Service vessel facility, Princess Royal Harbour, Albany

Albany Port Authority

Report and recommendations
of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 820
June 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 21 June 1996.

Environmental Impact Assessment Process Timelines

Date	Timeline commences from receipt of full details of proposal from proponent for public review	Time
13/05/96	Proponent Document Released for Public Comment	2 weeks
27/05/96	Public Comment Period Closed	
28/05/96	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	1 day
29/05/96	Final Proponent response to the issues raised	1 day
07/06/96	EPA reported to the Minister for the Environment	9 days

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Assessment No. 1028

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 construct a service vessel facility in Princess Royal Harbour (PRH), Albany.

The proponent, the Albany Port Authority (APA), proposes to improve its facility for mooring of existing service vessels and a new large tug. The proposal involves the disturbance of approximately 3.1 ha of seabed by dredging and reclamation and the construction of a breakwater and three jetties (See Section 2 for a detailed description of the proposal).

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

- dredging and reclamation of a portion of Princess Royal Harbour;
- impact on marine habitat including seagrass; and
- maintenance of water quality within service vessel facility embayment in the short and long term.

Following evaluation of the environmental issues, 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	That, if the Minister provides environmental clearance so that the proposal may be implemented, that clearance be subject to 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 construct a service vessel facility in Princess Royal Harbour (PRH), Albany.

1.2 Background

The proposal to construct a service vessel facility in PRH was referred to the EPA in September 1995. This document was subsequently revised to incorporate issues raised by the Albany Waterways Management Authority (AWMA) and resubmitted to the EPA in February 1996.

An informal level of assessment was set on the proposal by the Chairman of the EPA on 1 March 1996. An appeal was received against this level of assessment and following consideration of this appeal, the Minister for the Environment requested that the proposal be assessed under Part IV of the *Environmental Protection Act 1986* as a Consultative Environmental Review (CER). The Minister requested that the assessment of the proposal be completed within 5 weeks.

The location of the Service Vessel Facility is shown in Figure 1.

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 (Halpern Glick Maunsell, 1996 (b)).

Section 3 explains the method of assessment and provides a summary of the topics raised through the setting of guidelines and in public submissions. From these topics and others raised throughout the assessment process, those considered to be issues that require further evaluation by the EPA are identified. A table summarising this process is provided (Table 1).

Section 4 sets out the evaluation of the key environmental topics associated with the proposal. Each issue is dealt with in its own subsection, which initially states the objectives of the assessment for that issue. 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 issue 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 are provided in Section 7.

