Albany Port developments, Albany

Albany Port Authority

Report and recommendations
of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 830
August 1996

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 report.

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 contents of the assessment report or 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 25 October 1996.

Environmental Impact Assessment Process Timelines

Date	Timeline commences from receipt of full details of proposal from proponent for public review	Time
01/04/96	Proponent Document Released for Public Comment	4 weeks
29/04/96	Public Comment Period Closed	
30/05/96	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	4 weeks
07/06//96	Final Proponent response to the issues raised	1 week
11/10/96	EPA reported to the Minister for the Environment	15 weeks

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Assessment No. 931

Contents

Summary and recommendations

This report and recommendations provides the Environmental Protection Authority's (EPA) advice to the Minister for the Environment on the environmental factors relevant to the proposal to expand the Port of Albany in Princess Royal Harbour (PRH), Albany.

The proponent, the Albany Port Authority (APA), proposes to construct a new berth at the eastern end of the port, reclaim 5.5ha of Princess Royal Harbour (PRH) to provide land backing to the new berth, and dredge a basin 6.0ha in extent for ships adjacent to the new berth (See Section 2 for a summary description of the proposal).

The proposal does not include any structures which may be constructed on or adjacent to the new berth nor specific proposals for the transport of commodities to or from the new berth. These features can only be determined in the future when specific requirements of port users are known.

The EPA recognises that there exists the potential for woodchip stockpiles to be located in the vicinity of the port and remains concerned about long term vehicle access to the Port along Princess Royal Drive, which may be restricted as a result of the proposed Albany Foreshore Redevelopment. However, the EPA retains the right to assess specific export proposals for the Port of Albany if potential environmental impacts are identified.

A number of environmental issues generated by the proposal were considered by the EPA. From these, the EPA has identified relevant environmental factors requiring detailed evaluation as:

- dredging and reclamation of a portion of PRH;
- impact on seagrass; and
- maintenance of water quality within PRH embayment in the short and long term.

Following evaluation of relevant environmental factors, the EPA has concluded that the proposal can be managed to meet the EPA's objectives subject to the proponent's commitments, and the conditions and procedures in this assessment report.

Recommendation No.	Summary of recommendations
1	That the proposal can be managed to meet the EPA's objectives, subject to the successful implementation of the proponent's commitments and the EPA's recommended conditions and procedures.
2	The Minister for the Environment adopts the conditions set out in Section 6 of this report.

1. Introduction and background

1.1 Purpose of this report

This report and recommendations provides the Environmental Protection Authority's (EPA)'s advice and recommendations to the Minister for the Environment on the environmental factors applicable to the proposal to expand the Port of Albany in Princess Royal Harbour (PRH), Albany.

1.2 Background

The proposal to expand the Port of Albany in PRH was referred to the EPA in December 1994. A Consultative Environmental Review (CER) level of assessment was set on the proposal and the CER was available for public review between 1 April and 29 April 1996.

The project area is shown in Figure 1 (Alan Tingay & Associates, 1996).

1.3 Structure of the report

This document has been divided into seven sections.

Section 1 introduces the report by stating its purpose, describes the background to the proposal and its assessment, and outlines the structure of the report.

Section 2 summarises the proposal. The proposal is described in more detail in the proponent's CER (Alan Tingay & Associates, 1996).

Section 3 explains the method of assessment and provides a summary of environmental factors raised through the setting of guidelines, the proponent's environmental review document and in public submissions. From these factors and others raised throughout the assessment process, the EPA identifies those factors considered to be relevant for further evaluation. A table summarising this process is provided (Table 1).

Section 4 sets out the evaluation of the key environmental factors associated with the proposal. Each factor is dealt with in its own subsection, which initially states the objectives of the EPA's assessment for that factor. The relevant EPA policy is stated and any technical information is provided. Comments from key agencies/ interest groups are summarised, and the proponent response is presented. The subsection on each relevant factor is concluded with the EPA's evaluation in terms of achieving the stated objectives.

Section 5 summarises the EPA's conclusions and recommendations and Section 6 describes the recommended environmental conditions. References cited in this report and used as part of the assessment of the proposal are provided in Section 7.

2. Summary description of the proposal

The proposal to extend Albany port facilities (refer to Figure 2), as discussed in the CER, includes:

- reclamation of an area of 5.5ha of seabed in front of the existing sea wall to provide land backing to the new berth for bulk storage of export products;
- constructing a new berth in front of the reclamation area; and
- dredging by suction dredge a basin of 6.0ha between the berths and the existing entrance channel to provide sufficient depth of water for ship handling purposes.

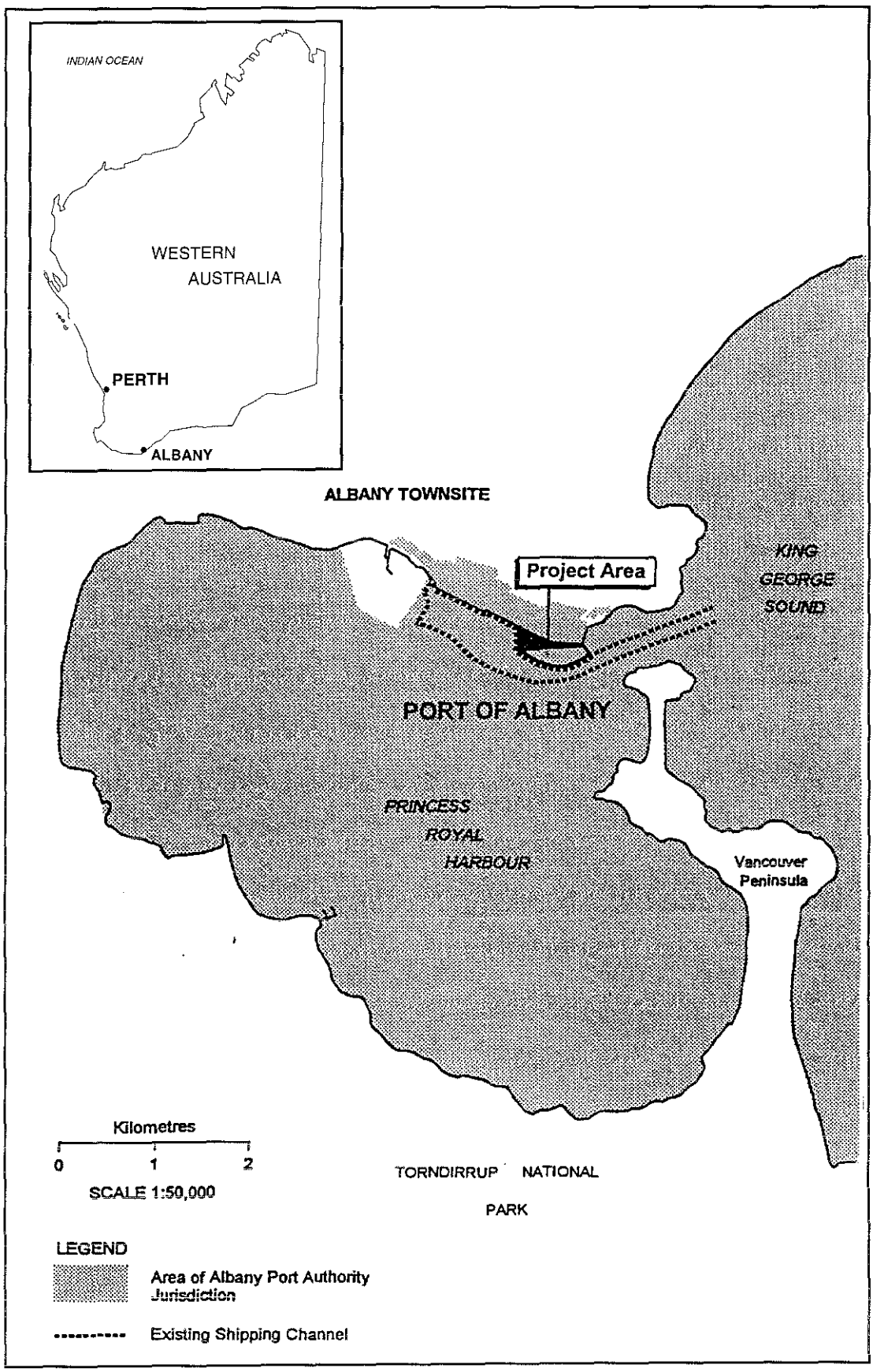

Figure 1. Port of Albany Regional Location (Alan Tingay & Associates, 1996).

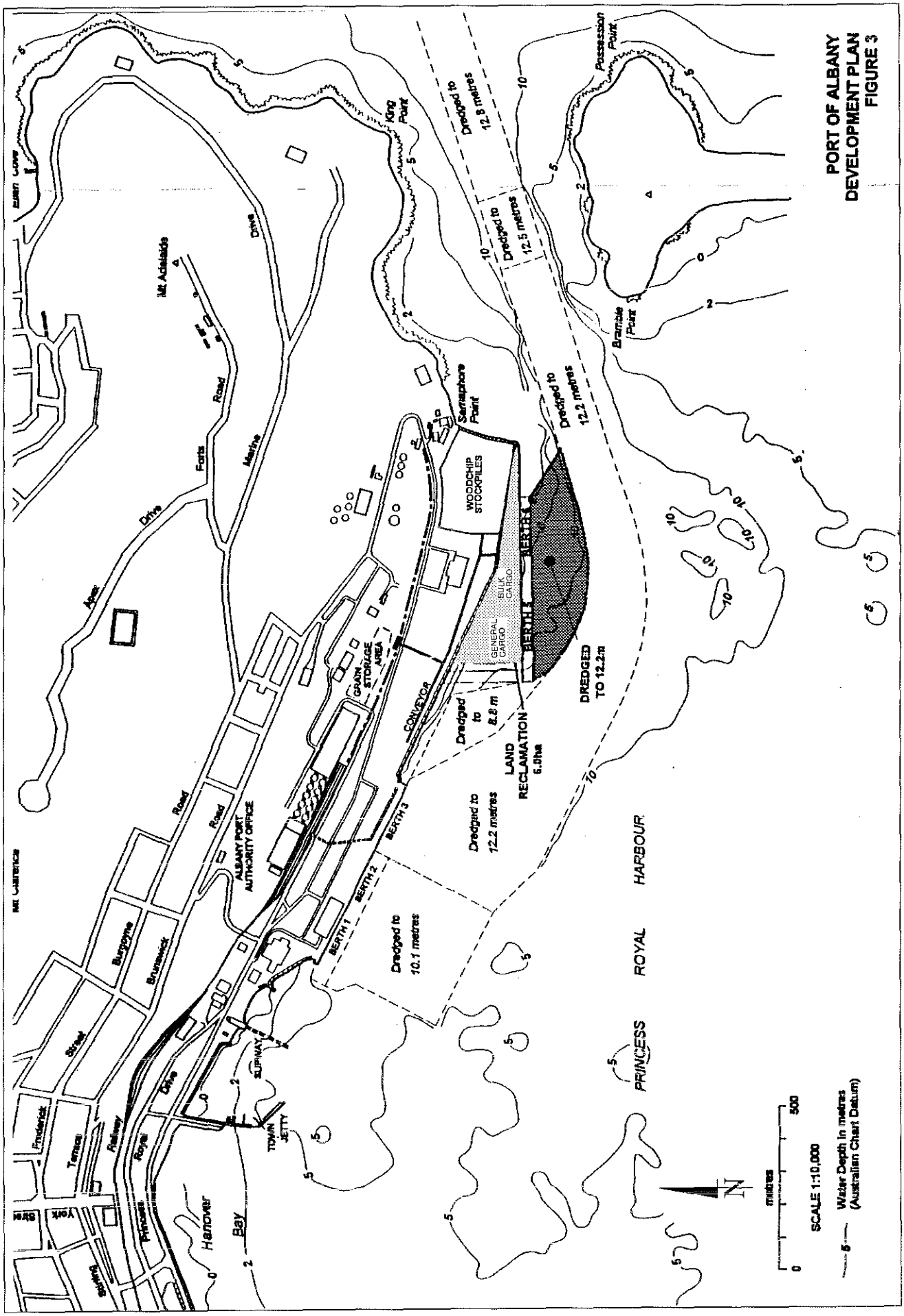

Figure 2. Port of Albany Development Plan (Alan Tingay & Associates, 1996).

Components of the proposal

Reclamation

Existing stockpiled dredge spoil and new spoil from the proposed dredging works will be used to create the reclaimed area. The existing stockpile is derived from previous harbour maintenance dredging (1978-1979) and is located near the proposed reclamation area. Approximately 300, 000m^3 of material is available from this source. The proposed dredging works for the new berths will provide an estimated further 250, 000m^3 of fill materials (Alan Tingay & Associates, 1996).

Dredging

The present water depth in the area to be dredged ranges from 5m to 10m and the dredging operation will extend this to 12.2m. This is the same as the existing depth of the entrance channel and harbour. It is estimated that the dredging operations will take 3-4 months to complete.

The dredge operations will be managed and monitored in accordance with a licence to be granted by the Albany Waterways Management Authority and a Dredging and Dredge Spoil Disposal Management Plan. (Alan Tingay & Associates, 1996).

Drainage

The reclamation area will include a drainage system designed to facilitate management of discharges into PRH. The existing drainage system in the works area will also be improved as part of the present proposal (Alan Tingay & Associates, 1996).

Timing

The timing of construction of the new berths is scheduled for completion by the end of 1988 with reclamation works commencing in 1996, dredging during 1997, and berth construction in 1988 (Alan Tingay & Associates, 1996).

The proposal does not include any structures which may be constructed on or adjacent to the new berth site nor specific proposals for the transport of commodities to or from the new berth. These features are expected to be determined in the future when specific requirements of port users are known. The APA considers that export of woodchips is likely to constitute the primary use of the new port area and berth. Information on possible storage, loading and transport requirements is provided in the CER.

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.

3. Identification of environmental factors

3.1 Method of assessment

The purpose of the environmental impact assessment is to determine the environmental factors relevant to a proposal and to formulate conditions and procedures to which the proposal should be subject, should it proceed.

A set of administrative procedures has been identified (refer to flow chart in Appendix 1) in order to implement this method of assessment.

The first step in the method is to identify the environmental factors to be considered. A list of factors (or possible issues) was identified by the DEP, through the preparation of guidelines.

These factors are then considered by the proponent in the CER both in terms of identifying potential impacts as well as making project modifications or devising environmental management strategies.

The proponent's CER was available for public review for four weeks between 1 April 1996 and 29 April 1996, during which eleven submissions were received.

Following completion of the public review period, the responses received were summarised by the Department of Environmental Protection (DEP) on behalf of the EPA. This process can raise additional environmental factors to be considered by the proponent.

The APA was invited to respond to the issues raised in the submissions. Appendix 2 contains a summary of the issues raised in submissions and the proponent's response to those issues. A list of submitters appears in Appendix 3.

Fifteen environmental factors varying in significance have been identified as part of the assessment of this proposal. The EPA has considered all the factors and has identified those factors to be environmentally significant and requiring further evaluation by the EPA. It is considered that the remaining factors can be addressed through the processes of other agencies, should be considered when specific port related developments are proposed, or are no longer relevant to the proposal.

