

# **Geraldton Port Expansion — proposed change to environmental conditions**

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**Geraldton Port Authority**

**Report and recommendations  
of the Environmental Protection Authority**

**Environmental Protection Authority  
Perth, Western Australia  
Bulletin 752  
August 1994**

752

#### THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

#### APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

#### ADDRESS

Hon Minister for the Environment  
12th Floor, Dumas House  
2 Havelock Street  
WEST PERTH WA 6005

#### CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 pm. on 26 August 1994.

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## Summary and recommendations

The Environmental Protection Authority has been requested by the Minister for the Environment under Section 46 of the *Environmental Protection Act 1986*, to report on the proposed modification to the Geraldton Port Expansion plan.

The Proposed Geraldton Port Expansion was assessed by the Environmental Protection Authority and approved by the Minister for the Environment in December 1989 (Appendix 1).

This proposed modification describes the major environmental issues relating to this development which have been identified through the environmental impact assessment process and include:

- maintenance of water quality;
- ensuring shoreline stability in the Geraldton region;
- protection of biological communities, and
- evaluation of existing environmental conditions and commitments for Geraldton Port Expansion.

The Environmental Protection Authority considers that the Geraldton Port Authority has identified the potential impacts from the above environmental issues and believes that the proposal will not have any significant adverse environmental impacts with proper management.

The Environmental Protection Authority has concluded that the project is environmentally acceptable subject to the proponent's commitments and the Environmental Protection Authority's recommendations in this assessment report.

	Summary of recommendations
1.	• The proposal is acceptable subject to the recommendations contained in this report and the proponent's commitments.
2.	• The proponent prepare and implement a water quality monitoring programme for the port, including the inner harbour, to the requirements of the DEP. • The proponent establish a baseline for comparison of water quality. • The proponent ensure that water within the Geraldton inner harbour is maintained at a quality acceptable to the EPA, so that it does not have an adverse impact on the marine environment or on the beneficial uses outside the inner harbour.
3.	• The proponent prepare and implement a shoreline monitoring plan to the requirements of the DEP.
4.	• Modification of conditions 1, 2, 3, 4 and 6 of the Environmental Statement for the proposal of 27 December 1989, to reflect the EPA's review of conditions.
5.	• Condition 5 of the Environmental Statement for the proposal of 27 December 1989 be deleted, provided no future refuelling facilities are located in the Inner Harbour area.
6.	• A number of standard project management conditions should be added to the Environmental Statement.
7.	• Commitment 6 of the Environmental Statement for the proposal of 27 December 1989, relating to the issue of effluent disposal be retained.

# 1. Introduction

The Environmental Protection Authority has been requested by the Minister for the Environment under Section 46 of the *Environmental Protection Act 1986*, to report on the proposed modification to the Geraldton Port Expansion works. This report, (Bulletin 752) contains the EPA's recommendations to the Minister for the Environment, who will decide on any modifications to the conditions set on 27 December 1989.

In 1989 the EPA assessed the proposal by the Geraldton Port Authority (GPA) to expand the inner harbour facilities at the Port of Geraldton. The proposal consisted of Stages 1 & 2 which are described below and shown in Figure 1.

Stage I:

- dredging the fishing boat harbour to allow for the unrestricted access of larger vessels into the fishing boat harbour, and
- reclaiming approximately 2.2ha of land between No 5 berth, the shoreline and the southern pens.

Stage II:

- dredging the main harbour south of the outer breakwater;
- reclaiming 2.8ha;
- breaching the outer breakwater;
- dredging the area north of Stage 1 to provide a new entrance to the fishing boat harbour;
- extending the existing sand trap northwards by 100m to provide protection for fishing vessels navigating the new entrance; and
- the relocation of the existing rock lobster processing effluent outfall pipe (EPA, 1988).

The EPA released its report and recommendations on the proposal in November 1989 and subsequently the Minister for the Environment issued his approval in a statement with six environmental conditions (Appendix 1). The commitments made by the proponent also appear in Appendix 1. The first of these conditions required that the proponent adhere to the proposal as assessed by the EPA.

Stage 1 has been completed and Stage 2 is currently being undertaken. The current status of the works and the intended Stage 2 development is illustrated in Figure 2 (Tingay and Associates, 1994). This is not considered in this assessment.

The Geraldton Port Authority is also currently preparing a master plan for the future development of port related activities on Point Moore. The objective of this plan is to provide a high degree of efficiency and logic for land use on Point Moore in order to provide for growth of trade through the existing port and for the possibility of a new deepwater port (Tingay and Associates, 1994).

## 2. Summary description of the proposal

The Geraldton Port Authority proposes to extend the sand trap breakwater and reclaim approximately 7.8ha of sea bed by trapping littoral drift on the ocean side of the Fishing Boat Harbour.

The modified proposal involves the extension of the sand trap breakwater (shown in Figure 2) to the west for a distance of approximately 300m. The extension is proposed to be completed in stages as shown in Figure 3 (Tingay and Associates, 1994). The proposal will also enable sand to accumulate in a manner which would reduce the cost of land reclamation for further port development.

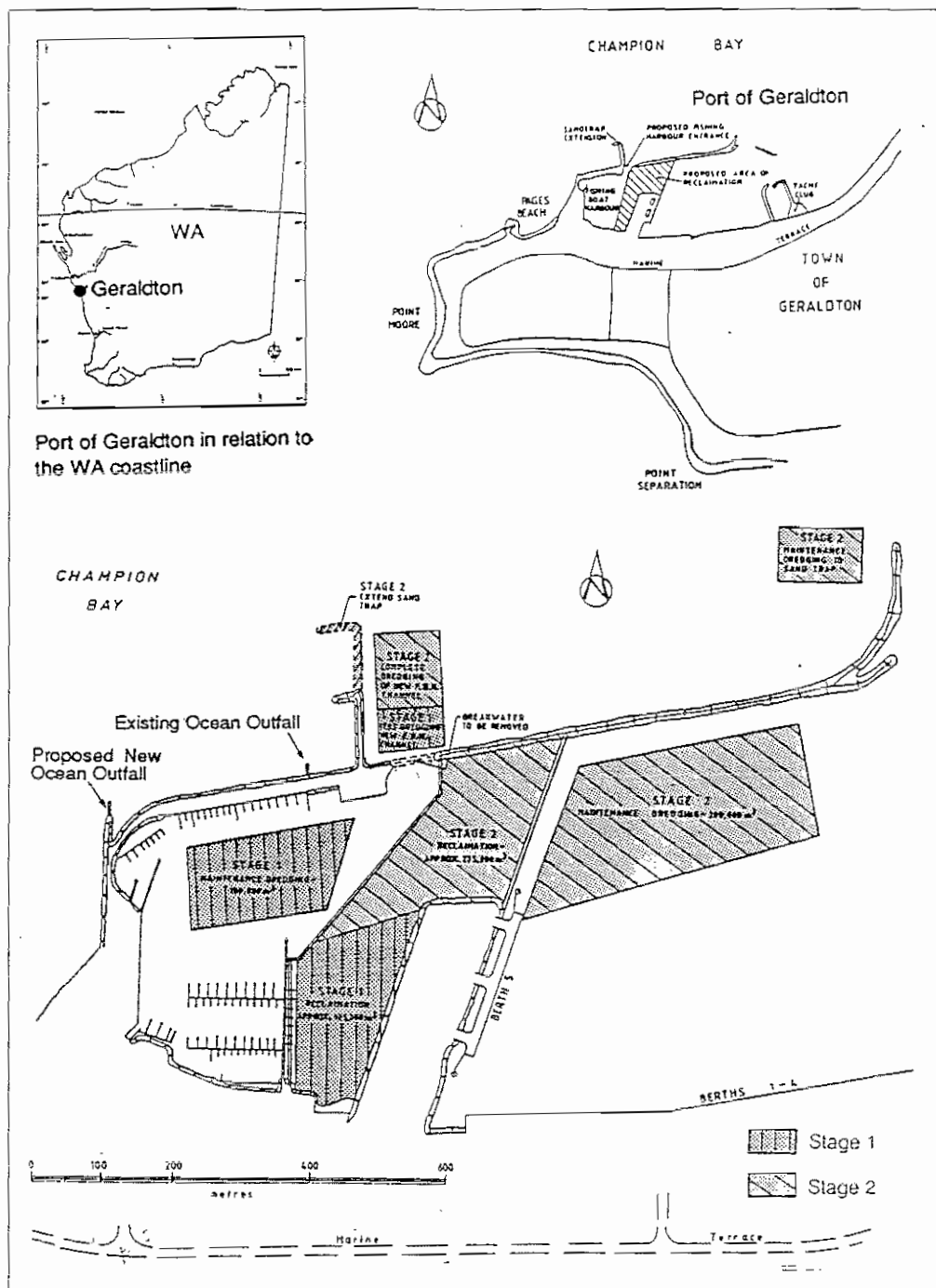


Figure 1. Stages 1 and 2 as assessed in EPA Bulletin 411, 1989.