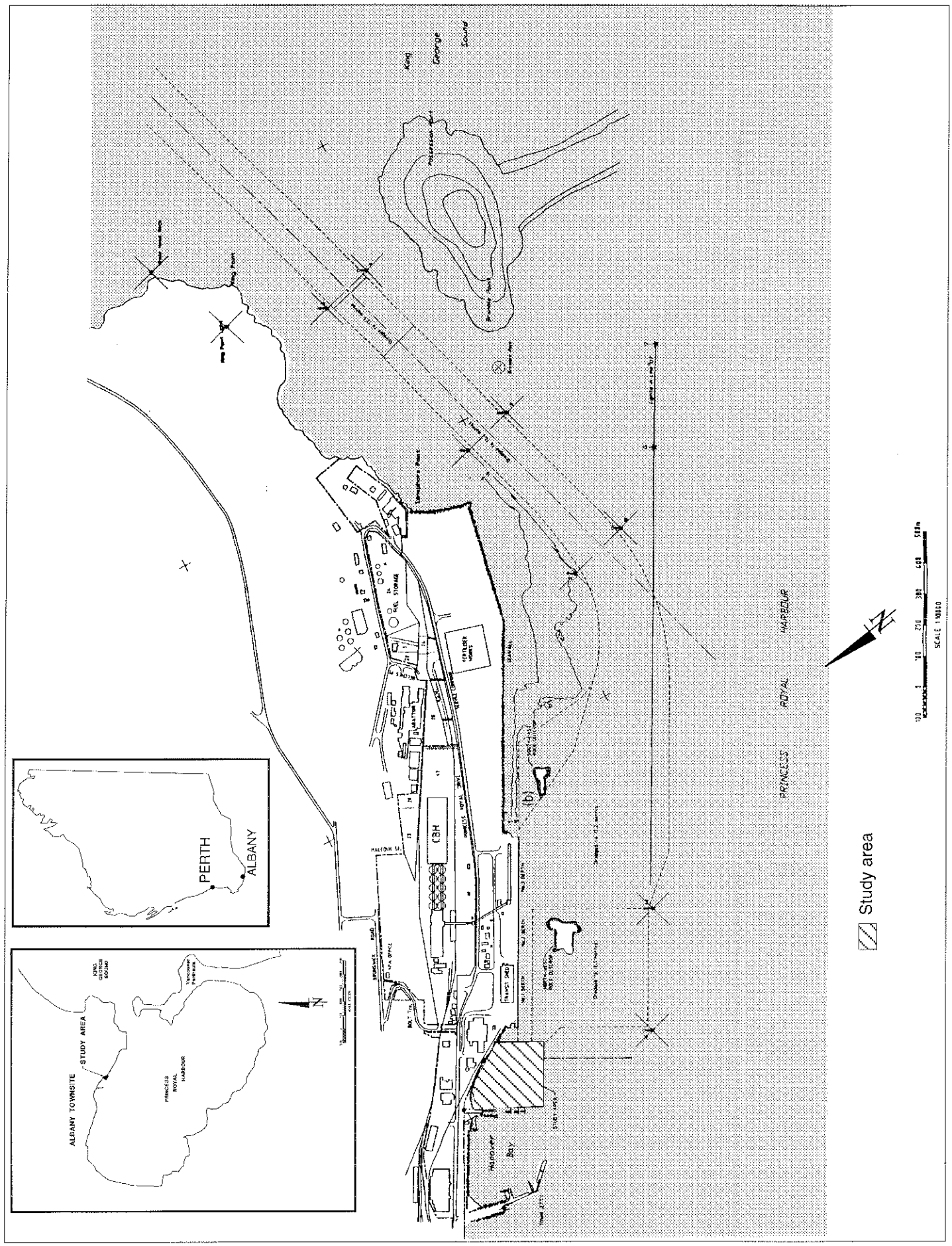

Figure 1. Map indicating the location of the service vessel facility (Halpern Glick Maunsell, 1996).

2. Summary description of the proposal

The APA proposes to improve its facility for the mooring of existing port service vessels and for a new large tug. The location and the extent of the proposed development is shown in Figure 2.

The proposal involves:

- dredging of approximately 25,000 cubic metres (m^3) (1.6 hectares) of material to provide a maximum water depth of -6m CD (Chart Datum);
- reclamation of 0.4 hectares of PRH using dredge spoil;
- establishment of a coarse sand beach fronting the reclamation area;
- construction of a rubble mound breakwater, approximately 250 metres long, using locally available quarry materials; and
- the construction of three steel piled jetties to provide permanent mooring for two tugs, a pilot boat and line boat.

Figure 2 shows the extent of the existing service vessel facility site (A) and the proposed development of that site (B).

3. Identification of issues

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 topics to be considered. A list of topics (or possible issues) was identified by the DEP, through the preparation of guidelines.

These topics 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 two weeks between 13 May 1996 and 27 May 1996, during which six 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 topics 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.