For each environmental factor, the environmental impacts of the proposal, and the proponent's environmental management commitments, were evaluated in the context of the EPA's assessment objective and relevant policy and technical information. The complete list of the proponent's consolidated environmental management commitments is included in Appendix 4 of this report. If the commitments by the EPA to achieve the assessment objectives, there is no need for the EPA to make recommendations to the Minister for the Environment on that factor, otherwise the EPA may recommend conditions and procedures necessary to achieve the EPA's objectives. Where the proposal is considered by the EPA to have unacceptable environmental impacts, the EPA can advise the Minister for the Environment. The Minister for the Environment then determines whether the proposal should proceed and under what conditions.

Limitation
This evaluation has been undertaken using information currently available. The information has been provided by the proponent in the CER document and supplementary documentation, 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 environmental impact assessment for this proposal has followed the *Environmental Impact Assessment Administrative Procedures 1993*. In addition, DEP officers undertook discussions with the proponent and site visits.

The EPA recognises that further studies and research may affect the conclusions reached in this assessment report. 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.

3.2 Public and agency submissions

Comments were sought on the proposal from the public, community groups as well as local and State government agencies. During the four week public submission period between 1 April 1996 to 29 April 1996, eleven submissions were received. A summary of these submissions was forwarded to the proponent for response. Submissions received by the EPA were within the following categories:

- 7 from members of the public;
- 2 from organisations; and
- 2 from State and other government agencies.

The principal factors of concern raised in public submissions included (in summary):

Biophysical impacts

Impact on marine flora and fauna

Comments from government agencies indicated:

- the existing seabed comprises bare sand and there is no seagrass within the area to be reclaimed or dredged (DEP); and

- seagrass surveys suggest the nearest seagrass is likely to be 400m away. No seagrass exists in the immediate site. The area to be dredged and reclaimed has been previously affected by dredging (AWMA).

The main points raised in public submissions were that:

- major marine habitats of local and regional significance which my be affected are not described;

- the reduction in aquatic environment from reclamation will reduce diversification, marine resource and long term viability;

- it was suggested that the proponent should re-establish and protect seagrass in a similar sized area in another part of the harbour, given 5.5ha is to be reclaimed; and

- it was claimed that the port is directly responsible for seagrass death in their part of the harbour.

Water circulation

AWMA commented that the proposed dredging is 1km from the harbour mouth and that past studies indicate the width and depth of the harbour mouth is the main influence on water velocity and intrusion of tidal flows.

The main points raised in public submissions were that:

- there would be a reduction of water exchange between the harbour and King George Sound;

- water circulation and flow modelling should be carried out in water tank experiments; and

- the proposed extension may create a nook or a corner that may not be adequately scoured by water movements, thus making a silt trap that will need to be dredged.

Pollution issues

Turbidity

Comments from government agencies were as follows:

- the increase in water column turbidity associated with dredging will be temporary (DEP);
- a Dredging and Dredge Spoil Management Plan (DDSDMP)will be prepared prior to progression of works and the dredging operations will achieve the guidelines laid down by the Waters and Rivers Commission (AWMA); and
- the proposed DDSDMP will not be subject to further public comment and an open environmental management processes (Town of Albany).

The main points raised in public submissions were that:

- the public should be given the opportunity to comment on the DDSDMP;
- loss of seagrass due to increased turbidity; and
- the impact of sediments flowing through the channel into King George Sound had not been addressed adequately.

Mobilisation of contaminated and nutrient enriched sediments

The DEP indicated that stockpiled sediments have been analysed for heavy metals and nutrients, as detailed in the CER document.

The main points raised in public submissions suggested that:

- the sampling conducted for nutrients and contaminants in stockpiled sediments at Semaphore Point is inadequate;
- levels of sulphur should be measured as part of an on-going monitoring programme; and
- dredging works may disperse organisms and mobilise nutrient enriched sediment.

Spillage from shipping operations

AWMA commented that water quality monitoring will be conducted before, during and after reclamation and dredging and that monitoring programme will be developed by the proponent in consultation with AWMA.

Concerns that were raised by the public were:

- ballast water contamination; and
- that spillage during vessel loading and unloading had not been addressed.

Maintenance dredging

The DEP noted that the proponent had made a commitment to undertake maintenance dredging if required.

The main point raised in public submissions was concern that requirements for ongoing dredging had not been addressed.

Noise and dust

Comments from government agencies were as follows:

- the management of dust and noise is a standard requirement associated with construction and reclamation activities (DEP); and
- through proper environmental planning and effective implementation, the off-site impacts of dust and noise on residents, visitors and harbour uses can be appropriately managed (Town of Albany).

The main points raised in public submissions focused on:

- the impact on residents of Brunswick Road;
- dust and noise during construction; and
- dust from loading of silica sands.

Drainage

AWMA in its submission indicated that the port will, as part of the works, install a drainage system for the reclaimed area that is capable of trapping pollutants and sediment prior to a discharge to the harbour, in consultation with AWMA and the DEP. The DEP, in addition to this indicated that the drainage system will be designed to reduce the potential for pollution of Princess Royal Harbour due to runoff and spills.

Points raised by the public in submissions focussed on the potential for contamination of the groundwater and the impact of runoff from woodchip stockpiles on harbour water.

Social Surroundings

Aesthetic and visual impacts

Comments from government agencies indicated:

- that the proposal is consistent with port-related developments (DEP);

- that the proponent had made a commitment to landscape the southern side of the eastern end of Brunswick Road to provide screening of port facilities from nearby residences if local residents are in agreement;

- the proponent had made a commitment to prepare and implement a landscape plan for the proposed development area as part of the design of specific storage and loading facilities (DEP); and

- that onsite and off-site buffers to the port, in relation to the State Industrial Buffer (Draft) Policy, have not been adequately addressed. The Town of Albany, however, conclude that this issue will be addressed during the TPS review, and that through proper planning and effective implementation, on-site buffers to ameliorate the negative visual impact of industrial development and storage facilities can be managed (Town of Albany).

The main points raised in public submissions were that:

- stockpiles and loading superstructure need to be specified to ensure visual impact from tourist lookouts along new cycle way and walkway is not reduced;
- landscaping of port area needed to be improved; and.
- the visual impact from the ocean needed to be addressed.

Recreational/ tourism impacts

The DEP noted that the area affected by the proposal does not have any major tourism or recreational values.

Public submissions indicated that the proposal would have an impact on recreation and tourism, for example on amateur fishing and whale watching and that the future needs of berthing passenger ships needed to be addressed.

Heritage (indigenous and non-indigenous cultures)

The DEP indicated that the foreshore area has been assessed for potential to contain maritime heritage artefacts.

The main point raised in public submissions were that:

- the area to be dredged may be in contravention of the Western Australian Marine Archaeology Act 1973; and
- cultural and maritime structures should be conserved and managed.

Other

Project justification and long term port development

AWMA indicated in its submission that the proposal is required to ensure the long term viability of port operations.

The main points raised in public submissions were that:

- the deepwater berth is not required due to shallow draught of woodchip carriers;
- the increase in exports speculative;
- the expected doubling in the storage and export of grain, minerals sands export and frozen meat exports can be absorbed by current facilities;
- Berths 1, 2, and 3 experienced low occupancy rates; and
- consideration needed to be given to upgrading Berths 1 & 2;

Port access

The Town of Albany in its submission indicated that the port expansion will have an impact on adjacent urban area, as heavy haulage vehicles rely on Albany Highway, Chester Pass Road and South Coast Highway before reaching Hanrahan Road and Princess Royal Drive, to enter the port (see Figure 3). The Town of Albany, however, considered that through proper environmental planning and effective implementation, the impact of the increase of heavy haulage vehicles on existing road networks can be managed.

The main point raised in public submissions focussed on the impact of increased traffic along Chester Pass Road on residents.

Town boundaries

The Town of Albany in its submission indicated that the proposal is not within the town boundaries as it is below the high water mark and that if reclamation proceeds, the boundary will need to be altered to include the expanded land area.

The main point raised in public submissions was that the port extensions will dissociate townspeople from their foreshore.

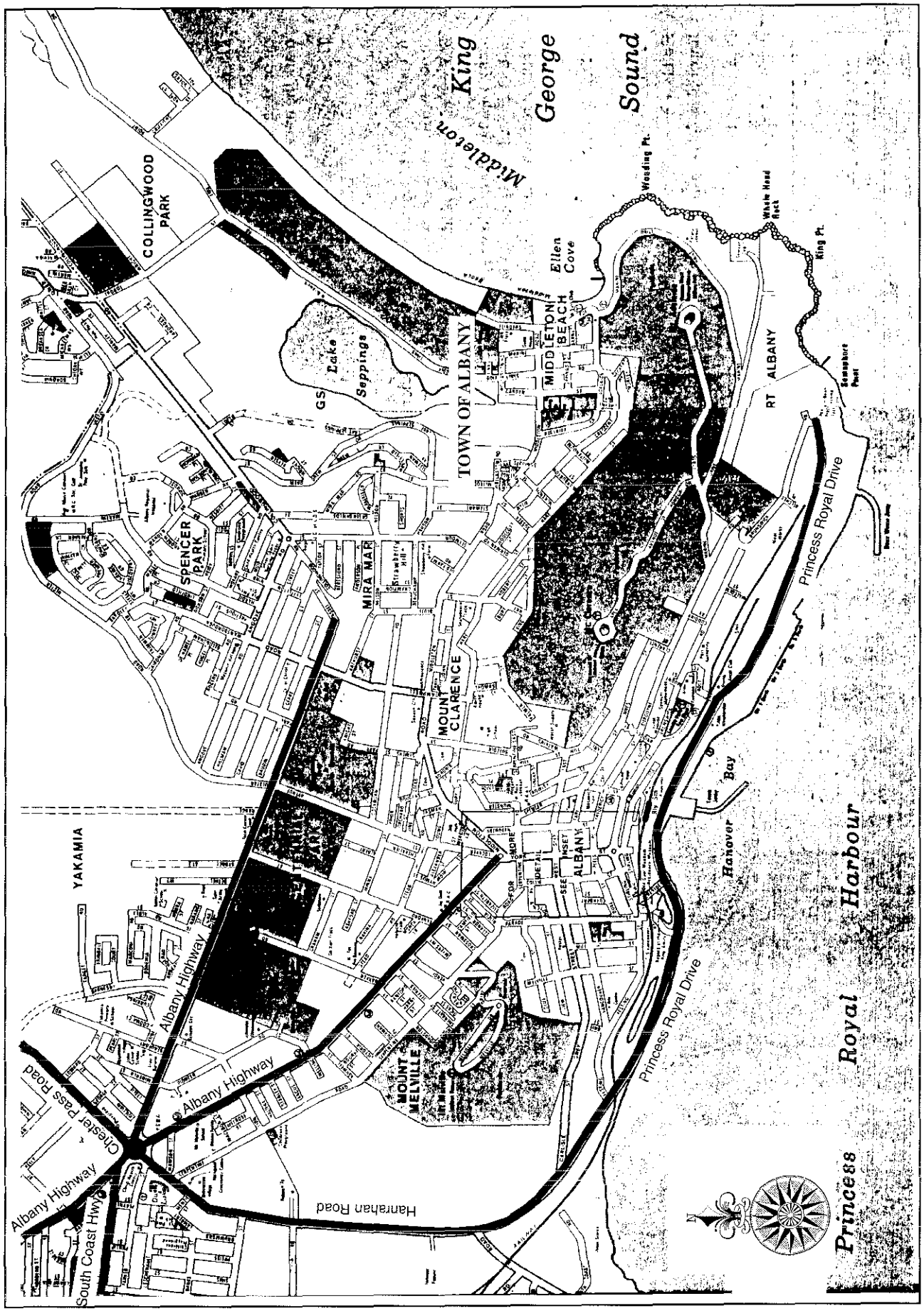

Figure 3. Road network surrounding Albany (Western Australian Street Directory)

Dredging and dredge spoil disposal management plan

The DEP notes that the proponent will be required to obtain a dredging and reclamation licence from AWMA and that the proponent has made a commitment to prepare and implement a DDSDMP to address issues such as water quality, turbidity and mobilisation of contaminated sediments.

The main points raised in public submission were that:

- monitoring should be conducted by an organisation other than the port authority; and
- the contingency measures outlined in the CER were vague.

The EPA has considered the submissions received and the proponent's response as part of the assessment of the proposal.

3.3 Review of factors

The public and agency submissions covered all factors identified during the assessment process including those identified in the guidelines for the CER.

The EPA has evaluated the above factors and considers that a number of them can be managed by the proponent in accordance with their environmental management commitments and in compliance with DEP regulations and guidelines or through approvals required from other agencies (see Table 1). Each factor is discussed below in order to identify those factors warranting further evaluation by the EPA.

3.3.1 Identification of relevant factors requiring EPA evaluation

Biophysical impacts

Marine habitat including seagrass

The total area of dredging and reclamation is approximately 11.5ha. The area in Princess Royal Harbour which will be affected by dredging and reclamation comprises bare sand, much of which has been dredged previously, and does not support a diverse marine community. No seagrass and macroalgae communities have been recorded in the proposed works area by any of the research programs co-ordinated by the EPA and the Waters and Rivers Commission (Alan Tingay & Associates, 1996).

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.2).

Pollution Potential

Water circulation

A study conducted by Mills & D'Adamo (1993) considered water circulation and concluded that it was driven by wind and tides. They considered that the width and depth of the entrance channel are important factors in tidal exchange between PRH and King George Sound and that changes in these dimensions could influence water circulation and flushing of the harbour.

Concern was expressed in submissions that there may be a reduction of water exchange between PRH and King George Sound and that the dredging and reclamation activities may alter the hydrodynamics of Princess Royal harbour.

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.5).

Turbidity

Dredging and reclamation activity associated with the Port of Albany expansion is likely to have a short term impact on water quality.

Turbidity will be addressed by the proponent as a component of the dredging licence to be issued by AWMA.

This relevant factor has been identified as requiring further and detailed evaluation by the EPA (See Section 4.3)

Contaminated and nutrient enriched sediments

Existing stockpiled dredge spoil and new spoil from the proposed dredging works will be used to create the reclaimed area. Dredging and reclamation activity associated with the Port of Albany expansion may result in the mobilisation of contaminants which exceed levels that would require an environmental investigation as specified in the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated sites (ANZECC & NHMRC, 1992).

The potential for release of toxic spores during dredging was also raised and the proponent in its response indicated that this potential is considered to be minor. In addition, the Australian Quarantine and Inspection Service (AQIS) in association with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has recently collected sediment samples from the port area which will be analysed for the presence of introduced organisms. The APA is awaiting the results of these studies and these will be considered during the preparation of the Dredging and Dredge Spoil Disposal Management Plan.

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.4).

Spillage from Shipping Operations

It was raised that spillage during bunkering, vessel loading and unloading management have not been addressed in the CER. However, the new berths will not be used for bunkering purposes. Standard procedures for controlling spillages during the loading or unloading of bulk commodities will apply as at existing berths. Specific loading proposals for new export commodities will also be referred to the EPA and AWMA.

It is considered that this factor does not warrant further assessment by the EPA at this stage.

Maintenance dredging

The ongoing maintenance of Princess Royal Harbour in terms of depth is important to ensure a safe and navigable waterway.

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.6.

Noise and dust control

The management of dust and noise are subject to DEP requirements and noise regulations of the Environmental Protection Act, 1986. The proponent has made commitments to manage dust generated during earthworks associated with reclamation activities to the satisfaction of the DEP, and to comply with noise regulations.

The EPA believes that adequate controls exist under the pollution control provisions of the Environmental Protection Act to control noise and dust associated with site works should they arise, and in the long term in association with the new facility.

