, from new Register Searches (e.g. for Threatened Species and Aboriginal heritage), and from discussion with a range of community and authority representatives.

The distribution and spatial association of each of the key attributes and values of Town Beach are shown in Figure 4.1.

Overall, the natural characteristics of the coastal landscape at Town Beach underpin very important community recreational values, which in turn support economic growth in Port Macquarie.

4.1 RECREATIONAL VALUES

Town Beach caters to an extensive range of beach users with local, regional, national and international origins. The beach is used for a wide range of activities, at all times of the day and all times of the year, including:

- Swimming, including a regular group of early morning swimmers, safe paddling for young children and easy surf for visitors (see Plate 4.1);
- Surfing, particularly at the northern end of the beach;
- Walking (the formalised pedestrian path from the breakwall to Flagstaff Hill is popular for active exercise and for leisurely walks);
- Jogging/Running;
- Family picnics, and games requiring open space (see Plate 4.2);
- Children’s playground activities;
- Skateboarding;
- A place for young people to meet friends;
- Informal gatherings of larger groups;
- Sight seeing – locals, and visitors;
- Music concerts; and
- Fishing (beach and rock platform).

The value of the beach for these purposes is elaborated in the comments provided by people who attended the community workshop for the project (see Section 4.2.2)
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Values and Assets

FIGURE 4.1
Town Beach Key Attributes and Values

Legend

- Existing areas (extensive and panoramic)
- Beach Wells
- Extensive Formulated public access
- Extensive area of open space (opportunity to review usage)

Source: Port Macquarie - Hastings Council

Children's play area. Opportunity for enhanced family space / activity.

Site topography provides opportunity for local pool / gathering.

Surfing

Coal Point Site of the original convict goal for Port Macquarie

Location Prominity to Town Centre

Safe swimming / body surfing

Passive recreation / scenic and tranquility values

Flagstaff Hill (Named after the signal station and beacon established in 1821)
Plates

Plate 4.1
Protected swimming and surfing area in southern corner of Town Beach

Plate 4.2
Recreational facilities at southern end of Town Beach
4.2 COMMUNITY CONSULTATION

As noted in Section 1, Town Beach is both visually and socially prominent in the Port Macquarie coastal landscape. It is immediately adjacent to the mouth of the Hastings River, and is visited and enjoyed by a wide range of local residents and visitors throughout the year. Residents have described how the beach and adjoining foreshore reserves are an integral part of Port Macquarie’s economic base as well as being an important meeting place for residents of all ages.

In developing strategies for sustainable management of Town Beach, understanding the diverse ways in which the local community uses and values the Beach is vital. Community information expands upon technical information about the characteristics of the beach and opens up new ideas and interpretations of the values of the area.

Port Macquarie Hastings Council has previously consulted with the community about aspects of its vision for Town Beach, including the preparation of a Master Plan (GeoLink 1994) and recent upgrades to facilities in the coastal reserves. This Coastline Management Plan considers the values identified in previous studies and plans, in the context of coastal processes that could threaten development to support recreational and tourism uses at the beach. Community consultation for this project was designed to review the overall beach and reserve design concepts previously supported by the community, and to provide an opportunity for beach and reserve users to comment on options for amendments to take new information about coastal processes into account.

Community input to the preparation of the Coastline Management Plan included discussion with Council land managers, state agencies, the Port Macquarie Visitor Centre, local school students and a community workshop.

4.2.1 Community Workshop

A community workshop was held on Wednesday 2 June 2004 at Council Offices, Port Macquarie. The purpose of the workshop was:

- To introduce the consultants working on the project and Council officers with responsibilities for implementing the Plan, and to provide local coastline users with an opportunity to express their interest in the future management of the coastline;
- To brief community members about the scope of the Coastline Management Plan and its relationship to previous studies and plans prepared for Town Beach and adjacent areas;
- To provide an opportunity for residents and coastline users to describe how they use Town Beach and the values or features of the beach that are important to them. These features could include special views or landscapes, perceptions of space, safe swimming areas, etc, and many other impressions of the beach;
- To provide an opportunity for community members to comment on any issues that they consider need to be addressed in the preparation of the Coastline Management Plan, such as potential conflicts between different user groups, the level of commercialisation of the beach, accessibility issues (parking, disabled access), linkages between different parts of the beach and coastal landscape and appropriate facilities for local people and visitors.

The workshop was structured to facilitate exchange of ideas and information between the community representatives, other stakeholders, Council and Council’s consultants. After an introduction to the principles of Coastline Plan preparation under the NSW Coastline Management Program, values and issues for Town Beach were discussed.
Introductory information provided to residents about the community workshop is included in Appendix 3.

4.2.2 Outcomes of the Community Workshop

Value statements based on comments made at the June 2004 workshop are summarised in Table 4.1. The values have been organised into three categories – natural/environmental, social/community and economic. These are the three key strands of sustainable management – otherwise known as the “triple bottom line” that is promoted in the NSW Coastal Policy (1997).
<table>
<thead>
<tr>
<th>Natural/Environmental values</th>
<th>Social/Recreational/Community Values</th>
<th>Economic Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The fact that it’s north facing</td>
<td>• The ease of accessibility to the beach and surrounding areas</td>
<td>• Important resource for town – tourism (social)</td>
</tr>
<tr>
<td>• ‘Protected during southerly winds and large swell</td>
<td>• Swimming at the beach, enjoy the safety of the area, very safe beach (Plate 4.1)</td>
<td>• Tourists say they have never seen such a lovely place</td>
</tr>
<tr>
<td>• It’s the “Jewel in the Crown” of all Port Macquarie beaches’</td>
<td>• The beach is patrolled during the summer, adding to safety for recreational swimmers</td>
<td>• Port Macquarie is known as a tourist town for families</td>
</tr>
<tr>
<td>• Enjoy the bush setting and bird life at southern end of beach.</td>
<td>• Proximity to the town</td>
<td>• International tourists visit Town Beach</td>
</tr>
<tr>
<td>The fact it is so close to the CBD is also a factor.</td>
<td>• The beach is a focal point for both tourists and locals</td>
<td>• The visibility and accessibility of the beach from accommodation in the adjacent residential/tourism precinct is an important contributor to the economic value of these properties and the businesses that provide services to visitors</td>
</tr>
<tr>
<td>• The mosaic of landscapes in such a small area, great to sit and look around</td>
<td>• Embodies what Port Macquarie is, interaction with the sea and river, connects well with surrounding area, active part of town due to proximity with CBD also – very accessible</td>
<td>• The connectivity of Town Beach to the Central Business District of Port Macquarie (pedestrian and road) adds to the economic value of both the town centre and the beach</td>
</tr>
<tr>
<td>• Enjoy the views from the higher ground</td>
<td>• It is a focal point for passive recreation</td>
<td>• Town Beach is a central part of Council’s economic development strategy for the City, because of its accessibility to restaurants etc in town, and easy stroll along scenic pathways</td>
</tr>
<tr>
<td>• Hills around open areas form a natural amphitheatre</td>
<td>• Disabled access is good from car park and includes ramps</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• Access to natural areas</td>
<td>• Good beach for body boarders, both inexperienced and experienced ones, particularly in the north corner. The beach is protected during southerlies.</td>
<td></td>
</tr>
<tr>
<td>• Sunrise and sunset walks are popular - including the bush and birds of Flagstaff Hill</td>
<td>• Important surf resource for the area, heavily used by surfers and body boarders.</td>
<td></td>
</tr>
<tr>
<td>• Enjoy surf break at ‘middles’ (surf that breaks out on the bar during bigger swell)</td>
<td>• Enjoy surf break at ‘middles’ (surf that breaks out on the bar during bigger swell)</td>
<td></td>
</tr>
<tr>
<td>• Area is of a regional significance because of the recreational opportunities it provides for diverse age groups.</td>
<td>• Area is of a regional significance because of the recreational opportunities it provides for diverse age groups.</td>
<td></td>
</tr>
<tr>
<td>• Historical importance, from Flagstaff Hill to entrance</td>
<td>• Historical importance, from Flagstaff Hill to entrance</td>
<td></td>
</tr>
<tr>
<td>• Sunbathing on beach is popular – from early in the season, because of protection from southerlies</td>
<td>• Sunbathing on beach is popular – from early in the season, because of protection from southerlies</td>
<td></td>
</tr>
<tr>
<td>• People fish off the breakwall – this includes people staying in the caravan park, people staying in local hotel accommodation and local residents</td>
<td>• People fish off the breakwall – this includes people staying in the caravan park, people staying in local hotel accommodation and local residents</td>
<td></td>
</tr>
<tr>
<td>• Caters for all users – land and water based</td>
<td>• Caters for all users – land and water based</td>
<td></td>
</tr>
<tr>
<td>• Area has strong family ties and atmosphere, a great place to take family for tourists and locals</td>
<td>• Area has strong family ties and atmosphere, a great place to take family for tourists and locals</td>
<td></td>
</tr>
<tr>
<td>• The name “Town Beach” encapsulates the experience of the beach</td>
<td>• The name “Town Beach” encapsulates the experience of the beach</td>
<td></td>
</tr>
<tr>
<td>• The paths along the breakwall, along Town Beach, Flagstaff Hill, and beaches further to the south are used all year round and for most hours of the day – from early morning fitness walkers to family groups with young children, older citizens, people taking a stroll after dinner on a summer evening. The connectivity of the beach to own makes for diverse recreational experiences/opportunities within a short distance</td>
<td>• The paths along the breakwall, along Town Beach, Flagstaff Hill, and beaches further to the south are used all year round and for most hours of the day – from early morning fitness walkers to family groups with young children, older citizens, people taking a stroll after dinner on a summer evening. The connectivity of the beach to own makes for diverse recreational experiences/opportunities within a short distance</td>
<td></td>
</tr>
</tbody>
</table>
4.3 **LANDSCAPE**

The landscape of the Town Beach coastline has significant natural and cultural appeal with extensive views evident from public places and peripheral residential and tourist development.