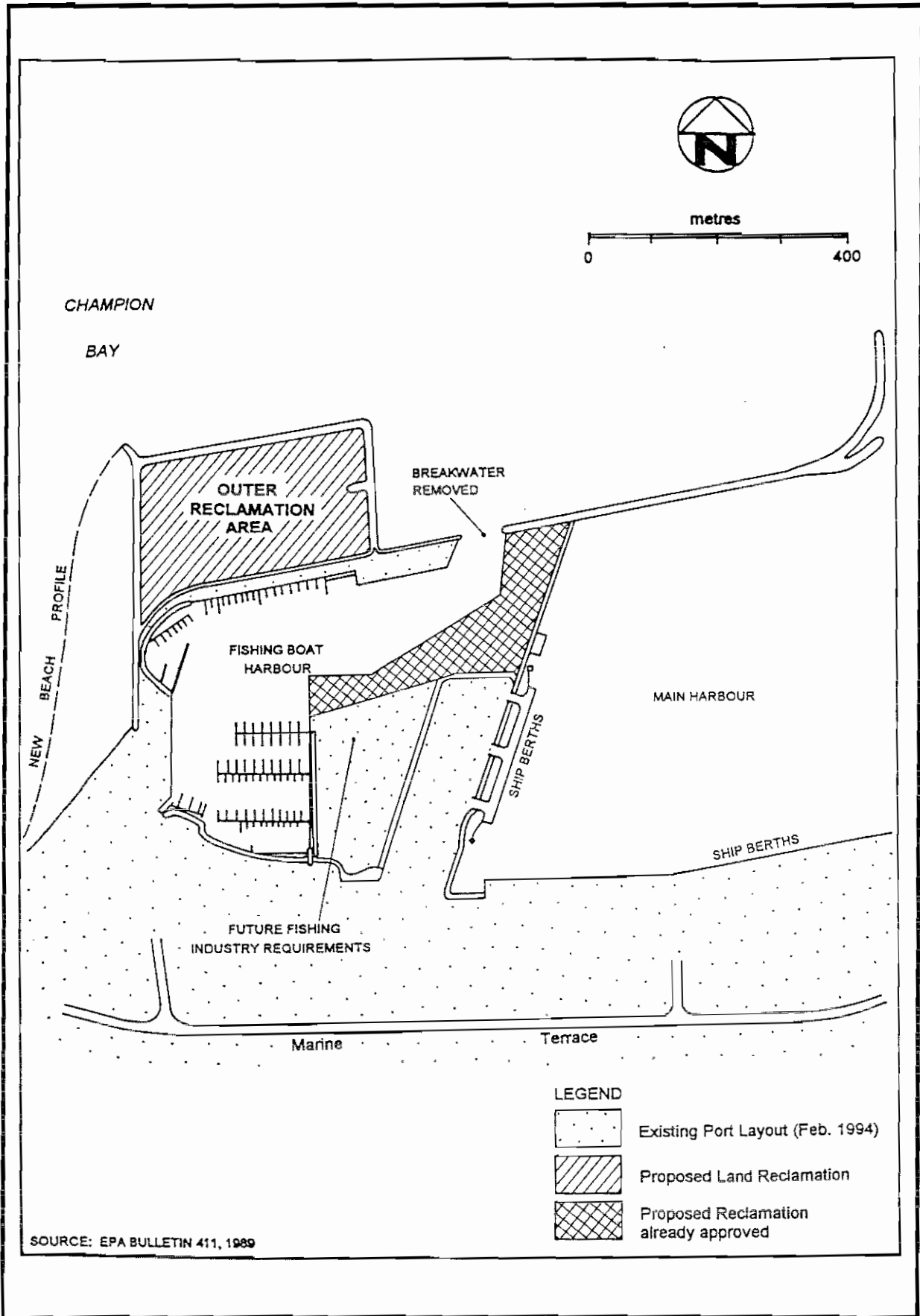


Figure 2. Proposed Geraldton Port Expansion land reclamation



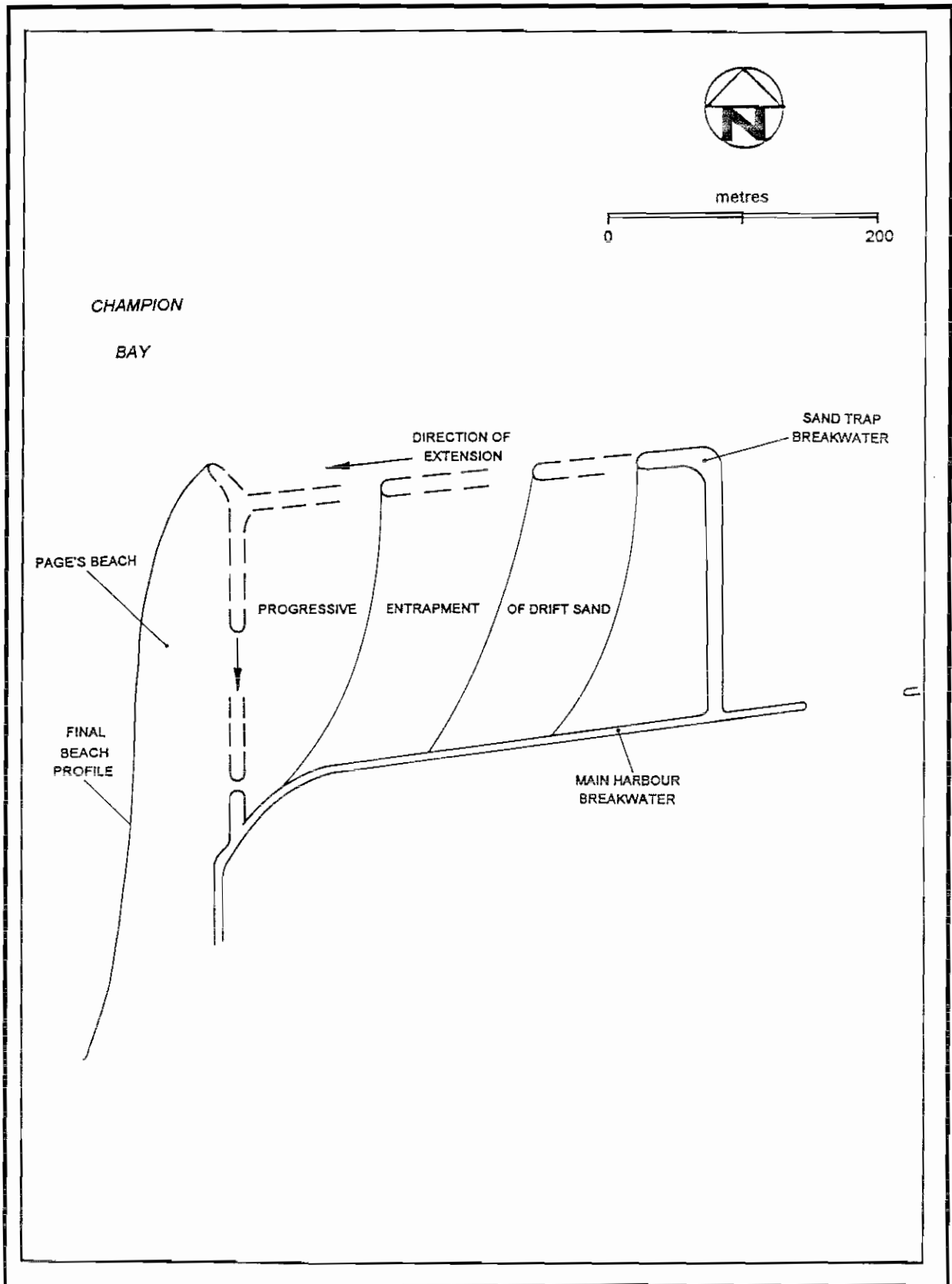


Figure 3. Geraldton Port Expansion — Progressive extension of the sandtrap  
 Source: Tingay and Associates, 1994

The proposal seeks to:

- alleviate the shortage of suitable land for the fishing industry in the vicinity of the port;
- allow for growth of the Geraldton fishing industry;
- reduce the amount of sand moving around the breakwater into the new entrance to the fishing boat harbour; and
- increase natural deposition of sand at Pages Beach on the western side of the breakwater (Tingay and Associates, 1994).

