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Portland Bay Coastal Infrastructure Plan

November 2007



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Portland Bay Coastal Infrastructure Plan

Prepared for
Glennelg Shire Council (Client)

By
Beca Pty Ltd (Beca)

In collaboration with
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November 2007

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Revision History

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Document Acceptance




Action	Name	Signed	Date
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Preface by the Mayor

The Portland Bay foreshore is an attractive destination situated 360km west of Melbourne and 75km east of the South Australian border. Portland Bay is popular for a range of recreational and community activities including boating, fishing, kayaking, diving and swimming. Along the foreshore a number of community events are held such as festivals, markets, carnivals and charity events in addition to beach areas that are ideal for family recreation. Portland is recognised as the birthplace of Victoria's settlement and there are significant shipwrecks in the area.



A significant commercial fishing industry also operates from Portland Bay with lobster, squid, deep sea trawling and abalone fleets using Portland facilities. Adjoining the foreshore is one of Victoria's international deep sea ports, the Port of Portland which is a major exporting facility that contributes significantly to the local economy.

Such a significant foreshore deserves a long term plan that helps in realising the community's vision and provides specific advice to Council and the State Government that is consistent with coastal policy and management direction.

Council formally adopts this Portland Bay Coastal Infrastructure Plan as a document that will provide the strategic direction required to implement positive change to the foreshore environment. The Plan has been prepared on the basis of extensive community and stakeholder engagement through a number of mechanisms. It is a significant achievement that the community and wide range of interested stakeholders has ownership of this Plan as a platform to move forward into the implementation phase.

Beca has prepared this report under the stewardship and advice of an inter-departmental Project Steering Committee. The project was made possible through a partnership with Regional Development Victoria, the Department of Sustainability and Environment (DSE) and the Glenelg Shire Council.

Thank you to those who attended the various consultation sessions for your interest and significant input into steering the direction of this Coastal Infrastructure Plan. The support and sound advice of the Beca project team as well as the Officers of the Glenelg Shire Council, is also acknowledged.

Sincerely

Cr. Gilbert Wilson

Mayor, Glenelg Shire Council

1 Introduction

The Glenelg Shire Council has engaged Beca Pty Ltd to prepare a Coastal Infrastructure Plan (CIP) for the foreshore area of Portland Bay. The aim of the CIP is to provide clear and practical design guidance for the future use and development of the foreshore area. This has involved considering coastal infrastructure requirements, such as marine structures and foreshore amenity facilities, within the study area. Assessing the condition of current facilities and the gaps to deliver infrastructure required to meet user demands of the foreshore into the next 20 years and beyond is the key focus of this CIP.

Pressure on coastal environments is growing and Portland’s experience is consistent with this international trend. Lifestyle changes, population increases and tourism opportunities are contributing to increased demands on limited and sensitive coastal spaces, resulting in increased pressure on coastal infrastructure. The impacts from climate change such as sea level rises and storm



surges are becoming more widely understood and have been factored into the planning throughout this project. The expansion plans of the Port of Portland are also a key factor in managing any interface issues with the foreshore and accommodating the commercial fishing fleet that is required to be relocated. Many recreational, community and business activities in Portland are dependent on this coastal environment. It is therefore important that the CIP seeks to achieve an appropriate balance between these sometimes competing and sometimes complementary demands. The CIP also provides guidance for effective use of the foreshore as a public land asset and the appropriateness of any commercial uses.

The Coastal Infrastructure Plan aims to:

- § Provide a long term master plan through a foreshore vision for the future to 2020.
- § Undertake a robust and innovative assessment of the opportunities available for the Portland foreshore and its civic, recreational, operational and boating functions.
- § Identify options that improve facilities, and will enable Portland to be promoted to the wider boating community as a distinctive and quality waterfront with modern facilities.
- § Provide a clear strategy for the relocation of the lobster fleet.
- § Assess the needs of the boating community including services, facilities and infrastructure for marina and boat ramp options.
- § Provide a strategy for improved foreshore amenity and connectivity with the township of Portland.

The Portland Bay Coastal Infrastructure Plan is being funded through a partnership with Regional Development Victoria, the Department of Sustainability and Environment (DSE) and the Glenelg Shire Council.

The Glenelg Shire Council is managing the Project. A Project Steering Committee has been involved in providing input from local, state and federal agencies and guidance to the project team with representatives from Glenelg Shire Council, Regional Development Victoria, DSE, the Greater Green Triangle Area Consultative Committee and Department of Infrastructure (DoI).

1.1 Study Area

The study area extends from the cliff top at Andersons Point in the north to the western boundary of the trawler wharf at the Port of Portland in the south. It is shown as the area contained by the red boundary in the study area map in Figure 1.



The focus of this CIP is the land managed by Glenelg Shire Council as the Committee of Management on behalf of the Crown under the operation of the *Crown Land (Reserves) Act 1978*.

It is recognised however, that the adjacent land use of the Port of Portland Pty Ltd international port operations are significant and need to be considered during the assessment of key values and threats to the foreshore. It is acknowledged that the Lee Breakwater is owned and operated by the Port of Portland, although public access is available and highly valued by the Portland community.

The Trawler Wharf is a key asset within Portland Bay currently owned by the Port and the only suitable berthing space currently available for large vessels. The State Government is in the process of undertaking a separate study to upgrade the Trawler Wharf to meet the needs of the deep sea

trawler and squid industries. Therefore, this area has not been included in the study area for this CIP. Additionally, the Port of Portland, through the Harbour Master, has the jurisdiction to assume control of the water area managed by Council should this be deemed necessary for port security operations. It is recognised that there are some areas with shared responsibility for managing the coastal environment.

The cliff top area above Nun's Beach, including the "Ploughed Field", are subject to a separate study expected to be commissioned by the Glenelg Shire Council in the near future. The Portland central activities area is the other key adjoining land use along the western boundary of the study area, although they are separated by a significant grade difference. The proximity of the town centre to the foreshore area provides Portland with an opportunity to promote improved movement and access between these two locations, and create a unique experience for all users of the coastal environment and town centre.



Portland Bay Coastal Infrastructure Plan
Study Area Map

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1.2 Asset Appraisal

An initial appraisal of the assets existing in the CIP study area was undertaken in December 2006. This appraisal consisted of a brief visual inspection of the existing assets in order to qualitatively assess their present condition and serviceability, and to form an impression of their future service life in terms of functionality, serviceability and financial viability.

The inspection was limited to foreshore areas that are accessible to the public. The asset appraisal has focused on significant infrastructure assets such as buildings, roads, jetties that represent major capital investments. There are many smaller assets existing within the study area such as street furniture, artworks, public lighting, public water outlets etc which have not been individually assessed.

The initial impression obtained from the inspection of the foreshore infrastructure assets is one of under development and under utilisation, although this obviously fluctuates with seasonal changes.

In general, the assets in existence cater for specific interest groups, with the exception of the Maritime Discovery Centre and Visitor Information Centre, Henty Beach and Nun's Beach precincts which attract the general public for beach activities, play equipment, picnic and BBQ areas. Specific interest groups catered for include:

- § Trailer boat users;
- § Off the beach boat users;
- § Recreational fishing users;
- § Yacht Club members;
- § Angling Club members; and
- § Naval cadets

An apparent feature of the study area is a lack of public assets that attract the general public to the water. For example, considering the proximity of the foreshore to the centre of Portland, a significant regional centre, apart from the existing marina jetty, there is no public wharf or jetty for people interested in promenading or watching boating and marine activity. The existing marina jetty has design limitations which are discussed below, and which limit the number and type of private vessels berthed in the harbour.

Further, there is no facility within the study area suitable for berthing and operation of commercial and charter vessels, visiting tall ships and other vessels of interest to the public. These facilities may currently be available within the commercial port area which is outside the study area, although the port area is more remote from the centre of town, and the future maritime security regime within the commercial port is likely to be incompatible with public access areas. There is also no current commercial activity on or over the water to attract the public, such as retail outlets, cafes and restaurants.

Figure 2 provides a visual overview of the current assets that exist within the study area.

Additional detail of the asset appraisal is provided in the Portland Bay Coastal Infrastructure Plan – Vision and Values Report (Beca, June 2007).



Legend

Study Area Boundary

Coastal Infrastructure

- Naval Cadets Building
- Play Area
- Parking
- Toilets
- Shelter/ Picnic/ BBQ Areas
- Visitors Information Centre
- Maritime Discovery Centre
- Angling Club
- Yacht Club
- Fish Cleaning Facility
- Boat Ramp & Jetties
- Pedestrian Access Stairs
- Skate Park
- Lee Breakwater
- Road
- Rock Revetment
- Retaining Wall
- Jetty
- Reclaimed Land



Portland Bay Coastal Infrastructure Plan
 Existing Asset Infrastructure

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1.3 Project Approach

The preparation of the Portland CIP was informed and developed over a series of key phases. A thorough process of consultation and research has been undertaken to provide the reporting that lead to the recommendations in this CIP. The CIP is the culmination of the robust assessment using an evidence-based methodology throughout the project. There were three phases of work for this project:

1.3.1 Phase 1 – Vision and Values

- § Preliminary Mapping
- § Asset Appraisal
- § Planning and Community Profile
- § Funding Opportunities
- § Project Information Newsletter
- § Stakeholder and Residents Consultation
- § Draft Vision and Values Report
- § Steering Committee Meeting
- § Councillor Workshop Briefing
- § Final Vision and Values Report

1.3.2 Phase 2 – Design Solutions

- § Lobster Fleet Options
- § Marina Options
- § Boat Ramp Options
- § Traffic Review
- § Stakeholder Design Workshop
- § Preferred Design Option – Master Plan
- § Steering Committee Meeting

1.3.3 Phase 3 – The Coastal Infrastructure Plan

- § Infrastructure Cost Estimates
- § Business Case
- § Draft Coastal Infrastructure Plan Report
- § Steering Committee Meeting
- § Council Presentation
- § Project Information Newsletter
- § Community Information Session and launch 4 week Public Exhibition of Draft CIP
- § Review and Summarise Submissions
- § Final CIP Report and Steering Committee Meeting

The Vision and Values Report (Beca, June 2007) has been formally approved by the Project Steering Committee and includes the following sections:

- § Planning and Community Profile
- § Asset Appraisal
- § Funding Opportunities
- § Summary of Stakeholder Issues Consultation
- § Summary of Residents Discussion Group Consultation
- § Foreshore Vision and Values
- § Next Steps

2 Vision and Values

The vision and values for the Portland CIP reflect the long term strategies of Glenelg Shire Council and other State government agencies responsible for the management of the foreshore. They are consistent with the policy direction for the Portland foreshore and surrounding area such as the Portland township and, importantly, take into account the needs and aspirations of the community, key stakeholders and foreshore users.

The desired outcomes are to be achieved over a long period, although some components of the CIP will be realised in the shorter term. The vision and values established the basis upon which the design solutions were founded upon.



Importantly, future applications for the use or development of the Portland Bay foreshore should be generally in accordance with the vision, principles and values identified in this section of the CIP.

2.1 Vision for the Portland Bay Foreshore

The long term vision for the Portland Bay foreshore is:

The proximity between the town centre, foreshore and the port activities creates a dynamic and unique relationship where recreational, community, fishing and boating uses of the foreshore operate in harmony with the adjacent international port and build on Portland's rich heritage as Victoria's first settlement.

2.2 Key Principles of the Vision

A number of key principles are encompassed in the vision that it is reliant upon. These elaborate on the detail of what the vision is based on, as follows:

2.2.1 Great infrastructure:

The recreational and community needs of a range of foreshore users are met through delivery of high quality coastal infrastructure.

