

# **Seawall and land reclamation to extend Rous Head, Fremantle. Change to environmental conditions**

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**Fremantle Port Authority**

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

**Environmental Protection Authority  
Perth, Western Australia  
Bulletin 771  
March 1995**

#### 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 31 March 1995.

## Summary and recommendations

The Environmental Protection Authority (EPA) 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 Fremantle Inner Harbour Deepening Project.

The Fremantle Inner Harbour Deepening Project was assessed by the EPA and approved by the Minister for the Environment on 12 October 1988 (Appendix 1).

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

- loss of seabed;
- shoreline stability;
- source and quality of reclamation material;
- construction issues;
- water turbidity; and
- evaluation of existing environmental conditions and commitments for the Fremantle Inner Harbour Deepening project.

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

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

|   | <b>Summary of Recommendations</b>   |
|---|---|
| 1 | The proponent undertake shoreline monitoring to confirm shoreline stability to the requirements of the DEP.<br><br>Should erosion be detected, the proponent should prepare and implement a strategy for management of the affected beach.                                  |
| 2 | The proponent ensure that fill material is supplied from within the Fremantle Port Authority Inner Harbour area.<br><br>The proponent shall ensure fill material is inert.  |
| 3 | The proponent shall prepare and undertake a monitoring programme for heavy metals and tributyltin from all areas to be dredged. If contamination is detected in the monitoring programme, the proponent shall prepare and implement a strategy for management of the spoil. |
| 4 | The proposal is acceptable subject to the recommendations contained in this report and the proponent's commitments.   |

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# 1. Introduction

## 1.1 Background

The Environmental Protection Authority (EPA) has been requested by the Minister for the Environment under Section 46 of the *Environmental Protection Act 1986*, to report on the proposed extension to the Fremantle Inner Harbour Deepening Project. This report (Bulletin 771) contains the EPA's advice and recommendations to the Minister for the Environment, who will decide on any modifications to the environmental conditions set on 11 October 1988.

In 1988 the EPA assessed the proposal by the Fremantle Port Authority (FPA) to deepen the Inner Harbour of the Port of Fremantle to approximately 13 metres and to reclaim an area of 27 hectares to the north of North Mole. The deepening of the inner harbour and associated land reclamation involved four stages:

1. Construction of a seawall to enclose the reclamation area and proposed small craft harbour;
2. Dredging of the inner harbour and the pumping of dredged material to the reclaimed area;
3. Modification of the North Mole providing an entrance to allow access to the small craft harbour; and
4. Development of reclaimed land.

The EPA released its report and recommendations on the proposal in August 1988 (Bulletin 342) and the Minister for the Environment issued his approval in a statement on 12 October 1988 (Appendix 1). The commitments made by the proponent also appear in Appendix 1.

Environmental impacts identified in the original assessment included: water quality, water turbidity associated with inner harbour dredging and land reclamation, changes to Leighton and Port Beaches and the impact on marine ecosystems.

The status of the original project is as follows:

- Stages 1-3 have been completed;
- Stage 4 is currently being completed; and
- all pre-development and development conditions have been fully met.

This assessment deals with an expansion of this project.

## 2. Summary description of proposal

The FPA proposes to extend the Rous Head Development area by constructing a seawall (approximately 710m in length) off Rudderham Drive and reclaiming approximately nine hectares of sea bed. The boundaries of the original and current proposal are shown on Figure 1.

The proposal seeks to:

- reclaim nine hectares of sea bed using predominantly fill material arising from the impending reconstruction of Berth No. 3 and excess fill material within the port area; and
- develop additional land backing to the berths on North Quay through this reclamation.

In addition, this reclamation provides the opportunity to provide an additional exit/entry road to the Rous Head area.

The modified proposal is to be completed in two stages. These stages are shown in Figure 2 (Fremantle Port Authority, 1995) and are described on page four.

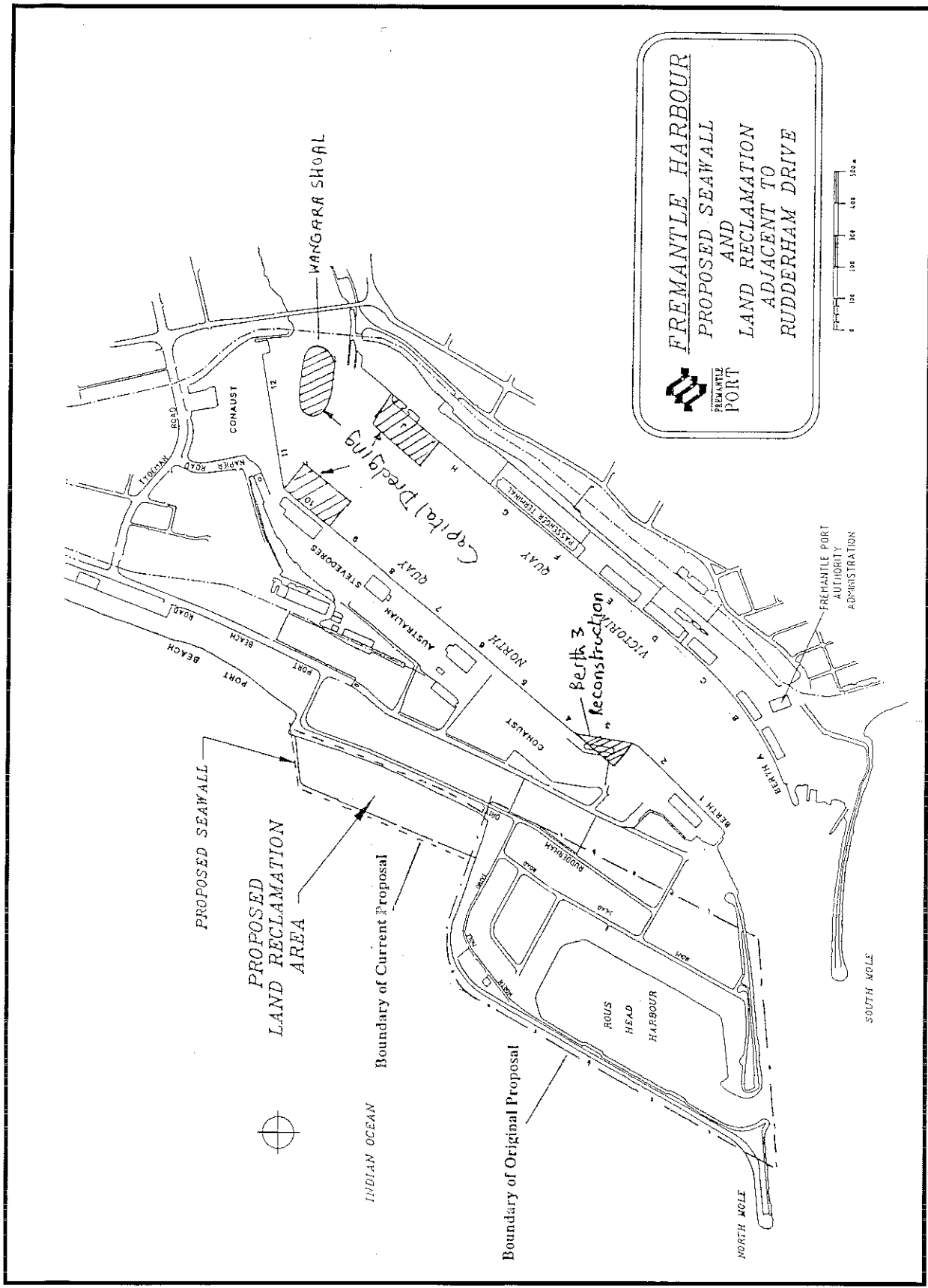


Figure 1. The boundaries of the original and current proposal (Fremantle Port Authority, 1995).