### **3. Environmental impact assessment method**

The environmental impact assessment for this proposal followed the *Environmental impact assessment administrative procedures 1993*. The proponent's revised commitments following the Section 46 appears in Appendix 2. The summary of submissions and the proponent's response to those submissions appears in Appendix 3.

Department of Environmental Protection officers also undertook a reappraisal of conditions and commitments set in 1989.

#### *Limitation*

This evaluation has been undertaken using information currently available. The information has been provided by the proponent through preparation of the Environmental Review document (in response to guidelines issued by the DEP), by DEP officers utilising their own expertise and reference material, by utilising expertise and information from other State Government agencies, and by contributions from EPA members.

The EPA recognises that further studies and research may affect the conclusions. Accordingly, the EPA considers that if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the EPA.

### **4. Evaluation**

The major environmental issues related to this proposal which have been identified through the environmental impact assessment process include:

- maintenance of water quality;
- ensuring shoreline stability in the Geraldton region;
- protection of biological communities; and
- evaluation of existing environmental conditions and commitments for the Geraldton Port Expansion.

#### **Recommendation 1**

**The Environmental Protection Authority concludes that the extension of the Geraldton Port Expansion is environmentally acceptable and recommends that the Environmental Statement for the proposal of 27 December 1989 should be updated to reflect changes and to include standard conditions to more effective project management, as reported in Environmental Protection Authority Bulletin 752.**

**The proponent should fulfil the commitments made and implement the environmental management measures as updated through this re-assessment of the proposal.**

## **4.1 Water quality**

### **4.1.1 Objective**

To maintain an acceptable water quality within the port area, including the inner harbour.

### **4.1.2 Evaluation framework**

#### **4.1.2.1 Public submissions**

Concern expressed in public submissions focussed on:

- water quality being maintained adjacent to live rock lobster facilities;
- possible anoxic conditions or blockage of water intake pipes caused by extra loading of suspended sediment;
- conducting water quality monitoring for dissolved oxygen levels and suspended solids throughout the construction phase; and
- water quality monitoring in accordance with the 1989 approval.

#### **4.1.2.2 Proponent's response**

In response, the proponent indicated that:

- water quality is likely to be affected by construction activities which may cause temporary increases in turbidity offshore;
- the Geraldton Port Authority is prepared to undertake construction between July and November (which falls outside the rock lobster season);
- it is unlikely that sediment will reach a level sufficient to cause anoxic conditions or cause blockage of water intake pipes;
- the lobster facilities will have the option of switching intake pipes (which are presently located on the eastern side of the existing sand trap) should it become necessary;
- the Port Authority will remain in close communication with the rock lobster industry during construction;
- the Port Authority has no objection to monitoring dissolved oxygen levels and suspended solids around the proposed reclamation area before, during and after the reclamation works; and
- The Geraldton Port Authority is in the process of developing a monitoring schedule for the port including the Inner Harbour.

(Proponent's response to public submissions, 1994 )(see Appendix 3).

### **4.1.3 Evaluation**

The EPA is concerned that the intent of Condition 3 of the original statement has not yet been implemented. Condition 3 required the proponent to ensure acceptable water quality in the Geraldton Inner Harbour in accordance with beneficial uses identified in EPA Bulletin 103. It is also noted by the Authority that the proponent has not reviewed the need for monitoring in the revised commitments.

Although the original assessment of the Geraldton Port Expansion proposal did not address long term monitoring, the EPA considers that this should now be addressed and conducted.

In order to accommodate more recent guidelines on water quality, references to beneficial uses should be in relation to EPA Bulletin 711 'Western Australian Water Quality Guidelines for Fresh and Marine Waters' (EPA, 1993). Water quality monitoring should include the following

factors: colour and clarity, dissolved oxygen, nutrients (nitrogen, phosphorus and chlorophyll a), pH, salinity, and suspended particulate matter.

The EPA concludes that the environmental impacts associated with water quality issues are acceptable subject to Recommendation 2.

## **Recommendation 2**

**The Environmental Protection Authority recommends that:**

- **prior to construction the proponent should prepare a water quality monitoring programme for the port, including the inner harbour;**
- **prior to construction the proponent should establish a baseline for comparison of water quality;**
- **the proponent should ensure that water within the Geraldton Inner Harbour is maintained at a quality acceptable to the Department of Environmental Protection, so that it does not have an adverse impact on the marine environment or on the beneficial uses outside the Inner Harbour. The draft document 'Western Australian Water Quality Guidelines for Fresh and Marine Waters' (EPA Bulletin 711) should be used as the criteria for determining acceptable water quality; and**
- **the proponent should implement the monitoring programme required by Condition 3-1.**

This recommendation is reflected in Recommended Environmental Condition 3 in Section 7 of this report.

## **4.2 Shoreline stability in the Geraldton region**

### **4.2.1 Objective**

To protect the coastline in the vicinity of Geraldton from unacceptable changes arising from the proposal.

### **4.2.2 Evaluation framework**

#### **4.2.2.1 Background**

The dominant driving mechanism of sand movement along the coast near Geraldton is believed to be waves breaking in the littoral zone. These waves are generated by local winds or swells (Department of Marine and Harbours, 1988 cited in Tingay and Associates, 1994). The waves predominantly come from the south to southwest and tend to move sand from the southern beaches, toward Point Moore and the port area.

In a study conducted by Port and Harbour Consultants (1980), it was found that Point Moore, Back Beach and Greys Beach were eroding, and that the eroded material appeared to be moving in a northerly direction. It was also found that the coastline immediately north of Geraldton Port showed minimal coastal activity.

This minimal coastal activity could be influenced by coastal structures associated with port developments and various natural features. These include the nearshore reef at Separation Point, the Point Moore reefs, the groyne separating Explosives and Pages Beach, the main breakwater for the port, the sand trap breakwater and the dredged shipping channel (Tingay and Associates, 1994).

Studies conducted by the Department of Marine and Harbours (1988) and Port and Harbour Consultants (1989) suggest that the nett sand movement to Point Moore is in the order of 20,000 to 25,000m<sup>3</sup> each year. In the last 10 years, the Geraldton Port Authority has removed some of the accumulated sand from Pages Beach for use elsewhere. (Tingay and Associates, 1994).

#### **4.2.2.2 Comments from key government agencies**

The Department of Marine and Harbours (1991) advised that while the bulk of the moving sand has been trapped by a range of structures including the original breakwaters, extended spurs, and groynes such as that at Pages Beach, a small proportion has bypassed those traps and moved to the northwestern beaches and their offshore flats.

#### **4.2.2.3 Public submissions**

Concern was raised in public submissions regarding the proponent's statement that the proposed reclamation area will not have any additional affect on shoreline stability north of Town Beach. One submission indicated that this had not been justified with technical data and recommended that the Geraldton Port Authority undertake a study of the northern coastline to determine coastal dynamics, causes of instability, and solutions to overcome erosion.

#### **4.2.2.4 Proponents response**

In response to these comments the proponent cited a document prepared by Rogers and Associates (1994) entitled "Proposed Port Expansion Coastal Engineering Study" that indicated the northern beaches have not received significant amounts of littoral sand for many decades, and that the situation will not change with completion of the expansion. The proponent also indicated that this conclusion reflects that of the 1988 Geraldton Foreshore Redevelopment Study prepared by the then Department of Marine and Harbours, which concluded that the port facilities have been a barrier to littoral drift since the 1930's.

(Proponent's response to public submissions, 1994 )(see Appendix 3).

### **4.2.3 Evaluation**

Rogers and Associates (1994) indicate that the natural and man-made features near the port can be considered as a barrier to littoral sand movement from the beaches south of Geraldton, and that given the engineered nature of this part of the coast, the proposed port extensions would not cause any additional interruption of the littoral sand drift.