Multiple sites around the beach provide important coastal views and outlooks. These include:

- The view from residential apartments and hotels immediately adjacent to the Town Beach study area. These are multi story buildings, with rooms/balconies overlooking the beach and broader Hastings River embayment. Views include ocean vistas from Town Beach far to the north; views of vessels entering and leaving the river mouth; views of dolphins playing in the surf; views on surfers, particularly on the outer breaks at Town Beach in larger swell conditions. Many of these apartments also enjoy the northern aspect of the local landform and summer ocean breezes;

- Gaol Point is an important stop for visitors arriving at the beach by vehicle. It is elevated above the beach and apart from the general ocean views across the embayment, provides an excellent vantage point for checking the condition of the surf. The outlook from Gaol Point encourages visitors to access the beach via the (currently) informal path down the grassy bluff;

- Flagstaff Hill, which is accessed via the coastal walking track and a set of stairs, provides a natural outlook from an elevated and relatively isolated vantage point. The lookout at this point is used for whale watching as well as general views of the rocky headland landscape and ocean views to the north.

- The walking path along the rear of the beach provides low level and local views of the beach, focusing on sand, sunbathers and umbrellas. Similar close up views of the beach can be obtained from the seating at the beach side kiosk;

- Walkers and swimmers on the beach enjoy views both seaward and landward. The near view to landward includes various low grassy bluffs and iconic Port Macquarie trees – Norfolk Pines (see Plate 4.3) and coast casuarinas. The background view from the beach includes the holiday apartment and hotel development.

- There are currently relatively restricted views of the beach from the reserve lands behind the northern part of the beach and from the breakwall (except the end of the breakwall, which provides views along the beach to the south).

In addition to these coastal views and landscapes, the study area includes parkland containing the Port Macquarie Observatory. The observatory was built in 1961/62 by enthusiastic local amateur astronomers and the Rotary club and its dome is a local landmark. It continues to be open to the public for night sky viewing and other astronomical information, although the observatory itself is not now suitable for detailed observations because of the amount of urban light around it.

4.4 **ECOLOGICAL ATTRIBUTES - SCIENTIFIC AND COMMUNITY VALUES**

4.4.1 Overview of Ecological Attributes

The ecology of Town Beach consists generally of a highly modified coastal landscape with small areas of remnant native vegetation communities. The majority of the area is dominated
by open, grassy areas, modified for high levels of recreational uses. These open areas contain areas of plantings of some native species chosen for their historic significance to the area, particularly the coastal horsetail casuarina (*Casuarina equisetifolia*). The backdrop to Town Beach is characterised by numerous large Norfolk Island Pines (*Araucaria heterophylla*) (e.g. near Gaol Point) (see Plate 4.3).
The vegetation communities located on the bluffs and headlands that shelter Town Beach are remnants of native coastal grasslands and woodlands that are characteristic of the vegetation of the local area. The majority of the woodland vegetation community is located on the southern headland (see Plate 4.4). The coastal horsetail casuarina (*Casuarina equisetifolia*) is a notable dominant species in this area. This vegetation community appears to be in relatively good condition, despite relatively heavy usage of the area for recreation purposes, and the high level of exposure to coastal winds. The native grassland vegetation community is generally located on the steep bluffs of the southern headland and the back of the beach (see Plate 4.5). This vegetation is relatively inaccessible to recreational use, but is traversed in places by informal tracks. It is impacted by weed invasion. Weed species distributed across the grassy bluffs include, lantana (*Lantana camara*) and bitou bush (*Chrysanthemoides monilifera subsp. rotundata*) as well as garden escapees such as palms.

Recent planting in the reserve at the southern end of the beach was undertaken to increase shade for visitors, as well as to provide attractive landscape features in this part of Town Beach. This planting focused on the coastal horsetail casuarina (*Casuarina equisetifolia*). Large specimen trees, such as Norfolk Island Pines (*Araucaria heterophylla*) have generally not been used in this area, because of the potential for long term impacts on the view from the upper road level and from nearby accommodation.

### 4.4.2 Potential Threatened Species Issues

Searches of the Department of Environment and Conservation (DEC) Atlas of NSW Wildlife (DEC 2005) and Department of Environment and Heritage (DEH) Protected Matters search tool (DEH 2005) were conducted to determine whether any threatened flora or fauna species have been previously recorded, or are considered to have potential habitat in the vicinity of Town Beach. These databases identified a number of threatened species and protected migratory species that have the potential to occur within a 10 kilometre radius of Town Beach. A copy of both database searches has been included as Appendix 4.

While habitat for threatened and protected migratory species is limited in the Town Beach vicinity, there is the potential that some would utilise the general area. It is most likely that such species would be recorded within the vegetation on the southern headland, rather than the central areas of Town Beach, where habitat is scarce, and recreational use is high. From the results of the database searches, it is considered that no threatened flora species have the potential to be recorded at Town Beach. Of the potential fauna species, there is potential for the glossy black-cockatoo (*Calyptorhynchus lathami*) to forage within the woodland vegetation of the southern headland, particularly on *Allocasuarina* or *Casuarina* species in this area. A number of threatened bat species, such as the grey-headed flying-fox (*Pteropus poliocephalus*) and eastern bentwing-bat (*Miniopterus schreibersii oceanensis*) have the potential to forage within the vegetated areas of Town Beach, particularly the southern headland. The osprey (*Pandion haliaetus*) has the potential to forage along the coastal and riverine areas. Sooty oystercatchers (*Haematopus fuliginosus*) and pied oystercatchers (*Haematopus longirostris*) have the potential to forage along the coastline, particularly on the rocky platforms below the southern headland.

Despite this, the high level of urbanisation and the low levels of native habitat for threatened species suggest that the Town Beach area is unlikely to be a significant area for threatened species. Any management decisions for Town Beach should consider the potential for threatened species in the area, and any management actions should consider protecting and enhancing native vegetation as potential habitat for a variety of threatened flora and fauna species.
4.5 ATTRIBUTES AND VALUES ASSOCIATED WITH CULTURAL HERITAGE

4.5.1 AHIMS Database Search

A search of the study area and neighbouring locality was undertaken using the DEC Aboriginal Heritage Information Management System (AHIMS).

Seven archaeological records have been identified within the search area but none of the records are within the Town Beach Study Area. There are no known Aboriginal sites within the Town Beach area and therefore known Aboriginal cultural heritage provides no direct constraint for the management of the area. Notwithstanding this, the Plan presents opportunities to include information about the Aboriginal cultural heritage of the Port Macquarie coastline in interpretative signage and brochures to accompany the coastal walk.

4.5.2 Native Title Search

A Native Title Search was undertaken across the study area. The search found that no records relating to:

- National Native Title Register
- Register of Native Title Claims
- Unregistered Claimant Applications
- Register of Indigenous Land Use Agreements.

4.5.3 Historic Heritage Values of Town Beach

Town Beach and its adjacent reserve areas are within the area of the earliest European settlement in Port Macquarie and contain areas associated with both the convict and
maritime history of the City. This historic heritage adds to the value of Town Beach, providing further linkages to the reserves, museums and walkways along the Hastings River foreshore and the town centre.

Key features of the historic heritage of Town Beach study area include:

- Flagstaff Hill, named after the signal station and beacon established there in 1821, forms the southern headland of the beach. A plaque on the headland commemorates the historic functions of the signal station;

- Gaol Point Lookout is part of the original site of the Port Macquarie convict gaol. The gaol was built by convict labour between 1837 and 1840. The gaol was also the site of several convict hangings in the 1840s. The buildings were demolished in 1920. The current lookout at Gaol Point presents outstanding views across the entrance to the river and the beach. A map at the site highlights the connectivity of Gaol Point and other early nineteenth century buildings in the town.