The EPA also recognises that there is the potential for woodchip dust from stockpiles, proposed to be located in the vicinity of the Port of Albany, to create a dust nuisance to residents of Albany, as has occurred as a result of woodchip stockpiles adjacent to Bunbury Port. The EPA retains the right to assess future specific export proposals for the Port of Albany, such as woodchip activities.

It is considered that this factor, although relevant, does not warrant further assessment by the EPA, at this stage.

Drainage from reclamation area

Design measures have been incorporated to reduce the potential for pollution of PRH due to runoffs and spills. The reclamation area will include a drainage system designed to facilitate management of discharges into Princess Royal Harbour. The existing stormwater drainage system in the works area is expected to be improved as part of the present proposal. Specific details of the drainage plan will be developed in consultation with AWMA.

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.7).

Social surroundings

Aesthetic and Visual impacts

The Albany Port Development is consistent with port-related developments in relation to visual form comprising docks, loading facilities, storage sheds and ships at berth.

The Town of Albany has indicated that onsite and offsite buffers to the port, in relation to the State Industrial Buffer (Draft) Policy will be addressed during the Town Planning Scheme Review. The Town of Albany consider that through proper planning and effective implementation, on site buffers to ameliorate the negative visual impact of industrial development and storage facilities can be managed. Comments raised in the public review period focused on landscaping within the port area and the need to ensure visual impact from tourist lookouts along the new cycle way and walkway is not reduced due to stockpiles and loading superstructure.

The proponent has made commitments (Commitments 7 & 8, Appendix 4) to implement landscaping planting on the southern side of the eastern end of Brunswick Road to provide screening of port facilities from nearby residences if local residents are in agreement, and to prepare and implement a landscape plan for the proposed development area as part of the design of specific storage and loading facilitate to minimise any visual impacts. The EPA believes that the development is consistent with surrounding development and that further evaluation of this topic is not required.

It is considered that this topic does not warrant further assessment by the EPA and can be appropriately managed through planning provisions and landscaping during the design of specific facilities.

Recreational/tourism impacts

The area affected by the proposal does not have any recognised major tourism or recreational values, although the area is occasionally used for recreational fishing.

Concern was expressed during the public review period on the impact on recreation (for example amateur fishing) and tourism, however, this is not expected to be a significant environmental factor.

It is considered that this factor does not warrant further assessment by the EPA.

Heritage (indigenous and non-indigenous cultures)

Concern was expressed in submissions that the area to be dredged may be in contravention of the *Western Australian Marine Archaeology Act 1973* and that the conservation and management strategies that the proponents have developed to ensure appropriate treatment of the cultural and maritime heritage issues of this site, are inadequate.

The proponent has indicated that the area has previously been dredged and that all above surface structures including piles extending beyond the existing reclamation area have been removed. The proponent, however has stated that it will seek clearances under the provisions of the Marine Archaeology Act before dredging in the area (See Appendix 4, R13.1). The proponent also indicates that the remnants of the Albany Deepwater Jetty which is buried within the existing reclamation area will be unaffected by the present proposal.

It is considered that this topic does not warrant further detailed assessment by the EPA.

Other

Port development

Concerns raised by the public on the proposed dredging and reclamation of a portion of Princess Royal Harbour focused on justification for the project and long term development of the port. Issues raised included low occupancy rates of Berths 1, 2 and 3, shallow draught required for woodchip carriers, current facilities being able to handle frozen meat exports, grain exports and mineral sands exports, and relocation of port facilities.

This factor has been identified as an issue which requires further evaluation by the EPA (See Section 4.1).

Port Access

Access to the port is via transport corridors, ship rail and road. The Town of Albany has indicated that the port expansion will have an impact on adjacent urban areas as heavy haulage vehicles rely on Albany Highway, Chester Pass Road and South Coast Highway before reaching Hanrahan Road and Princess Royal Drive to enter the port (see Figure 3). However, through proper environmental planning and effective implementation the impact of the increase of heavy haulage vehicles on existing road networks can be managed.

Concerns raised by the public included consideration of storing woodchip stockpiles at the CSBP site and an increase in traffic along Chester Pass Road.

The Environmental Protection Authority (EPA) is aware that increasing rail and road traffic along the Albany Foreshore has implications on future residential development. In its report on the 'Albany Foreshore Redevelopment' in 1995 (Bulletin 800), the EPA states that it is considered that residential development adjacent to the Port's northern boundary may constrain long term Port operations and restrict the Port's ability to react to the demands of new industries dependent upon use of the port.

The EPA is aware that residential development in close proximity to ports throughout the State has the potential to impact on future port operations, in terms of maintenance of adequate buffers. The EPA believes that a pro-active approach needs to be undertaken to address this

issue, and that planning authorities need to take into consideration and support the long term requirements of ports such as Albany in a general planning context.

The EPA remains concerned about long term vehicle access to the Port along Princess Royal Drive, which may be restricted as a result of the proposed Albany Foreshore Redevelopment. This issue will be addressed as part of ongoing discussions with DEP/ EPA and the Western Australian Planning Commission.

It is considered that this factor does not warrant further assessment by the EPA in this report but needs to be addressed through the planning process.

Town boundaries

The Town of Albany has advised in its submission that the proposal is not within the Town boundaries as it is below high water mark, and that should reclamation proceed, the town's boundaries will need to be altered to include the expanded land area. Concern within submissions also focused on the dissociation of the townspeople from their foreshore if the port extension proceeds.

It is considered that this factor does not warrant further assessment by the EPA, and can be addressed through the planning process.

Dredge spoil

Concern was expressed in submissions that monitoring should be conducted by an organisation other than the proponent, and that contingency measures are vague.

The proponent will be required to obtain a dredging and reclamation licence from Albany Waterways Management Authority. The proponent will prepare a dredging and dredge spoil disposal management plan, to the satisfaction of AWMA to address issues such as water quality, turbidity, mobilisation of contaminated sediments.

This relevant factor has been identified as requiring further evaluation by the EPA (See Section 4.8).

3.3.2 Summary

Table 1 summarises the process used by the EPA to evaluate environmental factors raised during the environmental impact assessment process. The table identifies the factors, the relevant proposal characteristics, and comments received from specialist government agencies and the public. If a factor is considered environmentally significant this factor is evaluated further by the EPA (as summarised in Table 2). Section 4 of this report provides this evaluation.

As noted in Table 1 and Section 3.3.1, the following have been identified as relevant factors:

1. port development;
2. marine habitat including seagrass;
3. turbidity;
4. contaminated and nutrient enriched sediments;
5. water circulation;
6. maintenance dredging;
7. drainage from reclamation area;
8. dredge spoil;
9. noise; and
10. dust.

Factors	Proposal Characteristics	Government Agency Comments	Public Comments	Identification of Relevant Factors
Biophysical				
Marine habitat (including seagrass).	Dredging and reclamation of Princess Royal harbour may impact on existing seagrass communities.	**DEP** - The existing seabed comprises bare sand. **AWMA** - No seagrass exists in the immediate site which has been previously dredged.	Major marine habitats are not described. Reduction in aquatic environment from reclamation. Seagrass area affected should be re-established elsewhere. Port responsible for seagrass death in port areas.	EPA evaluation required.
Pollution				
Water circulation.	Dredging and reclamation of Princess Royal Harbour may alter hydrodynamic characteristics.	**AWMA** - Width and depth of the harbour mouth is the main influence on water velocity and intrusion of tidal flows.	Reduction of water exchange into the harbour. Water circulation and flow modelling should be carried out. Proposed extension may create a silt trap that will need to be dredged.	The factor of water circulation changes in relation to water quality warrants further evaluation by the EPA.
Turbidity.	Reclamation and dredging works will impact on harbour water quality.	**DEP** - Temporary increase in water column turbidity associated with dredging. **AWMA** - A Dredging and Dredge Spoil Management Plan (DDSDMP)will be prepared. **TOWN OF ALBANY** - Concern that the proposed DDSDMP will not be subject to further public comment.	The public should comment on the DDSDMP. Loss of seagrass due to increased turbidity. Impact of sediments into King George Sound.	This factor warrants further evaluation by the EPA.
Contaminated and nutrient enriched sediments.	Dredging of 6ha. Sediment may be contaminated as a result of on-going port activities.	**DEP** - stockpiled sediments have been analysed for heavy metals and nutrients.	Sampling for nutrients and contaminants is inadequate. Levels of sulphur should be measured. Mobilisation of nutrient enriched sediment. Dredging works may disperse organisms	This factor warrants further evaluation y the EPA.
Spillage from Shipping Operations.	Vessel loading and unloading.	**AWMA** - Monitoring of water quality will be conducted.	Spillage has not been addressed. Ballast water contamination.	New berths not used for bunkering, loading/unloading operations require specific project evaluation. No further evaluation warranted at this stage.
Maintenance Dredging.	Dredging works required.	**DEP** - notes proponent's commitment to undertake maintenance dredging if required.	Ongoing requirements for dredging have not been addressed	This factor warrants further evaluation by the EPA.
Noise and Dust Control.	Reclamation, earthworks and construction may generate dust and noise.	**DEP** - the management of dust and noise is a standard requirement. **TOWN OF ALBANY** - The off-site impacts of dust and noise can be appropriately managed.	Impact on residents of Brunswick Road. Dust and noise during construction. Dust from loading of silica sands.	Subject to DEP requirements and regulations. This factor does not warrant further evaluation by the EPA.
Drainage.	Drainage from reclamation area will discharge to Harbour.	**DEP** - drainage plan for reclaimed land and new berth will be developed prior to construction. **AWMA** - The port will install a drainage system for the reclaimed area.	Modification of drainage leading to contamination of groundwater. Run-off from woodchip stockpiles on harbour water.	This factor warrants further evaluation by the EPA.
Social Surroundings				
Aesthetic and visual impacts.	Construction of new berth and reclamation.	**DEP** - notes that the proposal is consistent with port-related developments. Landscaping will be implemented to provide screening of port facilities. **TOWN OF ALBANY** - Onsite and off-site buffers to the port, in relation to the State Industrial Buffer (Draft)Policy, has not been adequately addressed.	Stockpiles and loading superstructure needs to be specified to ensure visual impact from tourist lookouts along new cycle way and walkway is not reduced. Landscaping of port area reduced. Visual impact from the ocean.	This factor does not warrant further evaluation by the EPA and can be appropriately managed through planning provisions.
Heritage (indigenous and non-indigenous cultures).	Historical value of town jetty.	**DEP** - notes entire foreshore area has been assessed for potential to contain maritime heritage artefacts.	The area to be dredged may be in contravention of the Western Australian Marine Archaeology Act 1973. Conservation and management of cultural and maritime structures.	This factor does not warrant further evaluation by the EPA and can be managed under the provisions of the Marine Archaeology Act.

Table 1. Identification of relevant factors requiring EPA evaluation

Factors	Proposal Characteristics	Government Agency Comments	Public Comments	Identification of Relevant Factors
Recreation/ Tourism impacts.	Dredging and reclamation.	**DEP** - notes the area affected by the proposal does not have any recognised major tourism or recreational values.	Impact on recreation and tourism, for example amateur fishing, whale watching. Future needs of berthing passenger ships.	This factor does not warrant further evaluation by the EPA.
Other				
Dredge Spoil.	A DDSDMP is to be developed to manage and monitoring all dredging and reclamation operations.	**DEP** - DDSDMP required to address issues such as water quality, turbidity, mobilisation of contaminated sediments.	Monitoring should be conducted by an organisation other than the APA. Contingency measures are vague.	This factor warrants further evaluation by the EPA.
Port access.	Access to port via transport corridors.	**TOWN OF ALBANY** - The port expansion will have an impact on adjacent urban area due to increase in heavy haulage vehicles.	An increase in traffic along Chester Pass Road will exacerbate the noise problem already experienced by residents.	This factor does not warrant further evaluation by the EPA in this report.
Town Boundaries.	Proposal below high water mark	**TOWN OF ALBANY** - Should reclamation proceed, the Towns boundaries will need to be altered to include the expanded land area.	Port extensions will dissociate townspeople from their foreshore.	This factor does not warrant further evaluation by the EPA and can be managed by the Town of Albany statutory planning process.
Project justification and long term development.	Dredging (6.0ha) and reclamation (5.5ha) of Princess Royal Harbour.	**AWMA** - The proposal is required to ensure the long term viability of port operations.	Deepwater berth is not required. Increase in exports speculative. Expected doubling in the storage and export of grain, mineral sands export and frozen meat exports can be absorbed by current facilities. Low occupancy rates of Berths 1, 2, and 3. Consideration to upgrading Berths 1 & 2.	This factor requires EPA evaluation.

Table 1. Identification of relevant factors requiring EPA evaluation (continued)

In relation to noise and dust, the EPA recognises that adequate controls exist under the pollution control provisions of the Environmental Protection Act to control these factors, should they arise. Noise and dust control, therefore, are not further evaluated in the following section.

4. Evaluation of relevant environmental factors

4.1 Port development

Objective

Development and reclamation of the harbour foreshore is restricted to only those types of development that require foreshore location and which offer genuine public benefit in the use of these waterways.

Existing Policy

Albany Port Authority Act

The APA was established by the *Albany Port Authority Act*, 1926 and its responsibilities are defined by that Act and by the *Port (Functions) Act,* 1993. Under the Acts, the APA has the exclusive control of the Port of Albany and has the duties of maintaining the Port and all facilities and infrastructure associated with the port, and of providing for necessary extensions of port works.

Albany Waterways Management Authority's Draft Policy FA1

This policy restricts development and reclamation of the harbour foreshore to only those types of development, that, by their very nature require such a location and which offer genuine public benefit in the use of these waterways.

The EPA endorsed AWMA's policy at its meeting in March 1996. This policy position is consistent with the EPA's position on other environmentally sensitive waterways.

Technical/ background information

A number of new export-oriented industries have been proposed recently or are being established in the Great Southern Region. These include a silica sands project, woodchip export operations, and an export abattoir. In addition, grain exports from the region are expected to increase and Co-operative Bulk Handlers have recently expanded their storage capacity at the Port of Albany to cater for this. Bulk bunker fuel storage facilities are also proposed and there is a possibility of additional general cargo and containers (Alan Tingay & Associates, 1996).

In 1994, the APA commissioned Halpern Glick Maunsell to examine the existing facilities at the port and to prepare a Port Development Plan that could be progressively implemented to meet additional requirements. It was concluded that the existing Port of Albany does not have the capacity to accommodate additional large storage areas for woodchips and that it would be very difficult to provide the necessary ship loading facilities at the existing berths as these are allocated to other export commodities and are not suitable for woodchip carriers or loaders. (Alan Tingay & Associates, 1996).