Rogers and Associates (1994) further concluded that 'it is anticipated that there would be no significant effect on Town Beach and those to the north by the proposed port expansion as these beaches presently receive only minor amounts of sand from the littoral system'. The study indicated that approximately 3,000m<sup>3</sup> of sand would leak past the trap area each year and move towards the navigation channels.

The EPA also notes that the Department of Marine and Harbours (now the Maritime Division, Department of Transport) were to undertake monitoring of the beaches on either side of the Geraldton Foreshore Development Marina in order to identify any unforeseen shoreline instability as a result of the project. The Geraldton Port Authority made a commitment (Commitment P4 of the original statement) to remain in close contact with the Department of Marine and Harbours with regard to the results of this monitoring programme and if necessary, take appropriate management actions in conjunction with the Department of Marine and Harbours.

The Department, however, decided not to monitor the beaches, although the Geraldton Port Authority requested the Department to fulfil its commitment. Consequently no monitoring of the shoreline has been conducted.

The EPA therefore considers that shoreline monitoring should be conducted north of the port to confirm shoreline stability or identify any littoral drift problems as a result of the modified proposal.

### **Recommendation 3**

**The Environmental Protection Authority recommends that the proponent:**

- **undertake shoreline monitoring, in order to confirm shoreline stability or identify any littoral drift problems as a result of the Port Expansion; and**
- **prepare and then implement a shoreline monitoring plan to the requirements of the Department of Environmental Protection.**

This recommendation is reflected in Recommended Environmental Condition 7 in Section 7 of this report.

## **4.3 Protection of biological communities**

### **4.3.1 Objective**

To protect marine biological communities, including seagrass.

### **4.3.2 Evaluation framework**

#### **4.3.2.1 Background**

The extent of seagrass communities beyond the existing breakwater was considered in the original Notice of Intent for the proposed extension of the harbour (Halpern Glick Maunsell, 1989). Studies conducted by Halpern Glick Maunsell (1989) and Monaghan, Rooke and Robinson (1994), indicate that a large proportion of the area which would be reclaimed is sandy seabed, which has resulted from sand movement along the outer breakwater. The remaining area of approximately 3.5ha is mostly colonised by seagrass, which will be covered by the reclamation process. A small area of low reef may also eventually be covered with sand as a result of the extension of Pages Beach (Tingay and Associates, 1994).

#### **4.3.2.2 Public submissions**

Submissions indicated concern with respect to the sand trap breakwater indirectly causing a loss of seagrass.

#### **4.3.2.3 Proponents response**

In response, the proponent indicated that the movement of sand along the outer breakwater may affect 1ha - 2.25 ha of seagrass beyond that directly impacted. The proponent also re-iterated the findings of Masini (1989), that 'the seagrass community found in proximity to the proposed reclamation is characteristic of Champion Bay and the Geraldton region', and the loss of seagrass will be relatively insignificant in relation to the regional extent of seagrass.

(Proponent's response to public submissions, 1994 )(see Appendix 3).

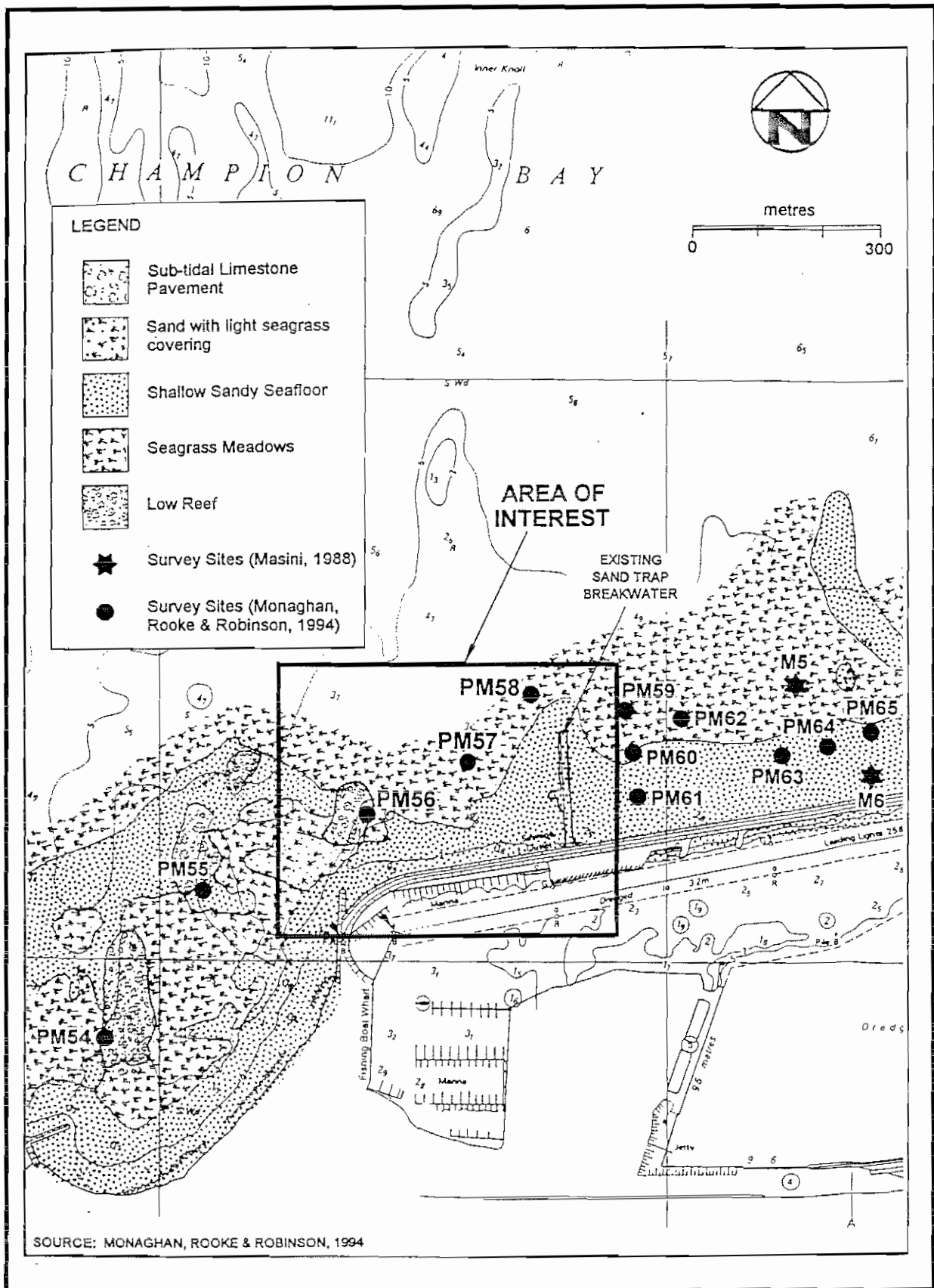


Figure 4. Marine habitats and survey sites at Port Geraldton (Source: Monaghan, Rooke and Robinson, 1994).

### 4.3.3 Evaluation

The EPA notes the results obtained from the Geraldton Port Marine Environs Habitat Survey conducted by Monaghan Rooke and Robinson (1994). This survey indicates that seagrasses have colonised most of the sub-tidal sand sheets that occur throughout the area. The area to be directly affected by the proposal has a sand substrate, which in places supports the following seagrass species: seagrass meadows of *Posidonia australis* and *P. sinuosa*, *Amphibolis antarctica*, and *A. griffithii*. The *Sargassum* and *Cladophora species* of algae are also present at one site (PM56) on low reef (see Figure 4).

Tingay and Associates (1994) consider that as the seagrass found in proximity to the proposed reclamation is characteristic of Champion Bay and the Geraldton region, the loss of seagrass will be insignificant in relation to the regional extent of seagrass.

The EPA concurs with this view, and concludes that the potential impacts on seagrass to be environmentally acceptable.

## 4.4 Assessment of existing environmental conditions and commitments

The Port Expansion project is currently subject to Environmental Conditions and Commitments (Appendix 1) as a result of the assessment of the original proposal in 1989.

The Environmental Protection Authority has taken this opportunity to review and revise existing conditions. Recommended changes are made in this section, and these are summarised in Table 1. The recommended draft environmental conditions appear in Section 7 of this report.