2.2.2 Vibrant and interesting:

Enhance public access and creation of a place of interest and attraction for locals and visitors to Portland.

2.2.3 Celebrate Portland's heritage and natural environment:

Portland's significant heritage values as Victoria's first settlement, unique environmental assets and marine animals in the Harbour are protected and promoted to enhance the foreshore's intrinsic coastal and maritime character.

2.2.4 Walk from city to coast:

The foreshore complements the use and function of the Portland township and increased pedestrian movement between these two key destinations is encouraged.

2.2.5 Easy and fun to navigate:

Linkages and increased activity are provided between the currently disjointed infrastructure facilities along the foreshore, based on precincts that fulfil different functions.

2.3 Values

Important values that need to be protected, maintained and/or enhanced through the implementation of the CIP include:

- § Building on the strengths and attraction of the established township and position Portland as a key coastal destination for the south western region;
- § Public access to a range of foreshore areas and experiences;
- § Any development or use on the foreshore must demonstrate broad community benefit;
- § Portland's unique coastal character through its mix of public foreshore, commercial fishing and international port activities;



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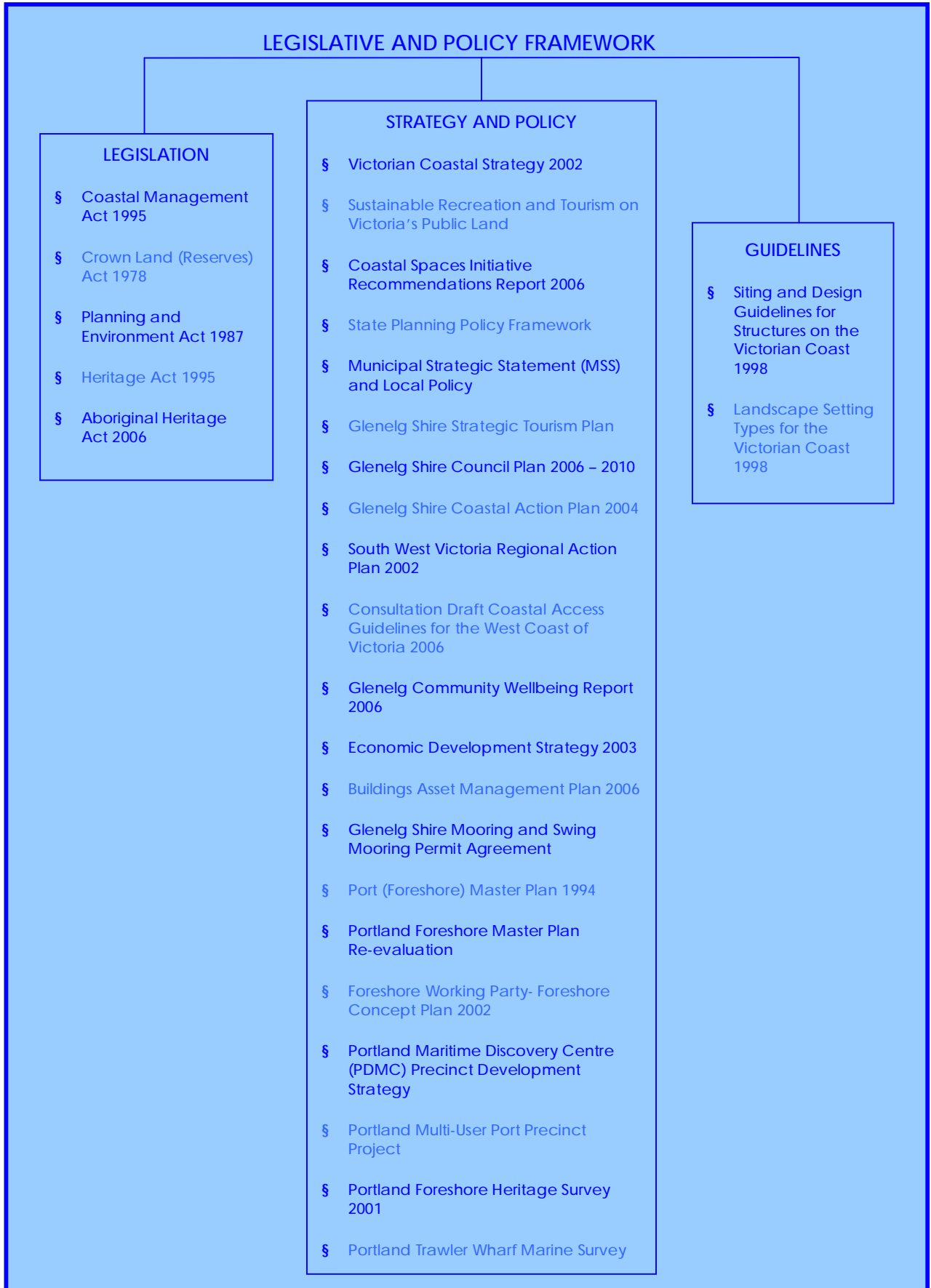
- § Priority for pedestrian users of the foreshore environment;
- § Opportunities to undertake a range of inexpensive recreational and family oriented activities;
- § Recognition of Portland's significant maritime heritage values and assets, particularly as the first settlement in Victoria and the large number of shipwrecks along the coast;
- § Appreciation of the contribution made by the recreational and commercial fishing industries to the Portland foreshore through vibrant wharf activity, tourism potential and economic development;
- § Opportunities to enhance the economic function that the Portland foreshore contributes to the local and regional economy, particularly from attracting visitors to the area; and
- § Opportunities to provide educational, interactive and interpretive experiences, building on the role of the MDC, to inform both the public and school children about the important foreshore, ecological, heritage and marine environment in Portland.

2.4 Planning and Community Profile

Figure 3 identifies the key pieces of legislation, strategies, policies and guidelines that apply to, or provide a context for coastal management within Portland. Each document has been reviewed to provide an understanding of the operating framework for preparing the CIP, including the vision and values.

Additional detail on the Planning and Community Profile is provided in Section 2 of the Portland Bay Coastal Infrastructure Plan – Vision and Values Report (Beca, June 2007).

Figure 3 - Legislative and Policy Framework



2.5 Existing Foreshore Leases

Table 1 lists each building located along the Portland foreshore with a current lease agreement with the Glenelg Shire Council to operate on coastal Crown land. Notably, all these buildings are focused on providing a community or recreation service and there are no leases currently operating on the foreshore that are commercial leases. This table is based on information provided by Council.

Table 1 - Existing Foreshore Leases

Tenant	Length of Lease	Rental Payments
Portland Yacht Club	Lease term is 10 years (commenced 01/07/99) with the option of two periods of 10 years each.	Annual rent paid is paid quarterly. Rental review undertaken every 5 years.
TS Henty - Naval Reserve Cadets (Commonwealth of Australia represented by the Department of Defence)	Lease term 3 years (commenced 01/07/2001 - appears to just "roll over").	Annual rent paid is payable in advance.
Portland Angling Club	Lease term 30 years (commenced 01/07/83).	Annual rent paid is paid in half yearly instalments.

2.6 Consultation Summary

Throughout the preparation of the CIP a number of consultation activities have been undertaken including:

- § 26 x individual Stakeholder interviews.
- § Design Options Meetings with the Stakeholder Groups.
- § 2 x Residents Discussion Groups.
- § Day and Evening Community and Stakeholder Design Workshop – Preferred design option.
- § Councillor Briefing Workshops
- § Steering Committee Meetings with Glenelg Shire Council, DSE, Regional Development Victoria, DoI, Greater Green Triangle ACC representatives.

This section provides a summary of the key issues and outcomes from consultation with both stakeholders and residents.

2.6.1 Key Messages from Stakeholders

From the stakeholder interviews, there are some clear messages about issues that need to be resolved or addressed as part of the CIP including:

- § All stakeholders unanimously supported public access to the Lee Breakwater to be retained in the future, and believe this is essential for Portland residents and visitors alike.
- § The majority of stakeholders were supportive of the commercial lobster fleet (excluding a couple of the larger vessels) to be relocated into a new marina in the

North West Corner. There were concerns however regarding the timing and available funding to implement this proposal.

§ There are a number of commercial operators seeking space and facilities on the foreshore for tourism, business and recreational purposes whose needs have to be balanced with managing the foreshore as a public asset.

§ All stakeholders supported the decommissioning of the Marina Jetty, however there were some groups that envisage it could be utilised in an altered form for promenading purposes.

§ There was overwhelming demand for a second boat ramp to be located within Portland Harbour to service recreational trailer boats and relieve current congestion. Preferred locations for this varied including additional lanes to the ramp in the current location, around the MDC reclaimed land or around the north west corner reclaimed land.



§ A number of the club buildings on the foreshore do not appear to be utilised to their full potential and have very low membership numbers. There was support to investigate the opportunity to share improved facilities provided arrangements could be negotiated successfully and clubs retain the ability for their building space to be available for public hire.

§ It is important to preserve Henty and Nun's Beaches as recreational and amenity precincts for safe swimming. Encroachment of the port industry, commercial fishing and tourism industry should not be permitted to compromise the value of these beaches.

2.6.2 Key Messages from Residents

From the Discussion Group consultation, there are some clear messages from residents about issues that need to be resolved or addressed as part of the CIP. These key messages include:

§ There is an overwhelming need to provide better access, connectivity and continuity along the foreshore area. This includes creating better access for all people of all abilities.

§ The importance of Henty and Nun's Beaches for recreational, family and community activities was emphasised as a key value.

§ The foreshore is car dominated at present and needs a more balanced approach to shared access for cars, pedestrians, cyclists and boats.

- § Land based fishing opportunities are just as important for local residents as boating needs.
- § Tourism opportunities along the foreshore need to be capitalised upon and recognition needs to be given to the significant contribution the foreshore and its activities make to Portland.

2.7 Key Issues Arising

The key issues arising from this Vision and Values Report that are addressed throughout the design principles and in this CIP are:

- § Provide better connectivity to and continuity along the foreshore area, including all abilities access, where visitors are intuitively drawn to the foreshore and harbour area with strong linkages to the Portland township.
- § The foreshore is currently vehicle dominated and needs to provide improved shared access for pedestrians, cyclists and boats.
- § Enhancement and preservation of Nun's Beach and Henty Beach for swimming and family activities.
- § General support for a marina development to be located in the North West Corner to accommodate recreational boats, charter boats and light commercial fishing fleet.
- § The importance of boating and fishing activity to the township to be recognised for its contribution to activity and vibrancy on the foreshore, tourism and economic development benefits.
- § Land based fishing opportunities are just as important for local residents as boating needs and a number of opportunities need to be provided for this to occur.
- § The need for a second boat ramp to meet current congestion issues and to find a suitable location for this infrastructure that manages traffic issues and avoids dominance of the foreshore.
- § Tourism opportunities need to be capitalised upon in a balanced way that manages activity on the foreshore without over commercialisation.
- § The land surrounding the Maritime Discovery Centre / Visitors Information Centre needs to be better utilised to provide a focus area for tourism and fills out the vacant spaces in a way that complements the existing built form.
- § The existing Marina Jetty should be reconfigured to remove the boat moorings and whilst it is deemed to be safe for public access, to be utilised for promenading and fishing activities.

3 Design Principles

3.1 Introduction

The purpose of this section is to identify and outline the:

- § Design Precincts;
- § Design Principles; and
- § Design Criteria.

3.2 Design Precincts

A precincts approach has been adopted for the CIP to provide for a range of activities with key destination points for these to be located and attract foreshore users. Five precinct areas have been identified to define the types of use and infrastructure required within each area. There was general agreement between the community and stakeholders when these precincts were discussed at the Design Workshop in July 2007.