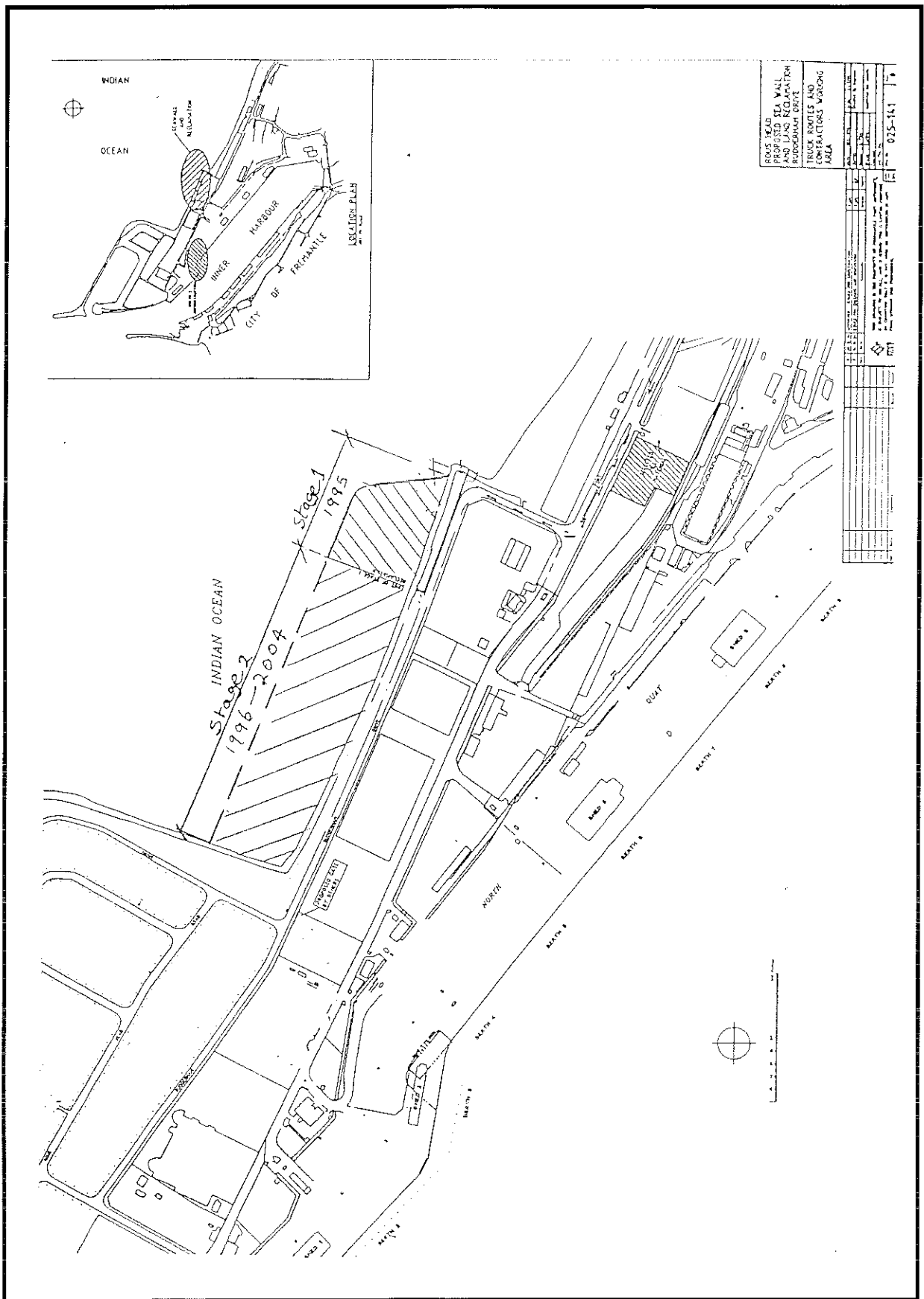


Figure 2. Stages of Development. (Fremantle Port Authority, 1995).



## **Stage 1**

Stage 1 involves:

- the construction of 250m of seawall;
- dumping of approximately 100,000m<sup>3</sup> of clean fill sourced from the Port area during 1995; and
- a construction period of 3-4 months.

## **Stage 2**

Stage 2 involves:

- the construction of a further 460m of seawall;
- the dumping of an additional 330,000m<sup>3</sup> of clean fill and dredged material;
- the construction of a bund wall (approximately 300m) for settlement ponds; and
- a construction period spanning between 1996 and 2005.

## **3. Method of assessment**

The environmental impact assessment process for this proposal followed the Environmental impact assessment administrative procedures 1993 for this Section 46 review. In undertaking this assessment the following approach was taken:

- identification of significant environmental issues;
- setting of objectives of assessment for each issue;
- assessment of the potential for impact; and
- formulation of recommendations to manage identified impacts.

### *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, by Department of Environmental Protection (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 environmental impact assessment for this proposal followed the *Environmental impact assessment administrative procedures 1993*. The summary of submissions and the proponent's response to those submissions appear in Appendices 2 and 3 respectively.

In addition to following the administrative procedures, (DEP) officers undertook discussions with the proponent and site visits.

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**

Environmental aspects of the Rous Head development area extension which require evaluation by the EPA include:

- loss of seabed;
- shoreline stability;

- source and quality of reclamation material;
- construction issues;
- water turbidity; and
- evaluation of existing environmental conditions and commitments for the Fremantle Inner Harbour Deepening project.

## **4.1. Loss of seabed**

### **4.1.1 Objective**

To protect the biological communities within and adjoining the area to be reclaimed.

### **4.1.2 Evaluation framework**

#### **Background**

As documented in the Public Environmental Review (PER) for the Fremantle Inner Harbour Deepening project (FPA, 1988), the proposed reclamation area is located on a submarine bank fringing the coastline and the sandy materials that form it belong to the geological formation known as the Cottesloe Fringing Bank Unit.

The PER also indicates that the area proposed for reclamation is typical of the sandy beach habitats found along much of the metropolitan coast and that the area is not biologically productive.

#### **Public submissions**

Concern was raised in public submissions regarding the proponent's charter to fill in the sea leading to a loss of nine hectares of sea bed.

#### **Proponent response**

In response the proponent indicated that the charter of the FPA gave it the right to plan and process the requirements to operate a port over land and sea areas vested in the Port Authority.

### **4.1.3 Evaluation**

The Coastal Information and Engineering Services (CIES) of the Department of Transport (1994) indicate that the seabed offshore from Port Beach is substantially bare sand and that the only change to the seabed would be the mobilisation of a small volume of sand into the sheltered corner at the southern end of Port Beach. The CIES conclude that there will be no significant impact on seagrasses or algal beds.

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

## **4.2 Shoreline stability**

### **4.2.1 Objective**

To protect the coastline from unacceptable changes arising from the proposal.

## **4.2.2 Evaluation framework**

### **Technical information**

The dominant driving mechanism of sand movement along the North Fremantle coastline is from storm and swell waves from the west and north-west. Sand movement is also influenced by local wind waves from the south-west sea breezes and from infrequent northerly to north-west storms (CIES, 1994).

The shore segment faces the Indian Ocean, but receives substantial shelter from wave action arriving at the shore from westerly and southerly directions. The beach has always been a sandy shore and has become stable as it has become aligned to the balance of wave energy.

At the southern end of Port Beach there have been several beach structures which have influenced the sandy shoreline. These structures include North Mole which reflects energy from north west storms causing short term erosion to a sandy beach on the north side of its abutment, and the existing seawall protecting the older part of Rudderham Drive. This seawall is built parallel to the sandy shoreline and thus directly reflects the normal wave action preventing beach buildup (CIES, 1994).

Therefore, given the interaction of incident and reflected wave energy on sand movement, the nett impact on Port Beach has been to allow a buildup of sand in the sheltered corner. The most recent structure is the Rous Head Harbour breakwater which gives some slight shelter to Port Beach from the south-west wind waves. It also influences the direction of along shore currents in front of Rudderham Drive seawall, and has created the potential for accretion in the sheltered corner (CIES, 1994).

The proposed new seawall is located seaward of Port Beach approximately 100 metres away from the sand beach waterline and is aligned similarly to that of North Mole. The return wall adjacent to Port Beach will be built in water of three metres and thus extreme storm waves will break and lose much of their energy before reaching the wall. The major part of Port Beach, being more than 100 — 150 metres away from the new wall, will not experience any significant change to its existing shore sand regime as a result of the new wall (CIES, 1994).

### **Public submissions**

There were two concerns raised in the public submissions. These were:

1. The FPA should monitor the condition of Port and Leighton Beaches to ensure that changes in ocean movements (tidal, wave action and local currents) and wind patterns resulting from the development do not cause erosion or other damage to adjacent beach areas; and
2. who has the charter to protect the beaches on behalf of the public.

### **Proponent response**

In response the proponent indicated that monitoring of Port and Leighton Beaches had been conducted during the past five years by the means of beach profiles, and that the results indicate that there have been no changes to adjacent beaches.

Although the proponent does not specifically state who is responsible for Port and Leighton Beaches, the Fremantle Regional Strategy (DPUD, 1994) indicates that whereas all other metropolitan coastal beaches are vested in the control and management of the respective local authority in which they are located, Port and Leighton beaches (including Port Beach Road) are currently vested in and under the care of the FPA. The strategy report has recommended that the beaches be vested in the City of Fremantle following the upgrading of infrastructure on Port and Leighton Beaches.