**Table 1. Summary of changes**

ORIGINAL STATEMENT 27 DECEMBER 1989 (Appendix 2)	RECOMMENDED ENVIRONMENTAL CONDITIONS
1. The proposal	1. Modified - becomes proponents commitments
2. Dredging Impact	2. Carried over
3. Water Quality	3. Modified - becomes 3-1 - 3-4
4. Bunding of reclamation areas	4. Carried over
5. Refuelling facilities Storm water drainage system	5. Deleted
6. Quarrying and transport of rock	6. Carried over.
	7. Shoreline Stability
	8. Implementation - management of non-substantial changes
	9. Proponent - management of transfer of the proposal
	10. Compliance Audit
	Procedure-on-going role of the Minister for the Environment and various agencies



#### **4.4.1 Objective**

To review and update the environmental conditions and commitments of this project.

#### **4.4.2 Evaluation framework**

In order to ensure that the environmental conditions and commitments that apply to this project remain current, the EPA has reviewed the status of environmental conditions and commitments set on this project by the Minister for the Environment on 27 December 1989. Appendix 1 contains a copy of these environmental conditions and commitments.

The EPA's review of the environmental conditions and commitments has identified that they should be updated to reflect the progress and performance of the proposal. On this basis the EPA suggests:

- clearing conditions where the environmental requirements have been met;
- modifying conditions which, based on new information, need to be updated;
- replacing conditions with others on the same issue, but which reflect the current policy on that issue;
- correcting errors in a condition;
- deleting conditions which are no longer considered relevant; and
- that a schedule of environmental management commitments is attached to the Environmental Conditions.

The following sections (4.4.2.1, 4.4.2.2 and 4.4.2.3) identify the environmental conditions and commitments reviewed by the EPA, recommended action and additional standard conditions.

##### **4.4.2.1 Review of environmental conditions**

###### **1. Environmental Condition 1**

*"The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made in the Notice Of Intent".*

###### **Evaluation**

The EPA considers that this condition should be modified to reflect the introduction of standard conditions since 1989. This will enable the project to be managed more effectively and to ensure conformity with recent statements.

###### **Recommendation 4**

**The Environmental Protection Authority recommends that this condition should be modified as follows:**

- **the proponent has made a number of environmental management commitments in order to protect the environment; and**
- **in implementing the proposal, including the proposed extension of the breakwater as reported in Environmental Protection Authority Bulletin 411 the proponent should fulfil the commitments made in 1989 (that is at the time of the assessment) and the consolidated commitments in August 1994. These consolidated commitments are included in Environmental Protection Authority Bulletin 752 as Appendix 3. (Commitments that will be audited appear in Schedule 1.)**

This recommendation is reflected in Recommended Environmental Condition 1 in Section 7 of this report.

## **2. Environmental Condition 2**

*"Prior to commencement of any major additional dredging activity not addressed within the Notice Of Intent, the proponent shall refer to the Environmental Protection Authority for assessment".*

### **Evaluation**

The EPA considers that this condition should be corrected and carried over as dredging in Stage 2 has yet to be completed.

## **Recommendation 5**

**The Environmental Protection Authority recommends that this condition should be modified as follows:**

**prior to commencement of any major additional dredging activity not addressed within the Notice of Intent, the proponent shall refer that activity to the Department of Environmental Protection Authority for assessment.**

This recommendation is reflected in Recommended Environmental Condition 2 in Section 7 of this report.

## **3. Environmental Condition 3**

*"The proponent shall ensure that water quality within the Geraldton Inner Harbour is maintained at a quality acceptable to the Environmental Protection Authority, so that it does not have an adverse impact on the marine environment or on the beneficial uses outside the Inner Harbour. The document 'Water Quality Criteria for Marine and Estuarine Waters of Western Australia' (EPA Bulletin 103) shall be used as a guide in determining acceptable water quality."*

### **Evaluation**

The EPA considers that in order to accommodate more recent guidelines on water quality, references to beneficial uses should be in relation to EPA Bulletin 711 'Western Australian Water Quality Guidelines for Fresh and Marine Waters' (EPA, 1993). The EPA also considers that a water quality monitoring programme for the port and inner harbour should be prepared and implemented and that a baseline needs to be established (see Section 4.1).

The EPA considers that this condition should be modified as recommended in Section 4.1 and Condition 3 in Section 7 of this report.

## **4. Environmental Condition 4**

*"In order to minimise environmental impacts that could occur from sediment plumes resulting from dredging, the proponent shall, prior to the commencement of dredging, bund all reclamation areas (for both Stages 1 and 2) and take such other action as is required to meet this objective to the satisfaction of the Environmental Protection Authority"*

### **Evaluation**

This condition addresses two issues:

1. bunding all reclamation areas for Stage 1 and 2; and
2. remedial action to minimise environmental impact as soon as possible should sediment plumes extend beyond the inner harbour breakwater.

Since this condition was set, Stage 1 has been bunded and no sediment plumes extended beyond the harbour breakwater (GPA advice, 040790). The EPA considers that this condition should be slightly modified as Stage 1 has been completed.

## **Recommendation 6**

**The Environmental Protection Authority recommends that this condition be modified as follows:**

**in order to minimise environmental impacts that could occur from sediment plumes resulting from dredging, the proponent shall, prior to commencement of dredging, bund all reclamation areas (for Stage 2) and take such other action as is required to meet this objective to the requirements of the Department of Environmental Protection.**

This recommendation is reflected in Recommended Environmental Condition 4 in Section 7 of this report.

## **5. Environmental Condition 5**

*"All refuelling facilities and fuel links in both the inner harbour and the fishing boat harbour shall be designed and sited so as to minimise the risk of spills into the inner harbour area.*

*The storm water drainage system and discharge points shall be designed and sited so as to minimise any detrimental impact on the marine environment and accordingly, shall be referred to the Environmental Protection Authority for comment prior to construction".*

### **Evaluation**

The EPA notes the proponent's request to delete Condition 5, as there are no refuelling facilities or fuel links associated with Stage 1 or 2 of the project. The EPA also notes that the Geraldton Port Authority has sought advice from the Department of Environmental Protection with regard to part 2 of this condition that relates to storm water drainage and discharge (26/05/92). The EPA also notes that part 2 of this condition is incorporated into the proponent's commitments to be dealt with.

The EPA considers that this condition can be deleted, given part 2 of this condition is incorporated into the proponent's commitments and provided no future refuelling facilities are located in the Inner Harbour area.

## **Recommendation 7:**

**The Environmental Protection Authority recommends that this condition be modified as follows:**

**the Environmental Protection Authority recommends that Condition 5 of the Environmental Statement for the proposal of 27 December 1989 be deleted provided no future refuelling facilities are located in the Inner Harbour area.**

This recommendation is reflected in Recommended Environmental Condition 5 in Section 7 of this report.

## **6. Environmental Condition 6.**

*"Prior to construction, the proponent shall identify appropriate environmental management for the quarrying and transport of rock associated with the construction of the bund walls, to the satisfaction of the Environmental Protection Authority following consultation with City of Geraldton".*

### **Evaluation**

This condition addresses the issue of quarrying. Since this condition was set in 1989, the City of Geraldton has agreed with rock arrangements (18/12/89) and the EPA has deemed Condition 6 to be fulfilled (22/12/89) for Stage 1.

### **Recommendation 8:**

The Environmental Protection Authority recommends that this condition should be carried over until the project is completed and modified as follows:

**Prior to construction, the proponent shall identify appropriate environmental management for the quarrying and transport of rock associated with the construction of the bund walls, to the satisfaction of the Department of Environmental Protection following consultation with City of Geraldton.**

This recommendation is reflected in Recommended Environmental Condition 6 in Section 7 of this report.

#### **4.4.2.2 Additional Standard conditions**

Since 1989, a number of standard conditions regarding project management are automatically included in Environmental Statements. The EPA recommends that the following conditions be added to the Environmental Statement for the proposal to ensure the project can be managed more effectively and to ensure conformity with recent statements.

##### **Management of non-substantial changes**

The EPA notes that during the detailed implementation of proposals, it is often necessary or desirable to make minor and non-substantial changes to the designs and specifications which have been examined as part of the EPA's assessment. The EPA believes that subsequent statutory approvals for this proposal should make provision for such changes, where it can be shown that the changes are not likely to have a significant effect on the environment.

**Subject to the conditions in the amended statement, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the EPA with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.**

##### **Management of transfer of the proposal**

The Statement should include a "transfer" clause which has been used in all recent statements issued by the Minister for the Environment and which allows for a continuity of environmental responsibility by any new proponent.