- Just outside the study area, within the grounds of the Historic Well Motel, is one of the two wells that originally provided water for the gaol.

- Also just outside the study area, but part of its connectivity to the other historic features in central Port Macquarie, is the remains of Port Macquarie’s first cemetery, dating to the period 1821-1824. This site, just past the intersection of Stewart Street and Clarence Street is also where the first commandant of the convict settlement raised the British flag.
5.0 TOWN BEACH KEY ISSUES

5.1 OVERVIEW

Information from the local community (see Section 5.2), from Council and government agency officers and from previous studies highlights three main issues for Town Beach. These derive from the proximity of the beach to the entrance of the Hastings River, its proximity to the central business and visitor facilities of Port Macquarie and the diversity of site values (scenic, recreational, heritage etc) which make the place an iconic part of the Port Macquarie coastline. The key issues, which are often interdependent, can be summarised as:

- Ongoing coastal hazards, particularly retreat of the beach face and overtopping of the back beach area by storm waves at the northern end of the beach, affect maintenance requirements to provide for safe enjoyment of the beach and back beach reserves by swimmers, surfers, walkers and other family activities;

- High levels of local and visitor usage of the beach and adjacent reserves require more formalised management of beach structures and facilities, including parking areas, walkways, toilets/showers, lighting, etc but also enhances the need for ongoing controls and maintenance to provide an attractive beach, free of litter and accessible to a wide range of age groups. High usage brings with it the potential for competing needs of different groups and also potential threats to amenity through overcrowding, loss of visual character etc.; and

- The lookouts and reserves at the back of Town Beach are an important attraction for visitors to Port Macquarie. In order to support and encourage the economic benefits of tourism, new facilities are required. These facilities have the potential to enhance the overall value of the beach and coastal landscape, but also have the potential to detract from traditional family holiday values, by changing the social character and visual context of the beach.

5.2 MANAGEMENT ISSUES AT TOWN BEACH – COMMUNITY PERSPECTIVE

As a result of discussion with community representatives at the workshop and in follow up conversations, a number of community issues have been identified for Town Beach. These are summarised in Table 5.1. The spatial pattern of these management issues is shown in Figure 5.1.

Community coastline management issues for Town Beach are considered in two broad categories, which reflect the core scope of the Coastline Management Plan:

- Management of beach access, amenity and facilities, to maintain and enhance the resulting social and economic values of Town Beach. The social issues to be addressed at Town Beach, deriving from its naturalness in an urban context, its amenity and its accessibility, incorporate issues associated with the landscape and land use context of Town Beach as well as the contribution of Town Beach to the local economy; and

- Management of coastal hazards. Unmanaged coastal hazards have the potential to impact on beach amenity, safety and socio-economic value. Management of coastal hazard issues may necessitate modifications to the design and use of beach side facilities, to minimise risks to community infrastructure.
A summary of issues raised by the community is provided below:

- Need for recreational facilities other than kiosk.
- Paths around the beach are used by walkers, joggers etc.
- Many different groups use area, at many different times of the day.
- Lifeguards are on duty during summer, but not during extended daylight hours and public holidays.
- The next beach south is Flynn’s then Lighthouse, neither of which are as good for body boarding and surfing.
- Good ‘model’ (example) of beach access presently exists.
- There is a lack of rubbish bins and litter removal is an issue – litter management needs upgrading.
- Access for youth and school kids to beach and area is important.
- The beach could be cleaned regularly by machinery (beach comber) to remove sticks and litter.
- More shade trees are needed around the area (see Plates 4.2, 4.5 and 5.1).
- There is conflict between traffic and pedestrians in car parks (see Plate 5.2).
- There are not enough seats and tables especially, around the kiosk.
- Toilet facilities are needed near the skate park and playground. The nearest facility is the kiosk or in Town Green.
- The walkway from Gaol Point (Stewart Street) to beach is unformed, steep and dangerous, but is regularly used by visitors to the area.
- Aesthetics (natural character) of the area need to be kept intact.
- The stormwater outlet near the kiosk is putting litter on the beach.
- Access for boats through the mouth of the river is important.
- Planting of shade trees may impact on views (i.e. if trees were very tall species).
- The rocks in water along the beach are dangerous.
- Any extra lighting should not be sulphur globes as the light is not pleasing.
- Sand and twigs blow across the path at the back of the beach, maybe need more maintenance/inspections.
- There is a regular Youth Concert, which uses the big open area near skate park, so space for this types of large event needs to be maintained in the Plan.
- With major attractions, such as Peppermint Park, closed, there are fewer “name” attractions in the area – Town Beach may provide a solution.
Coastal Zone Management Plan for the Town Beach Coastline

Town Beach Key Issues

PLATE 5.1
Limited shade in car parking areas

PLATE 5.2
Pedestrian and vehicle movement in close proximity
• Demand is too high for the kiosk, especially considering it used to sell mainly ice creams. There are expectations of a greater range of products, which is anticipated to increase with the new development in the precinct adjacent to the beach.

• The provision of facilities that provide economic benefit is highly desirable.

• The Sea Rescue (sited above the kiosk) staff also undertake an informal water safety patrol.

• People were happy when the marine “Animal Park” was abandoned (porpoise pool).

• People use the main car park as a shortcut during construction periods when traffic management along other roads had changed – this is hazardous for pedestrians in the beach area.

• Car parking can be taken by construction workers during summer months, reducing the availability of parking for beach goers.

• Visitors to the town are lead to Town Beach by the road network and pathway network, so it is set up to be a highlight for visitors – it is important that this build up in fulfilled.

• Concerns were expressed about social misbehaviour and vandalism, particularly at night.

• The misuse of toilet blocks for anti-social behaviour should be considered when planning for such a facility.

• Options being considered to manage coastal hazards should not change the surf in any way, because the breaks at Town Beach are widely valued.

• Extending the southern breakwall (as a management option) may negatively effect the surf.

• Area around erosion is a safety hazard, and is being exacerbated by people jumping off the bank. Both access and stability need to be addressed (see Plate 5.3).

• No breakwall extension is desirable.

• Erosion is not of natural land; it is fill or reclaimed land.

5.3 MAINTENANCE AND ENHANCEMENT OF BEACH AMENITY AND SOCIAL VALUE

The amenity of Town Beach is of very high importance with the beach and adjacent foreshore being enjoyed by a wide range of local, regional, national and international beach users. Maintenance and enhancement of beach amenity are key objectives for Council and form the fundamental basis of the Master Plan that was developed in 1995 and that Council has been implementing since that time. Many of the components of the Master Plan for the southern section of the beach have been implemented over the last five years, resulting in significant enhancement of the amenity of this area. Despite the improvements that have been made, there are some outstanding issues that would further improve amenity for beach users. These relate particularly to beach cleanliness, to traffic management, access from the car park to the sand, kiosk facilities, toilets and shade.
PLATE 5.3
Erosion of back beach area at northern end of Town Beach
Council recognises these ongoing opportunities for improvement, and has commenced planning for further actions. For instance, a new Gross Pollutant Trap is planned for the car park adjacent to the kiosk. When constructed, this will greatly reduce the flow of litter from the car park and reserve area, reducing the amount of litter on the beach. Further changes to the Sea Rescue station and kiosk facilities are also being considered (see Figures 1.3 to 1.6 and Section 6). Council is aware of some difficulties with lighting of the back beach reserves, and is also considering options to improve night time security. This is discussed in Section 6.

Given the relatively short beach length and its high accessibility, an integrated and stylish presentation of the beach and reserve areas is considered important, and has previously been highlighted in the Master Plan (GeoLink 1995). Because of the previously unresolved hazard issues at the northern end of the beach, the concept of an integrated design and presentation of beach facilities has not yet been achieved. The style and amenity of the northern part of the study area is not currently consistent with the southern part. Amenity issues identified at the northern section of the beach include:

- lack of toilets and showers;
- rock being dislodged from the southern breakwall and being strewn through the surf impacting on the safety of swimmers and body boarders that use this area;
- lack of shade (trees or formal picnic shelters large enough for larger family groups);
- playground facilities in need of upgrade;
- lack of definition of spaces;
- insufficient tables and benches; and
- the ongoing erosion of the back beach escarpment and degradation of the southern breakwater impacting on the visual amenity of the area.

As previously discussed works to address these issues have been delayed until plans can be formulated and implemented to control the ongoing coastal erosion and associated hazards.

The scenic quality of Town Beach and the attractiveness of views from the beach and associated lookouts is a critical value of the study area. There is potential that further development at the beach and in the coastal reserves will affect some of these views. Maintenance of view corridors within and across the beach and reserve lands, from both public and private vantage points, is an important issue.