3.2.1 Nun's Beach to Andersons Point Precinct

This precinct includes the coastal strip between the Lee Breakwater and Andersons Point, from the base of the cliffs to the water's edge. This precinct is generally undeveloped in nature, with native vegetation, exotic weed species and expansive sandy beaches.

Access to the precinct is pedestrian only, from the Nun's Beach Car Park at the southern end of the precinct. This car park has a sealed surface, with the eastern edge adjacent to the beach bounded by kerb and channel, stormwater drainage and a concrete footpath, and is generally in good condition. Views from the car park to the beach are restricted by vegetation.



Significant built assets in the precinct are:

- § Nun's Beach public toilets and change rooms;
- § Electric barbecue and picnic shelter (derelict) at Nun's Beach;
- § Beach shelter, Nun's Beach;
- § Access stairs, Nun's Beach; and

§ Access stairs, Andersons Point.

All of the assets within this precinct are owned and operated by Council as Committee of Management for DSE. The access stairs at Nun’s Beach are due to be upgraded in the near future and are the subject of a separate study to be commissioned by Council. The Andersons Point access stairs have recently been constructed, however are currently closed due to a landslip at Wade Street.

The design intention is that these natural values will be protected to maintain the beach areas for recreational use and coastal amenity and to minimise the built form in this precinct.

3.2.2 Commercial Marina and Boat Ramp Precinct

This precinct is currently largely open water within the Harbour, however does include part of the reclaimed land platform that extends from the Lee Breakwater. This platform is currently under utilised open space that is not maintained and contributes to a poor image of the foreshore. There is an unsealed vehicle access track on this land.

The Lee Breakwater is a major asset of the Port of Portland which currently provides public access and is a popular location for walking, driving and recreational fishing activities.

This precinct provides significant development opportunities to accommodate a new commercial marina and boat ramp to utilise the significant space available, leverage of the current breakwater infrastructure and provide safe launching and mooring facilities.

3.2.3 Tourism and Recreation Marina Precinct

This precinct extends from the north of the current marina jetty to the reclaimed land where the new boat ramp is proposed to be located. It includes the existing sandy beach area, the Maritime Discovery and Visitor Information Centre (MDVIC), the lagoon area through to the Lee Breakwater and part of the existing reclaimed land.



The area adjacent to Bentinck Street rises towards the north, with a rock-faced batter linking the two levels opposite the MDVIC. As the level difference increases

towards the area opposite the Lee Breakwater, the formal batter gives way to more natural cliffs between the coastal strip and the landscaped area adjacent to Bentinck Street. Within this precinct the coastal strip between the cliff top and the beach presents a natural environment, with large undeveloped areas, and developed areas presenting a rural image with plantings of native grasses.

Significant land reclamation work has been undertaken in the corner of the harbour adjacent to the Lee Breakwater. A large platform extending into the harbour from the

western shore houses the MDVIC, with a large area of unsealed land used for overflow car parking. A second platform projects into the harbour from the inner end of the Lee Breakwater. The platforms are protected by rubble rock revetment to reduce wave and tidal effects. These two platforms have been identified as significant opportunities to accommodate a range of uses on the foreshore to help fill the blank spaces currently there.

This precinct also includes a lagoon area that provides shallow protected waters. A significant shipwreck called the *Regia* is also located in the lagoon area between the two areas of reclaimed land.

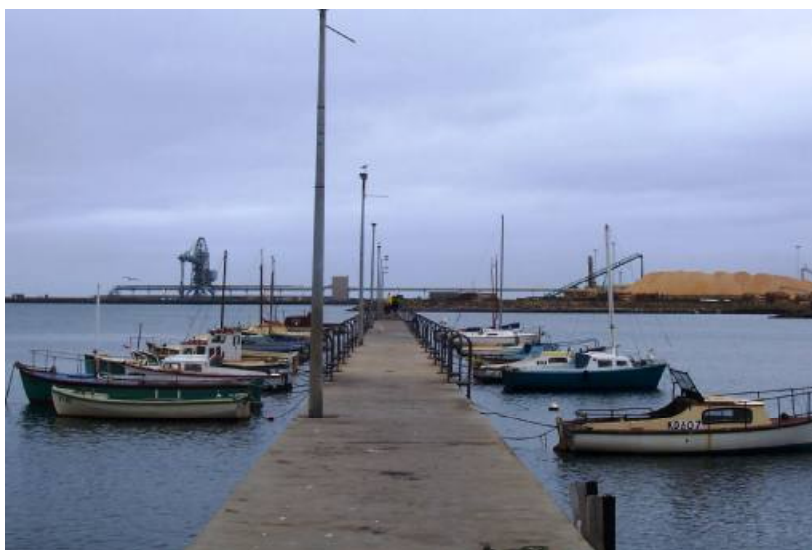
Primary MDVIC car parking facilities are provided on the western side of the building, however there is no formal provision for coach or caravan parking which generally use either the unsealed reclaimed area or park on the grass near the beach between the MDVIC and marina jetty.

The focus of this precinct is to provide tourism and recreational activities to complement the current function of the MDVIC with significant board walk areas, opportunities for land based fishing and points of interest. A helipad is proposed to be located within the precinct to contribute to this tourism activity.

3.2.4 Civic Foreshore Precinct

The Civic Foreshore Precinct is currently an area which includes the significant boating assets of the boat ramp and marina jetty, Yacht Club and Angling Club. The area is generally low lying, with a difference in level of approximately 4 metres between the foreshore area and Bentinck Street on the western perimeter, which is supported by a retaining wall. It is understood that the retaining wall had a historical purpose when train access was required to the waterfront, however it now acts as a significant visual and physical barrier between the Portland central activities area and the foreshore. A pedestrian link between the two levels is provided by steps located opposite Julia Street.

Access to the precinct is either via Lee Breakwater Road from the southern end, or via entry and exit ramps from Bentinck Street which run alongside the retaining wall, joining at the lower end to provide a two way link to Lee Breakwater Road.



The eastern area of the precinct between Lee Breakwater Road and the beach has been built up to provide a platform above the effects of tides and waves within the harbour. There is a significant area of sealed pavement to provide car and trailer parking for the boat ramp, marina jetty and

adjoining facilities. The boat ramp is a two lane ramp with a boarding jetty on each side. The marina jetty provides basic access to boats which are moored by the stern to the jetty however cannot service larger boats and is therefore under utilised. The design intention for this precinct is to ultimately remove boating activity from this area (and relocate to other precincts within the Harbour) to ease congestion issues and transform this space into a focal point for civic and community activities which encourages promenading and connections to the town centre.

3.2.5 Henty Beach Precinct

The Henty Beach Precinct consists of the foreshore area adjacent to Henty Beach, extending from the trawler wharf at the eastern end, to the car park adjacent to the northern end of the beach, including expansive grassed open spaces.

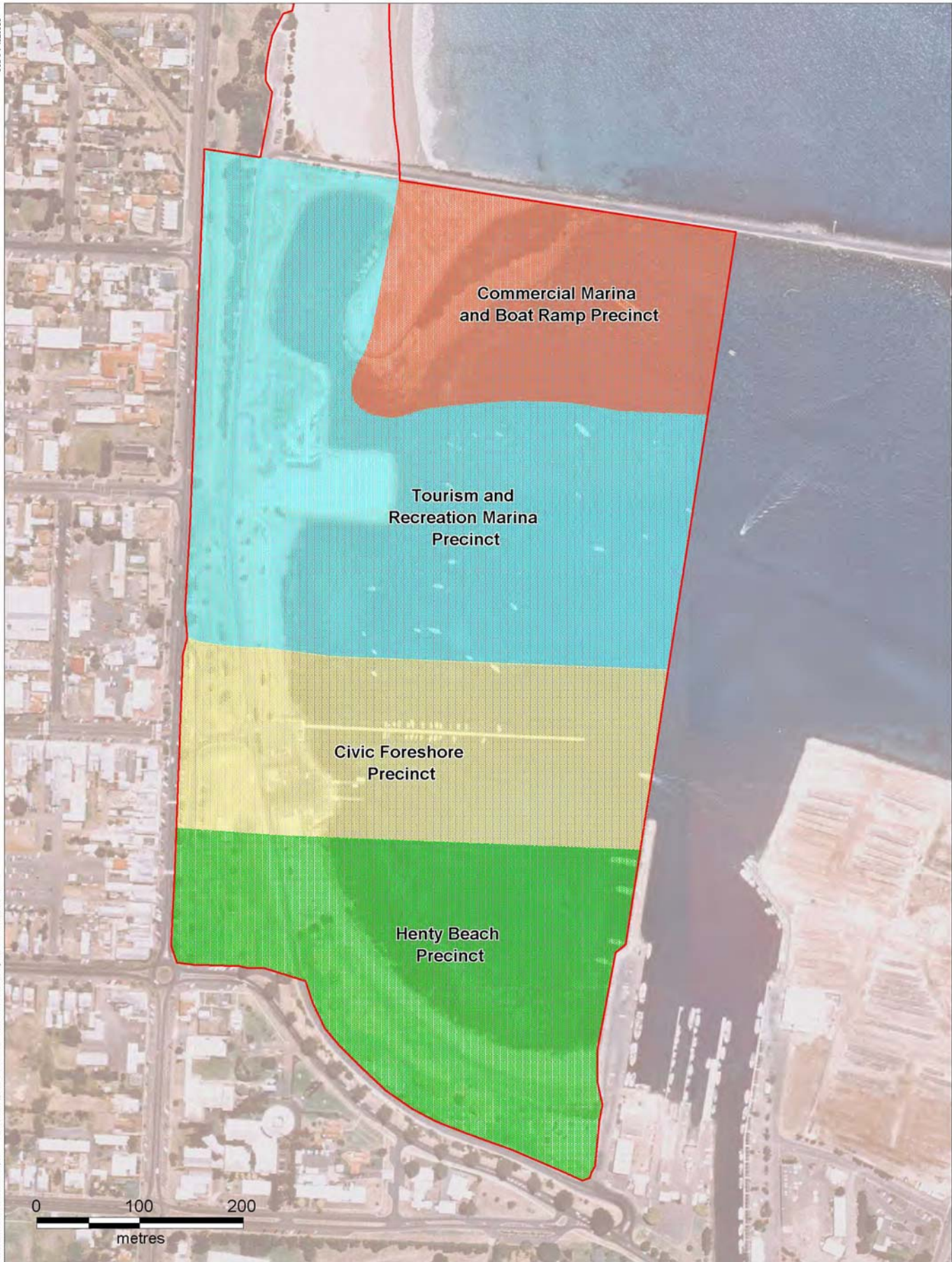
Existing access to the precinct is via Lee Breakwater Road from both ends. A road connecting Lee Breakwater Road and Cliff Street at the northern end of the precinct that was formerly used for a go-cart event, has been permanently closed to traffic.

This precinct is a highly valued by the community as a foreshore recreational area. The area has been developed in a manner suitable for family activities, and is characterised by maintained lawns and trees, picnic and play areas and urban road construction.



Significant built assets within the Henty Beach Precinct include:

- § A skate park at the eastern end of the precinct;
- § Two picnic shelters near the skate park, with adjacent electric barbecues;
- § One public toilet block with change facilities;
- § Additional open air picnic area with two electric barbecues, tables and seats.
- § The TS Henty Naval Cadet facility;
- § Extensive areas of play equipment; and
- § Electric barbecue with timber picnic tables adjacent to the car park at the northern end.