### **4.2.3 Evaluation**

The Coastal Information and Engineering Services (CIES) of the Department of Transport (1994) has indicated that under swell and storm wave patterns, there will be a tendency for the shallow sandy seabed immediately in front of the new wall to deepen and for the suspended sand to be transported towards the shore where it will widen the beach in the sheltered corner. CIES also indicate that this will be a "one off" exercise involving a small volume of sand and will cease to be of significance once the seabed is lowered to 2 or 3 metres below datum.

The EPA believes that although beach erosion is likely to be minimal, shoreline monitoring should be conducted north of the proposed seawall to confirm shoreline stability. If monitoring results indicate a problem, the proponent should prepare and implement a management strategy to the requirements of the DEP.

The EPA recognises that beach profiles have already been conducted since 19/08/91 on a six monthly basis, and recommends that these should be continued and that Environmental Condition 5 (2) of the original statement be updated.

#### **Recommendation 1**

**The proponent undertake shoreline monitoring to confirm shoreline stability to the requirements of the Department of Environmental Protection.**

**Should erosion be detected, the proponent should prepare and implement a strategy for management of the affected beach. This recommendation should meet the requirements of the Department of Environmental Protection.**

## **4.3 Source and quality of reclamation material**

### **4.3.1 Objective**

To ensure the source and quality of fill for the development of the reclamation area is from within the Fremantle Port Authority Inner Harbour area and is clean.

### **4.3.2 Evaluation framework**

#### **Background**

##### **Source of fill material**

The main source of fill material during the first stage of the proposed reclamation will be from the proposed reconstruction of Berth No. 3 situated on North Quay.

Sources of fill have been identified by the proponent as follows:

- 50,000 m<sup>3</sup> of sand, limestone rock and concrete debris will be generated from the old berth demolition;
- 50,000m<sup>3</sup> from levelling areas behind berths 8 to 10;
- 50,000m<sup>3</sup> from within the port area during 1996 to 2005;
- 180,000m<sup>3</sup> from capital and maintenance dredging within the Inner Harbour; and
- 100,000m<sup>3</sup> from outside of the port area.

## **Quality of Material**

The proponent has indicated in the environmental review document (FPA, 1995) that reclamation material will be of an inert and uncontaminated nature (except dredged sediments) and consist of sandy soils, limestone rubble, concrete debris, building material rubble, dredged material and bituminous pavement material.

The definition of dry inert fill (that has been defined in EPA Bulletin 586) is 'without active properties' or 'chemically inactive'. In the context of a landfill operation this definition implies that there would be no chemical change to the material as a result of biological activity or interaction of the material with water.

Inert materials are considered to include: asphalt from former roads, bricks, fibreglass, plastic, road base materials, and soils such as topsoil, excavated rock material, sand, gravel and clay.

The EPA has also decided to create a list of non-inert materials that may be dumped at dry inert fill sites. These non-inert materials are unlikely to cause pollution and include: timber, metals used in building construction (for example, steel, galvanised iron, aluminium), and concrete blocks.

It should be noted that the following materials are not considered inert and should not be dumped at dry inert fill sites; garden refuse such as tree lopping, grass clippings etc, containers such as chemical containers, sawdust, paper, cardboard wastes and asbestos.

## **Disposal of dredged material**

The EPA has noted that the FPA has made a commitment to test samples of sediment taken from Berth No. 3 and other areas of the inner harbour for heavy metals and tributyltin.

The proponent has indicated that disposal of dredged material is likely to be via a dragline, depositing material into trucks prior to tipping at the proposed reclamation area. However, it is possible that a dredger may be employed with spoil being deposited by pipeline.

## **Public submissions**

Issues raised in public submissions focussed on whether it is necessary to source fill material from outside the Port area and from where the outside source of fill would come. Submissions indicated that fill material being sourced from outside the Port area was unacceptable as it did not meet the primary justification for the reclamation for port purposes and could provide for commercial dumping. Another concern raised was whether the land proposed for reclamation would be exclusively used for port related purposes.

## **Proponents response**

In response the proponent indicated that the use of the land will be identical to that currently employed on Rous Head (commercial, marine and port related).

The proponent also pointed out that fill material required to reclaim the proposed area to a level of RL + 3.5m is in the order of 430,000 cubic metres, with 330,000 cubic metres being sourced from within the port area and 100,000 cubic metres being sourced from outside the port area. The outside source of fill material will primarily come from building demolition sites within the Perth metropolitan area.

### **4.3.3 Evaluation**

The Authority notes that the two main objectives for the proposal are:

1. To provide a disposal site for dredged materials derived from maintenance or capital dredging of the Fremantle Inner Harbour; and
2. to reclaim nine hectares of additional land to be used for port related activities.

The EPA further notes that the FPA intends to import 23 per cent of the total fill required to complete the reclamation in the time frame set by the FPA from outside of the port.

The justification for the proposal appears to be to use fill material generated from within the port and to create additional land using this fill material for port related activities. The Authority considers that to meet the justification for the proposal, all fill material should be supplied from within the Fremantle Port Authority Inner Harbour area.

The EPA also notes that the FPA has made a commitment to carry out monitoring programmes of sediment taken from Berth No. 3 and other areas of the Inner Harbour, if necessary, for contaminants prior to any dredging or excavation commencing.

## **Recommendation 2**

**The proponent should ensure that:**

- **fill material is supplied from within the Fremantle Port Authority Inner Harbour area; and**
- **fill material is inert.**

## **Recommendation 3**

**Prior to the commencement of dredging in the harbour, the proponent should prepare and undertake a monitoring programme for heavy metals and tributyltin from all areas to be dredged. If contamination is detected in the monitoring programme, the proponent should prepare and implement a strategy for management of the spoil. This recommendation should meet the requirements of the Department of Environmental Protection.**

## **4.4. Construction impacts**

### **4.4.1 Objective**

To minimise construction impacts during Stage 1 and 2 of the development.

### **4.4.2 Evaluation framework**

#### **Public submissions**

The main concerns raised in public submissions focussed on noise monitoring and dust control.

#### **Proponent response**

In response to these concerns the proponent referred to Commitments 8.1 and 8.3 (as documented in Section 8, of the Environmental Review document). Commitment 8.1 states that the proponent will abide by the Noise Abatement (Neighbourhood Annoyance) Regulations 1979, and Commitment 8.3 states that the proponent will prepare a dust management strategy to control dust to the requirements of the DEP.

### **4.4.3 Evaluation**

The EPA has concluded that the commitments proposed by the proponent to minimise construction impacts from the extension of the Rous Head development area to be environmentally acceptable. In particular it notes the commitment to comply with appropriate noise regulations and to prepare a dust management strategy.

## **4.5 Other issues**

### **4.5.1 Water turbidity**

The environmental review document provided an outline of possible sources of turbidity, arising from the development, primarily:

- the dredger's cutting or suction head;
- the seawall rock dump face;
- the dredge spoil deposition; and
- the dumping of landfill by trucking.

The proponent has indicated that any turbidity will be temporary and that turbidity will be monitored on a regular basis.

The proponent has also made a commitment (Commitment 8.2) (Appendix 4) to reduce turbidity to a minimum during dredging and construction by implementing staged construction of the seawall so that it extends beyond the area of fill at all times and temporary bunding of the fill area, to ensure that the area of reclamation is always contained within it.

The EPA has concluded that the commitment proposed by the proponent to minimise turbidity from the construction of the seawall and reclamation area to be environmentally acceptable.

## **4.6. Assessment of existing environmental conditions and commitments**

The Fremantle Inner Harbour Deepening Project is currently subject to environmental conditions and commitments set as a result of the environmental impact assessment of the proposal in 1988.

### **4.6.1 Objective**

The objective of reviewing existing conditions and commitments is to achieve one environmental statement and one list of proponent commitments that provides for adequate protection of the environment and for efficient and effective environmental auditing of compliance criteria. It is also considered that this objective will assist the public, the proponent and relevant agencies to easily identify the environmental requirements associated with the Fremantle Inner Harbour Deepening Project and the subsequent proposal to extend the Rous Head development area.

### **4.6.2 Changes to environmental conditions**

Existing environmental conditions have been reviewed, revised and consolidated. The status of conditions are summarised in Table 1. Table 1 should be examined in conjunction with the original statement of environmental conditions contained in Appendix 1. The revised statement containing the recommended environmental conditions arising from this assessment is included in Section 6 of this report.

New standard conditions have also been included in the recommended environmental conditions and these relate to transfer of ownership, time limit on approval and compliance auditing.