### 5.4 ECOLOGICAL AND CULTURAL HERITAGE ISSUES

The review of ecological and cultural heritage information has not revealed any significant constraints to the management/enhancement of the recreational values of Town Beach and its associated coastal reserves. As noted in Section 4, the natural and cultural heritage character and context of the area do provide opportunities for future management of the beach. These include:

- opportunities to provide visitors with information about the natural heritage (terrestrial and aquatic) of Port Macquarie’s coastline – vegetation, habitat, and particularly the dolphins and whales that visit/pass the beach;
• attractive species to guide sustainable planting of beach side vegetation for shade, shelter and landscaping purposes;

• opportunities to introduce the Indigenous cultural heritage of the Port Macquarie coastline to a large number of locals and visitors; and

• opportunities to encourage local groups to participate in the management of the area, through weed removal etc. maintaining records of visiting bird species etc.

It should be noted that detailed investigation of potential habitat of threatened species has not been completed as part of this Management Plan. Where future development or other projects at Town Beach require the removal of native plant communities, further detailed studies of specific locations would be necessary, in accordance with the requirements of the EP&A Act.

5.5 BEACH EROSION AT NORTHERN END OF BEACH

In February 2005, SMEC prepared a Hazard Definition Study for Town Beach. This report is provided in full in Appendix 1. The study used available photogrammetry to access recorded changes in the beach profile, alignment and position over the period 1971 to 2003. This assessment was done using a series of shore normal profiles along the beach as shown on Figure 5.2.

The analysis (SMEC (2005) see Figure 5.3) indicates that Town Beach over this period has:

• accreted by approximately 15 to 25 metres at the southern end (Profiles 1-7, 2-1 and 2-5), (1-7 is through the car park)

• remained reasonably constant at Profile 1-3 (which is through the Kiosk)

• Undergone approximately 15 to 20 metres of recession at Profiles 2-10 and 2-12 (immediately north of Gaol Rock)

• Undergone approximately 30 metres of recession at Profile 2-17 which is approximately 50 metres south of the Southern Breakwall (see Plate 5.3).

SMEC (2005) states that it considers that the erosion at the northern end of the beach is a result of construction of Northern Breakwater. Figure 3.2 of Appendix 1 of SMEC 2005 (see Appendix 1) indicates that the greatest period of recorded change occurred between the period 1979 (when the Northern Breakwater was built) and 1989. Since that time the alignment of the beach has remained reasonably constant at all profile locations except at the very northern end (Profiles 2-17 and 2-18) where the beach has receded approximately a further 10 metres over the 14 year period to 2003. Recorded changes in dune profiles along Town Beach are provided in Appendix 3 of SMEC 2005 (see Appendix 1).

This analysis also indicates that sand is accreting at the southern end of the beach and eroding from the northern end. This implies that some sand is being transferred from the northern end of the beach to the southern end. This is shown graphically on Figure A.5 of Appendix 2 of SMEC 2005 (see Appendix 1) where orange and yellow show accretion of sand at the southern end and blue shows erosion of approximately 1.5 metres depth at the northern end of the beach.

Figure A.6 of Appendix 2 of SMEC 2005 (see Appendix 1) shows that between 1981 and 1989 the net volume of sand in the beach profile, at all measured profiles, decreased by
FIGURE 5.3
Immediate and 50 year coastal hazard risk and stable foundation zones
Beach Hazard Prediction

Source: SMC 2005
approximately 100 to 150 m$^3$/m. This measurement only took into account the sand volume above 0 mAHD that is landward of the 2 mAHD contour. Figure B.6 of Appendix 2 of SMEC 2005 (see Appendix 1) also shows that since 1989 the net volume of sand at each of the measured profiles landward of the 2 mAHD contour has remained constant indicating that the sand mass on the beach was reasonably stable over the period 1989 to 2003.

No information is available on what is happening to the beach profile below water level but it appears that erosion from the dune/back beach escarpment system has slowed since 1989 with the sand volume landward of the 2 mAHD contour remaining constant along the beach system since that time.

5.6 INUNDATION AND HAZARD FROM WAVE RUNUP

SMEC (2005), as part of its analysis of coastal hazards at Town Beach, assessed the potential for wave runup and dune overtopping during a 1 in 100 year Average Recurrence Interval (ARI) storm event. The assessment was undertaken for high tide conditions. This modelling allows for the variation in wave height during a set of waves during the 1 in 100 year ARI event (as also occurs with normal wave sets). As a result, varying levels of wave runup will occur during the storm event. To address this variability, Average, Significant, 2% and Maximum wave runup during the 1 in 100 year ARI event have been estimated, where ‘Average’ is the average wave runup height during a 1 in 100 year ARI event; ‘Significant’ wave runup level is defined as the average height of the highest one third of waves to run up onto the dune system during a 1 in 100 year ARI event; ‘2%’ is the wave runup height achieved by the highest 2% of waves during a 1 in 100 year ARI event; and ‘Maximum’ is the predicted maximum wave runup height that is predicted to occur during a 1 in 100 year ARI event. The results of this analysis are shown on Figure 5.4.

As can be seen from Figure 5.4, modelling indicates that during a 1 in 100 year ARI storm event:

- The existing kiosk is landward of the average and 2% wave runup levels but some inundation would be expected at maximum wave runup levels.
- The car parking area at the southern section of the beach average would not be inundated even as a result of maximum wave runup levels.
- A section of road around the base of Gaol Point would be inundated by average wave runup levels but the car park at the northern end of the beach would not. The road and car park would be inundated as a result of wave runup levels in excess of predicted average wave runup levels. Maximum wave runup levels of 9.1 metres are predicted at Gaol Point due to the steeper beach and foreshore profile. Immediately to the north and south of the Gaol Point outcrop, the maximum predicted wave runup level is approximately 6 mAHD.

As shown on Figure 5.4, modelling undertaken by SMEC indicates that the northern section of the beach and adjoining foreshore recreation area will be subject to wave overtopping and subsequent inundation during a 1 in 100 year ARI storm event. Under these conditions there is potential for flooding to occur across the reserve and in the caravan park.

To explore the potential for waves to overtop the existing dune system further, analysis of dune height and predicted wave runup levels at each of the beach profiles used on the northern part of the beach has been summarised in Table 5.1.
Coastal Zone Management Plan for the Town Beach Coastline

February 2010

Town Beach Key Issues

FIGURE 5.4
Wave Runup Hazard

Source: SMEC 2000

Predicted maximum, 2%, and average wave runup limits for 100 year 12 hour storm, all profiles
Table 5.1 – Wave Runup Levels for Town Beach

<table>
<thead>
<tr>
<th>Profile</th>
<th>Current Maximum Dune Height (mAHD)</th>
<th>Max Wave Runup (mAHD)</th>
<th>2% Wave Runup (mAHD)</th>
<th>Average Wave Runup (mAHD)</th>
<th>Significant Wave Runup (mAHD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-12</td>
<td>4.7</td>
<td>5.8</td>
<td>5.3</td>
<td>3.9</td>
<td>4.6</td>
</tr>
<tr>
<td>2-13</td>
<td>4.3</td>
<td>5.6</td>
<td>5.1</td>
<td>3.8</td>
<td>4.5</td>
</tr>
<tr>
<td>2-14</td>
<td>4.5</td>
<td>5.7</td>
<td>5.3</td>
<td>3.8</td>
<td>4.6</td>
</tr>
<tr>
<td>2-15</td>
<td>4.1</td>
<td>5.4</td>
<td>5.0</td>
<td>3.7</td>
<td>4.4</td>
</tr>
<tr>
<td>2-16</td>
<td>4.5</td>
<td>5.6</td>
<td>5.2</td>
<td>3.8</td>
<td>4.5</td>
</tr>
<tr>
<td>2-17</td>
<td>4.0</td>
<td>5.8</td>
<td>5.3</td>
<td>3.8</td>
<td>4.6</td>
</tr>
<tr>
<td>2-18</td>
<td>4.2</td>
<td>5.7</td>
<td>5.2</td>
<td>3.8</td>
<td>4.5</td>
</tr>
</tbody>
</table>

As can be seen from Table 5.1, maximum dune height along the northern section of the beach varies from approximately 4.0 mAHD to approximately 4.7 mAHD. At these elevations, the existing dune would not be overtopped by average wave runup levels during a 1 in 100 year ARI storm event but would be overtopped by runup from a significant wave.

As can be seen from Table 5.1, predicted maximum wave height at the northern end of the beach ranges from 5.4 mAHD to 5.8 mAHD. The foreshore beach reserve behind the dune system and the adjoining caravan park have an elevation of approximately 3 mAHD and as a consequence any water that overtops the dune system has the potential to drain inland over the foreshore recreation area to the caravan park. With current dune elevations, runup levels in excess of average wave runup will overtop the dune system and have the potential to result in flooding of the caravan park.
6.0 MANAGEMENT OPTIONS

6.1 CONCEPT PLAN

Figure 6.1 presents the integration of management responses to coastal hazard issues and coastal amenity issues and summarises the principal outcomes of the Coastline Management Plan. The Concept Plan incorporates elements of the 1995 Master Plan and options to address both erosion and flooding from storm wave runup. The major features of the Concept Plan are designed to enhance the amenity of the beach and reserves for local and visitor users, as well as to further develop the potential of Town Beach as an iconic site for visitors to Port Macquarie and a key element of the tourism strategy for the City.