Portland Bay Coastal Infrastructure Plan
 Design Precincts Map

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3.3 Design Principles

In order to develop design options for the CIP, a number of design principles were established following the consultation undertaken and these included:

3.3.1 Coastal Infrastructure Design Principles

- § Separation of heavy and light commercial fishing activities is required. The existing operations at the trawler wharf are not considered compatible with the attraction of large numbers of tourists and visitors to the foreshore, due to the health and safety risks arising from a mixture of pedestrian activity with heavy transport vehicles and mechanised handling of product by fork lifts. Light commercial fishing activity, specifically the lobster fleet in Portland, is more compatible with the attraction of tourists and visitors due to the smaller scale of operations, the use of manual handling and light vehicles for transporting the catch from the wharf. There are a small number of larger lobster boats that may be better accommodated at the trawler wharf for unloading of larger volumes of product into heavy vehicles.
- § The squid boats to be located at the trawler wharf as the squid fleet generally consists of larger vessels and their operations are similar in the methods of handling and transport to the trawler operations.
- § Improved facilities for berthing of resident and visiting vessels, including tall ships and naval vessels within an active harbour environment which attracts visitors and tourists while providing security for vessel owners. The existing marina jetty is inadequate to meet contemporary marina standards, and should be retained only for promenading and land based fishing activities, with appropriate safety improvements for the remainder of its useful service life.
- § Reduction in vehicle dominance of the foreshore. The current location of the boat ramp attracts large numbers of vehicles and trailers to the central foreshore area which will become the civic foreshore precinct, and it is considered desirable to reduce the impact of vehicles in this prime central location.
- § Concentration of clubs into multi-purpose buildings. It appears that the existing club buildings are generally under utilised and consume significant space on the foreshore. These could be relocated into an attractive multi-purpose facility designed to form an integral part of a revitalised foreshore that meets a range of user needs.
- § Beach replenishment to facilitate off the beach launching of sailing dinghies, which has become difficult in recent years due to beach erosion, resulting in safety issues arising from congestion and the clash of incompatible uses at Henty Beach.
- § Protection of Henty Beach from additional boating activities as Henty Beach is considered to be a valuable family activity space, and additional boating activity is undesirable in terms of creating clutter, safety and water quality issues in this already busy location.
- § Public and tourist access to recreational and lobster fishing activity as people are naturally attracted to water, and to the activity that is generated by the mooring, use

and maintenance of boats. A busy harbour environment with a mix of recreational craft and compatible commercial use will attract visitors to the foreshore.

- § Provision for land based fishing activity as there is a strong community demand for more land based fishing sites around the harbour, accessible to people of all abilities.
- § All coastal infrastructure detailed designs need to incorporate environmentally sustainable features based on an in depth understanding of the potential impacts on natural and cultural heritage values.
- § The concept design for all coastal infrastructure includes general consideration of the impacts of climate change such as sea level rise and storm surges. Modelling of impacts should be undertaken to further understand the impacts for each infrastructure asset during the detailed design process.

3.3.2 Land Use and Urban Design Principles

- § Capitalise on the highly valued coastal character and significant maritime heritage of Portland. Portland's heritage as the first settlement site in Victoria and its shipwreck coastline is a unique differentiator that could be better interpreted along the foreshore as points of interest.
- § Better utilisation of foreshore land spaces to provide activity in currently vacant or under utilised spaces. The Portland foreshore has significant areas of Crown land that are either incomplete development or do not currently have formal uses. This contributes to a poor image on the foreshore and a lack of destinations to focus activity.
- § Provide a clearly defined visual connection from the Portland town centre to the foreshore. This is particularly important from the visual axis from Percy Street along both Henty and Julia Streets towards the foreshore in addition to the entire length of Bentinck Street.
- § Uninterrupted pedestrian access along the length of the foreshore should be created through a mixture of formal boardwalks and unsealed informal linkages (along sandy beaches for example). Currently the paths and access ways along the foreshore are disjointed and pedestrians need to negotiate conflict points with vehicles.
- § Enhance the sense of foreshore open space. Although there are significant areas of vacant land, built form on the foreshore should be concentrated to limited areas to ensure the attraction of open spaces is preserved along the foreshore. Central to this design principle is the opportunity to reduce clutter on the foreshore which is created by separate stand alone buildings, particularly toilet blocks. Maintaining large areas of open spaces also contributes to providing space that can be used for a range of community activities by erecting temporary structures to meet short terms needs.
- § Preserve and enhance the recreation area around Henty Beach reserve as this provides a focal point for family and youth activities and has important historical value as a recreational beach and reserve area. Preventing encroachment on this area from boating activity is important to achieving this design principle.
- § Create a vibrant tourism precinct around the existing Maritime Discovery and Visitor Information Centre to focus activity and complement the current uses. This area is currently isolated and requires clearer definition as a hub of activity and key foreshore

destination for visitors. There is potential to accommodate additional uses in this area that would contribute investment and revenue to the foreshore area. Good design of the built form is essential to maintaining the heritage character of Portland and protecting vistas. In principle, built form height limits should be restricted to two storey to achieve this.

- § Creation of a civic space opposite Julia Street focused around the current marina jetty location. The foreshore is a highly valued space within Portland and also the Glenelg region and is used for a range of community events including festivals, New Years Eve celebrations, carnivals, market days and charity fund raisers. There is an opportunity to improve the appearance and facilities available on the foreshore that will provide a focal point to meet these needs and promote a sense of pride in the foreshore environment.
- § Protection of the natural character of Nun's Beach whilst improving its facilities for recreation. The undeveloped nature of this area through to Andersons Point should be maintained with enhancement opportunities to address weed invasion and cliff stabilisation issues.
- § Providing opportunities throughout the various foreshore environments, for a range of interactive, educational and interpretive experiences that will inform and education both the public and school children about the important foreshore, ecological, heritage and marine environment in Portland.

3.3.3 Traffic and Transport Design Principles

- § Improve vehicle and pedestrian access from Bentinck Street to foreshore. The existing access roads to and from Bentinck Street generate traffic congestion, while the high retaining wall parallel to Bentinck Street acts as a physical and visual barrier between the town centre and the foreshore.
- § While the foreshore area requires access by many vehicles it is important that pedestrian priority be maximised to provide a safe environment for pedestrians and to encourage promenading throughout the area.
- § Keep vehicular activity away from Henty Beach foreshore precinct.
- § Provide sufficient parking in close proximity to key generators to meet demands of the various competing uses, having regard to existing demands and design standards (where relevant).
- § Balance the competing demands for car parking with the amenity, visual and environmental impacts associated with the dominance of the foreshore by sealed formal parking areas.
- § Minimise the number of vehicle/pedestrian/cable tram conflict points.
- § Separate tourist/recreational traffic from commercial vehicle access where possible.
- § Provide coach and caravan parking opportunities, particularly near tourist generators such as the Maritime Discovery Centre and Visitor Information Centre and the proposed marina precincts.

- § Ensure sufficient space is available within the commercial marina facilities to accommodate parking and loading requirements of the various industries proposed to be located at this area.
- § Simplify the intersection of Lee Breakwater Road with the Lee Breakwater as much as possible, taking into account likely pedestrian movements and existing pipelines.
- § Maximise access and queuing space at the new boat ramp location to minimise potential congestion associated with boat launching, particularly during peak season.

3.4 Design Criteria for Coastal Infrastructure

3.4.1 Introduction

The following design criteria for coastal infrastructure was developed after consideration of existing facilities and usage, stakeholder consultation, assessment of current and future demand, contemporary marina design practice, and provisions of Australian Standard AS3962-2001 Guidelines for design of marinas.

The criteria have been developed for the purposes of this master planning study, and will require detailed ratification and further development in the design phases of specific projects or stages of development which follow this study.

3.4.2 Commercial Marina Design Criteria

Table 2 - Commercial Marina Vessel Berths

Commercial Use	No. of Berths	Maximum Boat LxB (m)	Minimum Water Depth (m)
Lobster Fleet	15	15m x 5.0m	3.5m
	6	18m x 5.5m	3.5m
	6	24m x 6.5m	3.5m
Itinerant Commercial	6	24m x 6.5m	3.5m
Unloading Berth	1	24m x 6.5m	3.5m
Total Commercial	34 minimum		

- § Jetty width 8m minimum.
- § Fixed finger piers (2.0m minimum width) between pairs of berths.
- § Fairway / interior channel width (minimum) - 30m (boats < 18m length), 40m (boats 18m - 24m length)
- § Light vehicle (utility) access to berths.
- § Common user unloading berths with power and water services.
- § Single unit truck access to unloading berths, with road geometry capable of accommodating an occasional semi trailer.
- § Parking on the wharf for 20 cars minimum.

- § Fish and lobster sales / holding tanks on wharf.
- § Low level boat repair area for owner use, with wastewater retention.

3.4.3 Recreational Marina Design Criteria

Table 3 - Recreational Marina Vessel Berths

Recreational Use	No. of Berths	Maximum Boat LxB (m)	Minimum Water Depth (m)
Resident power boats	24	8m x 3.5m	2.5m
	6	12m x 4.5m	2.5m
Resident yachts	8	12m x 4.5m	3.5m
Itinerant yachts	6	15m x 5.0m	3.5m
Charter boats	1	24m x 7.0m	3.5m
Total Commercial	45 minimum		

- § Floating pontoon type marina with fingers between pairs of berths.
- § Secure access to walkways.
- § Marina office / retail area and coastguard / emergency services office.
- § Fairway width (minimum) 16m (boats to 8m length), 26m (boats to 15m length).

3.4.4 Marina Berth Car Parking

Car parking for marina berths, refer AS3962: 0.3 - 0.6 spaces per wet berth - adopt 0.5 spaces.

This equals 25 spaces plus vehicle space on jetties for commercial berths and equals 23 car spaces for recreational marina berths.

3.4.5 Boat Ramp

The existing boat ramp has:

- § Two lanes
- § Two boarding jetties
- § Approximately 20 trailer parking spaces

AS3962 recommends 40 - 50 trailer spaces per ramp lane in this configuration, hence the available room for boat trailers is clearly inadequate, as demonstrated by frequent congestion and overflow of trailer parking onto adjacent grassed areas.

Design for a new two lane boat ramp to operate in conjunction with the existing ramp (i.e. doubling of existing ramp capacity) until additional boat ramp facilities can be developed outside the Portland Harbour. The existing ramp can then be removed to develop this area for civic purposes.

The following design criteria for the new boat ramp have been adopted:

- § Limit boat ramp to two lane width due to parking constraints in the study area.

- § Two lane ramp, 9m minimum total width, gradient 1:8.
- § Off street queuing lane.
- § Two floating pontoons.
- § Boat trailer parking 70-80 spaces (consistent with Australian Standards), trailer bays 15m x 4.2m - 45° angle.
- § Fish cleaning.
- § Boat wash down.

3.4.6 Squid Fleet (Trawler Wharf)

Assume that all squid operations are accommodated at the trawler wharf (ie outside the study area).

Itinerant squid boats and larger lobster fishing boats may occupy itinerant berths at the commercial marina for lay up from time to time if necessary.

4 Preferred Option Coastal Infrastructure Plan

4.1 Introduction

Based on the precincts and design principles identified above, in addition to a design workshop with the community and stakeholders, a preferred option for the Coastal Infrastructure Plan has been developed. The principal features of the Coastal Infrastructure Plan are shown in the maps in Figure 6 and Figure 5, with explanatory comments relating to each of the precincts outlined below.

4.2 Nun's Beach to Andersons Point Precinct

Within the southern section of the Nun's Beach Precinct, it is proposed to upgrade the existing car park accessed via Lee Breakwater Road by providing a more efficient car parking layout. The amount of parking will remain in the order of 40 spaces.

The parking will serve the toilet facility, the foreshore pedestrian walk, the recreational swimming beach and the picnic and BBQ facilities.

Vegetation between the beach and car park is to be re-landscaped with appropriate native species to improve vegetation quality, natural surveillance and views, whilst maintaining shady areas.