The APA has indicated an expected increase in:

- grain from 1.3Mtpa to 2Mtpa;
- woodchips between 200,000tpa and 1.5Mtpa;

Relevant Factors	Environmental Objective	Evaluation Framework	Proponent's Commitment	EPA Recommendation
1. Port development.	Foreshore developments restricted to those requiring foreshore location and offering genuine public benefit.	Compliance with AWMA policy. Consideration of other options and long term port development.	Projected demand and local bearing requirements of land backing berths justify port expansion. Berth 6 will not be constructed until there is a definite demand.	EPA acknowledges genuine benefit achieved so long as adverse impacts kept to a practical minimum.
2. Marine habitat including seagrass.	To maintain the ecological function of seagrass in Princess Royal harbour.	Protection of seagrass meadows and other marine ecosystems.	Area selected is previously dredged bare sand with no seagrass within 400 metres.	No specific EPA recommendation required.
3. Turbidity.	To meet EPA water quality criteria and requirements of Waterways Commission Guidelines No. 9.	Compliance with water quality criteria and Waterways Commission guidelines.	Impacts from dredging and reclamation will be managed and monitored in accordance with DDSDMP.	Factor can be managed by dredging licence provisions with specific attention to sediment control design and water quality monitoring.
4. Contaminated and nutrient enriched sediments.	To ensure sediment disturbance does not result in the mobilisation of contaminants which exceed ANZECC & NHMRC guidelines.	Compliance with ANZECC/ NHMRC guidelines.	Existing stockpiled sediments and area to be dredged will be tested for contaminants against ANZECC & NHMRC guidelines.	Tests of stockpiled sediments indicate compliance with ANZECC/NHMRC guidelines. Factor can be managed in accordance with dredging licence provisions and DDSDMP so long as contingency plan prepared if material fails to meet guidelines.
5. Water circulation.	No adverse effects on water quality.	Predictions of change in water quality.	Development not expected to affect water circulation patterns in Princess Royal Harbour.	No specific EPA recommendation required.
6. Maintenance dredging.	To meet EPA water quality criteria and requirements of Waterways Commission guidelines.	Compliance with water quality criteria and dredging guidelines.	Maintenance dredging, if required, will be undertaken in accordance with the requirements of AWMA.	Proponent's commitments are considered adequate.
7. Drainage from reclamation area.	Maintain or improve drainage water quality.	Maintenance of water quality in harbour.	Drainage Plan will be prepared to reduce the potential for pollution of Princess Royal Harbour due to runoff and spills.	Proponent's commitments are considered adequate
8. Dredge spoil.	Reduce unnecessary impacts and manage unavoidable impacts to acceptable levels.	Compliance with Waterways Guidelines No. 9.	A DDSDMP will be prepared, in accordance with Waterways Guidelines No 9, to monitor water quality in and within a relevant distance of the works area during construction. The DDSDMP and monitoring data will be made public.	Proponent's commitments are considered adequate.

Table 2. Summary of Environmental Protection Authority recommendations

- silica sands between 150,000tpa and 500,000tpa; and
- fertiliser (imports) from 100,000tpa to 200,000tpa.

The APA has also considered other Port expansion options which include construction of new berths along the current foreshore to the east of existing Berth No. 3 and variations of the preferred proposal (Alan Tingay & Associates, 1996).

Comments from key agencies/interest groups

AWMA in its submission indicated that there has been extensive Water and Rivers Commission officer input into the proposal. AWMA has objected to the infilling or dredging of the harbours unless the works are related to the environmental protection of the harbours, are required for the amenity use and enjoyment of the harbours, or are deemed essential for the operational requirements of the Port. This view is reflected in AWMA's draft policies.

In accordance with this view, Water and Rivers Commission officers requested the APA to justify the need for the proposed dredging/ reclamation in the CER. The APA responded by providing details in the CER of the Port's projected trade, the anticipated growth in various industries, and the need for additional land, for example, 5ha for woodchips alone,.

AWMA also noted details of other port expansion options considered by the APA, including an option for the additional berths to be provided alongside the shoreline and hence not requiring reclamation. AWMA points out that from an environmental perspective, the option would not provide the necessary land for the Port's expansion, and that from an environmental perspective, it is questionable whether the additional dredging required for this option would be desirable.

In conclusion, AWMA states that although infilling of the harbour is by nature a development that would normally be objected to, it is considered that in the above circumstances the infilling and dredging as proposed is acceptable, as a failure to provide this infilling and dredging may impede the expected growth of the port.

The Town of Albany reinforce the importance of the Port for the export of goods from the region and comment that the APA has reclaimed and dredged portions of the harbour over the years to allow for the expansion of the Port's shipping and industrial activities. The Town of Albany also indicate that Council reserves the right to comment on future land-based developments on the new berths and to request EPA assessment of those developments.

Public submissions suggest that a deepwater berth is not required due to the shallow draught of woodchip carriers, and that the increase in exports is speculative. Comment was made that the storage and export of grain and mineral sands can be handled by current facilities and that frozen meat exports can be handled by berths 1 and 2. It was also suggested that due to the low occupancy of berths 1, 2 and 3, additional berths are not required for woodchip exports, and that the construction of berth 6 is unnecessary. Submissions also focused on the relocation of port facilities and the need to plan for future expansion (see Appendix 2).

Response from the proponent

In response, the proponent indicated that dredging to 12.2m in front of the new berths is the current preferred operational depth for the Port of Albany and that the deepwater berth is required for both woodchip exports and for general and bulk cargoes. The proponent also indicated that while increased grain exports and export of silica sands through the Port of Albany can be handled by current facilities but the APA may prefer to load the silica sand on the new berths so that the existing Berth No. 3 can be allocated exclusively for grain exports.

The proponent also indicated that Berth's 1 and 2 do not have the load bearing capacity to serve as general purpose berths as they have restricted draft and are generally not suitable for

woodchip carriers. Frozen meat exports can be handled by Berths 1 and 2. (Refer to Appendix 2). With regard to Berth No. 6, the proponent has indicated that provision will be made for land backing however the berth itself will not be constructed until there is a definite demand for further export facilities.

The proponent also indicated that the increase in exports is considered to be a definite potential rather than speculation . The extent of blue gum plantations in the Albany Region and the lack of a wood pulp mill in Western Australia are both strong indicators that export of large volumes of woodchips through the Port of Albany is likely to occur in the near future.

In response to low occupancy rates of Berths 1, 2 and 3, the proponent has indicated that Berths 1 and 2 do not have the load bearing capacity to serve as general purpose berths and that they have restricted draft. The proponent also indicated that Berth 3 is required virtually exclusively for grain exports.

The proponent advised that it does not have any further plans for port expansion beyond the proposed reclamation and construction of the new berths. It is considered that any further expansion is not likely to be necessary, and that when the new facilities are complete the port will have achieved its maximum capacity.

With regard to relocation of the port, the proponent indicated that relocation to the western end of the harbour between Robinson and Elekar Estates was considered but rejected as relocation of the port facilities would involve extensive dredging within PRH to provide ship access, which is unlikely to be considered environmentally acceptable.

EPA Evaluation

The EPA notes AWMA's view that reclamation of the harbour is not normally supported. However, it is considered that genuine public benefit would be achieved by port expansion so long as adverse environmental impacts were kept to a practical minimum.

The EPA also notes AWMA's view in relation to port expansion options considered by the APA, including an option for the additional berths to be provided alongside the shoreline. The EPA notes that this option would require additional dredging and would not provide the necessary land for the Port's expansion. The EPA concurs with AWMA's view that additional dredging required for this option is not environmentally desirable.

The EPA notes that the APA wishes to maximise the area of reclamation to cater for the maximum potential demand for storage space and area for shiploading facilities. The APA has indicated that the reclamation area associated with the new berths will be allocated to the storage of woodchips, general and bulk cargoes, while the silica sands and meat exports will be accommodated in existing storage areas. It is also noted that potential woodchip exporters have requested the APA set aside 5ha for stockpile requirements.

The EPA notes that the preferred option provides for additional backing for the port development proposal, and involves less direct environmental impacts than other options described within the CER document.

The EPA concludes that the proposed reclamation and dredging of PRH can meet the EPA's objective of restricting development associated with the waterways of Princess Royal Harbour to proposals with genuine public benefits.

4.2 Marine habitat including seagrass

Objective

To ensure the ecological function of Princess Royal Harbour is maintained.

Existing Policy information

Albany Harbours Environmental Study 1988-1989

The Albany Harbours Environmental Study was prepared in 1990 for the EPA by the Albany Technical Advisory Group. Bulletins 412 and 426 summarise work undertaken during 1988 and 1989 on environmental problems experienced within Princess Royal Harbour and Oyster Harbour. The work focussed on the environmental problems experienced in the harbours, and consisted of a number of interrelated studies that provide the technical rationale for a number of management recommendations, with the ultimate aim of identifying solutions to these environmental problems. Studies undertaken included seagrass mapping, an inventory of the major sources and types of pollutants entering the harbours, water circulation patterns, and an assessment of nutrient stores accumulated in the waters, sediments and plants. The work concluded that seagrass communities have declined and that the water within the harbours is enriched with nutrients. This has resulted in the accumulation of macroalgae in the harbours and a further decline of seagrass communities. One major recommendation was the formation of a management organisation (AWMA) to provide an on-site co-ordinating role for management of the harbours and associated waterways.

Albany Waterways Management Programme. Albany Waterways Commission Report No. 54, 1995.

This programme was drafted to provide strategies and actions required to address the issues facing the Albany waterways, with the overall aim of improving and maintaining the ecological health of Albany harbours and associated waterways for the enjoyment of present and future generations by conserving, protecting and rehabilitating the waterways and their foreshores and by fostering appropriate development and land use practices which are compatible with the need to maintain the waterways as healthy functional systems.

The programme was prepared under Section 35 of the *Waterways Conservation Act,* to guide AWMA's operations and provide direction for other organisations, agencies and groups involved in waterways management. AWMA was established in 1991 to take an on-site management role, to co-ordinate the implementation of recommendations made by the EPA in EPA Bulletins 412 and 426, and to take responsibility for overall management of the waterways.

AWMA's Draft Policy S1 *(This foreshore area policy is detailed in AWMA's policy manual)*

This policy states that development proposed within the Albany Harbours will be required to consider its impact on seagrass distribution. In general, development is not permitted if it will lead to a loss of seagrass coverage.

Technical information

The CER (Section 3.3.6) indicates that the existing benthic environment comprises bare sand and no seagrass and macroalgae communities have been recorded in the proposed works area by any of the research programs co-ordinated by the EPA and the Water and Rivers Commission. Similarly, no evidence of living seagrass was recorded during intensive core sampling which was conducted as part of the planning for the proposed port extension works.

This conclusion is supported by technical studies undertaken by the EPA (EPA, 1990).

Comments from key agencies/interest groups

AWMA in its submission notes that the CER states that there is no seagrass within the area to be reclaimed or dredged, or is within 500m of these areas. AWMA indicates that based on seagrass surveys it has conducted, suggests that this 500m distance is likely to be an over estimate with the nearest seagrass likely to be more in the region of 400m away. However, it is considered the CER is correct in stating no seagrass exists in the immediate site, with the nearest seagrass to the south and west being several kilometres away.

AWMA, also points out that the area to be dredged and reclaimed has been previously affected by dredging, and that the CER contains a detailed account of past dredging operations.

Public submissions expressed concern with regard to:

- the reduction in aquatic environment from reclamation leading to reduced marine resource and long term viability;
- the port being directly responsible for seagrass death in the vicinity of the harbour. One submission suggests that the proponent should be required to re-establish and protect seagrass in a similar sized area in another part of the harbour, given 5.5ha is to be reclaimed; and
- lack of detail in the CER document with regard to major marine habitats of local and regional significance which may be affected.

One submission also expressed concern that the CER failed to describe the impact of dredging in any quantitative way and fails to give acceptable assurances that sediment will not be deposited on seagrass communities.

Response from the proponent

The proponent has indicated that previous dredging and reclamation operations have not caused a decline in seagrass beyond the direct area of impact of these operations. Dredging has occurred at intervals over the past 100 years whereas significant seagrass decline in the harbour has only been reported since the 1960's. Virtually all of the evidence to date indicates that this seagrass decline is associated with increased nutrient levels due to polluted inflows to the harbour, rather than operations associated with port-related activities.

In addition, the proponent indicates that the proposed reclamation will not impact on any significant marine communities, as any communities which may have existed in the area have been removed by previous dredging operations. There are no major marine habitats of local or regional significance which will be affected by the proposed port expansion because the area affected has been dredged more than once previously and is therefore already modified.

The proponent considers that as the port expansion will not affect any seagrass in PRH, a requirement to establish seagrass in an area equivalent to the development would be unjustified.

EPA Evaluation

The EPA notes that the existing seabed comprises bare sand and that there is no seagrass within the area to be reclaimed or dredged. The EPA also notes that based on AWMA's seagrass surveys, the nearest seagrass is likely to be 400 metres and that the area to be dredged and reclaimed has previously been affected by past dredging operations.

The EPA also notes that the proponent has undertaken a commitment to manage off-site impacts so that suspended material is confined, in accordance with the Dredging and Dredge Spoil Disposal Management Plan and AWMA's requirements (Commitment 2, Appendix 4). The EPA notes that this management plan will form part of the licence to be issued by AWMA for dredging and reclamation operations.

The EPA considers that through implementation of Commitment 1, and the measures outlined in the CER, that the ecological function of the harbour can be maintained in accordance with the EPA's objective.

4.3 Turbidity

Objective

To manage dredging and reclamation activities to ensure EPA water quality criteria and the requirements of Waterways Commission Guidelines No. 9 are met.

Existing Policy

The water quality criteria relevant to this proposal are described in EPA Bulletin 711 for Protection of Aquatic Ecosystems and for Recreational Water Quality and Aesthetics.

A dredging licence is required to be issued by AWMA in accordance with Waterways Guidelines No. 9 (1995). The main aim of the dredging/ reclamation licence is to control sediment in the water column. The dredging licence is expected to include time schedules, analysis of sediments and sediment size, monitoring of sediment plumes, monitoring of water clarity and visible pollution and seagrass monitoring.

Technical information

The proponent has stated that:

- dredging will be undertaken in accordance with a dredging licence to be issued by AWMA. This will include a Dredging and Dredge Spoil Disposal Management Plan (DDSDMP) to be undertaken to the requirements of AWMA and the DEP;
- dredging will involve suction dredging and disposal of spoil will be pumped into bunded cells made adjacent to the shoreline. These cells will be bunded by rock, with silt curtains and a layer of sand along these walls to help retain sediment. Excess water will drain from the discharge basin through the rock bund back to the harbour. The filter cloth, protective sand covering and bund will ensure that the returning waters have low suspended sediment concentrations with little discolouration;
- in case dredging exceeds the rate at which the excess water can pass through the bund, an overflow section will be provided in the eastern part of the reclaimed area. This overflow will comprise a discharge culvert set approximately 2 metres above high water to provided adequate retention in the discharge basin. The overflow section will include a separate bunded sedimentation basin to allow maximum sediment settling prior to overflow to the Harbour. Discharge from the eastern section of the reclamation area will ensure that any remaining sediment in suspension is discharged at the maximum distance from seagrass beds. Again this will be in accordance with the licence to be issued by AWMA;
- specific boundaries will be defined for the dispersal of sediment in PRH (in consultation with AWMA and the DEP) and the operations will be modified or temporarily suspended if the sediment plumes disperse beyond these boundaries; and
- impacts from dredging and reclamation activities will be monitored by the proponent in accordance with the dredging licence and DDSDMP.

Comments from key agencies/interest groups

The DEP advised that the increase in water column turbidity associated with dredging and breakwater construction will be temporary.

AWMA in its submission indicated that the proponent will undertake all dredging/ reclamation operations in consultation with AWMA and the DEP, and that a DDSDMP will be prepared prior to progression of works in accordance with Waterways Commission Guidelines No. 9.

AWMA also indicated that a monitoring programme will be undertaken and the existence of sediment plumes extending beyond certain defined points will lead to a cessation of work.

Response from the proponent

The proponent also indicated that a commitment has been made to prepare a DDSDMP in consultation with AWMA and the DEP, and that this DDSDMP will contain specific measures designed to limit sediment drift and to monitor the dredging operation to ensure that seagrass communities are protected.