Important components of the Concept Plan are discussed in Sections 6.1.1 to 6.1.7, with further discussion of design attributes that are consistent with coastal hazards discussed in Section 6.2.

6.1.1 Gaol Point and Rotary Park

Gaol Point is set directly above central part of Town Beach and is frequently used by surfers and others as a vantage point to assess the surf, before descending to the beach. The lookout site also encourages visitors to descend to beach level down the bluff. There is potential for large numbers of people to use this access route, particularly as parking and other general facilities at the Stewart Street level are improved. It is therefore proposed to replace the current unformed track from Gaol Point to the back of Town Beach with two formalised and lit pathways, incorporating stairs and rails. This will improve visitor safety and reduce the risk of erosion of tracks.

The popularity of the Gaol Point lookout area means that already traffic management in this part of Stewart Street is an issue in busy periods. Council has recognised the existing traffic management issues and is also considering further modification of traffic flow to improve the safety and amenity of residents and visitors. It is anticipated that with high occupancy rates in the adjacent apartment and hotel accommodation, together with increasing numbers of visitors to Rotary Park and Gaol Point, and improved access from Gaol Point to the beach, will all increase the need for measures to protect the safety of pedestrians moving through this area.

Further traffic calming devices and simplified traffic flow will reduce the risk of conflicts between pedestrian and vehicle traffic and will also reduce the potential for noise impacts on adjacent apartment and hotel occupants.

In addition to these measures to facilitate orderly and safe movement through the area, it is important that additional car parking spaces, provided for visitors to lookouts and the Visitor Information Centre or accessing the beach from Gaol Point, do not visually dominate the outlook from Stewart Street and adjacent walkways over the ocean.

6.1.2 Proposed Sea Rescue / Coastal Patrol / Public Facilities

The southern corner of Town Beach is the most protected and often has gentle spilling waves suitable for young children and less strong surfers. Council’s beach patrol covers this end of the beach during summer. The southern end of the beach is therefore favoured by all age groups visiting the beach. Toilets and change rooms for beach users need to be maintained and upgraded to cater for relatively high visitor numbers.

There have been some vandalism activities and antisocial behaviour reported around the existing public toilet facilities at the southern end of the beach. Enhanced night time lighting, and community awareness may assist with reducing the risk of these impacts.
The current Town Beach Kiosk is the only waterfront food outlet along the popular walking route from Town Green, along the breakwall, along Town Beach and around the southern headlands. The kiosk has recently been upgraded, with some wind protection and seating, as well as broad timber steps above the beach. In addition to this land based visitor market, the kiosk provides the traditional beach side chips, cool drinks and ice cream for families visiting the southern (patrolled) end of the beach.

As noted in Section 5.6, the kiosk is subject to wave runup hazard under extreme wave runup conditions, so any café infrastructure should respect this hazard.

Council proposes to redevelop the facilities at the southern end of the beach with the construction of a new Sea Rescue / Beach Patrol and Public Facilities building, as shown on Figures 1.3 to 1.6. As shown, these new facilities will include a kiosk, toilets, SLSC office and garage, first aid station, operations and control rooms, storage areas and elevated viewing areas. The new facilities will utilise existing timber decks, boardwalks and parking areas.

6.1.3 Landscaping, Lighting & Pathways

Actions in relation to lighting, landscaping and pathways are all designed to improve the safety, amenity and versatility of the Town Beach study area for visitors.

6.1.3.1 Lighting

Lighting for the immediate back beach area and car parks is an important management strategy, contributing to the safety and amenity of the beach from early morning into the evening.

Upgrades and redevelopment of facilities at the southern end of Town Beach performance over the last five years include provision of solar powered lighting. Individual solar panels are attached to each light pole. It is understood that there have been some difficulties with these lights and they have now been connected to mains electricity.

Options for consideration include:

- Converting all lighting to mains based electricity;
- Utilising a sustainable energy supply such as centralising the photovoltaic cells to generate solar power and supplying this power to the individual light poles;
- Use of energy efficient lanterns.

6.1.3.2 Landscaping

The major components of landscaping are shade in the back beach reserves, visual screening (or conversely maintaining specific view corridors), creation of a pleasant urban beach side landscape (planting and weed management) and maintenance of basic habitat connectivity along the beach for native species that occasionally forage there. All species used in planting in the back beach reserve areas should be coastal species able to withstand a high level of wind and salt exposure. All street furniture should also be constructed in materials that are appropriate for the exposed open beach conditions.
Management options for the beach landscape include:

- Continue the theme of seating, lighting and other public furniture along the southern part of the beach, and extending into the northern reserve areas;

- Continue the current use of the beach horsetail casuarina (*Casuarina equisetifolia*) as a key species for both general landscaping and shade planting in the back beach reserves;

- Mix plantings of casuarinas with coastal banksias (*Banksia integrifolia*) and other locally indigenous small trees and shrubs (as noted in the 1995 Master Plan), to provide for shade and some delineation of spaces, without blocking views from above. This mix of flowering native species will also encourage foraging along the beach by a range of bat and flying fox species that visit the area from time to time;

- Continue a program of weed removal on the grassy bluffs;

- As noted in the 1995 Master Plan, use a range of coastal shrub and grass species on the low dune behind the beach, including *Acacia sophorae* (coastal wattle), *Ammophila arenaria* (Marram Grass), *Carpobrotus glaucescens* (Pig Face), *Hibbertia scandens* (Guinea Flower) and *Spinifex sericeus* (Spinifex Grass).

- Continue to provide structural shade as well as shade from small trees in the back beach area, by ensuring that all picnic tables have canopies;

- Where possible, introduce small shade trees into car parking areas;

- Essential signage should provide clear directions/instructions, without dominating the beach and reserve landscape. The design and content of signage should be determined in consultation with the Port Macquarie Tourist Office, local historical society and Birpai Local Aboriginal Land Council;

- Landscaping in Rotary Park should also be enhanced to provide greater connectivity between the various areas of coastal reserve. Whilst the presence of Norfolk pines throughout the area is one visual link, there are good opportunities for other planting of attractive natural vegetation to create more interesting spaces and enhance visual amenity.

### 6.1.3.3 Pathways

One of the key community values of Town Beach is the walking paths that pass along the back of the beach, connecting the breakwall pathway to the natural pathways around the southern headlands. These paths are heavily used from early in the morning until well into the evening. Management options to enhance the amenity of the walking routes include the following:

- As identified in the 1995 Master Plan, widen pedestrian paths to 2 metres and pave with a surface to withstand moderately heavy pedestrian traffic. This includes pathways across Rotary Park, around Gaol Point, across the northern reserve area and along the back of Town Beach;

- Install a high level pathway from Gaol Point along the side of Stewart Street (but set back from the roadway), to connect with other paths at the southern end of Town Beach;
Coastal Zone Management Plan for the Town Beach Coastline  
Management Options

- Where pathways are immediately adjacent to the roadway, ensure that traffic calming devices are in place to reduce vehicle speed. Wherever possible, set pathways back slightly from roadway, with low level grass/ground cover plantings or bollards between;

- Highlight the linkages and route options for walkers from the Town Centre (Town Green), to Town Beach and then to headlands and pocket beaches to the south. This can be achieved by signage at various entry points to the walkway, by providing brochures at the visitor Centre and other tourist venues and by developing a theme(s) for the whole of the walk. Theme options include heritage, coastal recreation or coastal scenery, noting the opportunities for whale and dolphin watching from vantage points along the coastal walk;

- The pathways along the back of the northern part of the beach should be located behind the reconstructed dune in this area, with access points to the crest of the low dune for outlooks across the beach and for beach access (see Figure 6.1 and Section 6.1.7). This should include a pathway connecting the proposed rotunda to the beach;

- Construct new formalised paths and stairways from Gaol Point to the lower level of the back beach reserve. This will provide for safe access from the lookout down to the beach, and also provide more control over pedestrian movement across the grassland habitats on the steep slopes. Other informal pathways down the bluff should generally be closed off, discouraging use; and

- Ensure that all pathways are well lit (see Section 6.1.5.1).

6.1.4 Access and Car Parking

One of the attractions of Town Beach is that it is accessible on foot from a wide range of accommodation for visitors, including the caravan park, hotels, motels and apartments. Pedestrian links from these locations (e.g. across Rotary Park and from Gaol Point down to the beach) encourage visitors to walk rather than drive. However, Town Beach is also used by large numbers of residents and visitors staying/living in other parts of Port Macquarie, and is visited by vehicle based sight-seers. Visitors come to the beach for different purposes seasonally.