It should be noted that there has been a modification of conditions 1, 2, 3, 5 (2), (3), (5) & (6) of the Environmental Statement for the proposal of 12 October 1988, to reflect the EPA's review of conditions.

**Table 1. Summary and evaluation of changes to environmental conditions set by the Minister for the Environment.**

| Original Condition No. | Issue   | Evaluation  | New Condition No. |
|------------------------|---|---|-------------------|
| 1                      | Adhere to proposal  | This is a standard condition - now updated  | 1-1               |
| 2                      | Water Quality Monitoring  | This condition has been updated to reflect revision of Bulletin 103   | 3-1               |
| 3                      | Refer siting of facilities and amenities to EPA for assessment and approval | Condition refers to location of refuelling facilities, stormwater drainage and pump out facilities<br>Further construction for port-related activities is proposed. Condition should remain. Condition has been updated | 4-1               |
| 4                      | Connect development to deep sewerage  | This condition has been met to the satisfaction of the EPA, 05/07/93<br>Will apply to new development through Commitment 8.6  | Removed           |
| 5 (1)                  | Monitor the extent and impact of rock dumping plume                         | This condition has been met to the satisfaction of the EPA, 05/07/93. Condition can be removed  | Removed           |
| 5 (2)                  | Monitor the extent of changes to Leighton and Port Beaches                  | This condition has been updated   | 6-1, 6-2 & 6-3    |
| 5 (3)                  | Monitor sediment heavy metal concentrations                                 | This condition has been updated   | 7-3 & 7-4         |
| 5 (4)                  | Monitor dust levels   | This condition has been met to the satisfaction of the EPA, 05/07/93. Condition is replaced by Commitment 8.3   | Removed           |
| 5 (5)                  | Review and report monitoring results for M5                                 | This condition has been updated and carried over as components of the original assessment remain unfulfilled  | 8-1               |
| 5 (6)                  | Review and report monitoring results after 5 years                          | This condition has been updated and carried over as components of the original assessment remain unfulfilled  | 8-2               |
| 6                      | Refer additional dredging proposals for assessment                          | This condition has been updated   | 5-1               |
| 7                      | Prepare a Land Use Management Plan (LUMP)                                   | LUMPs for Stages 1-3 have been completed. The LUMP for Stage 4 will be expanded to include this proposal and has been included in Proponent Commitment 8.7  | Removed           |



### 4.6.3 Changes to proponent commitments

In the proposal documentation submitted by the FPA, a revised list of environmental management commitments was included. These have been rationalised with the initial commitments attached to the current Ministerial Statement of approval. Previous commitments have been amalgamated, and commitments which duplicate existing statutory requirements or have already been satisfied have been removed. The proposed new consolidated and updated list of environmental commitments, which will be included as part of the DEP's compliance auditing programme, is included as a schedule of the recommended environmental conditions in Section 6. Table 2 summarises the changes to the proponent's environmental commitments.

**Table 2. Summary and evaluation of changes to proponent's environmental commitments as attached to the original Statement of Approval.**

| Original proponent commitment No. (12/10/88) | Issue  | Evaluation   | No. in audit schedule of proponent's commitment |
|--|--|--|---|
| 1  | Monitor noise and dust generation                          | Repeated in 1995 Environmental Commitments 8.1 and 8.3   | 3 and 5   |
| 2  | Minimise turbidity of waters                               | Repeated in 1995 Environmental Commitment 8.2  | 4   |
| 3  | Maintain safe public access                                | Commitment fully met, 05/08/95   | Removed   |
| 4  | Manage the Greenup Wreck                                   | Commitment fully met, 05/08/95   | Removed   |
| 5  | Maintain water quality in the proposed small craft harbour | Commitment is duplicate of Environmental Condition M2 (of original statement). Commitment can be removed             | Removed   |
| 6  | Manage fuel spills   | Repeated in 1995 Environmental Commitment 8.4  | Not subject to audit                            |
| 7  | Maintain integrity of new constructions                    | Repeated in 1995 Environmental Commitment 8.5  | Not subject to audit                            |
| 8  | Comply with building requirements                          | Commitment is a planning issue and can be managed by the City of Fremantle   | Removed   |
| 9  | Connect development to deep sewerage                       | Commitment fully met, 05/07/95. Commitment also repeated for proposed extension in 1995 Environmental Commitment 8.6 | 5   |
| 10   | Prevent surface erosion of reclaimed land                  | Commitment fully met, 05/07/95   | Removed   |

A number of the proponent's commitments repeat the intent of existing commitments summarised in the table above. Where this is the case, the wording of the most recent commitment has been retained. The proponent's full list of 1995 commitments is included in Appendix 4. Although the proponent is legally bound by all commitments made for the project, and reported in the Minister's Statement, not all of these will be subject to audit. A schedule of these auditable environmental management commitments is provided in Section 6.

### **New commitments to be introduced (see Appendix 4)**

New commitments made by the proponent relate to testing of sediment for contaminants, the removal of limestone from Port Beach and the expansion of the LUMP (Stage 4) to include the proposal.

## **5. Conclusion and recommendations**

In assessing the proposed seawall reclamation area the EPA gave particular consideration to the following potential environmental effects:

- loss of seabed;
- shoreline stability;
- the source and quality of fill;
- construction impacts; and
- water turbidity.

The EPA has evaluated the impact of the proposal in relation to these issues and has also recommended that the original environmental conditions be amended to reflect proposed changes.

The EPA has evaluated the implications of the proposed change of proponent commitments. A number of commitments have been consolidated and updated to more easily identify environmental requirements associated with the Rous Head development area.

Following consideration of the environmental issues indicated in Section 4 of this report and the proponent's response to them, the EPA has concluded that the modification to the Fremantle Inner Harbour Deepening Project is acceptable and recommends that the environmental statement be amended accordingly.

The EPA 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.

The EPA concludes that the modifications to the Fremantle Inner Harbour Deepening Project is environmentally acceptable and recommends it could proceed, subject to the recommendations in this report.

### **Recommendation 4**

**The Fremantle Port Authority's proposed expansion of the Rous Head development area is environmentally acceptable and could proceed subject to:**

- **the Environmental Protection Authority's recommendations in this Assessment Report (Recommended Environmental Conditions are listed in Section 6);**
- **compliance with the proponent's environmental management commitments (see Appendix 4); and**
- **compliance with the Environmental Statement for the proposal of 12 October 1988 being consolidated and updated to reflect changes to the proposal, as reported in Environmental Protection Authority Bulletin 771.**

**The environmental factors considered above have been addressed adequately by either environmental management commitments given by the proponent or by the recommendations in this report.**

## 6. Recommended environmental conditions

The following recommended environmental conditions would amend the Minister for the Environment's previous Statement for the Fremantle Inner Harbour Deepening Project as reported in Bulletin 342 and apply additional conditions to reflect the recommendations in this report and ensure a continued review of the environmental performance and development.

Based on its assessment of this proposal and recommendations in this report, the Environmental Protection Authority considers that the following Recommended Environmental Conditions are appropriate.

### STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL (PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE ENVIRONMENTAL PROTECTION ACT 1986)

|                    |  |
|--------------------|--|
| PROPOSAL:          | FREMANTLE INNER HARBOUR DEEPENING<br>PROJECT (100 / 924) |
| CURRENT PROPONENT: | FREMANTLE PORT AUTHORITY                                 |
| CONDITIONS SET ON: | 11 OCTOBER 1988  |

The implementation of this proposal is now subject to the following conditions which replace all previous conditions:

#### 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 documented modifications involving the construction of a sea wall and land reclamation to extend Rous Head (January 1995), the proponent shall fulfil the relevant environmental management commitments made in the Public Environmental Review reported on in Environmental Protection Authority Bulletin 342, in documentation on the sea wall and land reclamation to extend Rous Head, and those made in response to issues raised following public submissions; provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

A schedule of environmental management commitments (February 1995) which will be audited by the Department of Environmental Protection is published in EPA Bulletin 771 and a copy is attached.

#### 2 Implementation

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

- 2-1 Subject to these conditions, 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.

### **3 Water quality**

- 3-1 The proponent shall ensure that water quality within the Fremantle Inner Harbour is maintained such that there are no unacceptable environmental impacts on the marine environment or on the beneficial uses of adjacent waters outside the Inner Harbour to meet the requirements of the Department of Environmental Protection.

### **4 Facilities and Amenities**

- 4-1 Prior to construction of refuelling facilities, stormwater drainage, pumpout facilities and runoff containment, the proponent shall liaise with the Department of Environmental Protection.

### **5 Dredging**

- 5-1 Prior to commencement of any major additional dredging activity not addressed within the Public Environmental Review (1988), or in documentation submitted in connection with the construction of the sea wall and land reclamation to extend Rous Head, the proponent shall refer that activity to the Environmental Protection Authority.