The proponent has stated that this DDSDMP and all monitoring data will be made available to the public and that any comments that members of the public may wish to make on the plan would be welcome.

EPA Evaluation

The CER does not provide specific information on the extent of the impacts from dredging and reclamation but the proponent commits to a DDSDMP in order to manage water quality effects (Commitment 2, Appendix 4).

No provisions have been made for controlling the plume from dredging operations. The concept to manage reclamation return flow through cells with silt curtains is capable of being designed to meet appropriate water quality criteria. However special attention needs to be given to the overflow section to ensure control of sediment release. Such control can be achieved by limiting the rate of dredging or the adequacy of the sedimentation basin.

There is also a proponent commitment to water quality monitoring (Commitments 2 and 3, Appendix 4), but without an indication of the actual monitoring programme.

The EPA concludes that the proposed dredging and reclamation activities are capable of being designed and managed to meet the EPA's objectives, and that the dredging licence requirements of AWMA is a suitable process to ensure this occurs.

In the information requirements for the dredging licence (Commitment 3) the EPA considers the following matters need to be included:

- the possible need for turbidity control on the dredging operations;
- the design of the cells and silt curtains to meet water quality criteria for the reclamation return flow;
- the control of sediment from the overflow through dredging rate controls and sedimentation basin design; and
- the design of the monitoring programme to ensure water quality criteria are met.

4.4 Contaminated and nutrient-enriched sediments

Objective

To ensure sediment disturbance does not result in the mobilisation of contaminants which exceed Australian and New Zealand Guidelines for the assessment and management of contaminated sites (ANZECC & NHMRC, 1992).

Existing Policy

Australian and New Zealand Guidelines for the Assessment and Management of Contaminated sites (ANZECC & NHMRC, 1992), detail investigation threshold levels for various chemicals, based on environmental concerns. These levels have been set utilising overseas information and represent conservative values which should protect the environment. Generally, where these levels are exceeded, an investigation should take place.

Technical information

The proponent states that:

- dredged material will be used for reclamation;
- sediments which were dredged from the Harbour in 1978 and 1979 (which are currently stockpiled) will also be used for reclamation. Heavy metal and nutrient levels in these stockpiled sediments have been analysed in a series of 3 samples collected in 1994 from various depths in the stockpile. The results indicate that the levels of heavy metals, phosphorus and nitrogen are within ANZECC/ NHMRC environmental soil quality guidelines;
- sampling of sediments in the area to be dredged for heavy metals and nutrients will be conducted before, during and after dredging in accordance with environmental monitoring programme (see Section 6.3 of CER for further detail);
- if levels of any parameter are found to occur above the background criteria, repeat sampling and analysis for that parameter will be implemented and contaminated sediments will be disposed of according to the requirements of the DEP;
- further assessment of heavy metal and nutrient levels in stockpiled sediments will be conducted (see Section 6.3 of CER for further detail); and
- assessment of sediments in the area proposed to be dredged for the presence of introduced toxic organisms will be conducted (see Section 6.3 of CER for further detail).

Comments from key agencies/interest groups

Concern was expressed in public submissions that sampling for nutrients and contaminants in stockpiled sediments at Semaphore Point are inadequate for a representative sample. One submission also raised the link between sulphur and the release of heavy metals and commented that as sulphur appears to be abundant in the stockpile sulphur should be measured as part of the on-going monitoring programme.

Concern was also expressed with regard to the use of stockpiled sediment for reclamation in view of pollution found in reclaimed land associated with the Albany Foreshore Development. Submissions also raised issues relating to the likelihood of mobilising nutrient-rich sediment adjacent to the Town Jetty and the possible consequences of such disturbance.

One further issue raised in submissions focused on the release of toxic spores resulting from disturbance to the seabed.

Proponent response

The proponent has indicated that further sampling of heavy metals and nutrient levels in the existing stockpiled sediments will be carried out as described in Section 6 of the CER. The information collected will form part of the proposed EMP and would be considered in the DDSDMP.

The proponent also indicated that the pollution levels in the reclaimed land associated with the Albany Foreshore Development are localised and there is no evidence to suggest that the stockpiled dredge sediment has any significant levels of contamination (see Section 4.4.3 of the CER).

With regard to sulphur, the proponent advised that there is no data on sulphur levels in the existing sediment stockpile, however, the level of heavy metals in samples analysed to date are well within recognised criteria. The proponent, however, stated that sulphur levels would be measured as part of the monitoring programme if required by the DEP.

The proponent also commented that the proposed port development referred to in the CER will not affect any area close to the Town Jetty and there is no possibility of mobilising sediments at this location.

In relation to the release of toxic spores, the proponent has indicated that the Australian Quarantine and Inspection Service (AQIS) in association with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has recently collected sediment samples from the report area. These samples will be analysed for the presence of introduced organisms. The proponent is awaiting the results of these studies and these will be considered during the preparation of the DDSDMP. The release of toxic spores, however, is considered minor.

EPA Evaluation

Initial sediment sampling indicates that nutrient and heavy metal concentrations are likely to be within ANZECC/NHMRC guidelines for contaminated sites. The proponent has committed to further sampling and analyses of dredged material and material reclaimed from existing stockpiles of dredge spoil, including nutrients, heavy metals and sulphur as part of its DDSDMP.

If results indicate that the guidelines are not met then the EPA recommends that the proponent prepare a contingency plan to the satisfaction of AWMA and the DEP for the management of material which does not meet the ANZECC/ NHMRC guidelines (see Commitment 7). With this provision, together with the proponent's commitment to prepare and implement a DDSDMP and the dredging licence which will be issued by AWMA, the EPA concludes that the objective to ensure that sediment disturbance would not result in the mobilisation of contaminants which exceed ANZECC/ NHMRC guidelines.

4.5 Water circulation

Objective

To ensure effects of water circulation changes do not lend to adverse effects on water quality.

Existing Policy

Western Australian Water Quality Guidelines for Fresh and Marine Waters (EPA Bulletin 711)

This document identifies acceptable standards for water discharge to ensure that the ecological values of aquatic ecosystems are protected. In the context of this assessment, standards that will apply relate to recreational water quality and aesthetics and protection of aquatic ecosystems.

Technical information

Princess Royal Harbour is an oval shaped, marine embayment. The harbour is approximately 8 kilometres long and 4 kilometres wide and orientated in a north-west to south-east direction. The total area of the harbour is approximately 29 square kilometres (Waterways Commission, 1995).

The mouth of the harbour is located at the north-east corner and provides a relatively narrow waterway connection to King George Sound. Water in the harbour originates from the Sound and freshwater inflows through natural and man-made drainage channels (Alan Tingay & Associates, 1996).

The prevailing winds are south-easterly in summer and north-westerly (swinging to south-west) in winter. Wind-driven circulation has been the subject of a specific study by Mills and Brady (1985). This study concluded that flow patterns in the harbour are very similar for winds from the same direction regardless of wind speed. West to north-west winds generate predominantly anti-clockwise circulation whereas east to south winds generate predominantly clockwise circulation (Alan Tingay & Associates, 1996).

A more recent assessment of water circulation and flushing characteristics at PRH by Mills & D'Adamo (1993) concludes that up to 30, 000, 000 cubic metres of water may enter or leave PRH within 8 to 16 hours of rising or falling tides respectively (Alan Tingay and Associates, 1996).

Mills and D'Adamo (1993) consider that depth and width of the entrance channel are important factors in tidal exchange between PRH and King George Sound and that changes in these dimensions could be detrimental to water circulation in, and flushing of, the harbour. The proposed port development, however, is located in an area which is 1 kilometre at the nearest point to the mouth of PRH. The entrance channel through the mouth of the harbour and westwards for a distance of 1 kilometre therefore will not be affected by the proposed works (Tingay & Associates, 1996).

The alignment of the proposed reclamation area tapers eastwards to the existing shoreline. These features and the small size of the reclamation area are expected to limit any disruption to water circulation.

Comments from key agencies/interest groups

AWMA in its submission indicated that the implications of the Port's expansion on water circulation is given detailed consideration in the CER. AWMA also indicated that the proposed dredging is 1 kilometre from the harbour mouth and that past studies indicate that the width and depth of the harbour mouth is the main influence on water velocity and intrusion of tidal flows.

Concern was expressed in public submissions in relation to a reduction of water exchange between the harbour and King George Sound due to deepening of the project area by dredging. It was also suggested that water circulation and flow modelling should be carried out in water tank experiments to verify flow data in the harbour and that the proposed extension may create a nook or a corner that may not be adequately scoured by water movements, thus making a silt trap that will need to be dredged.

Further, the CER does not address the impacts of sediments flowing through the channel into King George Sound.

Proponent's response

In response the proponent indicated that the CER presents information on water circulation patterns in PRH and the distribution of seagrass both of which suggest that there is little potential for suspended sediment from dredging operations to drift onto and affect nearby seagrass communities. It is anticipated that suspended sediment will settle out in the dredged area to the south of the port. The proponent has, however, made a commitment to prepare a DDSDMP in consultation with AWMA and the DEP and this plan will contain specific measures designed to limit sediment drift and to monitor the dredging operation to ensure that seagrass communities are protected.

The proponent also indicated that water circulation in PRH is described in detail in Section 3.2.3 of the CER and that the dredged entrance channel accelerates the speed of water entering the harbour and is an important factor in water exchange with King George Sound. The proponent further advises that the proposed development is located at the western end of the dredged channel and is more than 1 kilometre from the start of the channel in the sound. Therefore, the development will not affect water circulation patterns in PRH.

In relation to water tank experiments, the proponent has indicated that modelling of water circulation in a tank is not considered necessary as the entrance channel between King Point and Vancouver Peninsula will not be affected. The proponent also indicated that there is no evidence of significant sand movements from the west in front of the Port of Albany. Further, any such sand movement is likely to be trapped in the dredged basins in front of Berths 1, 2 and 3 rather than accumulate adjacent to the new reclamation area. The lack of sand movement is indicated by the fact that no maintenance dredging has been required to date in the shipping basins to remove accumulated sand.

In addition to the above, the proponent indicated that based on water circulation patterns and distribution of seagrass in pH (as documented in the CER), there is little potential for suspended sediment from dredging operations to drift onto and affect seagrass communities. It is most likely that the suspended material will settle out in the dredged area to the south of the port where it is unlikely to impact on seagrass.

EPA Evaluation

The EPA recognises that AWMA is the responsible Authority for ongoing management of water quality in PRH.

The EPA notes that water quality in PRH has improved since 1988, and that is likely to be due to the successful management of potential pollution point sources.

The changes with respect to water circulation have been analysed by both the proponent, AWMA and the DEP and do not appear to have significant implications for water quality changes.

4.6 Maintenance dredging

Objective

To protect the environmental values of Princess Royal Harbour in particular with respect to the loss of aquatic systems.

Existing Policy

Waterways Guidelines No 9, 1995

These guidelines apply to management areas proclaimed under the *Waterways Conservation Act 1976*. The guidelines have been developed for the preparation of a dredging and dredge spoil disposal management plan (DDSDMP). Any operation which creates spoil should comply with these guidelines.

DDSDMP's are a standard requirement of dredging licences issued by the Commission and the local management Authority under Section 46 of the Waterways Conservation Act 1976 (as amended). Dredging licences are required for all dredging undertaken within any management area proclaimed under the Waterways Conservation Act.

These guidelines require the plan to specify:

- how the dredge operations will be conducted and what environmental management measures will be in place;
- where the dredged spoil will be placed and how it will be contained to limit the dispersion of suspended sediment; and
- a monitoring programme designed to measure a range of water quality parameters around the dredge and spoil placement areas, before, during and after dredging operations.

Technical Information

Existing stockpiled dredge spoil (approximately 300 000m^3) and new spoil from the proposed dredging works (approximately 250 000m^3) will be used to create the reclaimed area. The volume of sediment which needs to be dredged to provide the ship handling basin adjacent to the new berths, together with the volume already stockpiled onshore will provide a reclamation area of 5ha.

The present water depth in the area to be dredged ranges from 5 to 10m and the dredging operation will extend this to 12m. This is the same as the existing depth of the entrance channel and harbour.

Public and Agency Comments

One public submission indicated the need for ongoing dredging requirements to be addressed.

Proponent Response

In response, the proponent indicated that it is not anticipated that there will be a requirement for ongoing maintenance dredging as no maintenance dredging has been required in the existing port to remove accumulated sand. However, should maintenance dredging be required adjacent to the new berths, the operations will be controlled by a Dredging and Dredge Spoil Management Plan developed in consultation with the DEP and AWMA.

In addition to this, the proponent has made a commitment to undertake maintenance dredging if required, in accordance with AWMA's requirements (Commitment 8, Appendix 4).

With regard to ballast water, the proponent indicated that this is discussed in Section 5.5 of the CER and that a specific study designed to detect any introduced organisms in the existing port is described in Section 6.4 (Commitment 9, Appendix 4).

EPA evaluation

The EPA considers that the proponent's commitment to undertake maintenance dredging, if requires, in accordance with the requirements of AWMA (Commitment 8), to be adequate to meet the EPA's objectives.

4.7 Drainage from reclamation area

Objective

To maintain or preferable improve the water quality of drainage from the catchment of the reclaimed area.

Existing Policy

Where possible, the EPA seeks a net improvement in environmental quality.

Technical Information

The reclamation area will include a drainage system designed to facilitate management of discharges into PRH. Specific design details of the drainage plan will be developed in consultation with AWMA.

All companies proposing to establish stockpiles or other storage facilities, associated with the new berth, will be required to ensure that the design of their operations includes containment of all drainage or to ensure that any potential discharge into PRH complies with the requirements of AWMA and the DEP (Alan Tingay & Associates, 1996).

Public and Agency comments

AWMA indicated in its submission that the port, as part of the works, will install a drainage system for the reclaimed area that is capable of trapping pollutants and sediments prior to discharge to the harbour. This drainage system will be developed in consultation with AWMA and the DEP.

Public submissions expressed concern in relation to the proximity of the salt and fresh water ground water tables and suggested that an inspection by an independent expert in this area is necessary to prevent any modifications in drainage leading to contamination of fresh ground water by saline water.

Concern was also raised in relation to the impact on harbour water quality from tannin in the run-off water from woodchip stockpiles.

Proponent Response

In response, the proponent indicated that all drainage plans for the new development will be provided to the DEP and AWMA during the detailed design phase (Commitment 11, Appendix 4). All specific drainage management proposals associated with stockpiles and other storage of major commodities in the future will also be provided to these authorities for comment. It is assumed that specific technical assessments and modifications may be required if it is considered that there is any possibility of contamination of groundwater or of the harbour.

The proponent further indicated that specific proposals for the management of drainage from woodchip stockpiles will need to be developed by exporting companies or by the APA. All such proposals will be referred to the EPA and AWMA for their consideration.

EPA evaluation

The EPA notes Commitment 2 to manage and monitor all dredging and reclamation operations for the proposed port expansion in accordance with a DDSDMP. This management plan will be prepared in compliance with Waterways Guidelines No. 9 published by the Waterways Commission in December 1995, and will include a monitoring programme for water quality in and within a relevant distance of the works. Water quality parameters and environmental criteria which would be used in the monitoring programme will be in accordance with Bulletin 711.

The EPA also notes proponent commitment 4 to prepare a Drainage Plan for the reclaimed land and new berth. This plan will include a drainage system designed to reduce the potential for pollution of PRH due to runoff and spills. The drainage plan will be to the requirements of AWMA and the DEP.

The EPA considers that the proponent's commitments are adequate to meet the EPA's objectives.