The aim of traffic management around Town Beach is to encourage pedestrian access wherever feasible, to minimise conflicts between pedestrians and road users, to minimise crowding and queuing in car parking areas and to ensure that traffic flow/car parking does not dominate or detract from the coastal scenery and atmosphere that are the beach’s main assets.

Car parking issues and traffic flow have previously been addressed in the 1995 Master Plan and should be reviewed by Council.

The provision of additional parking towards the northern end of the beach, with appropriate shade trees (as well as upgrade of recreational facilities in this area), will help to redistribute the usage of the back beach reserve areas more evenly, by encouraging families to picnic in the northern reserve.

It is understood that Council has prepared plans for the installation of a new Gross Pollutant Trap to treat runoff from the existing car park area adjacent to the kiosk at the southern end of the beach. The construction of this treatment facility will help to reduce litter on the beach. Similar gross pollutant traps should be considered for other car park areas, as shown on Figure 6.1.
6.1.5 Southern headland – Flagstaff Hill

Unlike the open sandy beach components of the study area, the landscape of the southern headland is relatively steep, rocky and defined by native coastal woodland vegetation. Use of this area is not for direct beach pursuits, but for walking, enjoying ocean views and, at low tide, rock-hopping and fishing. The headland area is highly valued by locals and visitors for these purposes. The headland is a destination in itself, but is also a feature along the coastal walking route, which extends further to the south.

Actions to maintain the value of the southern headland/Flagstaff Hill area include:

- Protect the integrity of the coastal woodland vegetation by weed removal as necessary, and new planting as necessary to provide continuity of ground cover and to restore diversity. Walkers should generally be encouraged to stay on formed paths because of the potential damage to ground cover vegetation;

- Any new development proposals for this area should maintain the visual and habitat character of the woodland vegetation;

- Ensure that pathways, stairs, elevated walkways and lookouts are maintained to minimise any public safety risks. In keeping with the natural character of this area, relatively natural but robust surfaces are desirable;

- Provide seating at the Flagstaff Hill lookout;

- Provide interpretative signposting to advise visitors about the natural and heritage values of the area. Particular features include whales which can be seen from the headland lookout, occasional foraging of bats, flying foxes and birds in the area, and the early nineteenth century signal station which was located on the headland. There is also potential to highlight Indigenous heritage values along this part of the coast.

6.1.6 Northern Foreshore Recreation Area

The reserve area at the northern end of Town Beach has a number of values that are slightly different to those at the southern end. The northern end of the beach is also affected by coastal hazards that are more intrusive on public use than at the southern end of the beach. As noted in Sections 5.5 and 5.6, the northern reserve area is affected by both beach/dune erosion and flooding associated with storm wave overtopping the back of the beach. Details of beach protection works to address these hazards are discussed in Section 6.2. This section discusses proposed recreational facilities for the northern reserve area, taking into account previous recommendations (GeoLink 1995) and the implications of hazard management for the location and design of structures.

Unlike the reserve at the southern end of Town Beach where activities are focused directly on the beach, the northern area is set back slightly from the beach, and is adjacent to the breakwall and caravan park. Important opportunities include:

- The concept of the reserve as a sea foreshore family recreation area, but not totally dependent on the beach for its activity focus. It is a transition area between the beach and more terrestrial landscapes, and in this respect is similar to the Rotary Park area;

- The northern reserve is immediately adjacent to breakwall and to caravan park, both activity areas in their own right. Separation of the caravan park space from the public space can be achieved by planting of suitable attractive native coastal trees and shrubs;
• The reserve is traversed by the walking path along the breakwall from Town Green, to the beach and further south. Its position along this path makes it a destination in itself, as well as a transition area;

• The terrain of the reserve, with a natural amphitheatre slope on its southern side, and a large flat area, make it suitable for open air music or theatre events;

• The reserve presents a large open area compared to other opportunities in inner Port Macquarie. The size of the area and its position between the beach and more terrestrially focused areas makes it very adaptable for family recreation and for events for large groups. There is sufficient space to create recreational facilities targeting diverse group sizes and age range.

Proposed features and facilities in the northern reserve area are noted in Sections 6.1.8.1 to 6.1.8.6. The locations of each of the features/facilities discussed in these sections are shown in Figure 6.1 (Town Beach Concept Plan).

6.1.6.1 Playground Facilities

As noted in the 1995 Master Plan, it is proposed to upgrade the children’s playground in the northern reserve, making it a feature of this part of the beach reserve system. The playground could include structures that reflect its coastal location. A shade cover over the playground, or parts of the playground, should be considered.

It is anticipated that the playground would cater for beach visitors/holiday makers, but would also be used by local residents for family gatherings and/or children’s parties.

6.1.6.2 Rotunda

The northern reserve currently has limited structures. It is proposed that a feature picnic shelter or rotunda be constructed adjacent to the redeveloped children’s playground. This structure would provide a covered area for family picnics or other gatherings, and could include extended picnic tables and chairs.

As noted in Section 6.2, the reserve is subject to inundation from wave overtopping in very large storm events. To accommodate this hazard, it is proposed that the shelter/rotunda is constructed in robust materials. If a Rotunda is to be constructed, the floor level should be approximately 1 metre above the current ground surface.

6.1.6.3 Skate Park

It is proposed that the existing skate park in the northern reserve would be maintained. Additional seating and shade should be provided around the skate park.

6.1.6.4 Informal Amphitheatre

The 1995 Master Plan included an amphitheatre within the natural morphology of the north facing slope below Gaol Point. To facilitate the use of the amphitheatre, the steep embankment slope and stage area at the base of the slope should be revegetated with grass. Screen planting around the stage area could separate this space from other parts of the northern reserve. The relatively informal nature of this facility would be suitable for open air concerts with local artists, or as a site for specialist festival events etc.

The amphitheatre would be accessible on foot from the proposed stairways at Gaol Point and from pathways around the base of the bluff.
The north aspect of the amphitheatre would provide a sheltered outlook with excellent views across the river mouth.

**6.1.6.5 Public Toilets and Showers**

An issue noted in previous assessment of Town Beach and in community input to the preparation of this plan is the lack of public facilities at the northern end of Town Beach. The 1995 Master Plan suggested a major kiosk, information centre and public toilet facility in the reserve, close to the end of the breakwall, reflecting the “destination” status of the river mouth and the transition from river walk to coastal walk.

As discussed in Sections 5.5 and 5.6, the northern reserve is affected by both long term coastal erosion and wave inundation hazards. The construction of a major built facility immediately behind the beach is, therefore, no longer recommended.

It will be beneficial if public toilets and showers are located in a readily accessible position for people using the northern reserve. A possible location for toilets and showers is adjacent to the caravan park in the general proximity of the rotunda, as shown on Figure 6.1. This location is outside the coastal hazard zone and would avoid impacting of the amenity of the area and views from the northern reserve.

**6.1.6.6 Landscaping and Planting**

Landscaping in the northern reserve is recommended to achieve the following outcomes:

- **Dune stabilisation** (see Section 6.2). A mix of ground cover and small coastal tree species are proposed for the back beach dune. These will help to maintain a stable surface on the dune, help to direct pedestrian traffic from the reserve to the beach along specific routes, provide view corridors linked to other features of the reserve (e.g. from the playground and from the break wall) and provide shade/shelter in the immediate back beach area. Bitou bush and other weed species that are present in existing remnants of vegetation on the dune should be removed and replaced with native species.

- **Separation/screening** of the caravan park space from public open space using attractive native tree species. This was also recommended by GeoLink (1995).

- **Definition of the margin of the amphitheatre area** from the remainder of the reserve.

- **Definition of open space areas** within the northern reserve. It is envisaged that one area would be created around the children’s playground, with a second area around the skate park, and a third more open area between the two. By creating defined spaces within the reserve, the flexibility of the area for diverse user groups is reinforced.

- **Species selected for planting** in the northern reserve area would be similar to those used in the southern beach reserve area, contributing to a coherent coastal landscape.

- **Street furniture** in the northern reserve area should be generally compatible in style with the existing seating and lighting installed along the southern end of the beach.

- **Ensure all new pathways are 2 metres wide**, to cater for busy pedestrian traffic and often relatively large groups moving together.