**No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.**

##### **Audit**

In order to ensure that environmental conditions and commitments are met, an audit system is required.

**The proponent shall prepare periodic "Progress and Compliance Reports" to help verify the environmental performance of this project, in consultation with the Department of Environmental Protection.**

## **Ongoing role of the Minister for the Environment and various agencies**

A number of procedural statements are now incorporated in the Minister's Statement to clarify the roles of the Minister, the EPA and other government agencies in the verification of compliance and the determination of any disputes arising thereof.

**The Department of Environmental Protection is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of the Minister for the Environment, the Environmental Protection Authority or any other government agency.**

**If the Department of Environmental Protection, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.**

### **Recommendation 9:**

**The Environmental Protection Authority recommends that standard conditions that deal with:**

- **management of future non-substantial changes to the proposal;**
- **future transfer of the proposal;**
- **audit; and**
- **the on-going role of the Minister for the Environment and other various agencies,**

**be added to the Environmental Statement and that Condition 1 of the Environmental Statement of 27 December 1989 should be deleted and replaced to incorporate the proposal.**

#### **4.4.2.3 Changes to proponent's commitments**

As the proponent's commitments, to a large degree have been consolidated, the EPA considers it necessary only to review those conditions of the original statement that are no longer relevant or that have been fulfilled.

#### **1. Commitment 4**

*"The Department of Marine and Harbours has undertaken to monitor the beaches on either side of the Geraldton Foreshore Development Marina in order to identify any unforeseen shoreline instability as a result of that project. The Geraldton Port Authority commits to remaining in communication with the DMH with regard to the results of this monitoring programme and if necessary, take appropriate management actions in conjunction with the Department of Marine and Harbours".*

#### **Evaluation**

The EPA considers that shoreline monitoring should be conducted along the Geraldton town foreshore to confirm shoreline stability or to identify any littoral drift problems as a result of the modified proposal. The EPA considers that this commitment can be deleted, as this issue has been addressed in Section 3.4.1 of this report and forms the basis of Recommendation 2.

## **2. Commitment 6**

*"The Geraldton Port Authority commits to not allowing crayfish processing industries to establish on the reclaimed land of Stages 1 and 2. This is mainly because of effluent disposal problems associated with this type of industry".*

### **Evaluation**

This commitment addresses the issue of effluent disposal associated with crayfish processing. Since this commitment was made in 1989, the EPA and the Geraldton Port Authority have agreed (24/01/91) that live lobster storage and packing does not constitute crayfish processing.

The EPA notes the proponent's request to delete this commitment, but believes that as one of the objectives of the project is to allow for growth of the Geraldton fishing industry, this commitment should be retained.

### **Recommendation 10**

**The Environmental Protection Authority recommends that Commitment 6 of the Environmental Statement for the proposal of 27 December 1989, be retained.**

Commitments that will be audited by the Department of Environmental Protection, due to their environmental significance are listed below. All commitments from the original statement and the revised statement, however, are required to be fulfilled by the proponent and should be addressed in the compliance and progress report. The proponents commitments arising from the original NOI appear in Appendix 2 and the revised commitments in Appendix 3.

A Schedule of these environmental management commitments is provided in Section 7.

## **5. Discussion and synthesis**

In assessing the original Proposed Geraldton Port Expansion (EPA Bulletin 411), the EPA gave particular consideration to the following potential environmental effects:

- water quality, including turbidity associated with dredging and reclamation;
- marine ecosystems including the loss of seagrass meadows; and
- interruption of offshore processes.

The EPA has evaluated the impact of the proposed extension to the breakwater in relation to these issues and has recommended that the original environmental conditions be amended to reflect the changes proposed and changes in emphasis in environmental impact assessment since 1989. The EPA also considers that a number of new standard procedural conditions need to be incorporated in the environmental statement in order to conform with more recent statements.

Following consideration of the environmental issues indicated in Section 3 of this report and the proponent's response to these, the EPA has concluded that the modification to the Geraldton Port Expansion works to be acceptable and recommends that the environmental statement be amended accordingly.

## **6. Conclusions and recommendations**

The Authority has examined environmental issues associated with the proposal and has taken the opportunity to review and revise the existing environmental conditions and commitments. The issues have been appropriately identified and addressed by the proponent.

In relation to:

- maintenance of water quality;
- ensuring shoreline stability in the Geraldton region;
- protection of biological communities; and
- evaluation of existing environmental conditions and commitments for the Geraldton Port Expansion

the Authority has made specific recommendations.

The EPA concludes that the modification to the Geraldton Port Expansion works is environmentally acceptable and recommends it could proceed, subject to the recommendations in this report.

## 7. Recommended environmental conditions

The following Recommended Environmental Conditions would amend the Minister's original Statement (Appendix 1) and apply additional conditions to reflect the recommendations in this report and ensure a continued review of the environmental performance and development.

PROPOSAL: GERALDTON PORT EXPANSION  
(239/871)

CURRENT PROPONENT: GERALDTON PORT AUTHORITY

CONDITIONS SET ON: 27 DECEMBER 1989

Conditions 1-6 to be deleted and replaced by the following:

### 1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, including the proposed extension of the breakwater as reported in Environmental Protection Bulletin 411, the proponent shall fulfil the commitments made in 1989 (that is at the time of the assessment) and the consolidated commitments in August 1994. These consolidated commitments are included in Environmental Protection Authority Bulletin 752 as Appendix 3. (Commitments that will be audited appear in Schedule 1).

### 2 Dredging

- 2-1 Prior to commencement of any major additional dredging activity not addressed within the Notice of Intent, the proponent shall refer that activity to the Department of Environmental Protection for assessment.

### 3 Water Quality

- 3-1 Prior to construction the proponent shall prepare a water quality monitoring programme for the port, including the inner harbour;

- 3-2 Prior to construction the proponent shall establish a baseline for comparison of water quality; and
- 3-3 The proponent shall ensure that water within the Geraldton Inner Harbour is maintained at a quality acceptable to the Department of Environmental Protection, so that it does not have an adverse impact on the marine environment or on the beneficial uses outside the inner harbour. The draft document 'Western Australian Water Quality Guidelines for Fresh and Marine Waters' (EPA Bulletin 711) should be used as the criteria for determining acceptable water quality.
- 3-4 The proponent shall implement the monitoring programme required by Condition 3-1.

#### **4. Bunding**

- 4-1 In order to minimise environmental impacts that could occur from sediment plumes resulting from dredging, the proponent shall, prior to commencement of dredging, bund all reclamation areas (for Stage 2) and take such other action as is required to meet this objective to the requirements of the Department of Environmental Protection.

5. This condition has been deleted.

#### **6. Quarrying**

- 6-1 Prior to construction, the proponent shall identify appropriate environmental management for the quarrying and transport of rock associated with the construction of the bund walls, to the satisfaction of the Department of Environmental Protection following consultation with City of Geraldton

#### **7. Shoreline Stability**

- 7-1 The proponent shall undertake shoreline monitoring in order to confirm shoreline stability or identify any littoral drift problems as a result of the port expansion;
- 7-2 The proponent shall prepare a shoreline monitoring plan; and
- 7-3 The proponent shall implement the monitoring plan required by Condition 7-2.

#### **8 Implementation**

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 8-1 Subject to the conditions in this amended statement, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

#### **9 Proponent**

These conditions legally apply to the nominated proponent.

- 9-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the



proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

## **10 Compliance Auditing**

In order to ensure that environmental conditions and commitments are met, an audit system is required.

- 10-1 To help verify environmental performance, the proponent shall prepare periodic Progress and Compliance Reports in consultation with the Department of Environmental Protection.

### **Procedure**

The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.

If there is any dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

### **Note:**

When extending the breakwater, Geraldton Port Authority should do so in a manner that is consistent with the requirements of this statement.

## **Schedule of Environmental Management Commitments to be audited by the Department of Environmental Protection**

### **Preconstruction:**

1. Dredging for Stage 2 will be limited to four months so as to minimise the period over which turbidity will be generated. Management of turbidity will be performed to the satisfaction of the Department of Environmental Protection.
2. The Geraldton Port Authority will monitor on an annual basis the impact, if any, of sand moving around the reclaimed area on nearby seagrass communities. The monitoring programme will be prepared in consultation with the Department of Environmental Protection and the results will be supplied to the Department of Environmental Protection as they become available.