4.8 Dredge spoil

Objective

To ensure the project is managed during all phases to reduce unnecessary impacts and to properly manage unavoidable impacts to an acceptable level.

Existing policy

EPA Management Principle

Where possible, the EPA seeks a net improvement in environmental quality.

Waterways Guidelines No 9, 1995

These guidelines apply to management areas proclaimed under the *Waterways Conservation Act 1976*. The guidelines have been developed for the preparation of a dredging and dredge spoil disposal management plan (DDSDMP). Any operation which creates spoil should comply with these guidelines.

DDSDMP's are a standard requirement of dredging licences issued by the Commission and the local management Authority under Section 46 of the Waterways Conservation Act 1976 (as amended). Dredging licences are required for all dredging undertaken within any management area proclaimed under the Waterways Conservation Act.

These guidelines require the plan to specify:

- how the dredge operations will be conducted and what environmental management measures will be in place;
- where the dredged spoil will be placed and how it will be contained to limit the dispersion of suspended sediment; and
- a monitoring programme designed to measure a range of water quality parameters around the dredge and spoil placement areas, before, during and after dredging operations.

Technical Information

The APA, under the provisions of the Waterways Conservation Act 1976, must apply for a dredging licence for the work proposed in the CER.

Public and Agency Comments

The Town of Albany expressed concern that the proposed DDSDMP will not be subject to further public comment and an open environmental management process.

Public submissions mirrored concerns expressed by the Town of Albany in that the public should be given the opportunity to comment on the DDSDMP. Other concerns related to the loss of seagrass due to increased turbidity and the impact of sediments flowing through the channel into King George Sound.

Proponent Response

In response the proponent indicated that the DDSDMP and all monitoring data will be made available to the public through both the APA and AWMA. Any comments that members of the public may wish to make on the plan will be welcome by both authorities. Members of the public may also provide direct comment to the DEP.

EPA evaluation

The EPA notes AWMA's advice that commitments made in the CER adequately address the above factors and that these commitments enable AWMA to be fully involved in the management of the proposed dredging and reclamation, environmental monitoring programme and provision of stormwater drainage (Procedure 3, Section 6).

The EPA also notes that the DDSDMP will be prepared to the requirements of AWMA and the DEP and that this plan will be required to include a monitoring programme for water quality, levels of nutrients and heavy metals in sediments, and turbidity. This plan will also be required to contain contingency measures for sediment contamination.

The EPA also considers that the proponents commitment to make available to the public the Dredge and Dredge Spoil Disposal Management Plan and all monitoring results will address the public concern about the public availability of the plan.

The EPA concludes that the management measures outlined in the CER, and the commitments made by the proponent, meet the EPA's objective in relation to managing impacts on water quality in the long term.

5. Advice to the Minister for the Environment

The EPA has assessed the proposal by the Albany Port Authority to expand its port facilities to:

- construct a new berth at the eastern end of the Port of Albany;
- reclaim 5.5 ha of PRH to provide land backing tot he new berth; and
- dredge a basin of 6.0 ha to provide sufficient depth of water fro ship handling purposes.

In undertaking its assessment the EPA has reviewed the proponent's CER, submissions from the public and government agencies, relevant literature, and the proponent's revised environmental management commitments.

The environmental factors relevant to the proposal, the conditions and procedures, if any, to which any implementation of that proposal should be subject and other recommendations as the EPA sees fit, as required under Section 44(1) of the *Environmental Protection Act* 1986, are set out below.

5.1 Environmental factors relevant to the proposal

The EPA identified the following environmental factors as being relevant to the proposal:

(a) port development;
(b) marine habitat including seagrass;
(c) turbidity;
(d) contaminated and nutrient enriched sediments;
(e) water circulation;
(f) maintenance dredging;
(g) drainage from reclamation area;
(h) dredge spoil disposal;
(i) noise; and
(j) dust.

Environmental objectives for each factor above are given in Sections 3 and 4 and in Tables 1 and 2. The relevant environmental factors for this proposal should be read in the context of these objectives.

5.2 Conditions and procedures to be applied if the proposal is to be implemented.

The EPA has set out in Section 6 the recommended conditions and procedures to which any implementation of this proposal should be subject. These include:

(a) implementation of the proponent's commitments;
(b) requirements in relation to any changes in the proposal;
(c) maintenance of proponent status;
(d) time limits on approval;
(e) compliance auditing;

(f) environmental management; and
(g) procedures for assessing compliance and receiving advice.

The proponent should consider the relevant factors and manage to the objectives set out in Section 4. A general environmental management plan should be established for the implementation of the proposal. The plan should adopt quality assurance principles (such as those adopted in the voluntary Australian Standard ISO 9000 series) and environmental management principles (such as those adopted in the voluntary draft Australian Standard ISO 14 000 series).

Throughout the life of the proposal, the proponent shall exercise all care and due diligence in managing the proposal to ensure the protection of the environment.

As part of the management system there should be an annual audit and review. Performance indicators for each objective should be established.

5.3 Conclusion

The EPA has concluded that the proposal to develop the Albany Port (1996) can be managed to meet the objectives established by the EPA, subject to the implementation of the commitments made by the proponent (refer to Appendix 4) and the EPA's recommendations below.

5.4 Recommendations

Recommendation 1

That the Minister for the Environment note the relevant factors and environmental objectives set for each factor.

Recommendation 2

That the Minister for the Environment note that the EPA has concluded, subject to the satisfactory completion of the proponent's environmental management commitments and the EPA's recommended conditions and procedures, that the proposal can be managed to meet the EPA's objectives (see Table 2).

Recommendation 3

The EPA recommends that should the proposal be implemented then the implementation should be subject to the recommended environmental conditions set out in Section 6 of this report.

Recommendation 4

That the Minister for the Environment note the involvement of other agencies and processes in the management of environmental and other factors in relation to the implementation of this proposal:

(a) dredging will be undertaken in accordance with a dredging licence to be issued by AWMA including a Dredging and Dredge Spoil Disposal Management Plan to the requirements of AWMA and the DEP;

(b) noise and dust control is to be managed through DEP regulations and licensing requirements;

(c) **the adequacy of buffers, port access and landscaping as well as determining town boundaries is to be managed through the planning process; and**

(d) **any marine heritage issues can be managed through the provisions of the Western Australia Marine Archaeology Act.**

6. Recommended conditions and procedures

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

PROPOSAL: ALBANY PORT DEVELOPMENT (931)

PROPONENT: ALBANY PORT AUTHORITY

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, the proponent shall fulfil the commitments made in the Consultative Environmental Review, and subsequently; provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

The consolidated environmental management commitments (July 1996) were published in Environmental Protection Authority Bulletin 830 (Appendix 4) 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.

2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority 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 Proponent
These conditions legally apply to the nominated proponent.

3-1 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.

4 Time Limit on Approval
The environmental approval for the proposal is limited.

4-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the 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.

Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years.

5 Compliance Auditing

To help determine environmental performance and compliance with the conditions, periodic reports on the implementation of the proposal are required.

5-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

6 Environmental Management

6-1 Throughout the life of the proposal the proponent shall exercise all care and due diligence in managing the proposal to ensure the protection of the environment.

6-2 The proponent shall prepare and implement an environmental management plan and environmental management procedures (for example those provided for in Australian Standards 9000 and 14000 (draft) series) to manage the relevant environmental factors to achieve the objectives specified in this Bulletin, with appropriate monitoring, auditing and reporting to ensure compliance with these conditions and procedures and the ongoing protection of the environment.

6-3 If through the implementation of the procedures referred to in 6-2 the proponent identified a relevant environmental factor not listed as such in this Bulletin, the proponent shall immediately report to the Minister on that factor, a proposed objective and any proposals for management of the factor to achieve the objective.

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.

3 In connection with the following requirements, the Department of Environmental Protection will receive advice from the Albany Waterways Management Authority:

1. management of the proposed dredging and reclamation;
2. the environmental monitoring programme; and
3. the provision of stormwater drainage.

ENVIRONMENTAL COMMITMENTS

The Proponent makes the following commitments in relation to the development:

Dredging and Dredge Spoil

1. The APA will apply for a dredging licence from the Albany Waterways Management Authority (AWMA) for the proposed dredging and reclamation activities. The application will include a Dredging and Dredge Spoil Disposal Management Plan.

2. The APA will manage and monitor all dredging and reclamation operations for the proposed port expansion in accordance with a Dredging and Dredge Spoil Disposal Management Plan.

   This Management Plan will be prepared in compliance with Waterways Guidelines No. 9 published by the Waterways Commission in December 1995 and will also be to the requirements of the Department of Environmental Protection on advice of the Albany Waterways Management Authority.

3. The DDSDMP will include:
   1. specific strategies for the control of turbidity from all dredge and sediment handling activities;
   2. details of the design of cells within the reclamation area and methods for the control of dredging rates and sedimentation return flows;
   3. strategies for the control of sediment overflow during reclamation through the control of dredging rates and sedimentation based design; and
   4. a monitoring programme for water quality in and within a relevant distance of the works area, and of the levels of nutrients and heavy metals in sediments in both the dredged area and the existing stockpiled sediments which will be used for reclamation.

Note 1:

The water quality parameters and environmental criteria which will be used in the monitoring programme will be in accordance with those described in EPA Bulletin 711 for the "Protection of Aquatic Ecosystems" and "Recreational Water Quality and Aesthetics" and those in the "Guidelines for the Preparation of a Dredging and Dredge Spoil Disposal Management Plan" of the Waterways Commission (1995).

Note 2:

The environmental criteria which will be used in the monitoring programme of sediments will be the background criteria of the environmental soil quality guidelines defined in the "Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites" (ANZECC/NHMRC, 1992).

4. The monitoring programmes will commence following environmental approval of the port developments in order to establish existing baseline conditions in the dredge area, reclamation area, and the existing stockpiled sediments.

5. Additional monitoring will occur during and following construction.

6. The DDSDMP and all results of the monitoring programmes will be made available to he general pubic (Timing - prior to, during and following construction).

7. The APA will prepare a contingency plan for the treatment and disposal of any currently stockpiled or dredged sediments from PRH which may be found to have levels of contaminants which exceed the relevant ANZECC/NHMRC guidelines and which are not suitable for conventional reclamation works. The contingency plan will specify the locations and secure methods for disposal/ containment of such sediments and handling, packaging and transport procedures as appropriate. The contingency plan will form part of the DDSDMP which will be submitted to AWMA and DEP for approval. The APA will also dispose of any contaminated sediments in accordance with the approved contingency plan (Timing - prior to and during construction).

8. The APA will prepare a Dredge and Dredge Spoil Management Plan in consultation with AWMA for any maintenance dredging operations which may be required in the Port of Albany following the completion of the proposed developments.

Introduced Organisms

9. The APA will report the results of the AQIS/CSIRO survey for introduced organisms in the sediments of the proposed dredged area to the Department of Environmental Protection and AWMA prior to construction.

Noise

10. The APA will ensure that the noise regulations of the Environmental Protection Act 1986, are complied with in respect to the construction of the port developments.

Drainage

11. The APA will prepare a Drainage Plan for the reclaimed land and new berth which will include a drainage system designed to reduce the potential for pollution of Princess Royal Harbour due to runoff and spills. The drainage plan will be prepared prior to construction and to the requirements of the DEP on the advice of AWMA.

Dust

12. The APA will require contractors to ensure that no nuisance dust is generated during earthworks associated with the reclamation activities and that any requirements of the DEP relating to dust control are met.

Landscaping

13. The APA will implement landscaping plantings on the southern side of the eastern end of Brunswick Road to provide screening of port facilities from nearby residents if local residents are in agreement. (Timing - prior to developments).

14. The APA will prepare and implement a landscape plan for the proposed development area as part of the design of specific storage and loading facilities. Timing - concurrent with delineation of leases and their development).

7. Bibliography

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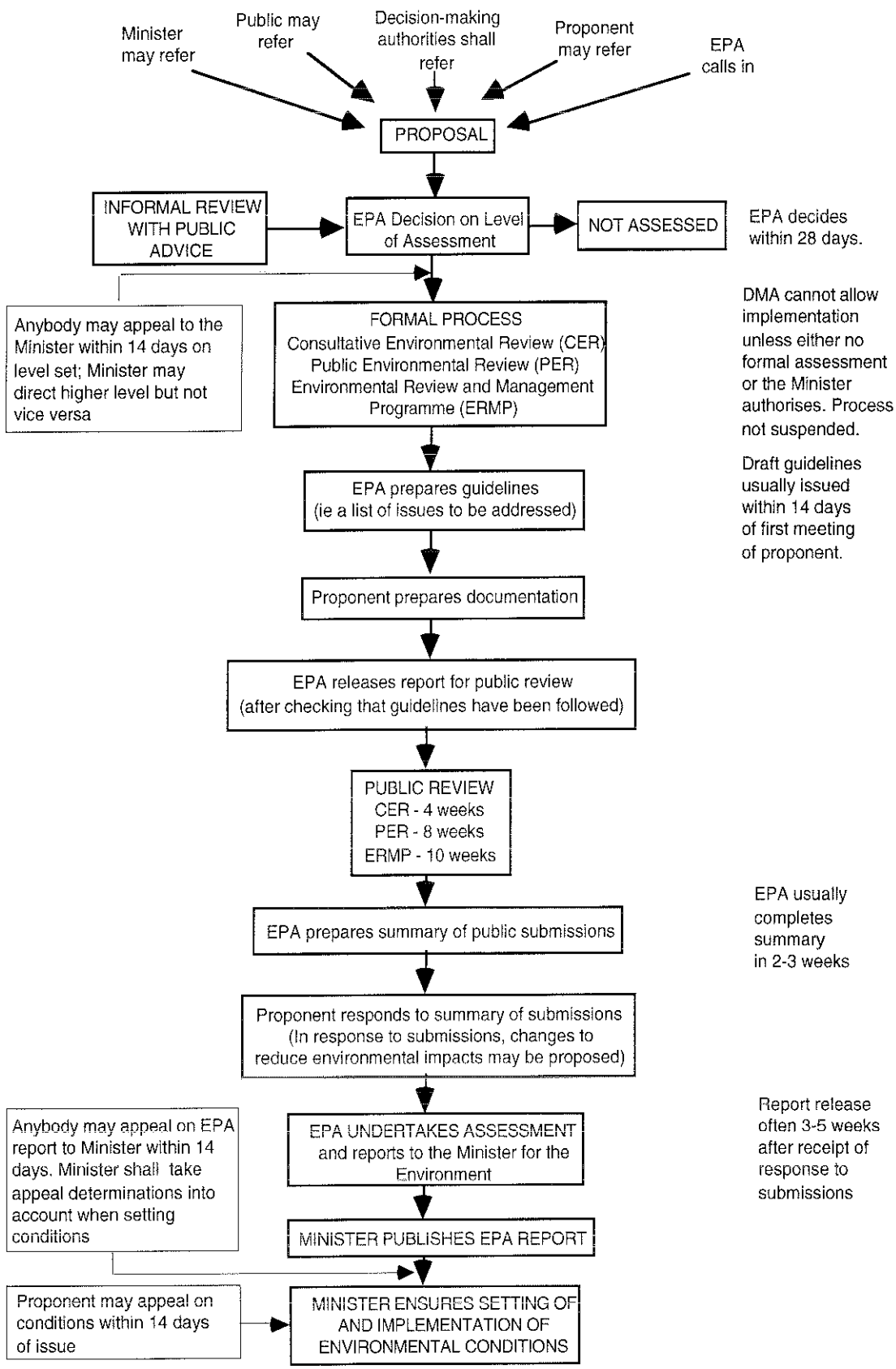
Appendix 1

Environmental impact assessment flowchart

EIA PROCESS FLOW CHART



Appendix 2

Summary of submissions and proponent's response

ALBANY PORT DEVELOPMENTS (931)

SUMMARY OF SUBMISSIONS

The public submission period for the Albany Port Development Albany commenced on 1 April 1996 for a period of four weeks, ending on 29 April 1996.