- **At both the northern and southern ends of the beach**, it would be possible to include some art work in the pathway surface, either as engraving or painting. This may be a suitable method, for instance, to raise awareness about the heritage of the area.
6.2 BEACH PROTECTION WORKS

As discussed in Sections 5.5 and 5.6, the southern section of Town Beach is currently protected by a timber wall that extends from the kiosk to Gaol Point. This wall was installed as a component of the 1995 Master Plan. To enable improvements to be made and additional facilities constructed at the northern end of the beach, appropriate measures to mitigate beach erosion need to be put in place. A number of options have been identified to address the ongoing erosion at the northern end of the beach and adjacent foreshore parkland. These options include:

- Do Nothing and accept the ongoing erosion, reduced stability of the southern breakwall and loss of beach and foreshore amenity. This option was not considered to be feasible;

- Construction of ‘hard engineering’ such as:
  - Groynes. These were considered to be ineffective at Town Beach as the predominant direction of sand movement/loss is considered to be offshore;
  - A submerged offshore breakwater. Assessment indicated that this option would be prohibitively expensive and potentially dangerous to boating traffic. It was therefore not considered any further;
  - Seawall or terminal revetment along part or the full length of the northern section of the beach. A seawall along the full length of the northern section of the beach would provide long term protection from erosion but would detract from the beach amenity and would be prohibitively expensive. Variations to this option considered included sand nourishment over the seawall to enhance beach amenity and construction of a short (50 metre) section of seawall adjacent to the area of greatest beach recession at the northern end of the beach (i.e. Profiles 2-17 and 2-18). Construction of a short section of seawall at the northern end of the beach is considered feasible;

- Dune reconstruction through sand nourishment to return the northern end of the beach to approximately its 1980 alignment. Dune crest heights ranging from 4.0 mAHD to 5.0 mAHD were considered with SMEC initially recommending a dune crest height of 5.0 mAHD to minimise the extent of storm cut during a 1 in 100 year ARI storm event. Subsequent analysis indicated that a dune crest height of 4.5 mAHD also provided satisfactory performance during a significant storm event. Proposed renourished beach profiles are shown in Appendix 5. Wave runup analysis discussed in Section 5.5 indicates that to prevent a 1 in 100 year ARI significant wave runup level overtopping the dune, a dune crest height of approximately 4.6 mAHD would be required. Modelling indicates that the volume of sand required to maintain the reconstructed dune profile in the longer term is similar for a 4.6 mAHD or 5.0 mAHD dune heights.

- Maintenance of the Southern Breakwall to mitigate against ongoing erosion and consequent reduction in wall integrity.

Following detailed consideration and assessment of each of these options and further discussion with Council, a combination of components of the above options has been recommended to address the observed erosion at the northern end of the beach. The recommended erosion control measures are shown on Figures 6.1 and 6.2 and include:

1. Maintenance of the Southern Breakwall to replace dislodged rock and protect the core of the wall;

2. Removing the dislodged rock from the surf zone;
3. Raising the level of the southern section of the existing southern breakwall to a minimum height of 4.6 mAHD;

4. Constructing a new seawall with a crest level of 4.6 mAHD with the new wall extending approximately 50 metres south of the Southern Breakwall along the back beach escarpment to approximately Profile 2-17. Design specifications and typical cross-section for the extension are shown on Figure 6.2.

5. Reconstructing through sand nourishment, the northern section of the beach between Profiles 2-10 and 2-17. It is proposed to reconstruct the dune along approximately the 1980 dune crest profile as shown on Figure 6.2. As analysis indicates that a 4.6 mAHD dune would over time require similar sand volumes to maintain as a 5.0 mAHD dune, a minimum dune crest height of 4.6 mAHD has been adopted. It is estimated that these proposed dune reconstruction works will require approximately 15,000 m$^3$ of sand with an additional 15,000 m$^3$ of sand, being required approximately every 10 years to maintain the reconstructed dune profile. Detailed profiles for the reconstructed dune are provided in Appendix 1. In terms of sand supply for dune reconstruction, there are four sites in the lower Hastings River where Council dredges sand for maintenance dredging purposes to ensure safe navigation. The current licensed sand yield from these sites varies from 12,000 m$^3$ to 28,000 m$^3$. These quantities more than adequately meet the identified sand nourishment needs for the Town Beach, however more assessment is required of these sites.

6. Shaping the ‘to be nourished’ section of the northern beach to mesh with the existing dune and beach profile in the vicinity of Profiles 2-8 to 2-10. In the area between the existing timber wall and Profile 2-10, the beach profile has been reasonably stable over the period 1980 to present. Apart from minor reshaping of the interface with the proposed beach nourishment works, no works are proposed in this area.

7. Revegetation of the reconstructed dune profile with native species, consistent with those used in other parts of the beach reserve system at Town Beach. As noted in Section 6.1, the planting will also create defined view corridors from the parts of the reserve to the beach. Details of species to be planted and planting location will be determined by Council.

8. Provision of defined beach access points across the dune, with appropriate treatments to prevent blowouts along heavily used routes. These will include a mulched pathway to be constructed over the renourished dune to provide connection to the rotunda and amenities building, as shown on Figure 6.1.

6.3 EMERGENCY RESPONSE

The Town Beach Coastline Hazard Definition Study (SMEC 2005) has defined immediate and short term beach erosion hazard zones as well as the potential for longer term recession of the shoreline. It has also defined areas that may be subject to wave overtopping and inundation during a 1 in 100 year Average Recurrence Interval storm event.

A detailed Emergency Response Plan will be prepared for Town Beach as a stand alone document. In terms of emergency responses that may be required on Town Beach the Hazard Definition Study (SMEC 2005) indicates that the following matters will need to be addressed as part of the Emergency Response Plan:

- Parts of the proposed new Sea Rescue / Beach Patrol facilities at the southern end of the beach is landward of the predicted 50 year coastal hazard limit, however is within the
immediate and 50 year Foundation Zone Limits. As a result, the foundations of the new building should be designed to be undercut and be inspected after each major storm event to ensure that if damage has been sustained that repair works are undertaken in a timely manner. No works should be undertaken at this site during a major storm event.

- Wave runup analysis indicates that the new Sea Rescue / Beach Patrol facilities will be landward of the 2% wave runup limit but within the maximum predicted wave runup limit. As a consequence, the facilities should be evacuated during major storm events. Analysis indicates that the car park is landward of the maximum wave runup limit and therefore a close and safe place for patrons of the facilities to be evacuated to.

- The section of access road from approximately 70 metres south of Gaol Point and the existing car park north of Gaol Point are within the 50 year Coastal Hazard Risk Limit with a small section of the road within the immediate Hazard Risk Limit. The car park and this section of road are also within the 1 in 100 year ARI Average Wave Runup limit indicating that during such an event this area could be overtopped by waves presenting a hazard to users of the area. An emergency response procedure should be developed that closes this section of road and car park during a 1 in 100 year ARI event.

- The northern foreshore reserve area (i.e. north of Gaol Point) is currently prone to wave overtopping from Average Wave runup during a 1 in 100 year ARI event. The proposed dune reconstruction works will protect this foreshore reserve from wave overtopping for wave runup heights up to a Significant Wave runup level however will still be overtopped during larger wave runup events. Signs should be erected along the foreshore reserve warning of potential wave overtopping and emergency response procedures should be developed to evacuate people from this area prior to wave runup levels exceeding 4.6 mAH. This will require monitoring to observe wave runup levels during significant storm events. Beach and foreshore users will be able to evacuate to Gaol Point which above the maximum 1 in 100 year ARI storm events wave runup level.

- Evacuation measures should be developed for the caravan park which is also prone to inundation from wave overtopping during a 1 in 100 year ARI storm event. These evacuation procedures should be implemented at the same time that people are evacuated from the northern foreshore reserve area.

These identified hazards are more significant at the northern end of the beach because of the relative elevation of the foreshore reserve area and adjoining caravan park.

For Town Beach, a detailed emergency response plan will need to be developed that is designed to direct and co-ordinate actions in the event of severe storms that place at risk either:

- Community safety (beach and reserve users), by affecting safe entry and access or by placing recreational users at risk from dangerous seas; or

- Community infrastructure, including playground equipment, picnic shelters, beach access stairs and walls, public toilets, cafes etc, which may be undercut, destabilised or flooded by storm waves.
7.0 MANAGEMENT RECOMMENDATIONS

Table 7.1 summarises the actions that are recommended to define a future management strategy for Town Beach that addresses community recreational aspirations, supports the economic sustainability of Port Macquarie and protects important natural and cultural values of the coastline.

Many of the recommended actions have been foreshadowed in previous studies and plans for the coast, notably in the Town Beach Master Plan (GeoLink 1995) to better integrate them with both the coastline and the business centre of the City.

The highest priority recommended actions are those which address the coastal erosion and hazard issues at the northern end of the beach. Although it will be possible to implement some other actions in the northern part of the beach reserve system (particularly outside the hazard zones), only when the erosion and inundation hazards have been controlled can redevelopment of the northern reserve parklands be substantially implemented.

- The other very high priority action is the redevelopment of Sea Rescue / Coastal Patrol / Public Facilities at the southern end of the beach, and provision of amenities and shower facilities to service the northern end of the beach.