### **6 Shoreline Stability**

- 6-1 The proponent shall undertake shoreline monitoring in order to confirm shoreline stability to the requirements of the Department of Environmental Protection.
- 6-2 The proponent shall prepare a shoreline monitoring plan to achieve the objective of Condition 6-1.
- 6-3 If erosion is detected in the monitoring programme required by Condition 6-2, the proponent shall prepare and implement a strategy for management of the affected beach.
- 6-4 The proponent shall implement the monitoring plan required by Condition 6-1.

### **7 Reclamation Fill**

- 7-1 The proponent shall ensure that fill material is supplied from within the Fremantle Port Authority Inner Harbour area.
- 7-2 The proponent shall ensure that fill material is inert.
- 7-3 Prior to the commencement of dredging in the harbour, the proponent shall prepare and undertake a monitoring program for heavy metals and tributyltin from all areas to be dredged.
- 7-4 If contamination is detected in the monitoring programme required by Condition 7-3, the proponent shall prepare and implement a strategy for management of the spoil.

### **8 Completion of Reporting**

- 8-1 Within six months of the formal authority issued to the decision-making authorities under Section 45(7) of the *Environmental Protection Act 1986*, the proponent shall complete the monitoring programme required by Condition 2 and 5(5) of the statement issued on 11 October 1988 and submit monitoring reports to the Department of Environmental Protection.

- 8-2 Within twelve months of the formal authority issued to the decision-making authorities under Section 45(7) of the *Environmental Protection Act 1986*, the proponent shall submit to the Department of Environmental Protection, as required by Condition 5(6) of the statement issued on 11 October 1988, a report on monitoring results obtained during the full five year period, including an interpretation of the results, recommendations relating to future requirements and a commitment to amend management in accordance with the monitoring results,

**9 Time Limit on Approval**

The environmental approval for the proposal is limited.

- 9-1 If the proponent has not substantially commenced the modified project within five years of the date of this statement, then approval to implement the proposal as granted in the statement of 12 October 1988 shall lapse and be void. The Minister for the Environment shall determine any question as to whether the modified project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the *Environmental Protection Act*. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority).

**10 Proponent**

These conditions legally apply to the nominated proponent.

- 10-1 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.

**11 Compliance Auditing**

To help determine environmental performance, periodic reports on progress in implementation of the proposal are required.

- 11-1 The proponent shall submit periodic Progress and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

**Procedure**

- 1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.
- 2 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.

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

### **Overall**

1. Expand the Land Use Management Plan (Stage 4 now under preparation) to include the construction of a sea wall and land reclamation to extend Rous Head.

### **Prior to construction**

2. Testing samples of sediment taken from Berth No. 3 and other areas of the Inner Harbour, if necessary, for contaminants (heavy metals and tributyltin). Sampling and testing will be carried out on behalf of the proponent by the Chemistry Centre of WA, to the satisfaction of the DEP. The frequency will be decided by the DEP, with the first exercise to be carried out on the Berth No. 3 area prior to any dredging or excavation commencing.

### **During construction**

3. Monitor the noise, investigate any complaints and ensure that any further problems are minimised. A reputable organisation will be engaged to take sound readings during construction at the nears work area (office of Fremantle Container Depot Pty Ltd near the intersection of Port Beach Road with Rudderham Drive). The FPA will abide by the Noise Abatement (Neighbourhood Annoyance) Regulations 1979 to the satisfaction of the DEP.
4. Reduce turbidity to a minimum during dredging and construction by implementing staged construction of the seawall and the timing of the land reclamation operations to the satisfaction of the DEP.
5. Monitor and limit the generation of dust arising from construction operations by providing FPA supervision to ensure that contract requirements for the work are complied with. The contract documents concerned will contain clauses which require Contractors to adopt strict dust control measures (applications of water and truck covers to be used if necessary) and to prepare a "Dust Management Strategy" to control dust (wind blown particulates from the site) to ensure that there are no validated complaints, to the requirements of the DEP.
6. The FPA will provide stormwater drainage and connection to deep sewerage to Local Authority Standards.

## **8. References**

- Department of Planning and Urban Development, 1994, *Fremantle Regional Strategy*, Department of Planning and Urban Development, Perth, Western Australia.
- Department of Transport Coastal Information and Engineering Services, 1994, *Probable Impact of proposed Rudderham Drive Reclamation Sea Wall On Port Beach*, Perth, Western Australia.
- Environmental Protection Authority, 1988, *Fremantle Inner Harbour Deepening Project, Report and Recommendations of the Environmental Protection Authority, Bulletin 342*, Environmental Protection Authority, Perth, Western Australia.
- Environmental Protection Authority, 1991, *Landfill, Lot 23 Fawcett Road, Munster Report and Recommendations of the Environmental Protection Authority, Bulletin 586*, Environmental Protection Authority, Perth, Western Australia.
- Fremantle Port Authority, 1988, *Public Environmental Review, Inner Harbour Deepening Project*, Fremantle Port Authority, Perth, Western Australia.

## **Appendix 1**

**Environmental statement and commitments of 12 October 1988**



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

FREMANTLE INNER HARBOUR DEEPENING PROJECT

FREMANTLE 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 Public Environmental Report and in its letter to the Authority of 14 July 1988 (copy of commitments attached).
2. The proponent shall satisfy Schedules 5 and 16 of the document "Water Quality Criteria for Marine and Estuarine Waters of Western Australia", pertaining to use of water for passage of fish and for navigation and shipping, to the satisfaction of the Environmental Protection Authority.
3. Proposals for location of refuelling facilities, stormwater drainage, pumpout facilities and runoff containment shall be referred by the proponent to the Environmental Protection Authority for approval when these are finalised and before construction commences.
4. Prior to use, the proponent shall provide deep sewerage to the development.




5. Prior to seawall construction commencing, the proponent shall prepare a detailed monitoring and management programme to the satisfaction of the Environmental Protection Authority. In addition to the commitments made in the Public Environmental Report, the programme shall also provide for:
- (1) monitoring of the extent and impact of any plume created from rock dumping during construction work, from dredging and from spoil disposal;
  - (2) monitoring of the extent of changes to Leighton and Port Beaches;
  - (3) monitoring of heavy metal concentrations in the sediments at sites both within and outside the small craft harbour (the latter as a control to enable long-term effects to be assessed), commencing before the reclamation starts and continuing for an initial period of five years;
  - (4) monitoring of dust levels during the construction phase of the operation;
  - (5) monitoring being carried out for a period of five years initially, then reviewed, with interim reports on monitoring and management submitted to the Environmental Protection Authority by the proponent on an annual basis; and
  - (6) reporting after five years of the reclamation, with reference to the monitoring results obtained during the full five year period, including interpretation of the results, recommendations relating to future requirements and with a commitment to amend management in accordance with the monitoring results.

Monitoring results obtained as a result of this condition shall be made available for public inspection following examination by the Environmental Protection Authority.

6. Any further dredging activity associated with the land reclamation not addressed within the Public Environmental Report shall be referred by the proponent to the Authority for assessment prior to commencement.

7. Prior to seawall construction commencing, the proponent shall prepare a land use management plan for the portion of North Fremantle likely to be affected by potential environmental impacts of the proposal. Specifically, the plan should address the environmental consequences of the development on other land uses, such as traffic impacts and noise. The plan should address in stages, both construction and operational phases of the proposal and be prepared in consultation with appropriate Government agencies and the City of Fremantle, to the Environmental Protection Authority's satisfaction.

When completed to the Authority's satisfaction, the land use management plan shall be made available for public inspection.

  
Barry Hodge, MLA  
MINISTER FOR ENVIRONMENT

11 OCT 1988

### SUMMARY OF COMMITMENTS

Responsibility for the design, management and operation of the project lies with the Fremantle Port Authority. In the discharge of this responsibility, the FPA commits itself to:-

- \* monitor the noise and dust generation, investigate any complaints and ensure that any further problems are minimised;
- \* reduce turbidity to a minimum during dredging and construction through staged construction of the sea and bund walls and the timing of the dredging;
- \* maintain public access to recreational areas to the greatest extent compatible with safety requirements;
- \* explore the possibility of preserving or replacing the Gareenup wreck as a recreational diving amenity;
- \* maintain water quality in the proposed small craft harbour at an acceptable level, as defined by the competent authority;
- \* promptly contain and remove any fuel spill, or other material, within the harbour;
- \* maintain the integrity of all new construction;
- \* ensure that all improvements to leased land meet stringent building and aesthetic standards;
- \* provide deep sewerage if deemed necessary; and
- \* hydromulch all exposed areas of reclaimed land as soon as practicable.