Eleven submissions have been received by the Environmental Protection Authority (EPA).

The proponent is asked to address all issues and questions.

In summary, the principal issues were identified as:

A. General
Project justification
Long term port development

B. Biophysical
Impacts from land reclamation and dredging
Impacts on marine flora and fauna
Drainage

C. Pollution
Impact on water quality
Noise, dust and odour

D. Social Surroundings
Recreational/ tourism impacts
Aesthetic and visual impacts
Impacts from increased traffic movements
Social Impacts

E. Other
Environmental Monitoring Programme
Heritage issues

A. GENERAL

1. Project Justification

1.1 A deep water berth is not required due to the shallow draught of woodchip carriers.

R1.1 The deepwater berth is required not only for woodchip exports but also for general and bulk cargoes as described in Section 2.3 of the CER. The proposal provides for dredging to a depth of 12.2m in front of the new berths which is the current preferred operational depth for the Port of Albany. This depth is provided adjacent to the existing Berth No. 3.

1.2 Simply because reclamation and dredging have occurred in the past does not provide support for further reclamation and dredging.

R1.2 The Albany Port Authority does not consider that past activities necessarily justify the present proposal. Rather, the information presented in the CER indicates that much of the area affected by the present proposal has been dredged in the past. Therefore, the proposal involves little potential for environmental impact.

1.3 Increase in exports from 1.5Mtpa to 2.9Mtpa in the next 5 to 10 years is speculative.

R1.3 The increase in exports is considered to be a definite potential rather than speculation. The extent of blue gum plantations in the Albany Region and the lack of a wood pulp mill in Western Australia are both strong indicators that export of large volumes of woodchips through the Port of Albany is likely to occur in the near future. This is supported by enquiries received by the Albany Port Authority from potential exporters. It is necessary for the Albany Port Authority (APA) to commence detailed planning for the berths due to the time required for construction.

1.4 The expected doubling in the storage and export of grain can be absorbed by current facilities.

R1.4 All increased grain exports through the Port of Albany will be accommodated by existing facilities.

1.5 The proposed annual average export of 150 000 tonnes of mineral sands can be handled with current facilities.

R1.5 The export of silica sand can be handled by current facilities but the APA may prefer to load this material on the new berths so that the existing Berth No. 3 can be allocated exclusively for grain exports.

1.6 Due to the low occupancy of Berths 1, 2, and 3, additional berths are not required for woodchip exports.

R1.6 Berth No's 1 and 2 do not have the load bearing capacity to serve as general purpose berths. They also have restricted draft and are generally not suitable for woodchip carriers. Berth No. 3 is required virtually exclusively for grain exports. This means that there is very little existing capacity for any new major export commodities.

1.7 Frozen meat exports can be handled by Berths 1 and 2.

R1.7 It is probable that frozen meat exports can be handled on Berth No's 1 and 2. However, this will depend on the size of ship involved as there is relatively shallow draft adjacent to these berths.

1.8 The statement that the proposed reclamation area will be required to store bulk and general cargo is highly speculative and does not provide grounds for reclaiming 5.5ha of Princess Royal Harbour.

R1.8 The size of the reclamation area has been determined by the quantity of fill materials available from previous (ie. 1978-1979) and proposed dredging works and the objective of providing two new berths. The APA considers that the new berths will provide the maximum development scenario for the Port of Albany for the foreseeable future.

1.9 Construction of Berth 6 is unnecessary. Construction of Berth 5 only would greatly reduce environmental impacts.

R1.9 Provision will be made for Berth No. 6 in terms of land backing but the Berth itself will not be constructed until there is a definite demand for further export facilities. The environmental implications of the proposed development are the same whether or not Berth No. 6 is constructed. The area directly affected will be very similar in both cases and it has been substantially disturbed by previous dredging operations.

1.10 Has thought been given to the future needs of berthing larger passenger ships?

R1.10 The APA is pursuing the possibility of Albany becoming a regular port for passenger ships. The new berth(s) will provide greater flexibility in handling such ships while accommodating regular export and import activities.

1.11 What serious investigations have been made on upgrading and utilising Berths 1 and 2, and why has the APA refused to release their commissioned study and Port Development Plan to the public?

R1.11 The APA considers that the upgrading of Berths 1 and 2 would not provide adequate increased capacity for the port to handle new large volume export commodities. In particular, there is no storage area available adjacent to these berths for any new commodities and therefore there is no potential for providing direct, cost-efficient load out facilities. Copies of the Port Development Plan are available for consideration at the APA office.

2. Long Term Port Development

2.1 The port is locked into a corner of land without room for real expansion. Plans for future expansion (CER Guidelines Key Issues, Point 2) have not been addressed in the CER.

R2.1 The APA does not have any further plans for port expansion beyond the proposed reclamation and construction of the new berths. It is considered that any further expansion is not likely to be necessary, and that when the new facilities are complete the port will have achieved its maximum capacity.

2.2 The port should be relocated in the western end of the harbour between Robinson and Elekar Estates as recommended by consulting engineers FWE Tydeman.

R2.2 This relocation option was considered but rejected by FWE Tydeman. Relocation of the port facilities would involve massive expenditure as well as extensive dredging within Princess Royal Harbour to provide for ship access. The cost and environmental implications are considered to be unacceptable.

2.3 Consideration should be given to the development of a strategic plan to resolve heavy transport and residential/tourist traffic conflict.

R2.3 The APA has had several meetings with LandCorp and the Town of Albany since the publication of the CER and is now satisfied that port related traffic and residential/tourist traffic on Princess Royal Drive can be managed effectively.

2.4 Future expansion of the use of land based on port infrastructure (CER Guidelines Key Issues, Point 3) has not been addressed in the CER.

R2.4 No details of stockpile and other storage requirements are provided in the CER as these will be determined by the particular needs of exporters in the future. The EPA will be notified of all such storage requirements by the APA and therefore it will have the opportunity to separately assess those proposals under the provisions of the Environmental Protection Act, 1986.

B. BIOPHYSICAL

3. Impacts from land reclamation and dredging

3.1 Due to deepening of the project area by dredging, water flow through the channel is likely to decrease reducing water exchange between the harbour and King George Sound, causing a reduction in water quality in the harbour.

R3.1 Water circulation in Princess Royal Harbour is described in Section 3.2.3 of the CER. The dredged entrance channel accelerates the speed of water entering the harbour and is an important factor in water exchange with King George Sound. The proposed development is located at the western end of the dredged channel and is more than 1 kilometre from the start of the channel in the sound. Therefore, the development essentially will not affect the channel and there is very little possibility that it will affect circulation patterns in Princess Royal Harbour.

3.2 Water circulation and flow modelling should be carried out in water tank experiments to verify flow data in the harbour.

R3.2 There is no reason to suspect that the proposed development will significantly affect water circulation and flow in Princess Royal Harbour as the entrance channel between King Point and Vancouver Peninsula will not be affected in any way. Modelling of circulation in water tank experiments is therefore not considered to be necessary.

3.3 If the APA wishes to reclaim 5.5ha it should re-establish and protect seagrass in a similar sized area in another part of the harbour.

R3.3 The proposed developments will not affect any seagrass in Princess Royal Harbour. A requirement to establish seagrass in an area equivalent to the development therefore would be unjustified.

3.4 The premise that previous reclamation/dredging did not impact on the marine environment of Princess Royal Harbour, implied in the CER, is incorrect. Data from the Waterways Commission and Murdoch University (Deeley et al 1993) show that this statement is wrong and the CER is partly misleading in providing only 1992 information for seagrass and macroalgae distributions when information goes back to 1962. It is considered that the Port is directly responsible for seagrass death in their part of the harbour.

R3.4 It is not claimed in the CER that previous reclamation and dredging in Princess Royal Harbour had no impact on the marine environment. In fact, it is assumed that seagrass beds were covered by the reclamation and removed by the extensive dredging operations. However, the extensive dredging and reclamation does not appear to have caused a decline in seagrass beyond the direct area of impact of these operations. This is supported by the fact that dredging has occurred at intervals over the past 100 years whereas significant seagrass decline in the harbour has only been reported since the 1960s. Virtually all of the extensive evidence to date indicates that this seagrass decline is associated with increased nutrient levels due to polluted inflows to the harbour.

3.5 The hard edged point that juts into the harbour from the proposed extension appears to create a nook or corner that may not be adequately scoured by water movements, thus making for a silt trap that would have to be dredged with associated potential costs and problems, which have not been adequately addressed.

R3.5 There is no evidence of significant sand movements from the west in front of the port of Albany. Any such sand movement is likely to be trapped in the dredged basins in front of Berths 1, 2 and 3 rather than accumulate adjacent to the new reclamation area. The lack of sand movement is indicated by the fact that no maintenance dredging is required in the shipping basins to remove accumulated sand.

3.6 The CER fails to describe the impact of dredging in any quantitative way and fails to give acceptable assurances that this sediment will not be deposited on seagrass communities. The CER does not address the impacts of sediments flowing through the channel into King George Sound.

R3.6 The CER presents information on water circulation patterns in Princess Royal Harbour and the distribution of seagrass both of which suggest that there is little potential for

suspended sediment from dredging operations to drift onto and affect seagrass communities. It is most likely that suspended material will settle out in the dredged area to the south of the port. The APA has also made a commitment in the CER to prepare a Dredging and Dredge Spoil Disposal Management Plan in consultation with the Albany Waterways Management Authority (AWMA) and the Department of Environmental Protection (DEP). This Management Plan will contain specific measures designed to limit sediment drift and to monitor the dredging operation to ensure that seagrass communities are protected.

3.7 Concern has been raised that the proposed Dredging and Dredge Spoil Management Plan will not be open to public comment and an open environmental management process.

R3.7 The Dredging and Dredge Spoil Management Plan and all monitoring data will be made available to the public through both the APA and AWMA. Any comments that members of the public may wish to make on the plan will be welcome by both authorities. Members of the public may also provide direct comment to the DEP.

3.8 Ongoing requirements for dredging (CER Guidelines Key Issues, Point 2) have not been addressed in the CER.

R3.8 At this stage it is not anticipated that there will be a requirement for ongoing maintenance dredging. No maintenance dredging has been required in the existing port to remove accumulated sand. However, should maintenance dredging be required adjacent to the new berths, the operations will be controlled by a Dredging and Dredge Spoil Management Plan developed in consultation with the DEP and AWMA.

4. Impact on Marine Flora and Fauna

4.1 Detailed descriptions of major marine habitats of local and regional significance which may be affected by the proposed port expansion (with the exception of seagrass beds) are not provided in the CER (CER Guidelines Key Issues, Point 3).

R4.1 No major marine habitats of local or regional significance will be affected by the proposed port expansion. This is because most of the area affected has been dredged more than once previously and as a result it does not constitute an important marine habitat.

4.2 The reduction in the aquatic environment from reclamation will reduce diversification, marine resource and long term viability.

R4.2 The proposed reclamation will not impact on any significant marine communities as any communities which may have existed in the area have been removed by previous dredging operations.

4.3 Concern about the loss of seagrass due to increased turbidity from suspended solids.

R4.3 See Response to 3.6 above.

5. Drainage

5.1 Due to the proximity of the salt and fresh water ground water tables, inspection by an independent expert in this area is necessary to prevent any modifications in drainage leading to contamination of fresh ground water by saline water.

R5.1 All drainage plans for the new development will be provided to the DEP and AWMA during the detailed design phase. All specific drainage management proposals associated with stockpiles and other storage of major commodities in the future will also be provided to these authorities for comment. It is assumed that specific technical

assessments and modifications may be required if it is considered that there is any possibility of contamination of groundwater or of the harbour.

C. POLLUTION

6. Impact on Water Quality

6.1 Spillage during bunkering, vessel loading and unloading management (CER Guidelines Key Issues Point 4.1) have not been addressed in the CER.

R6.1 The new berths will not be used for bunkering purposes. Standard procedures for controlling spillage's during the loading or unloading of bulk commodities will apply as at existing berths. Specific loading proposals for new export commodities will also be referred to the DEP and AWMA.

6.2 Release of toxic spores resulting from disturbance to the sea bed (CER Guidelines Key Issues Point 4.1) has not been addressed in the CER.

R6.2 The potential for release of toxic spores during dredging is discussed in Section 6.4 of the CER. This potential is considered to be minor. In addition, the Australian Quarantine and Inspection Service (AQIS) in association with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has recently collected sediment samples from the port area which will be analysed for the presence of introduced organisms. The APA is awaiting the results of these studies and these will be considered during the preparation of the Dredging and Dredge Spoil Disposal Management Plan.

6.3 Sampling for nutrients and contaminants in stockpiled sediments at Semaphore Point is considered inadequate for a representative sample.

R6.3 Further sampling of heavy metals and nutrient levels in the existing stockpiled sediments will be carried out as described in Section 6 of the CER. The information collected will form part of the proposed Environmental Monitoring Program and will be considered in the Dredging and Dredge Spoil Disposal Management Plan.

6.4 As sulphur has been linked to the release of heavy metals from sediments (Fannings et al 1986) and appears to be abundant in the stockpile, levels of sulphur should also be measured as part of an on-going monitoring programme.

R6.4 There are no data on the levels of sulphur in the existing sediment stockpile however, the level of heavy metals in samples analysed to date are well within generally recognised criteria. The level of sulphur will be measured as part of the proposed monitoring program if required by the DEP.

6.5 The use of stockpiled dredge sediment for reclamation is questioned in view of the pollution found in tests in the reclaimed land associated with the Albany Foreshore Development.

R6.5 The pollution levels in the reclaimed land associated with the Albany Foreshore Development are localised. There is no evidence to suggest that the stockpiled dredge sediment has any significant levels of contamination (see Section 4.4.3 of the CER).

6.6 The CER does not assess the likelihood of mobilising the nutrient rich sediment adjacent to the Town Jetty and the possible consequences of such disturbance.

R6.6 The proposed port developments referred to in this CER will not affect any area close to the Town Jetty and there is no possibility of mobilising sediments at this location.

6.7 Concern has been raised about the impact on harbour water quality from tannin in the run-off water from woodchip stockpiles.

R6.7 Specific proposals for the management of drainage from woodchip stockpiles will need to be developed by exporting companies or by the APA. All such proposals will be referred to the EPA and AWMA for their consideration. The objective in drainage management at all times will be to ensure that there is no impact on the water quality in the harbour.

6.8 Ballast water contamination from additional shipping from other areas and its management (CER Guidelines Key Issues, Point 4.1) has not been addressed in the CER.

R6.8 The management of ballast water is discussed in Section 5.5 of the CER and a specific study designed to detect any introduced organisms in the existing port is described in Section 6.4. See also Response 6.2 above.

6.9 What is the port doing to maintain/enhance the health of Princess Royal Harbour waters?

R6.9 The APA is committed to maintaining and protecting the environment of Princess Royal Harbour through the appropriate management of all of its operations. It has committed to provide management and monitoring plans for the dredging and reclamation associated with the present proposal and the information collected for these plans will assist in the overall management of the harbour.