### **During construction**

3. The Geraldton Port Authority will manage the reclamation activities in such a way as to minimise the generation of noise and dust. In the unlikely event that complaints are received the Geraldton Port Authority will take appropriate action to rectify the problem. These actions will be performed to the satisfaction of the Department of Environmental Protection.

### **Post Construction**

4. The Geraldton Port Authority will carry out management and monitoring programs of the dredging and reclamation works. These will include monitoring of heavy metals in dredged sediments to ensure that future industrial land does not contain contaminated sediment. The programmes will be designed and implemented to the satisfaction of the Department of Environmental Protection.

5. The Geraldton Port Authority will carry out management and monitoring programmes of the dredging and reclamation works. These will include monitoring of heavy metals in dredged sediments to ensure that future industrial land does not contain contaminated sediment. The programmes will be designed and implemented to the satisfaction of the Department of Environmental Protection.
6. The Geraldton Port Authority will modify existing contingency programs designed for hydrocarbon spillage and fire events to include the reclaimed area and will prepare a contingency plan for the repair of breakwaters and any other stabilising structures associated with the works should they fail.
7. The Geraldton Port Authority will upgrade the existing common user refuelling facility at the Fishing Boat Harbour by replacing the earth bund with a concrete floor and brick bund wall.

## 8. References

1. Environmental Protection Authority, 1989, *Proposed Port Expansion; Geraldton Port Authority - Report and Recommendations of the Environmental Protection Authority*, Bulletin 411, EPA, Perth, Western Australia.
2. Environmental Protection Authority, 1993, *Western Australian Water Quality Guidelines for Fresh and Marine Waters*, Bulletin 711, EPA, Perth, Western Australia.
3. Department of Marine and Harbours, 1988, *Geraldton Foreshore Redevelopment; Coastal Engineering Studies*, Report No. DMH 4/88, Department of Marine and Harbours, Western Australia.
4. Marine and Harbours, January 1991, Correspondence to Geraldton Port Authority.
5. Halpern Glick Maunsell, 1989, *Geraldton Port Expansion - Notice of Intent*, Perth Western Australia.
6. Masini, R.J. 1988, *Assessment of Potential Impacts of the Champion Bay Marina Development on Adjacent Benthic Communities*, Department of Marine and Harbours, Perth, Western Australia.
7. Monaghan Rooke & Robinson, 1994, *Geraldton Port Marine Environs Habitat Survey*, Geraldton Port Authority, Geraldton, Western Australia.
8. Rogers, M.P. & Associates Pty Ltd, 1994, *Proposed Port Expansion Coastal Engineering Study*, Geraldton Port Authority, Geraldton, Western Australia.
9. Tingay, A. & Associates. 1994, *Geraldton Port Expansion, Proposed Change to Environmental Conditions*, Perth, Western Australia.

## **Appendix 1**

**Environmental Statement and summary of commitments**

**27 December 1989**

Ass # 239  
Bull # 411  
State # 087



WESTERN AUSTRALIA  
MINISTER FOR ENVIRONMENT

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED  
(PURSUANT TO THE PROVISIONS OF THE  
ENVIRONMENTAL PROTECTION ACT 1986)

PROPOSED GERALDTON PORT EXPANSION

GERALDTON PORT AUTHORITY

This proposal may be implemented subject to the following conditions:

1. The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made in the Notice of Intent (copy of commitments attached).
2. Prior to commencement of any major additional dredging activity not addressed within the Notice of Intent, the proponent shall refer the proposal to the Environmental Protection Authority for assessment.
3. The proponent shall ensure that water within the Geraldton Inner Harbour is maintained at a quality acceptable to the Environmental Protection Authority, so that it does not have an adverse impact on the marine environment or on the beneficial uses outside the Inner Harbour. The document 'Water Quality Criteria for Marine and Estuarine Waters of Western Australia' (EPA Bulletin 103) shall be used as a guide in determining acceptable water quality.
4. In order to minimise environmental impacts that could occur from sediment plumes resulting from dredging, the proponent shall, prior to commencement of dredging, bund all reclamation areas (for both Stages 1 and 2) and take such other action as is required to meet this objective to the satisfaction of the Environmental Protection Authority.

Published On  
27 DEC 1989

In addition, should sediment plumes extend beyond the Inner Harbour breakwater, the proponent shall take remedial action to minimise environmental impact as soon as possible, to the satisfaction of the Environmental Protection Authority.

5. All refuelling facilities and fuel links in both the Inner Harbour and Fishing Boat Harbour shall be designed and sited so as to minimise the risk of spills into the Inner Harbour area.

The storm water drainage system and discharge points shall be designed and sited so as to minimise any detrimental impact on the marine environment and accordingly, shall be referred to the Environmental Protection Authority for comment prior to construction.

6. Prior to construction, the proponent shall identify appropriate environmental management for the quarrying and transport of rock associated with the construction of the bund walls, to the satisfaction of the Environmental Protection Authority following consultation with the City of Geraldton.



Bob Pearce, MLA  
MINISTER FOR ENVIRONMENT

22 DEC 1989

## SUMMARY OF COMMITMENTS

The GPA is responsible for all activities with regard to the Port of Geraldton, including the present proposal. As such the Authority makes the following commitments:

The GPA commits to managing the increase in turbidity generated by dredging. This will be performed by constructing the bund walls well in advance of reclamation in order to contain the extent of the plume. In addition the discharge outlet will be located as far away from the overflow outlet as possible to allow the maximum amount of suspended sediment to settle out before discharge to the harbour. Dredging of Stage 1 will be limited to one month while dredging for Stage 2 will be limited to four months so as to minimise the period over which turbidity will be generated. Management of turbidity will be performed to the satisfaction of the EPA.

The GPA commits to managing the reclamation activities in such a way as to minimise the generation of noise and dust. In the unlikely event that complaints are received the GPA commits to taking appropriate action to rectify the problem. This action will be performed to the satisfaction of the EPA.

The GPA commits to locating the dredge and associated pipelines such that continued access to the fishing boat harbour and to the berths within the main harbour will be provided. This will be carried out after consultation with port users along the lines of normal practice during other similar dredging programmes.

The Department of Marine and Harbours has undertaken to monitor the beaches on either side of the Geraldton Foreshore Development Marina in order to identify any unforeseen shoreline instability as a result of that project. The GPA commits to remaining in communication with the DMH with regard to the results of this monitoring programme and if necessary, take appropriate management actions in conjunction with the DMH.

The GPA commits to managing stormwater runoff from factories and hardstanding surfaces within the reclaimed area so that spills of chemicals, and other potential pollutants at the Port are directed into drains and captured in silt traps. The design of the drainage system will include a soak well and high level overflow and will be designed to the satisfaction of the EPA.

The GPA commits to not allowing crayfish processing industries to establish on the reclaimed land of Stages 1 and 2. This is mainly because of effluent disposal problems associated with this type of industry.

The GPA commits to not allowing the disposal of effluents from industries into any septic tanks installed on the reclaimed land.

The GPA commits to carrying out management and monitoring programmes designed to detect and address foreseeable contingencies associated with the reclamation works. This includes monitoring of heavy metals in soils to be dredged, modification of contingency programmes designed for hydrocarbon spillage and fire events and the repair of any stabilising structures associated with the works should they fail. These management and monitoring programmes shall be performed to the satisfaction of the EPA.

## **Appendix 2**

**Revised commitments by the Geraldton Port Authority**

**July 1994**

## **5.4 Revised Commitments**

A number of commitments were made by the Geraldton Port Authority relating to the original proposal for port expansion. In response to the guidelines for the present report, the format of these commitments has been altered as follows.

### **5.4.1 Pre-construction**

1. The GPA will manage the increase in turbidity generated by dredging. This will involve the construction of the bund walls in advance of reclamation in order to contain the extent of the dredge plume. In addition the discharge outlet will be located as far away from the overflow outlet as possible to allow the maximum amount of suspended sediment to settle out before discharge to the harbour.
2. Dredging for Stage 2 will be limited to four months so as to minimise the period over which turbidity will be generated. Management of turbidity will be performed to the satisfaction of the DEP.
3. The GPA will monitor on an annual basis the impact, if any, of sand moving around the reclaimed area on nearby seagrass communities. The monitoring program will be prepared in consultation with the DEP and the results will be supplied to the DEP as they become available.