Table 7.1 also highlights the organisation that will have primary responsibility for the implementation of each action. In general, all actions related to the design, installation and maintenance of community facilities at Town Beach and in the adjacent reserves, are the responsibility of Council. The works that are necessary to maintain the southern breakwall of the Hastings River are the responsibility of NSW Lands. It is anticipated that Department of Natural Resources would contribute funds to the dune restoration and stabilisation works proposed for the northern end of the beach.

- Preliminary estimates of the cost of each action are provided in Table 7.1.

The timeframes identified in Table 7.1 assume that all new actions in this plan would be commenced within a five to ten year time frame.
### Table 7.1 - Priority and responsibility for key management actions

<table>
<thead>
<tr>
<th>Action ID</th>
<th>Management Recommendation</th>
<th>Responsibility</th>
<th>Priority</th>
<th>Suggested Time frame</th>
<th>Indicative Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Maintain Southern Breakwall of the Hastings River entrance, to replace dislodged rock and protect the wall core and raise crest height to 4.6 mAHD</td>
<td>NSW Lands</td>
<td>Very High</td>
<td>2006</td>
<td>Approximately 35 metres $1500/m with total cost of approximately $55,000</td>
</tr>
<tr>
<td>1b</td>
<td>Ongoing maintenance of Southern Breakwall</td>
<td>NSW Lands</td>
<td>Ongoing</td>
<td>$2000/year</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Remove displaced rock from the surf zone to reduce safety hazards to swimmers and surfers</td>
<td>NSW Lands</td>
<td>Very High</td>
<td>2007/08</td>
<td>Approximately $10,000</td>
</tr>
<tr>
<td>3</td>
<td>Construct new breakwall structure at the northernmost 50m section of Town Beach, with top level set at 4.6 mAHD</td>
<td>Council, in consultation with DNR</td>
<td>Very High</td>
<td>2007/08</td>
<td>Approximately $4000/m with a total cost of approximately $200,000</td>
</tr>
<tr>
<td>4</td>
<td>Reinstate the frontal dune along the remainder of the northern section of Town Beach from the extended breakwall to the existing wooden wall fronting the southern part of the beach reserves. This action requires 15,000m³ of sand initially with an additional 15,000 m³ of sand required for renourishment every 10 to 15 years</td>
<td>Port Macquarie Hastings Council, in consultation with DNR and NSW Lands</td>
<td>Very High</td>
<td>2008/09</td>
<td>Approximately $20/m³ with a total cost of approximately $300,000 (assuming sand has to be purchased). Ongoing sand nourishment costs of approximately $30,000 - $45,000/year</td>
</tr>
<tr>
<td>5</td>
<td>Landscape the reinstated frontal dune with appropriate coastal species (groundcover, shrub and small trees), to stabilise the surface, provide screening and maintain specific view corridors from the back beach area.</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2009</td>
<td>Approximately 2000 m² at $5/m² with a total cost of approximately $10,000</td>
</tr>
<tr>
<td>6</td>
<td>Upgrade the children’s playground area in the northern parkland</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium to High</td>
<td>2007/08</td>
<td>$80,000</td>
</tr>
<tr>
<td>7</td>
<td>Construct a rotunda adjacent to the children’s playground area</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium to High</td>
<td>2008/09</td>
<td>$50,000</td>
</tr>
<tr>
<td>8</td>
<td>Construct new amenities building to service the northern reserve area</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007</td>
<td>$100,000</td>
</tr>
<tr>
<td>9</td>
<td>Topsoil and grass the northern slope of Gaol Point</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium</td>
<td>2008/09</td>
<td>Approximately 1000 m² at $10/m² with a total cost of approximately $10,000</td>
</tr>
<tr>
<td>10</td>
<td>Install additional seating, tables and lighting in the northern reserve, in the same general style as that in the southern reserve</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium to High</td>
<td>2007/08</td>
<td>Approximately $100,000</td>
</tr>
<tr>
<td>Action ID</td>
<td>Management Recommendation</td>
<td>Responsibility</td>
<td>Priority</td>
<td>Suggested Time frame</td>
<td>Indicative Cost</td>
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<tr>
<td>11</td>
<td>Upgrade and install pathways in the northern reserve, two metres wide and including art work or natural/cultural heritage information in the surface</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium</td>
<td>2008/09</td>
<td>Approximately 300 metres at $140/m with a total cost of approximately $42,000</td>
</tr>
<tr>
<td>12</td>
<td>Prepare plan and enhance landscape planting across the northern reserve, including creating shade and defined spaces around the children’s playground, amphitheatre area and screening for the caravan park.</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium</td>
<td>2008/09</td>
<td>Approximately $100,000</td>
</tr>
<tr>
<td>13</td>
<td>Upgrade skate park facility in northern reserve</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006-</td>
<td>Approximately $100,000</td>
</tr>
<tr>
<td>14</td>
<td>Provide formalised stairway access from Gaol Point to the back beach area, on north and south faces of Gaol Point</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium</td>
<td>2008/09</td>
<td>Approximately $70,000 to $80,000</td>
</tr>
<tr>
<td>15</td>
<td>Provide interpretative signage at Gaol Point about the history of the site, the harbour entrance, surf conditions, passing whales and dolphins, walking trails etc.</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium/high</td>
<td>2007/08</td>
<td>$5000</td>
</tr>
<tr>
<td>16</td>
<td>Upgrade pathways in Rotary Park and enhance landscaping to improve connectivity between the park, beach and adjacent accommodation</td>
<td>Port Macquarie Hastings Council</td>
<td>Medium</td>
<td>2008/09</td>
<td>Approximately 200 metres at $140/m, total cost of approximately $28,000</td>
</tr>
<tr>
<td>17</td>
<td>Prepare Traffic Management Plan that includes investigation of the closure of the southern end of Stewart Street and installation of traffic calming devices to minimise potential conflicts with pedestrians</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007/08</td>
<td>$10,000</td>
</tr>
<tr>
<td>18</td>
<td>Implement Traffic Management Plan</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007/08</td>
<td>$80,000</td>
</tr>
<tr>
<td>19</td>
<td>Improve lighting along all pathways, using efficient lighting fixtures</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007</td>
<td>Approximately $10,000</td>
</tr>
<tr>
<td>20</td>
<td>Install shade structures in the back beach reserve at the southern end of Town Beach, to complement planting of shade trees</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007</td>
<td>Approximately $20000</td>
</tr>
<tr>
<td>21</td>
<td>Continue to use local flowering small trees for shade and to provide local habitat for foraging native species</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>$5000/year</td>
</tr>
<tr>
<td>22</td>
<td>Continue to remove weeds from coastal bluff grassland vegetation communities, replacing weeds with local coastal shrub and ground cover species</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>$5000/year</td>
</tr>
<tr>
<td>23</td>
<td>Wherever possible, introduce shade trees into car parking areas</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>Part of overall landscaping budget</td>
</tr>
<tr>
<td>Action ID</td>
<td>Management Recommendation</td>
<td>Responsibility</td>
<td>Priority</td>
<td>Suggested Time frame</td>
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</tr>
<tr>
<td>24</td>
<td>Design and install stormwater gross pollutant traps in car park at southern kiosk and car parks east and north of Gaol Point</td>
<td>Port Macquarie Hastings Council</td>
<td>High</td>
<td>2007 for southern car park</td>
<td>Allow for four gross pollutant traps (gpt) at $40,000/gpt</td>
</tr>
<tr>
<td>25</td>
<td>Highlight pedestrian linkages from Town Green to Town Beach and beyond in tourist information and in sign posting/maps all key junctions along the walking paths. Develop major theme to integrate the walking track system. Sign posting to also be provided at Flagstaff Hill to highlight special visual features such as whale watching.</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>Approximately $10,000</td>
</tr>
<tr>
<td>26</td>
<td>Maintain relatively natural pathway surfaces around southern headland (Flagstaff Hill)</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>$2000/year</td>
</tr>
<tr>
<td>27</td>
<td>Review safety of all pathways, stairways, elevated walkways and lookout fencing around Flagstaff Hill.</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>$2000/year</td>
</tr>
<tr>
<td>28</td>
<td>Ensure that any further development of facilities in the woodland areas at Flagstaff Hill and beyond does not detract from the natural landscape character of this area.</td>
<td>Port Macquarie Hastings Council</td>
<td>Ongoing</td>
<td>2006</td>
<td>Ongoing Council decision making</td>
</tr>
<tr>
<td>29</td>
<td>Develop detailed Emergency Response Plan for Town Beach and the caravan park.</td>
<td>Port Macquarie Hastings Council in consultation with DNR and SES</td>
<td>High</td>
<td>2006</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

Total one off capital cost

Approximately $1,440,000 - $1,450,000

Ongoing cost

Approximately $46,000 - $61,000 / year
8.0 REFERENCES

GeoLink 1995.  Town Beach Draft Master Plan

SMEC 2005. Town Beach Coastal Hazard Assessment
APPENDIX A - EMERGENCY MANAGEMENT PLAN