7. Noise, Dust and Odour Problems

7.1 The proposal is likely to cause an impact on residents of Brunswick Road, as a result of noise, dust and reduced visual amenity, either from non-compliance with licence conditions (as has occurred with previous development) or incorrect evidence of the view residents will have of the proposed berths.

R7.1 The implications of the port development for residents of Brunswick Road are discussed in various sections of the CER. The nearest residence is several hundred metres from the development area and views of that area from the road are obscured by grain storage and other facilities as well as trees and vegetation. The separation distance and the intervening buildings and trees suggest that operations at the new berth will not have a significant impact on the amenity of residents.

7.2 The base of the woodchip pile will have to be of a suitable design to stop decomposition and subsequent odour problems.

R7.2 The design of woodchip stockpiles will be the responsibility of export companies and these designs will be referred to the EPA for its consideration. It is assumed that the EPA will require any decomposition and related odour problems to be effectively managed.

7.3 The dust and noise problems created by the use of bulldozers and front end loaders will impact over a wide area, both during construction and post construction with the work on stockpiles and needs to be managed.

R7.3 The APA will ensure that all construction operations are managed so that there is no potential for dust or noise problems at any residence close to the port area. The maximum predicted noise levels from all operations at the nearest residence to the proposed development area is predicted to be 54dB(A) as described in Section 5.4.2 of the CER. This complies with the assigned outdoor criteria for the nearest houses during day time. All other noise levels are likely to be considerably lower than those associated with bulldozing and therefore will easily comply with the noise regulations.

7.4 Due to the potential health danger from inhalation of silica sands and the periodic blowing of strong easterly winds along the shore and southern winds towards hill residences, regular tests of dust and wind blown sand should be conducted to ensure surrounding residences are safe.

R7.4 The present stockpile of silica sands are not part of the proposed port developments described in the CER. Nevertheless, there is no evidence to suggest that there has been any significant dispersion of sand from the stockpiles. For example, there have been no sand drifts on nearby roads, or sand accumulation on nearby buildings. The sand stockpiles are also kept in a moist condition to prevent dust.

D. SOCIAL SURROUNDINGS

8. Recreational/Tourism Impacts

8.1 Amateur fishing and recreational use by tourists and residents in the vicinity of the proposed development (CER Guidelines Key Issues, Point 3) has not been addressed in the CER.

R8.1 The impact of the proposed developments on amateur fishing and recreational use is discussed in Section 3.5 of the CER. The area involved is not used for professional or amateur fisheries purposes and does not have any recognised major tourism or recreational values.

8.2 Impacts of construction and on-going use of proposed berths on recreation and tourism, for example whale watching (CER Guidelines Key Issues, Point 4.2) has not been addressed in the CER.

R8.2 The operation of the new berths is not expected to affect any other boating or water based activities in Princess Royal Harbour. The APA recognises that whale-watching is an important tourist attraction to the region and is keen to promote this activity.

9. Aesthetic and Visual Impacts

9.1 The size of the stockpiles and loading superstructure needs to be specified before any work is approved to ensure the visual impact from tourist lookouts along the new cycle and walkway at the west end of the harbour is reduced.

R9.1 At this stage it is not possible to specify the size of woodchips stockpiles and loading facilities as these will be determined by the particular requirements of export companies. The proposals of these companies however, will be referred to the EPA for its consideration and it is assumed that the EPA will require specific visual impact analyses of any major structures. The visual analysis presented in the CER (Section 4.8) indicates that the development area is only partially visible from certain locations on Marine Drive on the slopes of Mt Adelaide from which existing port structures and other industrial buildings are already visible. The APA considers that the Port of Albany is part of the visual environment and that it adds a dimension of interest to the overall scene from vantage points. The APA however, accepts that new port structures preferably should not intrude into existing natural views. The proposed port developments will not be intrusive in this sense.

9.2 Consideration should be given to landscaping areas of to make the port more aesthetically pleasing and stabilise much of the bare ground.

R9.2 The APA is proposing to landscape areas along the south side of Brunswick Road provided that this is acceptable to residents on the opposite side of the road. It also intends to carry out progressive landscaping within the port area as development plans

for roads, storage and stockpile areas are developed. The APA has experienced difficulty however, in cultivating trees on reclaimed land possibly due to the presence of a shallow saline groundwater.

9.3 On-site and off-site buffers have not been adequately addressed in respect to the Draft Industrial Buffer Policy to ensure a suitable buffer zone between the port and homes in Brunswick Road.

R9.3 The Port of Albany has developed historically in close proximity to houses along Brunswick Road. As a result, there is no possibility of establishing more than a narrow buffer zone between the two. The Port Authority and port users must therefore, manage their activities carefully so as to ensure compliance with environmental regulations and in order to avoid creating a nuisance at nearby houses.

9.4 Visual impact from the ocean needs to be addressed.

R9.4 The new berths will constitute further development of an existing port area. The view from the ocean will be modified from the bare ground of the existing reclamation, large fuel storage tanks, and very large storage buildings, to load-out facilities and ships in berths. It is considered that there will be no visual impact but rather that the view will change and in fact will improve due to the interest associated with the shipping activity.

9.5 The port needs to be landscaped to soften the impact of the area.

R9.5 The APA will give consideration to landscaping the port development area during the design of onshore storage facilities and access roads.

9.6 Has consideration been given to locating the woodchip stockpiles at the CSBP site? What are the implications of stockpiling woodchips at the CSBP site?

R9.6 In order for ship loading to be efficient, it is generally necessary to transport large volume export commodities by conveyor from stockpiles to ships. Any stockpile located at the CSBP site therefore would involve a conveyor along the foreshore frontage past the Albany Foreshore Redevelopment area and on to the new berths at the eastern end of the port. Apart from the considerable costs involved, such a conveyor also would be a major intrusion into the foreshore area in front of the business district and would not be compatible with the Foreshore Redevelopment.

10. Social Impacts

10.1 Port extensions will further dissociate townspeople from their foreshore. This goes against the State Government stated intention to reunite the town and its foreshore.

R10.1 The proposed port developments are located at the eastern end of the port area where there is very little public access and use at present. The level of port related traffic on Princess Royal Drive will increase in the future with expansion of exports, but the Town of Albany, LandCorp, and the Main Roads Western Australia (MRWA) have all indicated that they consider that port related and public traffic can be managed through minor road improvements. It should be noted also that Princess Royal Drive was originally constructed to provide port access and was intended to separate port related traffic from the Town of Albany. Therefore, it is appropriate that the priority use of this road should continue to be for port traffic.

10.2 Do the two reference to the Port Jetty (CER page 12, Section 3.3.1) actually refer to what is more generally known as the Albany Deepwater Jetty? If so, does the APA acknowledge that this site is of cultural heritage to the Albany Community and the people of Western Australia as a whole?

R10.2 The references are to the former Albany Deepwater Jetty. The remnants of this jetty which are onshore and mostly comprise pile stumps buried in the existing reclamation area, are considered to be of historical value. These remnants will not be affected by the port developments.

10.3 What research (if any) has been done by the proponents on the real, long term employment growth prospects brought about directly by the works proposed, particularly in the light of the contemporary practices leaning towards mechanisation, bulk handling etc? How many long term jobs will this proposal create and what dollar value can be placed on the economic benefit it will bring to the local community when considered with the likely negative impact on tourism?

R10.3 It is not expected that the proposed development will generate significant additional employment at the Port of Albany as only a limited number of people are generally required for stockpile maintenance and shiploading. However, new industries in the Albany Region which require export facilities are likely to generate significant employment both directly and through general economic stimulation. The economic value of the port developments to the Albany Region therefore is likely to be considerable.

11. Impacts From Increased Traffic Movement

11.1 Truck movements should be put into a more easily understood monitoring and management context so that local residents are not simply frightened off by the figures.

R11.1 Information on truck movements is provided in Section 5.3.3 of the CER. In simple terms, It is estimated that predicted growth in exports will effectively double the number of truck movements on Princess Royal Drive from the present average of 340 per day to 700 per day but with considerably more during the grain season. These levels are not expected to affect public use of Princess Royal Drive.

11.2 Heavy transport using Chester Pass Road already causes a noise problem to residents of that area. An increase in traffic will further exacerbate the noise problem.

R11.2 The MRWA has advised that it is preparing plans for a by-pass route to the north of Albany which is intended to reduce traffic problems associated with the existing major road network. Furthermore, any company proposing to transport large volumes of commodities on Chester Pass Road for export through the Port of Albany will be required to refer their proposal to the EPA so that its implications may be considered.

E. OTHER

12. Environmental Monitoring Programme

12.1 Monitoring the effects of the proposed Environmental Management Plan (EMP) should be carried out by an organisation other than the APA, to ensure objective results.

R12.1 Most proponents engage consultants to prepare EMPs and to carry out environmental monitoring of their proposals. The work of such consultants is reviewed by such Government Agencies as the EPA and AWMA to ensure that it is comprehensive and objective.

12.2 There is no provision for monitoring seagrass communities, even though some are as close as 500 metres from dredging operations.

R12.2 It is expected that specific proposals for monitoring seagrass communities closest to the dredging operations will be incorporated in the Dredging and Dredge Spoil Management Plan.

12.3 The contingency measures proposed as part of the EMP are vague, and insufficient information is provided by the proponent to enable comment on their likely effectiveness.

R12.3 Contingency measures are described in Section 6 of the CER. These measures are specific and provide for cessation of dredging operations if sediment plumes extend beyond specified limits around the dredge area or if water quality parameters are exceeded at key monitoring locations. They also provide for repeat sampling of sediments if initial samples indicate significant levels of any contaminants. The locations of monitoring sites will be determined in consultation with the DEP and AWMA.

13. Heritage Issues

13.1 Under the Western Australian Marine Archaeology Act (1973), artefact deposits predating the year 1900, occurring under, or in the vicinity of a historic jetty structure and which were associated with the operation of, and/or, were derived from a ship, can be considered to be protected. If there are known to be (or there are likely to be) artefact deposits in the vicinity of the jetty, then that vicinity is a maritime archaeological site under the Act. Evidence suggests (Woolfe, 1994) that it is likely that artefact deposits, dating from before 1900, will be found below the site of the head and adjoining neck of the 1998-1888 section of the Albany Deepwater Jetty. This are is proposed to be dredged and therefore may in contravention of the Act.

R13.1 The area adjoining the 1887-1888 section of the Albany Deepwater Jetty has previously been dredged in 1901-1903, 1922-1923 and 1978-1979. All above surface structures including piles extending beyond the existing reclamation area have been removed. Therefore, it is considered that there is very limited potential for historical artefacts in the area which will be dredged for the present proposal. Nevertheless, the APA will seek clearance from the appropriate authorities before dredging in this area.

13.2 Concern has been raised over the conservation and management strategies (if any) that the proponents have developed to ensure appropriate treatment of the cultural and maritime heritage issues of this site.

R13.2 There are no structures which have cultural or maritime heritage significance in the proposed development area other than the remnants of the Albany Deepwater Jetty which are buried within the existing reclamation area. These remnants will not be affected by the present proposal.

REFERENCES

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Woolfe, A. 1994. The Albany Maritime Heritage Survey 1627 - 1994. Heritage Council of Western Australia, Albany Port Authority, and the Albany Maritime Heritage Association.

Appendix 3

List of submitters

State and local government agencies

Albany Waterways Management Authority
Town of Albany

Organisations

Conservation Council of WA
Friends of Princess Royal Harbour

Members of the public

Mr P Berkeloar
Mr C Brampton
Mr A Markovs
Mr A Newman
Mr T Riney
Mr P Sanford
Mr A Wolfe

Appendix 4

Summary of proponent commitments

ENVIRONMENTAL COMMITMENTS

The Proponent makes the following commitments in relation to the development:

Dredging and Dredge Spoil

1. The APA will apply for a dredging licence from the Albany Waterways Management Authority (AWMA) for the proposed dredging and reclamation activities. The application will include a Dredging and Dredge Spoil Disposal Management Plan.
2. The APA will manage and monitor all dredging and reclamation operations for the proposed port expansion in accordance with a Dredging and Dredge Spoil Disposal Management Plan.

   This Management Plan will be prepared in compliance with Waterways Guidelines No. 9 published by the Waterways Commission in December 1995 and will also be to the requirements of the Department of Environmental Protection on advice of the Albany Waterways Management Authority.
3. The DDSDMP will include:
   1. specific strategies for the control of turbidity from all dredge and sediment handling activities;
   2. details of the design of cells within the reclamation area and methods for the control of dredging rates and sedimentation return flows;
   3. strategies for the control of sediment overflow during reclamation through the control of dredging rates and sedimentation based design; and
   4. a monitoring programme for water quality in and within a relevant distance of the works area, and of the levels of nutrients and heavy metals in sediments in both the dredged area and the existing stockpiled sediments which will be used for reclamation.

Note 1:

The water quality parameters and environmental criteria which will be used in the monitoring programme will be in accordance with those described in EPA Bulletin 711 for the "Protection of Aquatic Ecosystems" and "Recreational Water Quality and Aesthetics" and those in the "Guidelines for the Preparation of a Dredging and Dredge Spoil Disposal Management Plan" of the Waterways Commission (1995).

Note 2:

The environmental criteria which will be used in the monitoring programme of sediments will be the background criteria of the environmental soil quality guidelines defined in the "Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites" (ANZECC/NHMRC, 1992).

4. The monitoring programmes will commence following environmental approval of the port developments in order to establish existing baseline conditions in the dredge area, reclamation area, and the existing stockpiled sediments.
5. Additional monitoring will occur during and following construction.
6. The DDSDMP and all results of the monitoring programmes will be made available to he general pubic (Timing - prior to, during and following construction).
7. The APA will prepare a contingency plan for the treatment and disposal of any currently stockpiled or dredged sediments from PRH which may be found to have levels of contaminants which exceed the relevant ANZECC/NHMRC guidelines and which are not suitable for conventional reclamation works. The contingency plan will specify the locations and secure methods for disposal/ containment of such sediments and handling, packaging and transport procedures as appropriate. The contingency plan will form part of the DDSDMP which will be submitted to AWMA and DEP for approval. The APA will

also dispose of any contaminated sediments in accordance with the approved contingency pan (Timing - prior to and during construction).

8. The APA will prepare a Dredge and Dredge Spoil Management Plan in consultation with AWMA for any maintenance dredging operations which may be required in the Port of Albany following the completion of the proposed developments.

Introduced Organisms

9. The APA will report the results of the AQIS/CSIRO survey for introduced organisms in the sediments of the proposed dredged area to the Department of Environmental Protection and AWMA prior to construction.

Noise

10. The APA will ensure that the noise regulations of the Environmental Protection Act 1986, are complied with in respect to the construction of the port developments.

Drainage

11. The APA will prepare a Drainage Plan for the reclaimed land and new berth which will include a drainage system designed to reduce the potential for pollution of Princess Royal Harbour due to runoff and spills. The drainage plan will be prepared prior to construction and to the requirements of the DEP on the advice of AWMA.

Dust

12. The APA will require contractors to ensure that no nuisance dust is generated during earthworks associated with the reclamation activities and that any requirements of the DEP relating to dust control are met.

Landscaping

13. The APA will implement landscaping plantings on the southern side of the eastern end of Brunswick Road to provide screening of port facilities from nearby residents if local residents are in agreement. (Timing - prior to developments).

14. The APA will prepare and implement a landscape plan for the proposed development area as part of the design of specific storage and loading facilities. Timing - concurrent with delineation of leases and their development).