The existing damaged shelter and shade structures should be removed immediately as they present a poor foreshore image. It is considered however that replacement of these minor structures is important to provide low impact recreational opportunities in this area. A newly designed shade structure should reflect Portland's maritime and foreshore heritage, perhaps even interpreting the historical use of the beach by the college nun's that now is the beaches' name.

Once the reclamation area to the south of Lee Breakwater is developed for a boat ramp and commercial marina, it will be appropriate to install signs restricting access to the Nun's Beach car park to prevent trailer parking.

Incorporating bathing boxes to be located on Nun's Beach was considered however it was decided these would not be consistent with the design principle for this precinct. It is important to maintain the value of a natural feel and minimise the built form on Nun's Beach. It is anticipated that the stormwater outfall will be removed in the near future. A boardwalk/viewing area has been included on the Plan and the remaining area is designed to be informal walking and recreational space.

There are no additional infrastructure changes recommended at Andersons Point beach. Due to a landslip currently in process at Wade Street, Andersons Point the northern section of the study area, including the recently constructed Anderson Point steps, are closed to public access until further notice. Council and DSE are working together to address this issue.



Andersons Point

Nun's Beach

LEE BREAKWATER

- STUDY AREA
- PROPOSED VEHICULAR ACCESS
- FORESHORE PEDESTRIAN WALK
Provide pedestrian link along entire foreshore from Andersons Point through Nun's Beach, Civic foreshore square and Henty Beach Foreshore, to the south and Botanic Gardens

Nun's Beach

- 1 Undertake weed eradication and revegetation program to address weed invasion and stabilise cliff banks. Provide resources to Coastal Cliffs Group to support council
- 2 Stormwater outfall to be removed in the future as part of Council's longer term project to address drainage
- 3 Maintain Nun's Beach as a recreational swimming beach. Preserve informal nature of Nun's Beach. No formalised boardwalk
- 4 Investigate a more efficient layout of car park. Provide 40 car parking bays using existing vegetation along cliff bank to screen car park area. Install signage and appropriate barrier treatment to prevent trailer parking from nearby boat ramp
- 5 Dune and vegetation replenishment enabling surveillance from car park to beach area with appropriate landscaping to maintain shady area
- 6 Upgrade beach toilets and provide boardwalk to surrounds & vegetation screening to Lee Breakwater
- 7 Replacement of damaged shelter and shade structures with iconic design that reflects maritime and foreshore history.

Portland Bay Coastal Infrastructure Plan
North Plan



scale 1:4000 @ A3

BCA POR North Plan - 201107



robertsday
From vision to venture >



NOTES: Indicative structure plan only, subject to detail design and engineering study. Cadastral and aerial information is based on supplied data and may vary from actual surveyed area.

4.3 Commercial Marina and Boat Ramp Precinct

The commercial marina design is based upon the assumption that the upgrade of the trawler wharf is proceeding as previously indicated by the State government under the management of the Department of Sustainability and Environment and Department of Infrastructure, and that existing large trawler and squid fleet operations will continue to be based at this location.

As indicated in the design principles outlined above, a new commercial marina is envisaged which will provide an operational base for the lobster fleet as an integral part of a new harbour development. The objective is to create an environment which encourages public, visitor and tourist access to the lobster fleet operational area and visiting vessels of interest such as tall ships and naval vessels.

The design utilises the existing Lee Breakwater to provide vehicle and pedestrian access to a deep water location suitable for the berthing of such vessels, and as a base for a new wharf or landing stage where vessel unloading and provisioning can occur.

It is recognised that the Lee Breakwater is an asset owned by the Port of Portland and that the Port has to comply with specific security, OHS and operational obligations.

Appropriate arrangements will need to be negotiated between the Committee of Management and the Port to provide future public access rights to this section of the breakwater. It is also recognised that the Port may need to restrict public access to the outer sections of the Lee Breakwater in the future, and the design will provide a new destination for public fishing activity and access, while providing the opportunity for a port security gate east of the new commercial marina jetty.

Similarly, the area proposed for the commercial marina encroaches into the waters controlled by the Port, and it may be necessary for Council to negotiate a re-alignment between port waters and the coastal zone managed by the Committee of Management.

The design features a new jetty extending south from the Lee Breakwater, which will provide deep water berthing for large visiting vessels, and a sheltered water space for berthing of the commercial lobster fleet. Later design studies will be necessary to determine whether a wave screen is required for the marina area, but the jetty structure will provide support if this is required.

The design of the commercial marina does not anticipate significant future growth of commercial fishing operations, but is sufficiently flexible to allow further expansion if required, and also to offer capacity for lay up berthing of itinerant squid boats which use the harbour on a seasonal basis. Vessel pens would consist of fixed finger piers between pairs of vessels, providing vehicle access to the head of each finger pier to facilitate unloading of product at the berths. Power and water services for vessels would be provided. It is envisaged, however, that fuelling and sewage pump out facilities would be located in the trawler wharf precinct, as this is considered a more appropriate location consistent with the other uses and it is not expected that the harbour could support more than one viable fuelling point in the short to medium term.

Although there has not been detailed hydrographic survey data available for this study, the commercial marina design envisages only minimal dredging to achieve the water depths indicated in the design criteria.

Between the commercial marina and the adjacent boat ramp area, a small concrete hardstand area of approximately 450sqm is proposed for minor boat repair activity by boat owners. This would essentially consist of an area of concrete pavement with a wastewater retention system, which can be accessed by boat owners wishing to carry out their own repairs and maintenance tasks. It is envisaged that this would include a low level of activity and any major repair works with environmental concerns would need to occur at the commercial slipway. Concerns about dust and impacts on the nearby fish sales area can be mitigated through proper detailed design and management measures and this arrangement is typical of many yacht clubs around Victoria. Management of this common user area would be a matter for agreement between the Council/Committee of Management and boat user groups.

Directly north of this boat repair area, allowance has been made to accommodate a fish and lobster sales shop that includes live holding tanks. The lobster and fish sales area is not intended to be used for seafood processing that would replace current processing facilities near the Port, as this amount of space is not available on the foreshore. The primary purpose of this building is to provide an opportunity for retail sales and interaction with the public through the live holding tanks for lobster that is nearby to the Commercial Marina where the catch is unloaded.

Adjacent to the proposed commercial marina, it is proposed to extend the existing land reclamation area and develop this area as a new boat ramp and trailer parking area. This is consistent with the design principle of reducing the overall vehicle domination of the foreshore area, as the configuration will assist in containing boat ramp activity in this specific location and removes this dominant use from the central foreshore area. The additional reclaimed area will require dredge/fill material (source unknown at this stage) and the impacts of this additional reclamation on the natural environment should be fully investigated, understood and mitigated as appropriate before proceeding.

The area available will limit the number of trailer parking bays to approximately 72, which is at the lower end of the range considered desirable for a two lane boat ramp to comply with current Australian Standards. Development of this facility will effectively double the boat ramp capacity in the harbour, however it is considered necessary to develop additional boat launching facilities outside the study area to accommodate future growth. The development of additional facilities will enable the existing boat ramp to be removed so that the development of the Civic Foreshore Precinct can proceed without interrupting the continuous anticipated growth of trailer boating activity.

The layout of the boat ramp area provides a queuing lane as vehicles entering from the Lee Breakwater await their turn to use the dual boat ramp lanes. After launching of boats and mooring to the adjacent pontoons, vehicles and trailers will move into the trailer parking area. On retrieval of boats, owners will have the option of driving through the boat wash down area before proceeding to the exit lane.

A total of 72 boat-trailer parking bays and 3 boat wash down bays will be constructed within the new boat ramp precinct. This is slightly less than recommended in the Australian Standard AS3962 (40-50 trailer spaces per ramp lane, i.e. 80-100 required for the two-lane boat ramp) but is significantly greater than the existing provision of approximately 20 boat-trailer parking bays at the Henty Beach boat ramp. This level of boat-trailer parking provision is considered to be the maximum able to be accommodated having regard to the competing space in conjunction with other uses, and will be appropriate to accommodate demands at most times.

Given the constraints within the Portland Harbour for recreational boating and the competing commercial demands, it is recommended that a new boat ramp also be established at a location outside of the study area (such as a nearby town) where there are not competing commercial demands, to reduce the pressure on the boat ramp facilities within Portland Harbour. It is anticipated that a study examining regional boating facilities will be initiated by the Western Coastal Board in the near future to facilitate this. It is likely, based on current demand, that the existing boat ramp will need to remain operational to complement the proposed new second ramp until another ramp in the region is made available.

Additional parking (approximately 20 bays) is proposed to be constructed within the commercial marina to accommodate staff parking requirements.

A pedestrian footbridge of approximately 40m long and 3m wide is proposed to provide continuity of public access along the foreshore, and an easy walk between the new centres of activity at the tourism precinct and the commercial marina. This footbridge is located in with a slightly curved shape to be designed at least 30 metres clear of the *Regia* to consider the heritage preservation restrictions surrounding the historic shipwrecks in the adjacent lagoon. A number of opportunities for land based fishing around the lagoon are provided in the design to recognise the importance of this activity as a recreational pursuit within Portland. The timber fishing jetty in the lagoon and the timber platform pavement needs to enable all abilities access.

4.4 Tourism and Recreation Marina Precinct

At the northern end of the Tourism and Recreation Marina Precinct, there is an opportunity to improve public access to the lagoon area with observation and fishing points.

Adjacent to the trailer parking area, an opportunity for a dual usage zone has been indicated in the south western corner of the land reclamation. This provides for a range of tourism and/or recreation uses to be put forward and is a potential location to site a helipad should this proposal proceed. The site has been selected as a potential for a helipad to be strategically located nearby the pedestrian footbridge that links to the MDC and tourist area whilst providing a reasonable distance between the town centre, large volumes of people and nearby water location for safety and amenity considerations. Alternatively, other tourism ventures may be proposed for this location or a recreation activity that complements the nearby boat ramp and MDC functions.

The CIP has considered the *Regia* display opportunity proposed in Stage 2 of the Portland Maritime Discovery Centre (PMDC) Precinct Development Strategy (November, 2002) and

believes the interpretation of the *Regia* can still be implemented within these plans. This has not been included in the costing or implementation of this CIP however, as there is a previous document that addresses this proposal.

The existing land reclamation adjacent to the MDC provides the opportunity to develop a vibrant tourism precinct and recreational marina which will attract visitors and tourists while providing a valuable community asset for interest groups and recreational boaters.

The recreational marina will provide secure berths for both local and visiting power boats and yachts. The existing recreational boating fleet in Portland is quite small, possibly reflecting the relative isolation of the town, the external ocean environment and the lack of high quality boating facilities. For these reasons the recreational marina is intended to be limited in size in the short term, with the flexibility for extensive future growth consistent with the demand for expansion of the facilities.

The initial stage as shown in the CIP would provide 24 marina pens for vessels up to 8m in length, and 20 pens for vessels ranging from 10m to 15m in length, arranged along two fingers extending to the northern side of a central pier. It is envisaged that the fingers would have access restriction to provide a level of security for vessel owners which is not currently available within the Portland Harbour. Larger recreational vessels will be few in number, and in the short to medium term may be accommodated as space permits in the commercial marina, until there is sufficient demand to construct a number of larger berths at the recreational marina.

The water space between the recreational marina and the existing marina jetty could be used for swing moorings if required, offering a lower cost mooring alternative to the marina berths.

It is anticipated that the recreational marina would be constructed predominantly of floating pontoons, although further detailed design studies will be necessary to confirm that the wave climate within the harbour is suitable for such construction. It is believed that free floating pontoons also provide the best solution to addressing the impacts of sea level rise or storm surge due to climate change over time. It may be necessary to amend the layout of the initial stage of development to incorporate some wave mitigation measures into the design.