Above all, to discharge the FPA's prime responsibility of providing and operating an efficient, commercially viable port for the benefit of the State and People of Western Australia.

## **Appendix 2**

### **Summary of submissions**



General Manager  
Fremantle Port Authority  
1 Cliff Street  
FREMANTLE WA 6160

Your Ref PRP.251  
Our Ref 86/87/2/1  
Enquiries Juliet Cole

Attention: Mr G Pike

Dear Sir

**CHANGE TO ENVIRONMENTAL CONDITIONS - PROPOSED SEAWALL  
AND LAND RECLAMATION TO EXTEND ROUS HEAD, FREMANTLE  
(924)**

I write further to recent discussions between Mr Glade Pike of the Fremantle Port Authority and Ms Juliet Cole of the Department of Environmental Protection, regarding the above proposal. I advise that four submissions have been received on the proposal. A summary of these issues is enclosed.

The Authority now awaits your formal response to these issues. A copy of these issues and your written response will be included as an appendix to the Environmental Protection Authority's assessment report on the proposal.

For further discussion or clarification of these issues, please contact Juliet Cole on 222 7080.

Yours faithfully

*Katrina Wilson*  
for: Colin Murray  
A/ DIRECTOR  
EVALUATION DIVISION

2 February 1995

Enc

# CHANGE TO ENVIRONMENTAL CONDITIONS - PROPOSED SEAWALL AND LAND RECLAMATION TO EXTEND ROUS HEAD, FREMANTLE (924)

## SUMMARY OF SUBMISSIONS

The public submission period for a proposed seawall and land reclamation to extend Rous Head, Fremantle commenced on 16 January 1995 for a period of two weeks, ending on 30 January 1995.

Four submissions were received by the Environmental Protection Authority (EPA). The principle issues raised in the submissions included environmental, social and planning issues. Other issues focussed on questions of fact and technical aspects of the proposal.

The proponent is asked to address all issues.

In summary, the principle issues were identified as:

1. General issues
2. Fill material
3. Disposal of dredged material
4. Dust control
5. Dune management
6. Realignment of Rudderham Road
7. Recreational facilities
8. Land use
9. Environmental impacts
10. Commitments

### 1.0 General

Whenever the Port has needed to expand it has done so either upriver or out to sea. The Rous Head expansion has added 30 ha of land reclaimed from the sea.

1. Does the charter of Fremantle Port Authority (FPA) give it a mandate to fill in the sea?
2. What are the objectives of this reclamation?
3. What are the demands made on the FPA mentioned on Page 4 that require this reclamation?
4. Why didn't the Port Authority take the projected growth in shipping alluded to on Page 5 para 4, into account when the Rous Head project was constructed in 1988?
5. Who has the charter to protect the beaches on behalf of the public against the aggressive economic exploitation inherent in this proposal?
6. From which document is Section 4 "Existing Environment" taken, and when was it written?
7. Have the schedules referred to in Point 2, Appendix 2 been revised since 1988?
8. What long term plans do the FPA have to dispose of harbour dredging after this project is completed?
9. What is the entire cost of the project?
10. What is the cost of sending dredged spoil to landfill?

## **2.0 Fill material**

### **2.1 Source of fill**

The development of the reclamation area should only use clean fill sourced from within the port operations, such as dredge spoil and port land redevelopment. The Section 46 document suggests on page 7 that some "fill material will have to be sourced from outside the Port area". This is considered to be unacceptable as it does not meet the primary justification for the reclamation for port purposes and could provide for commercial dumping. If the area is larger than the port related sources, the reclamation area should be reduced in size to match the anticipated volumes from port sources.

1. Will the land created by filling the area be used exclusively for port related purposes?
2. Is it necessary to source fill material from outside the port area?
3. Where will the outside source of fill material come from?

### **2.2 Stage 1 (1995).**

On page 6 of the document, Section 2.2 refers to the fill in Stage 1 being 'clean fill'. On page 8, Section 2.3.2, clean fill includes bituminous pavement materials, concrete, building rubble and dredged material (that may contain contaminants such as Tributyltin).

1. What contaminants exist in the building debris?
2. What environmental monitoring will be done of this material and others sourced in the Port area before it is dumped.

### **2.3 Stage 2 (1996-2004)**

On page 7 of the document, it is stated that a definite quantity of fill required from outside the port area cannot be assessed. However, in Appendix B, it is noted that half of the 300 000 cubic metres needed for Stage 2 will come from dredging. Therefore, approximately 165 000 cubic metres (or 38%) of the fill for the project will be imported.

1. Will the fill needed from outside mean the project will become a disposal site for metropolitan building wastes?
2. Will the limestone for the wall come from System 6 reserves in Coogee?

## **3.0 Disposal of dredged material**

While Rous Head was being constructed the water at Port Beach became turbid and unpleasant to swim in.

1. How can the seepage or overflow of contaminants from the dredge settling ponds be controlled during the ten years of this project?
2. Who will be responsible and how will water quality at Port and Leighton Beaches be monitored and controlled?

## **4.0 Dust Control**

Whilst Rous Head was being constructed dust control measures were inadequate as dust was blown inland whenever there was a strong sea breeze.

1. What dust control measures will be employed to minimise dust?

## 5.0 Dune Management

Figure 5 shows that Rudderham Drive is intended to be re-routed through the existing Ampol site and across the dunes and beach behind the site.

1. What management techniques will be employed to ensure the dunes are protected?
2. Will there be defined access to the beach once the Ampol site has been removed?
3. How will the Ampol site be cleared and rehabilitated?
4. What are the plans and timing for this?
5. Why is the dredging and removal of access to the beach at the southern end of Port Beach (locally known as Sandtracks beach) not mentioned in the environmental impacts in the document?

## 6.0 Realignment of Rudderham Road

It is suggested that Rudderham Drive remain where it is, joining Port Beach Road to the south of the Ampol site.

1. Is there a need to shift the road through the Ampol site?

## 7.0 Recreational Facilities

The beach area adjoining the Ampol site is very popular for swimming, especially in the portion protected by the existing reclamation area, next to Rudderham Drive. The extension of the breakwater will enhance this area, adding further protection from south westerly winds and encouraging more people to use this beach. There is an urgent need for the provision of toilet and changeroom facilities in this area because of its popularity.

1. Will the Port Authority provide toilet and changeroom facilities in this area?
2. Will the Port Authority provide additional off-road parking?
3. Would the Port Authority be able to use some of the existing paved area within the Ampol site rather than create additional areas?
4. Will the carpark at Sandtracks beach be closed to the public and for how long?

## 8.0 Land use

On page 12 of the document it is suggested that the BP terminal is a constraint to Port functioning.

1. Could the terminal be relocated to land at the Kewdale fuel terminal?

## 9.0 Environmental impacts.

It was suggested in submissions that the following impacts should be added to the impacts listed on page 15 of the Section 46 document. These impacts included:

- Accumulation of limestone rubble along the beaches;
- Loss of landscape amenity and views;
- Loss of amenity during construction, dust, truck movements, turbid water, exclusion; from construction area;
- Loss of Sandtracks beach, and
- Contaminants emanating from the imported fill.

Could the proponent comment on each of the above points?

## 10. Commitments

One submission indicated that the proponents commitments should be strengthened to ensure a minimal impact on the environment and on residents. The following points were recommended in a submission as issues that should be incorporated, amended and/ or addressed in the FPA commitments.

1. The noise monitoring programme prepared by the FPA should be undertaken by a qualified acoustic consultant who can both measure noise levels and propose strategies to control it should problems arise. The FPA must abide by the Noise Abatement (Neighbourhood Annoyance) Regulations 1979.
2. The FPA Emergency response unit should be made ready to control any fuel spill or other material, both within the harbour and on the Rous Head reclamation site.
3. The infrastructure needed to connect to the Ministers sewer be in place prior to the reclaimed land being used by industry.
4. The times that the site operates be restricted from 0700 hours to 1600 hours to minimise the noise impact from increased truck movements delivering clean fill and rock armour to the reclamation area. Trucks delivering fill (or other material capable of causing a dust nuisance) to be covered to prevent dust generation both on site and en route.
5. The FPA monitor the condition of Port and Leighton Beach to ensure that changes in ocean movements (tidal, wave action and local currents) and wind patterns resulting from the development do not cause erosion or other damage to adjacent beach areas.
6. An agreement between the FPA and Council be entered into giving the Council control of the routing of trucks within the municipality.
7. The provision of a second exit road from the Rous Head development as specified in the documentation. It should be noted that Figure 5 indicates the convergence of the existing and proposed access road at a single point and therefore it can't be considered as a separate exit road.
8. The FPA be required to submit development applications for all proposals to the Council for planning approval.