### **5.4.2 During Construction**

1. The GPA will manage the reclamation activities in such a way as to minimise the generation of noise and dust. In the unlikely event that complaints are received the GPA will take appropriate action to rectify the problem. These actions will be performed to the satisfaction of the DEP.
2. The GPA will locate the dredge and associated pipelines such that continued access will be provided to the fishing boat harbour and to the berths within the main harbour when completing Stage 2 works. Dredging will only commence after consultation with port users as is the normal practice during other similar dredging programs.

### **5.4.3 Post Construction**

1. The GPA will manage stormwater runoff from buildings and hard standing surfaces within the reclaimed area so that any accidental spills of chemicals or other materials are directed into drains and captured in silt traps. The design of the drainage system will include a soak well as high level overflow and will be designed to the satisfaction of the DEP.
2. The GPA will not allow the disposal of effluent's from industries into any septic tanks installed on the reclaimed land.
3. the GPA will carry out management and monitoring programs of the dredging and reclamation works. These will include monitoring of heavy metals in dredged sediments to ensure that future industrial land does not contain contaminated sediment. The programs will be designed and implemented to the satisfaction of the DEP.
4. The GPA will modify existing contingency programs designed for hydrocarbon spillage and fire events to include the reclaimed area and will prepare a contingency plan for the repair of breakwaters and any other stabilising structures associated with the works should they fail.
5. The GPA will liaise with DPUD regarding buildings on the reclamation area to ensure maintenance of a high standard of visual amenity. Guidelines in DPUD Policy No. DC6.1 pertaining to visual amenity will be referred to for all development proposals.
6. The GPA will liaise with the City of Geraldton to ensure that amenity values specified in Town Planning Scheme 1 are maintained. This liaison will occur during consideration of all development proposals.
7. The GPA will upgrade the existing common user refuelling facility at the Fishing Boat Harbour by replacing the earth bund with a concrete floor and brick bund wall.



## **Appendix 3**

**Proponents' response to issues raised in submissions**

**GERALDTON PORT EXPANSION  
PROPOSED CHANGE TO ENVIRONMENTAL CONDITIONS (871)**

**PROPONENT'S RESPONSES TO ISSUES RAISED DURING  
PUBLIC CONSULTATION PROCESS**

**Issue 1.      Water Quality**

**Comment 1.1** It is imperative that if the construction work is to occur during the rock lobster season, 15 November to 30 June in any year, that the quality of the water adjacent to the live rock lobster facilities is maintained.

An extra loading of suspended sediment may cause anoxic conditions and prove costly for the rock lobster factories in terms of loss of live product. Another possible scenario could be the blockage of pumps that pump the water into the live holding tanks with subsequent mortality of the product.

Water quality monitoring should be conducted for dissolved oxygen levels as well as suspended solids throughout the construction phase. This program should be designed in consultation with the rock lobster factories who have facilities on the wharf. A contingency plan in case potential problems occur should also be considered.

**Response 1.1** As discussed in Section 3.3.2, water quality is only likely to be affected by construction activities which may cause temporary increases in turbidity.

The GPA is prepared to undertake construction during July to November, however, this will be determined by the approval process.

The live lobster facilities have water intake pipes on the eastern side of the existing sand trap wall, as well as having pipes in the inner harbour. It is unlikely that suspended sediment will reach a level sufficient to cause anoxic conditions or cause blockage of water intake pipes. The lobster facilities have the option of switching intake points should it become necessary.

The GPA will remain in close communication with the rock lobster industry during any construction works to ensure they are not adversely affected by the proposal.

The GPA has no objection to monitoring dissolved oxygen levels as well as suspended solids around the proposed reclamation area before, during and after the reclamation works.

**Comment 1.2** Monitoring should be conducted to ensure water quality within the Geraldton Inner Harbour is maintained at a quality acceptable to the Environmental Protection Authority.

**Response 1.2** Water quality within the Inner Harbour will not be affected by this proposal, however, the issue is relevant to the alteration of existing conditions and commitments. The original assessment of the Geraldton Port Expansion proposal did not address long term monitoring issues.

The GPA is in the process of developing a monitoring schedule for the Port, including the Inner Harbour. This schedule will be referred to the EPA for comment. As stated in Section 5.2, water quality will be assessed in relation to EPA Bulletin 711 "Western Australian Water Quality Guidelines for Fresh and Marine Waters". A baseline for comparison of water quality will need to be established, which reflects the context of use and development of the inner harbour.

## **Issue 2. Impact on Seagrass**

**Comment 2.1** The sand trap breakwater will indirectly cause the loss of seagrass.

**Response 2.1** The potential for indirect impact is acknowledged and is discussed in Section 3.1. The movement of sand along the outer breakwater may affect 1 - 2.25ha of seagrass beyond that directly impacted. The loss of seagrass is considered insignificant in relation to the regional extent of seagrass.

## **Issue 3. Planning Issues**

**Comment 3.1** At present the proposed Outer Reclamation Area is not within the municipal boundary of the Town Planning Scheme Area. Discussions are currently underway between the GPA and the City on the future preparation of a development plan and development control policy for the West End area. The Study Area includes all land west of Crowther Street between Separation Point and Fitzgerald Street and the existing Port inclusive of new reclamation areas. On Town Planning grounds, it is considered premature to endorse the existing port reclamation proposal until agreement is reached on the development plan.

**Response 3.1** The GPA acknowledges the concern of the City of Geraldton on the status of the reclamation area. While the Geraldton Port Authority Act, 1968 established the GPA to control and manage the Port of Geraldton, the GPA is currently undertaking voluntary negotiation with the City of Geraldton to resolve issues of this nature. However, the development plan covers numerous issues concerned with Port operations and will take some time to prepare. The GPA submits that the environmental assessment process for the present project should not be delayed pending the resolution of a variety of planning issues not directly related to this project.

**Comment 3.2** Subject to 3.1 above, the proposed reclamation area should be incorporated within the development plan boundary and should be subject to controls agreed between the GPA and Council covering:

- i) Plot ratio/site cover;
- ii) Building height;
- iii) Building materials;
- iv) Landscaping, and
- v) Carparking.

**Response 3.2** The GPA has committed to liaise with the City of Geraldton and DPUD when considering development for the site. This issue is discussed in Sections 3.4.2 and 5.4.3 of the review document.

The GPA will act in accordance with its role as the planning authority under its enabling legislation, including referral to other authorities as required.

**Comment 3.3** Provision for public access/associated carparking to proposed breakwaters for recreational purposes is supported.

**Response 3.3** The GPA acknowledges and supports the recreational use of the Port breakwaters.

**Comment 3.4** Consideration should be given by the proponent to provision of facilities for Page's Beach users including sealed carpark, landscaping and changerooms/toilets.

**Response 3.4** Page's Beach and its surrounds comprise land reserved for recreation which is vested in the City of Geraldton, which therefore has management responsibilities for this area. It is outside the Geraldton Port boundaries, and is not considered to be a component of the project currently under assessment.

Should this area be handed over to the GPA for inclusion in its management boundaries the issues raised above would be implemented.

The GPA has initiated preparation of a Coastal Management Plan for the Point Moore area, which will include Page's Beach. This Plan will address the provision of access, facilities and landscaping.

#### **Issue 4. Coastal Stability**

**Comment 4.1** The proponent's statement that the proposed reclamation area will not have any additional affect on shoreline stability north of Town Beach is not justified with technical data. It is recommended that the GPA be required jointly with Council to undertake a study of the northern coastline to:

- i) determine coastline dynamics;
- ii) determine causes of instability, and
- iii) determine solutions to overcome adverse erosion (short term and long term).

**Response 4.1** The GPA has released a technical document prepared by MP Rogers & Associates Pty Ltd entitled "Proposed Port Expansion Coastal Engineering Study". The finding of this study is that the northern beaches have not received significant amounts of littoral sand for many decades, and that the situation will not change with completion of this expansion. This conclusion reflects that of the 1988 Geraldton Foreshore Redevelopment Study prepared by the then Department of Marine & Harbours, which concluded that the port facilities have been a barrier to littoral drift since the 1930s. The construction of the Batavia Coast Marina was based on the content of this report.

The statement that the proposed reclamation area will not have any additional affect on shoreline stability north of Town Beach is justified with technical data. Consequently, the GPA does not consider that it should be required to undertake a study of the northern coastline as a condition of this assessment process. This does not rule out the possibility of the GPA undertaking such a study on its own volition. In fact, the GPA is currently considering a proposal from a consultant regarding a study of this nature.