Again, without hydrographic survey data being available, it is expected that the available water depths in this area will be adequate for the size and types of vessels using the facility without the need for major dredging.

The design proposal includes a wharf structure skirting three sides of the land reclamation, providing berthing facilities for charter vessels, historic cuta boats and visiting itinerant vessels.

The land reclamation area would be available for a mixed use development including both commercial and community spaces in low rise (up to two level) buildings. Essential elements would include a marina office / retail area / charter boat booking facility, flexible areas available for commercial leases, and community uses such as:

- § Multi-purpose club rooms for the Yacht Club, Angling Club and Sport and Game Fishing Club, with facilities for visiting crews and a secure yard for boat storage.

§ Office / radio room for volunteer coastguard and essential services use.

The cable tram could potentially be extended to provide access to the Tourism Precinct through a loop track off the main route. However detailed design will be required to confirm a route alignment and ensure interaction with other traffic and pedestrians is safe.

The beach area immediately south of the Tourism Precinct, often referred to as Dutton Beach, would be replenished to provide a site for off the beach boat launching for yacht club activities, and a limited area for informal trailer parking and handling of small boat trailers. This would also address water quality and amenity issues in this area.

Importantly, Dutton Beach should remain an area where walking on the sand is feasible between the two built form areas of the Tourism Precinct and the Civic Foreshore Square Precinct.

The Tourism and Recreation Marina Precinct is expected to generate a high level of activity during peak time, including parking demands associated with clubroom use, fishing, recreational boating access, retail, restaurant, charter boat activities and marina offices and coastguard.

A new car park is to be constructed to accommodate the parking demands associated with these uses, and will accommodate at least 70 cars as well as 8 – 10 coaches/ caravans.

4.5 Civic Foreshore Precinct

The civic foreshore precinct includes the area currently occupied by the marina jetty, boat ramps, yacht club and angling club facilities. This area can therefore only be redeveloped after replacement facilities have been constructed for these activities. The infrastructure in this precinct will be designed to provide a focal point for civic activity on the waterfront, and improve the visual and physical links between the waterfront and the central business district along the axis of Julia Street.

The existing marina jetty is approaching the end of its service life, and is considered unsuitable for future vessel mooring. It does however fill a community need for promenading and fishing, and could be retained in the short term for these activities, providing some modifications are made to improve public safety. When detailed structural surveys indicate that the jetty has become unserviceable, it is anticipated that it would be replaced with a shorter structure and the opportunity to create a destination or landmark at the outer end of the pier. This structure would also provide a children's play area to enable jumping off the pier into the water and climbing back up.

Within the Civic Foreshore Precinct there is an existing parking area which currently accommodates boat trailers, located adjacent to the existing boat ramp. This existing boat ramp is proposed to be removed at such time that a replacement is constructed outside of the study area, subject to a further regional boat launching investigations. At that time, the car parking area will be reduced in size and reconfigured to provide parking opportunities for cars only, associated with the Henty Beach Foreshore precinct and associated activities.

The provision of parking will be tailored to meet the amenity and visual dominance constraints while at the same time development will encourage promenading for pedestrians.

It is important that this precinct reinforces the link between the foreshore and town centre through good design and emphasises visual connections.

4.6 Henty Beach Precinct

The Henty Beach precinct provides a valuable area for family activity taking in the beach, grassed areas, formal play grounds, barbecues and amenities. At the southern end of the precinct, a skate park has been recently constructed. The naval cadet facility is located in the centre of the precinct and is expected to continue to occupy this space.

The infrastructure in the area is generally maintained in good condition and adequately serves its intended purpose. However the area is currently under pressure from adjacent activities competing for space, including the existing yacht club at the northern end, and commercial fishing operations at the trawler wharf. The upgrades proposed for these activities will remove some of the pressure on the Henty Beach area, and the design includes provision for improvements to the existing infrastructure, including additional shade structures, improved play ground equipment and landscaping.

Maintenance of the beach and adjacent water spaces should be upgraded to improve cleanliness and water quality.

It is important to maintain the open space in the Henty Beach Precinct which provides an open feel with the landscaping sloping down to the Bay. This is a significant area for use by the community for events and recreational purposes and contributes enormously to the foreshore amenity. This open space should be retained with minimal structures to allow for temporary equipment to be erected that meets the needs of each specific event. There are opportunities to enhance the grassed amphitheatre to provide for music concerts and an open-air cinema during summer. The removal of the go kart track and, once a replacement multi purpose building is constructed, the Angling Club building, from this area will also contribute achieving these objectives.

The existing skate park should be provided with public lighting to improve the security of the area and support evening use of the facility by teenagers which is currently occurring in the dark.

The existing car parking area located to the south of the boat ramp parking area is proposed to be retained to service recreational and family activities. There is opportunity within this parking area to include some coach parking provision, particularly once the existing boat ramp is removed.

4.7 Vehicular Access and Circulation

The existing two-way access roadway (Lee Breakwater Road) extending from Cliff Street east of Glenelg Street at its southern end to Lee Breakwater will be retained and upgraded to a minimum 6m wide cross-section.

Provision for both standard and commercial vehicles to turn around will be made at the intersection of Lee Breakwater Road and Lee Breakwater.

The existing roadway along Lee Breakwater will be upgraded and will provide for eastbound traffic movements, while a new 4m wide carriageway will be constructed to the

south of the Lee Breakwater to provide for westbound traffic movements. The two carriageways will be separated by a “median” which is likely to be approximately 6 metres wide as a result of the difference in level and to accommodate the existing pipes and breakwater rock construction. The difference in grade/level for the two east-west carriageways will extend the full length with the exception of the boat ramp access crossovers, in order to minimise earthworks. The end of the east-west roadway will be designed to accommodate the turning requirements of large vehicles associated with loading activities at the commercial marina.

The CIP indicates that there will be three access points between the existing road network (i.e. Bentinck Street) and the foreshore precinct as follows:

- § The existing two-way access is proposed to be retained at the existing Cliff Street access point to the west of Glenelg Street.
- § One-way egress only (westbound directional traffic flow) is proposed to be provided by means of a reconfigured arrangement incorporating the existing northern access carriageway from Bentinck Street opposite Julia Street. A pedestrian pathway is proposed along the northern edge of the ramp. The existing southern ramp section between Lee Breakwater Road and Bentinck Street will be removed to make room for the pedestrian stairway and the civic and commercial development.
- § A new one-way entry only (eastbound directional traffic flow) is proposed to be constructed to the east of Henty Street, known as the Henty Street extension. The grades in this location are quite steep and Lee Breakwater Road is benched into the side of the hill with a resulting rock-faced batter up to about 4 metres high. Existing levels at the cable tram crossing and Lee Breakwater Road will need to be considered. Note that while there is strong community support for this proposed access point as it would help direct significant traffic volumes north to the boat ramp away from the foreshore entertainment area where high pedestrian activity is expected, further detailed investigations will need to be undertaken (including survey and design work) to confirm the viability of this option.

In any event, the existing access arrangements opposite Julia Street should be retained until such time that an alternative (such as the Henty Street extension) is constructed. If following detailed investigations it is found that the Henty Street extension is not a viable option, the northern Julia Street roadway can be modified to address the northern face of the proposed Julia Street boardwalk/ development extension and be modified to run two way.



LEGEND

<ul style="list-style-type: none"> — STUDY AREA TOWN CENTRE AREA → VIEWLINE CORRIDORS → PROPOSED VEHICULAR ACCESS - - - EXISTING RECLAMATION AREA - - - CABLE TRAM — FORESHORE PEDESTRIAN WALK Provide pedestrian link along entire foreshore from Andersons Point through Nun's Beach, Civic foreshore square, Henty Beach Foreshore, to the south and Botanic Gardens - - - TOURIST AND MARINA WALK Provide informal and formal pedestrian links around tourism and commercial marina precincts - - - Pedestrian footpath along new vehicular foreshore access connections 	<ul style="list-style-type: none"> 4 Tall Ship and Naval Vessel Berths 5 Port Security Gates if required in an emergency 6 Unloading Area 7 Itinerant Berths (approx 8 total) - boat size dependent 8 Parking Area (20 bays) 9 Public lookout 10 Lobster & Fish Sales and live holding tanks 11 Small boat repair area (450sqm) with vehicular access 12 Fish Cleaning Area 13 2 Lane Boat Ramp with Floating Pontoons 14 Trailer Parking with queue lane (72 bays) 15 Boat Wash Down Area (3 bays) <p>Tourism and Recreational Marina Precinct</p> <ul style="list-style-type: none"> 16 Dual usage area for tourism and recreation activities 17 Pedestrian bridge connection 18 Opportunity for timber fishing jetty 19 Opportunity for timber platform 20 Provide additional vegetation and incorporate pedestrian links (not a formal boardwalk) 21 Opportunity to implement Regia display in accordance with PMDC Precinct Development Strategy Stage 2 22 Maritime Discovery Centre and Visitor Information Centre 	<ul style="list-style-type: none"> 23 Caravan and coach parking (8-10) 24 Carparking to accommodate parking for cars (70+) 25 Opportunity for locating retail and other development 26 Mediterranean moorings for Cousta Boats 27 Opportunity for Marina Office and Coastguard building 28 Charter Boat berths 29 8m Recreational Vessel Berths (24) 30 10-15m Recreational Vessel Berths (20) 31 Opportunity to provide landmark pier shelter/destination point 32 Opportunity for multi purpose Yacht Club, Angling Club and Sport and Game Fishing Club building 33 Yacht Club storage 34 Off the beach boat launching 35 Beach replenishment 36 Provision for Swing Moorings area (if required) <p>Civic Foreshore Square</p> <ul style="list-style-type: none"> 36 Investigate pedestrian promenade with steps down leading to extension of Julia Street promenade. Providing gateway entry to foreshore, and civic foreshore square 37 Opportunity sites to develop future feature civic or retail structures. Structures to frame civic space 	<ul style="list-style-type: none"> 38 Existing Marina Jetty, including: <ul style="list-style-type: none"> - Pedestrian/fishing access only - Safety improvements - Future refurbishment to jetty including reducing length of jetty - Opportunity to provide boardwalk and landmark shelter/destination point with swimming and diving access 39 Existing 2 Lane Boat Ramp To be removed when replacement available outside study area. 40 Opportunity for redesign of current parking area <p>Henty Beach Precinct</p> <ul style="list-style-type: none"> 41 Henty Beach Foreshore Entertainment Area including: <ul style="list-style-type: none"> - Opportunity to formalise grassed amphitheatre - Opportunity to provide multi-purpose performance space - Removal of go-kart track 	<ul style="list-style-type: none"> 42 Removal of rock revetment and beach replenishment 43 Existing carparking to be retained and upgraded. Opportunity to include some coach parking 44 Henty Beach Foreshore Reserve upgrade including: <ul style="list-style-type: none"> - Provision of more shade structures - Retain and enhance family friendly surrounds - Investigate improvements to picnic areas and playground equipment - Opportunity to enhance informal grass area with additional site planting and revegetation 45 Provide lighting to Skate Park 46 Investigate cable tram and vehicular intersection improvements <p>Trawler Wharf</p> <ul style="list-style-type: none"> 47 Extension and upgrade in accordance with State government design work 48 Alongside berths of 3 - 4 large lobster vessels unsuitable for commercial marina
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Portland Bay Coastal Infrastructure Plan
South Plan

scale 1:4000 @ A3
0 50 100 150 200m

BCA POR South Plan - 2011/07

NOTES: Indicative structure plan only, subject to detail design and engineering study. Cadastral and aerial information is based on supplied data and may vary from actual surveyed area.