Could the proponent comment on each of the above points and state whether the commitments they have made in the Section 46 document will remain the same or change as a result of the above suggestions.



## **Appendix 3**

**Proponents response to submissions**



FREMANTLE  
PORT

File : PRP.251

6 February 1995

Ms J Cole  
Department of Environmental Protection  
Westralia Square  
141 St George's Terrace  
Perth WA 6000

Dear Ms Cole

**Proposed Seawall and Land Reclamation Adjacent to Rudderham Drive**

Further to your letter of 2 February 1995, we have pleasure in enclosing our response to issues and questions raised in submissions concerning the Proposal.

Yours faithfully

John Peraldini  
Director Business & Strategic Development

**PROPOSED SEAWALL AND LAND RECLAMATION**  
**TO EXTEND ROUS HEAD**  
**CHANGE TO ENVIRONMENTAL CONDITIONS**  
**PROponents RESPONSE TO PUBLIC SUBMISSIONS**

Four submissions were received by the Department of Environmental Protection (DEP). The principal issues raised in the submissions included environmental, social and planning issues. Other issues focused on questions of fact and technical aspects of the proposal.

In summary, the principal issues were identified as -

- General issues
- Fill material
- Disposal of dredged material
- Dust control
- Dune management
- Realignment of Rudderham Road
- Recreational facilities
- Land use
- Environmental impacts
- Commitments

**1. GENERAL**

Whenever the Port has needed to expand, it has done so either up river or out to sea. The Rous Head expansion has added 30 ha of land reclaimed from the sea.

Question 1 Does the charter of the Fremantle Port Authority (FPA) give it a mandate to fill in the sea?

*Answer* The charter of the FPA gives it the right to plan and process the requirements to operate a port over the land and sea areas vested in the Port Authority. The Proposal is part of this process.

Question 2      What are the objectives of this reclamation?

*Answer*            *The objectives are detailed in the first four paragraphs of Section 1 of the FPA's Report on "Proposed Sea Wall and Land Reclamation to Extend Rous Head : Fremantle - Proposed Change to Environmental Conditions"*

Question 3      What are the demands made on the FPA mentioned on Page 4 that require this reclamation?

*Answer*            *The Fremantle Port Authority has an obligation to provide for the development of Port facilities (inclusive of container terminals) for the expected life of the Port, which is of the order of 20 years and beyond.*

*An immediate demand is the consolidation of North Quay Container Terminal facilities to ensure cost effective operations.*

*A major component of consolidation is the reconstruction of Berth No. 3, which will give rise to the problem of disposal of up to 70,000 m<sup>3</sup> of soil generated by excavation operations.*

Question 4      Why didn't the Port Authority take the projected growth in shipping alluded to on Page 5 Paragraph 4 into account when the Rous Head project was constructed in 1988?

*Answer*            *The extent of Rous Head was based on accommodating the expected volume of material arising from deepening the Inner Harbour to accept deeper draft vessels.*

Question 5      Who has the charter to protect the beaches on behalf of the public against the aggressive economic exploitation inherent in this proposal?

*Answer*            *Implementation of the Proposal will not impact on any natural beaches. A small seasonal artificial beach was created at the north end of Rous Head a few years after the main seawall was constructed. This beach disappears in the Winter months. Towards the end of the Proposal (approximately 8 to 10 years time), this area will be reclaimed.*

Question 6      From which document is Section 4 "Existing Environment" taken, and when was it written?

*Answer*            *The document concerned is stated in Section 4 as being the 1988 PER. This is the "Public Environmental Report on the Inner Harbour Deepening Project" dated March 1988.*

Question 7 Have the schedules referred to in Point 2, Appendix A been revised since 1988?

*Answer* Yes. DEP Bulletin 103 was updated by Bulletin 711.

Question 8 What long term plans does the FPA have to dispose of harbour dredging after this project is completed?

*Answer* The FPA will adopt plans which are environmentally acceptable.

Question 9 What is the entire cost of the project?

*Answer* The question is not related to environmental aspects.

Question 10 What is the cost of sending dredged spoil to landfill?

*Answer* Dredging involves the excavation and removal of seabed sediments via a discharge pipeline which contains a mixture of soil and water in the approximate ratio of 1 part soil to 4 parts water. Unless the pipeline can reach the intended landfill area, any other land based means of disposal of dredged sediments (eg trucking) are not practical, given the large amounts of water which have to be separated from the solids. Although not impossible, the costs would be astronomical.

## 2. FILL MATERIAL

### 2.1 Source of Fill

Question 1 Will the land created by filling the area be used exclusively for Port related purposes?

*Answer* The uses and zoning will be identical to those applicable to the Rous Head development area (commercial, marine and port related industry). Two existing tenants are likely to extend their existing leases into the new reclaimed area.

Question 2 Is it necessary to source fill material from outside the Port area?

*Answer* To complete the reclamation of the intended land area, it will be necessary to source fill from outside the Port area. If the size of the ultimate reclamation area is reduced to match the estimated quantity of fill emanating from the Port area only, the land use will be significantly affected in an adverse way, partially defeating two of the main objectives of the Proposal. The latter objectives are to obtain the preferred road alignment for a second exit from Rous Head and to reclaim an extension of land which can be utilised effectively for port related, commercial and marine industry.

*The estimate of total fill material required to reclaim the proposed area to a level of RL +3.5 m is 430,000 m<sup>3</sup>.*

*It is expected that over the next 10 years, 330,000 m<sup>3</sup> of filling will be generated from within the Port area, leaving a shortfall of 100,000 m<sup>3</sup> to be provided from outside the Port area. The Proponent is confident that he can manage this procurement to ensure strict quality control on the fill material.*

Question 3      Where will the outside source of fill material come from?

*Answer*            *The source of fill material will have to be compatible with the required quality of material as detailed in Section 2.3.2 of the Proponent's report.*

*The primary source is expected to be from building demolition sites within the Perth metropolitan area.*

*The material will consist largely of pieces of concrete and building rubble which contains no contaminants or organic matter.*

## 2.2      Stage 1 (1995)

Question 1      What contaminants exist in the building debris?

*Answer*            *None*

Question 2      What environmental monitoring will be done on this material and others sourced in the Port area before it is dumped.

*Answer*            *The Proponent has made a commitment in his report (see Section 8.7). Samples will be taken from the sediments over the intended excavation area at Berth No.3 and over maintenance dredging areas for testing by a suitable laboratory to check for possible contaminants (such as Tributyltin and heavy metals).*

*The DEP have requested that a Land Use Management Plan be prepared. The FPA is committed to this process and will be submitting progress reports to the DEP. The monitoring, testing and approval of proposed fill material can be included in this process*

### 2.3 Stage 2 (1996-2004)

Question 1 Will the fill needed from outside mean the project will become a disposal site for metropolitan building wastes?

*Answer* While the primary intention is to use fill from the Port area, it may be difficult to ensure that from a timing aspect, all existing and future fill material used emanates from the Port area. In the event that filling is used from outside the Port area, strict quality control measures will be adopted to ensure compliance with standards detailed in Section 2.3.2 of the Proponent's report.

Question 2 Will the limestone for the wall come from System 6 reserves in Coogee?

*Answer* It is unlikely that the limestone for the seawall will come from System 6 reserves in Coogee.

### 3. DISPOSAL OF DREDGED MATERIAL

Question 1 How can the seepage or overflow of contaminants from the dredge settling ponds be controlled during the ten years of this project?

*Answer* Should contaminants be present (such as Tributyltin), they are expected to settle onto the seabed fairly quickly and not escape over the weir. It should be kept in mind that the duration and frequency of discharge over the weir is expected to be only 1 month every 5 years.

Question 2 Who will be responsible and how will water quality at Port and Leighton Beaches be monitored and controlled?

*Answer* The FPA will be responsible for monitoring and controlling water quality at Port and Leighton Beaches. Monitoring will be carried out to the satisfaction of the DEP.

#### 4. DUST CONTROL

Question 1 What dust control measures will be employed to minimise dust?

*Answer Point 8.3 of Section 8 of the Proponent's report answers this question.*

#### 5. DUNE MANAGEMENT

Question 1 What management techniques will be employed to ensure the dunes are protected?

*Answer The Fremantle City Council will dictate the techniques to be employed.*

Question 2 Will there be defined access to the beach once the Ampol site has been removed?

*Answer Yes. The existing access will be retained, while a new one will be provided when Port Beach Road is realigned.*

Question 3 How will the Ampol site be cleared and rehabilitated?