4.8 Cost Estimates

Itemised cost estimates have been undertaken for the capital works proposed as part of this CIP, based on Figures 4 and 5, to assist decision making on the cost implications and inform the Business Case and staged implementation of the CIP. The detailed cost estimated are provided in Appendix A.

The total cost estimate of implementing the CIP is \$42,139,000. This includes design and management fees of \$4,580,000 which is 15% of the capital works cost. A contingency allowance of 20% has been included which equals \$7,023,000. The breakdown of costs for each precinct are:

- § Nun’s Beach to Andersons Point Precinct = \$375,000
- § Commercial Marina and Boat Ramp Precinct = \$19,108,450
- § Tourism and Recreational Marina Precinct = \$6,892,000
- § Civic Foreshore Precinct = \$2,254,350
- § Henty Beach Precinct = \$1,263,200

The road connections from Bentinck Street to Lee Breakwater Road have been costed as an additional \$643,000 which will transcend a number of precincts along the foreshore.

It is important to note that these are estimates only and at this strategic master planning level can only be calculated in the order of plus/minus 35% accuracy. A number of exclusions have also been identified, such as escalation costs, soil investigation and landscaping, as these are unknown at this stage. Closer to implementation, more accurate cost estimates will be required once detailed design features are known.



It is also expected that a significant amount of these costs we would not expect to be borne by government, but believe there is a real opportunity to attract private investment, particularly for the recreational marina and tourist precinct components. This is further explored in the Business Case Report (Meyrick and Associates, September 2007).

5 Business Case

A Business Case for this Coastal Infrastructure Plan has been prepared by Meyrick and Associates as a separate report (Meyrick and Associates, September 2007). This section below is intended to provide a brief outline of the purpose of the Business Case and a summary of the key results.

5.1 Introduction

The business case has been developed to show the financial impact of the development if it were approached as a single project with all components run concurrently from start-up date. The model takes account of estimates of capital to develop the commercial marina, boat ramp and associated parking, helipad etc., the tourism and recreational marina and the civic foreshore square (Julia Street).

Assumptions are made for a range of variables, such as escalation in costs, growth in occupancy and revenue and suitable discount factors. All of these variables can be adjusted in the model.

The period used (to 2039) is based on the assumption that the structures will be depreciated over 30 years, which is considered reasonable given the nature of the civil works. Marine structures employing steel/concrete piling and reinforced concrete decking, sheet pile walls are generally expected to last thirty to fifty years.

5.2 Initial Business Case Analysis Results

5.2.1 Option without staging

For this initial analysis, which assumes that the complete project is developed all at once (i.e. the estimated \$42.1 million of capital expenditure is used by the end of 2009), the results indicate an estimated negative NPV of \$38 million for the 30-year project. This first pass result excludes the receipt of any operating subsidies from other parties.

In order to achieve a zero NPV over the 30-year period, a total annual operating subsidy in the region of \$2.25 million would be required based on the current assumptions used in the evaluation.

5.2.2 Staging

These preliminary results suggest that both the revenue and capital expenditure parts of the project should be reviewed further to determine the optimum staging of the project and the matching of the best revenue streams to the less capital intensive parts of the development project.

To explore initially the impact of staging, a second analysis has been carried out which assumes that an initial extended stage would focus on (a) priority needs and (b) incremental revenue opportunities. The results of this second analysis also produce a negative NPV without external support.

The results of both analyses show that, with the conceptual business case assumptions, an investment payback period extends beyond the current maximum crown land lease period

of 21 years. It is therefore recommended to explore the possibility of negotiating special lease term conditions for the crown land which extend beyond the current maximum of 21 years. Such an extended lease term should help to reduce an element of commercial risk and improve the project attractiveness for private partners / developers.

5.3 Costs Benefit Analysis

Given the possibility of sourcing funding through various government and private sector sources, the case for the development will be much enhanced by a high level cost benefit analysis to focus on potential economic benefits from increased day and overnight visitors, itinerant boat calls and the development of events to augment the existing yacht and fishing based regattas and competitions.

5.4 Business Case Evaluation

The Business Case Report (Meyrick and Associates, November 2007) provides additional details about the degree of investment required for the use and development of the Crown land on Portland's foreshore. It presents details about the broader economic benefits of implementing this Coastal Infrastructure Plan and includes a detailed model (that can be updated as circumstances require) to demonstrate revenue and capital expenditure requirements.

The Business Case Report includes commentary on the following issues:

- § Scope and Structure of the Business Case;
- § Cost and Revenue Estimates;
- § Risks and Sensitivities;
- § Financial Analysis;
- § Staging Options;
- § Assumptions of the Business Case;
- § Business Case Results;
- § Review of Funding Options;
- § Government Funding Possibilities including Local Ports Funding;
- § Possible Funding Structures; and
- § Possible Funding Partners.

The Business Case is to be used by Glenelg Shire Council as a platform to be able to provide the evidence required as a basis for applying for funding grants to implement the recommendations contained within this Coastal Infrastructure Plan.

6 Implementation Recommendations

Given the significant nature of development and infrastructure works required on the Portland foreshore, it will be necessary to implement the CIP with a staged approach and identify key priorities.

It is recommended that the recommendations within the Nun's Beach Precinct be implemented as the first priority in the short term. This is based on two factors being that Council has earmarked \$300,000 to be available this financial year for foreshore capital works and the cost estimates of the works proposed in this precinct is approximately \$375,000 which would mean



significant additional funding would not be required. The second factor is that much of the other more significant infrastructure proposed in other precincts will require detailed construction design and lead time to mobilise construction. Implementing the Nun's beach recommendations would provide significant amenity and functional improvements to this area relatively easily and quickly and would demonstrate to the community Council's commitment to revitalising the Portland foreshore environment.

The next priority recommendation to be implemented is the Commercial Marina to provide a solution to the relocation of the lobster fleet in addition to injecting a revenue income into the foreshore. The Boat Ramp should follow either concurrently (depending on availability of dredge material) or closely behind to provide relief to the peak congestion currently experienced.

The Tourism and Recreational Marina precinct should follow, and can be implemented to suit market interest from the private sector. This will be also be revenue generating and contribute to offsetting the capital costs for infrastructure.

Within the Henty and Civic Foreshore Precincts the recommendations included on the Plan are mainly focused around delivering broad community benefit and should be implemented in the following priority order within these precincts: Plan number 46, 41, 36, 38, 42, 43, 44, 37, 45, 40 and 39. Many of these projects could be implemented individually or simultaneous to development in other precincts, rather than as whole precinct projects, as funding becomes available or is sourced.

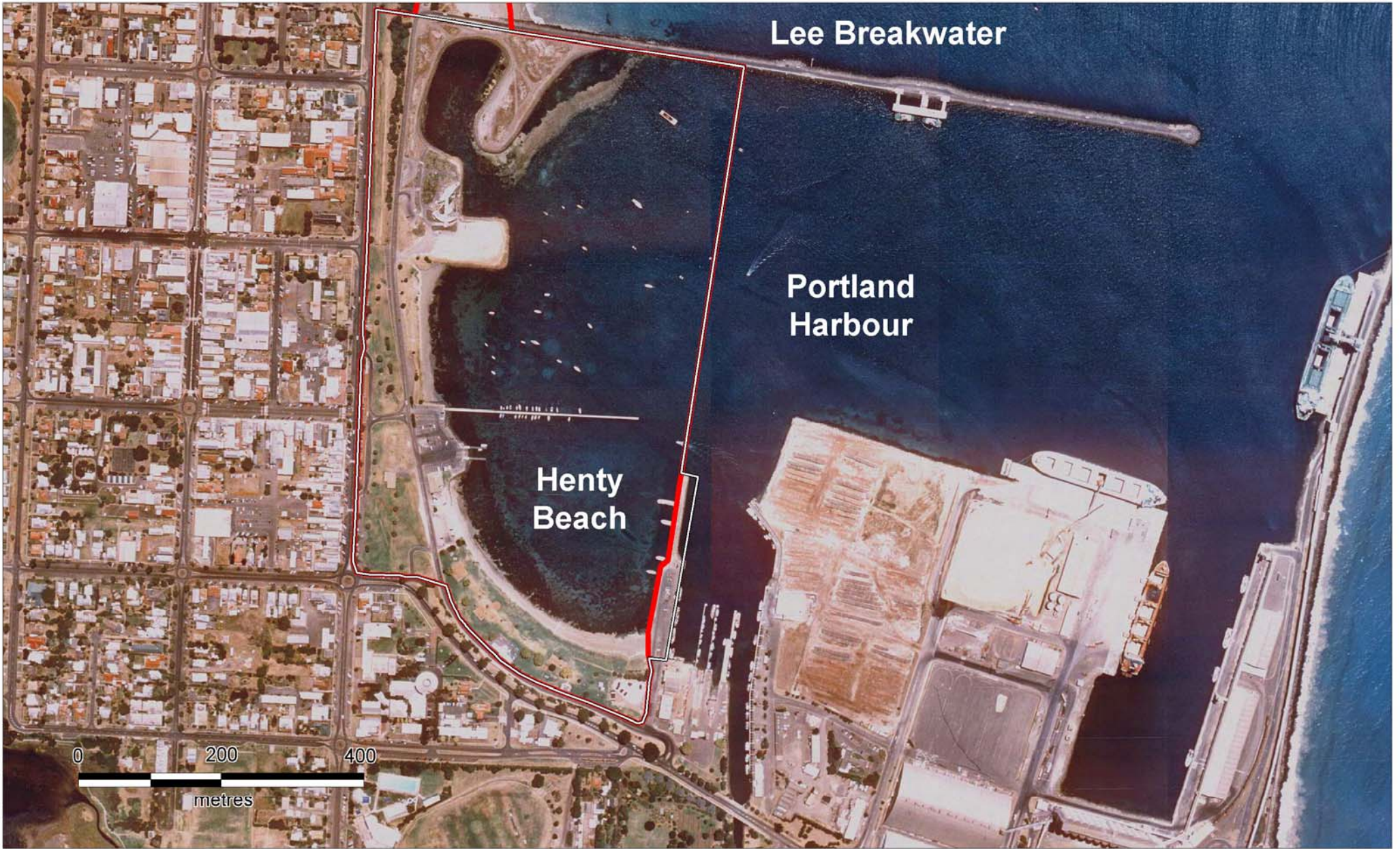
6.1 Management Arrangements

The management arrangements for the implementation of this CIP will need to be resolved. It is recommended that the current Steering Committee arrangements, with various Agencies represented, continue until the end of 2008. This will provide the stewardship necessary for decision making on the implementation and monitoring of this CIP.

It is further recommended that the area shown in Figure 7 be designated as a Local Port through DSE's local ports program due to the significant contribution from the commercial fishing industry to the local and regional economy which is unrelated to the port activities of the Port of Portland. This proposed Local Port area will include the new commercial and recreational marinas, the new boat ramp and the upgraded trawler wharf.



It is important that a coordinated approach is implemented to managing the upgraded infrastructure required in Portland for both commercial and recreational purposes. This will require the newly proposed Local Port manager, the commercial port manager, the Port of Portland, to work closely together to achieve this objective.

The recommendations in this CIP have been prepared in a broad-brush manner to allow for a degree of flexibility to be built into the process. However, the Plan specifies the type of future foreshore environment that is sought which should not be compromised for any short term perceived solutions. It is intended to facilitate decision-making where permits and other approvals are to be sought whilst allowing the application of discretion and innovation. This report should aid the private sector in developing appropriate proposals that will support the implementation of the CIP.



Portland Bay Coastal Infrastructure Plan
Local Port Status

Legend

-  Study Area Boundary
-  Proposed Local Port Boundary

This map contains data derived in part or wholly from sources other than Beca, and therefore, no representations or warranties are made by Beca as to the accuracy or completeness of this information.

§ Appendix A:
Cost Estimates

GENERAL SUMMARY

COMPANY : BECA PTY LTD

PROJECT : PORTLAND BAY COASTAL INFRASTRUCTURE PLAN

DATE : Wed 29 Aug 2007 04:34pm

SubTitle : August 2007

Bid Currency : AU\$

CO	SECTION NAME	UNIT	QTY	RATE	COST
	<u>PORTLAND BAY COASTAL INFRASTRUCTURE PLAN</u>				
	CONCEPT ESTIMATES OF PROBABLE COST				
	Note: The accuracy of these concept design estimates are in the order of plus/minus 35%.				
	These estimates are based on the indicative areas on the draft issue Concept Designs only without any design input. Further engineering and scope definition should be undertaken to prepare more accurate estimates appropriate for budget and funding purposes.				
A	Proposed Works				30,536,000
B	Design and Management Fees				4,580,000
C	Contingency Allowance (20%)				7,023,000
	TOTAL				42,139,000
	NOTES				
	Estimates based on the following drawings dated 15 August 07: BCA POR South and North Plans.				
	EXCLUSIONS				
	Temporary works Soil investigation Relocation of existing services Soft and hard landscaping other than that specifically mentioned Traffic management Ground/property purchase costs GST Escalation Client costs Capitalised interest Costs to date Legal and finance fees Site IR rates Construction Industry levies Risk items				
	TOTALS OF SELECTED SECTIONS				42,139,000

Section 'A'-'Proposed Works'

COMPANY : BECA PTY LTD

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BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
A	PROPOSED WORKS				
	Nun's Beach				
1	Stabilisation of cliff banks and revegetation program	note		excluded	
2	Maintain Nun's Beach as a recreational swimming beach	note			
3	Allowance to upgrade car park	sum	1	85,000.00	85,000
4	Allowance for dune and vegetation replenishment next to car park	sum	1	15,000.00	15,000
5	Allowance to upgrade toilets	sum	1	100,000.00	100,000
5	Allowance for boardwalk area	m2	500	200.00	100,000
6	Allowance for replacement of damaged shelter and shade structure with iconic design	sum	1	75,000.00	75,000
	Sub Total **				375,000
	Commercial Marina and Boat Ramp Precinct				
1	24m berths including fixed wharf structure	no	6	53,000.00	318,000
2	18m berths including fixed wharf structure	no	6	72,000.00	432,000
3	15m berths including fixed wharf structure	no	15	48,250.00	723,750
4	Tall ship and naval vessel berth wharf	m2	1,360	1,900.00	2,584,000
5	Allowance for port security gates	sum	1	10,000.00	10,000
6&7	Unloading area wharf and itinerant berths (includes wharf structure)	m2	4,143	1,900.00	7,871,700
8	Parking area on wharf structure	m2	720	1,900.00	1,368,000
9	Timber public lookout platform	m2	210	600.00	126,000
10	Building for lobster and fish sales - assume shell only, fitout by tenant	m2	440	2,400.00	1,056,000
11	Boar repair area on wharf structure	m2	450	1,900.00	855,000
12	Allowance for fish cleaning area	sum	1	10,000.00	10,000
13	Allowance for new 2 lane boat ramp with floating pontoon both sides	sum	1	310,000.00	310,000
14&15	The following in reclaimed trailer parking and boat wash down areas:				
14&15	Allowance to fill area with stabilised dredged material - assume all material available from future harbour dredging - assumed volume	m3	13,500	50.00	675,000

Section 'A'-'Proposed Works'

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BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
14&15	4m wide 1 lane road along Lee Breakwater to wharf	m	260	700.00	182,000
14&15	Allowance for new roundabout intersection with existing road	sum	1	75,000.00	75,000
14&15	Trailer parking area	m2	11,000	60.00	660,000
14&15	Lighting	no	20	5,000.00	100,000
14&15	Allowance for stormwater drainage to above parking and road including boat wash down area	sum	1	400,000.00	400,000
16	Helipad - Concrete slab including security fence. No services provided at helipad	sum	1	90,000.00	90,000
17	Allowance for footbridge - assume 40m long x 3m wide (see next item for finishes)	m2	120	1,875.00	225,000
17	Allowance for lighting and architectural features to bridge	sum	1	200,000.00	200,000
18	Allowance for timber fishing jetty and adjacent boardwalk	m2	750	500.00	375,000
19	Boardwalk areas around inlet	m2	425	200.00	85,000
19	Allowance for timber stairs	sum	1	25,000.00	25,000
19	Walkways	m2	1,100	70.00	77,000
19	Lighting	no	15	5,000.00	75,000
19	Allowance for street furniture	sum	1	50,000.00	50,000
20	Allowance for soft landscaping	sum	1	150,000.00	150,000
	Sub Total	**			19,108,450
	Tourism and Recreational Marina Precinct				
21	Maritime Discovery Centre	note		existing	
22&23	Parking area	m2	4,200	60.00	252,000
22&23	Allowance for stormwater drainage to above parking and road	sum	1	105,000.00	105,000
22&23	Lighting	no	12	5,000.00	60,000
24	Future retail	note		excluded	
25	Mediterranean moorings	sum	1	75,000.00	75,000
26	Marina Office and Coast Guard building - assume shell only, fitout by tenant	m2	600	2,400.00	1,440,000
27	Allowance for charter boat berths	sum	1	100,000.00	100,000
	Assume piers below are floating precast construction:				
28	8m berths	no	24	20,000.00	480,000

Section 'A'-'Proposed Works'

COMPANY : BECA PTY LTD

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BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
29	10-15m berths	no	20	28,000.00	560,000
30	Allowance for landmark structure on pier - assume decorative canopy with seating	no	1	75,000.00	75,000
31	New multi purpose building for Angling and Yacht clubs - assume shell only, fitout by tenants	m2	600	2,500.00	1,500,000
32	Allowance for yacht club storage - sealed fenced area only	sum	1	50,000.00	50,000
B/walk	Boardwalk area around buildings (26 - 32 above) including connection from Bentinck Street	m2	5,750	200.00	1,150,000
B/walk	Extra value for work to edges of boardwalk over existing revetment walls	sum	1	235,000.00	235,000
B/walk	Extra value for stairs (from Bentinck to foreshore - Henty St)	sum	1	15,000.00	15,000
B/walk	Allowance for street furniture	sum	1	100,000.00	100,000
B/walk	Extra value for features - planters, bollards, lights, etc.	sum	1	320,000.00	320,000
33	Off the beach boat launching	note		excluded	
34	Allowance to replenish beach - assumed volume to be dredged from offshore location	m3	5,000	35.00	175,000
34	Mobilisation and demobilisation of dredge	sum	1	200,000.00	200,000
35	Provision for swing moorings	note		excluded	
	Sub Total	**			6,892,000
	Civic Foreshore Square				
36	Allowance for feature gateway entry to promenade	sum	1	250,000.00	250,000
36	Boardwalk promenade area including stairs from Julia St	m2	3,450	203.00	700,350
36	Lighting	no	12	5,000.00	60,000
36	Extra value for work to edges of boardwalk to water edge	sum	1	60,000.00	60,000
36	Allowance for street furniture	sum	1	50,000.00	50,000
36	Extra value for features - planters, bollards, etc.	sum	1	80,000.00	80,000
37	Future civic / retail development	note		excluded	
38	Allowance to demolish 165m section of existing jetty	sum	1	70,000.00	70,000
38	Allowance for safety improvements to remainder of jetty	sum	1	135,000.00	135,000

Section 'A'-'Proposed Works'

COMPANY : BECA PTY LTD

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DATE : Wed 29 Aug 2007 04:34pm

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BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
38	Allowance for landmark structure on jetty - assume decorative canopy with seating including structure	no	1	300,000.00	300,000
38	Boardwalk connection between Tourism Precinct and Civic Foreshore	m2	1,080	200.00	216,000
38	Lighting for boardwalk	no	4	4,500.00	18,000
38	Allowance for street furniture for boardwalk	sum	1	50,000.00	50,000
39	Allowance to demolish and remove existing boat ramp	sum	1	65,000.00	65,000
40	Allowance for upgrading/improving car park	sum	1	200,000.00	200,000
	Sub Total **				2,254,350
	Road Connections from Bentinck Street to Lee Breakwater Road				
	8m wide 2 lane road between Lee Breakwater Rd and Bentinck St (at Henty Street)	m	100	1,300.00	130,000
	6m wide 1 lane road between Lee Breakwater Rd and Bentinck St (at Civic Square)	m	100	1,000.00	100,000
	Allowance for new intersections with existing roads	sum	1	150,000.00	150,000
	Allowance for stormwater drainage to road	sum	1	70,000.00	70,000
	Allowance for retaining walls	sum	1	165,000.00	165,000
	Concrete footpaths	m2	400	70.00	28,000
	Sub Total **				643,000
	Henty Beach Precinct				
41	Allowance to formalise grassed amphitheatre	sum	1	100,000.00	100,000
41	General lighting	no	15	5,000.00	75,000
42	Demolish and remove existing buildings	sum	1	60,000.00	60,000
42	Remove existing revetment walls	sum	1	85,000.00	85,000
42	Allowance to replenish beach - assumed volume to be dredged from offshore location	m3	5,000	35.00	175,000
42	Mobilisation and demobilisation of dredge	sum	1	200,000.00	200,000
43	Allowance for upgrading/improving car park	sum	1	150,000.00	150,000
44	Allowance for improvements to picnic areas and playground equipment	sum	1	50,000.00	50,000
44	Allowance for soft landscaping improvements	sum	1	200,000.00	200,000
44	Allowance for street furniture	sum	1	150,000.00	150,000

Section 'A'-'Proposed Works'

COMPANY : BECA PTY LTD

PROJECT : PORTLAND BAY COASTAL INFRASTRUCTURE PLAN

DATE : Wed 29 Aug 2007 04:34pm

SubTitle : August 2007

Bid Currency : AU\$

BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
45	Lighting to skate park - assumed number	no	4	4,500.00	18,000
46	Investigate cable tram and vehicular intersection for improvements	note		excluded	
	Rounding	sum	1	200.00	200
	Sub Total	**			1,263,200
Totals for Section 'A'-'Proposed Works'					30,536,000

Section 'B'-Design and Management Fees '

COMPANY : BECA PTY LTD

PROJECT : PORTLAND BAY COASTAL INFRASTRUCTURE PLAN

DATE : Wed 29 Aug 2007 04:34pm

SubTitle : August 2007

Bid Currency : AU\$

BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
B	<u>DESIGN AND MANAGEMENT FEES</u>				
	Allowance for Design and Management fees for the above works (15%)	sum	30,536,000	0.15	4,580,400
	Rounding	sum	1	-400.00	-400
	Sub Total	**			4,580,000
	Totals for Section 'B'-Design and Management Fees '				4,580,000

Section 'C'-'Contingency Allowance (20%)'

COMPANY : BECA PTY LTD

PROJECT : PORTLAND BAY COASTAL INFRASTRUCTURE PLAN

DATE : Wed 29 Aug 2007 04:34pm

SubTitle : August 2007

Bid Currency : AU\$

BQREF	DESCRIPTION	UNIT	QTY	RATE	COST
C	<u>CONTINGENCY ALLOWANCE</u>				
	Allowance for Contingency (20%)	sum	35,116,000	0.20	7,023,200
	Rounding	sum	1	-200.00	-200
	Sub Total	**			7,023,000
	Totals for Section 'C'-'Contingency Allowance (20%)'				7,023,000