*Answer Ampol are required to decontaminate their site prior to the termination of their lease. This work is already under way.*

Question 4 What are the plans and timing for this?

*Answer The Fremantle City Council and Main Roads WA are responsible for the programming and funding for the realignment of Port Beach Road up to the intersection with Rudderham Drive. From the latter point onwards to Rous Head, the realignment/additional road is dependent on the completion of Stage 2 of the Proposal.*

Question 5 Why is the dredging and removal of access to the beach at the southern end of Port Beach (locally known as Sandtracks Beach) not mentioned in the environmental impacts in the document?

*Answer Access to the southern end of Port Beach adjacent to the car park next to the east/west leg of Rudderham Drive is not being removed. The only access that will be denied is to the seawall and reclamation area during construction.*



## 6. REALIGNMENT OF RUDDERHAM DRIVE

Question 1 Is there a need to shift the road through the Ampol site?

*Answer* *The proposal does not seek approval to shift Rudderham Drive.*

## 7. RECREATION FACILITIES

Question 1 Will the Port Authority provide toilet and changeroom facilities in this area?

*Answer* *Negotiations are in progress to hand over this responsibility for beach areas to the Fremantle City Council as from 1 July 1995.*

Question 2 Will the Port Authority provide additional off-road parking?

*Answer* *This will be the responsibility of the FCC and MRWA when realigning Port Beach Road.*

Question 3 Would the Port Authority be able to use some of the existing paved area within the Ampol site rather than create additional areas?

*Answer* *No. The realigned Port Beach Road will pass over this area.*

Question 4 Will the car park at Sandtracks Beach be closed to the public and for how long?

*Answer* *No*

## 8.0 LAND USE

Question 1 Could the terminal be relocated to land at the Kewdale fuel terminal?

*Answer* *The Fremantle Regional Strategy has proposed this relocation in the long term and the matter is likely to be addressed in 5 to 10 years time.*

## 9.0 ENVIRONMENTAL IMPACTS

It was suggested in submissions that the following impacts should be added to the impacts listed on Page 15 of the Section 46 document. These impacts included -

- Accumulation of limestone rubble along the beaches
- Loss of landscape amenity and views
- Loss of amenity during construction, dust, truck movements, turbid water, exclusion from construction area
- Loss of Sandtracks Beach
- Contaminants emanating from the imported fill

The Proponent comments on each of the above points as follows -

In the event limestone rubble accumulates along the beaches, the FPA will remove it. The Proponent does not perceive that there will be a loss of landscape amenity and views.

The loss of amenity during construction will be limited to the seawall and reclamation area. There will be no loss of amenity or access to Sandtracks Beach, which is understood to mean the south end of Port Beach.

Imported fill will be closely examined to ensure compliance with Point 2.3.2 of the Proponent's Report (Quality of Material).

## 10. COMMITMENTS

The Proponent comments on the following issues relating to Commitments -

Issue 1                    The noise monitoring program prepared by the FPA should be undertaken by a qualified acoustic consultant who can both measure noise levels and propose strategies to control it, should problems arise. The FPA must abide by the Noise Abatement (Neighbourhood Annoyance) Regulations 1979.

*This issue has been addressed in Commitment 8.1 of the Proponent's Report. No change is deemed necessary.*

Issue 2                    The FPA Emergency Response Unit should be made ready to control any fuel spill or other material, both within the harbour and on the Rous Head reclamation site.

*Commitment 8.4 of the Proponent's Report deals with this issue.*

Issue 3

The infrastructure needed to connect to the Minister's sewer be in place prior to the reclaimed land being used by industry.

*A sewer pumping main exists adjacent to the proposed reclaimed land. Lease of land to any organisations will not permit the use of septic tanks. Lessees will be required to connect into the Water Authority sewer main. Commitment 8.6 of the Proponent's Report already covers this issue.*

Issue 4

The times that the site operates be restricted from 0700 hours to 1600 hours to minimise the noise impact from increased truck movements delivering clean fill and rock armour to the reclamation area. Trucks delivering fill (or other material capable of causing a dust nuisance) to be covered to prevent dust generation, both on site and en-route.

*The seawall construction period is expected to extend for 12 weeks during March to May 1995 when winds tend to be light. It is not practical or economical to cover trucks delivering seawall materials or to restrict working hours to a degree that limits movements and construction operations to a period less than daylight hours. Given the experience of delivery during the Rous Head construction, the impositions suggested are considered unwarranted in view of the much smaller scale of intended construction operations.*

*The commitments given at Points 8.1 and 8.3 of the Proponent's Report are considered quite adequate. No change to these are considered necessary.*

Issue 5

The FPA monitors the condition of Port and Leighton Beaches to ensure that changes in ocean movements (tidal, wave action and local currents) and wind patterns resulting from the development do not cause erosion or other damage to adjacent beach areas.

*Monitoring of the condition of Port and Leighton Beaches during the past 5 years by taking beach profiles, has indicated that no changes to adjacent beaches have taken place.*

Issue 6

An agreement between the FPA and Council be entered into giving the Council control of the routing of trucks within the municipality.

*The FPA will liaise with the Fremantle City Council in defining a reasonable route for delivery trucks.*

Issue 7

The provision of a second exit road from the Rous Head development as specified in the documentation. It should be noted that Figure 5 indicates the convergence of the existing and proposed access road at a single point and therefore it can't be considered as a separate exit road.

*Figure 5 has been prepared to indicate rationalisation of land uses. The question of a second exit from Rous Head is a planning issue which will be addressed in due course.*

Issue 8

The FPA be required to submit development applications for all proposals to the Council for planning approval.

*The FPA is prepared to comply with the legal obligations applicable to the developments and to co-operate with the FCC with respect to Port development and associated matters.*

## **Appendix 4**

### **Proponents commitments**

## 8. COMMITMENTS

The FPA will undertake to comply with the intent of all Environmental conditions and commitments previously made as part of the 1988 PER assessment.

Responsibility for the design, management and operation of the project lies with the Fremantle Port Authority. In the discharge of this responsibility, the FPA commits itself to -

- 8.1 Monitor the noise, investigate any complaints and ensure that any further problems are minimised.

A reputable organisation will be engaged to take sound readings during construction at the nearest work area (office of Fremantle Container Depot Pty Ltd near the intersection of Port Beach Road with Rudderham Drive). The FPA will abide by the Noise Abatement (Neighbourhood Annoyance) Regulations 1979 to the satisfaction of the DEP.

- 8.2 Reduce turbidity to a minimum during dredging and construction by implementing staged construction of the seawall and the timing of the land reclamation operations to the satisfaction of the DEP.

- 8.3 Monitor and limit the generation of dust arising from construction operations by providing FPA supervision to ensure that contract requirements for the work are complied with. The contract documents concerned will contain clauses which require Contractors to adopt strict dust control measures (applications of water and truck covers to be used if necessary) and to prepare a "Dust Management Strategy" to control dust (wind blown particulates from the site) to ensure that there are no validated complaints, to the requirements of the Department of Environmental Protection.

- 8.4 Promptly contain and remove any fuel spill, or other material, within the harbour. The FPA will monitor construction operations and will use their Emergency Response Unit to deal with all spills to the satisfaction of the DEP.

- 8.5 Maintain the integrity of all new construction by adoption of recognised Project Management Practices.

- 8.6 The FPA will provide stormwater drainage and connection to deep sewerage to Local Authority Standards.

- 8.7 Testing samples of sediment taken from Berth No. 3 and other areas of the Inner Harbour, if necessary, for contaminants (heavy metals and Tributyltin). Sampling and testing will be carried out on behalf of the Proponent by the Chemistry Centre of Western Australia, to the satisfaction of the Department of the Environment. The frequency will be as decided by the Department of the Environment, with the first exercise to be carried out on the Berth No. 3 area prior to any dredging or excavation commencing.

- 8.8 Removal of limestone or other rubble from Port Beach, should it migrate there as a result of construction of the proposed seawall and land reclamation area. The beach will be regularly monitored by the FPA to check for the incidence or otherwise of rubble. The FPA will also respond to complaints on this issue made to their Public Affairs Section. Removal will be arranged by the FPA using either a large excavator equipped with a special bucket or by a front end loader during periods of calm at low tide. The FPA will time their action to suit these sea conditions, whilst a significant incidence shall be obvious as opposed to very minor occurrences, before removal commences.
- 8.9 Expand the Land Use Management Plan (Stage 4 now under preparation) to include the Proposal.

Above all, to discharge the FPA's prime responsibility of providing and operating an efficient, commercially viable port for the benefit of the State and people of Western Australia.