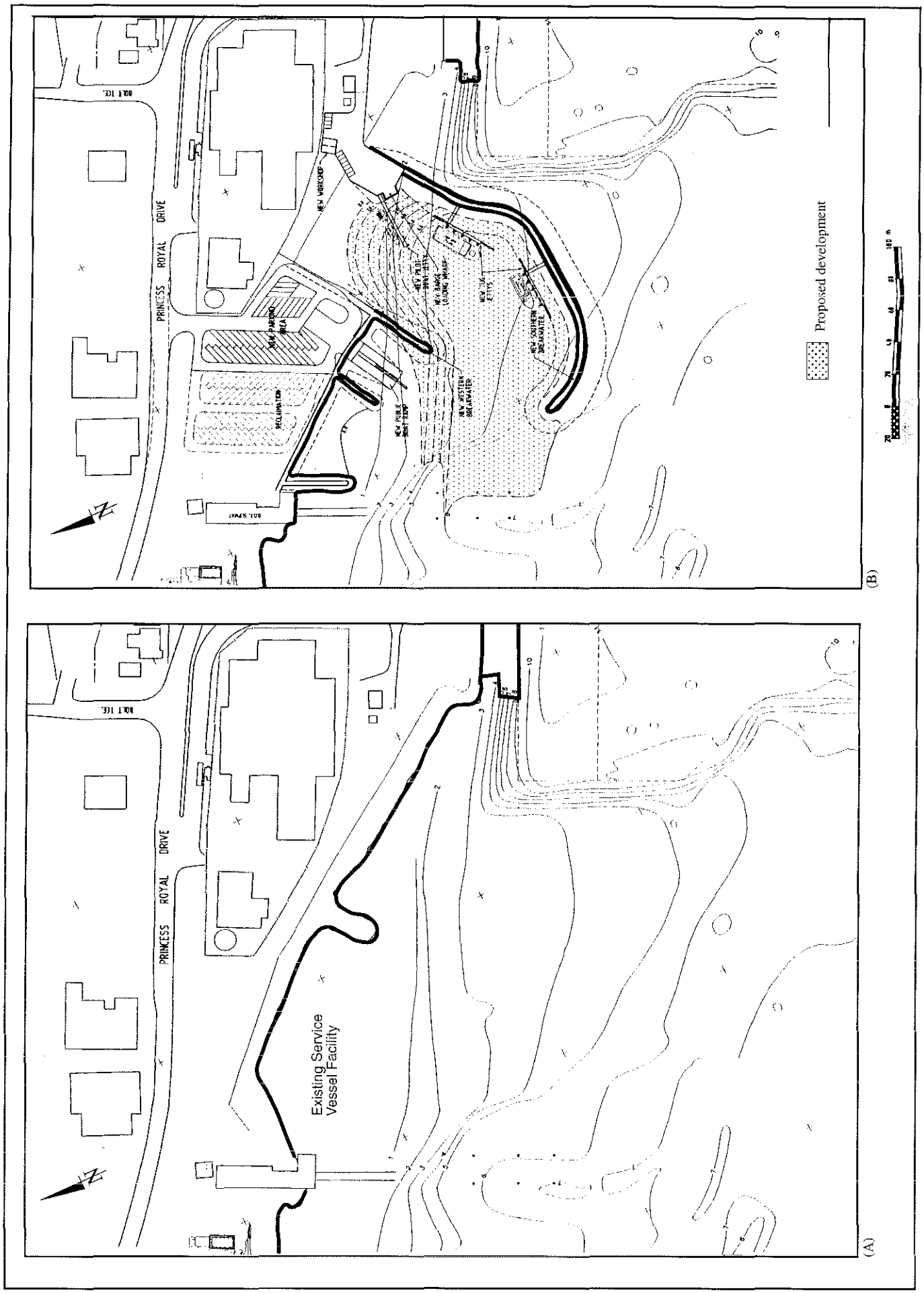

Figure 2. Existing development (A) and proposed development (B) (Halpern Glick Maunsell, 1996 (b)).

Thirteen environmental topics varying in significance have been identified. The EPA has considered all the topics and identifies those that do not require further evaluation. Often those topics can be addressed through the processes of other agencies or are no longer relevant to the proposal. The remaining topics are considered to be issues of environmental significance that require further evaluation by the EPA.

For each environmental issue, 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 achieve the assessment objectives, there is no need for the EPA to make recommendations to the Minister for the Environment on that issue, otherwise the EPA may recommend conditions and procedures necessary to achieve the EPA's objectives. Where the proposal has unacceptable environmental impacts, the EPA can advise the Minister for the Environment. The Minister for the Environment 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 followed the *Environmental Impact Assessment Administrative Procedures 1993*. In addition to following the administrative procedures, DEP officers undertook discussions with the proponent and site visits.

The EPA recognises that further studies and research may affect the conclusions. 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 public submission period between 13 May 1996 to 27 May 1996, six 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:

- 3 from members of the public;
- 1 from an organisation; and
- 2 from State and other government agencies.

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

Biophysical impacts

Coastal Stability
Impact on seagrass

Pollution issues

Turbidity

Other

Justification for new proposal
Alternative locations
Community issues (including boat ramp facilities)
Maritime heritage

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

3.3 Review of topics

3.3.1 Identification of topics

Thirteen topics were raised during the environmental impact assessment process including those topics identified in the guidelines for the CER, subsequent consultations and the submissions described above. The topics are as follows:

Biophysical impacts
coastal stability
loss of seagrass
impact on nearshore marine habitat
water circulation

Pollution Potential
water quality
turbidity
noise and dust control

Social surroundings
visual impact

Other
alternative locations
community issues (including boat ramp facilities)
maritime heritage artefacts

The EPA has evaluated the above topics 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 topic is discussed below in order to identify those issues warranting further evaluation by the EPA.

3.3.2 Identification of issues requiring EPA evaluation

Biophysical impacts

Impact on nearshore marine habitat, including seagrass

The major benthic marine habitats within and adjacent to the project area consist of bare sandy sea floor, patchy seagrass clumps of *Posidonia australis* and *Amphibolus antarctica*, and degraded *Posidonia sinuosa* meadow (Halpern Glick Maunsell, 1996(b)).

The construction of a service vessel facility through dredging and reclamation will have a direct impact on seagrass through the loss of 0.3ha of patchy *P. australis* and *A. Antarctica* and 1.8ha in which there are isolated patches of *P. sinuosa*. The area of seagrass habitat that will be lost

(0.3ha to 2.1ha) represents between 0.1% and 0.2% of the total seagrass area in the harbour (291 to 1256ha) (ERM Mitchell McCotter, 1995).

This topic has been identified as an issue which requires further and detailed evaluation by the EPA (See Section 4.2).

Coastal Stability

One submission raised the issue of coastal stability in relation to sand drift. The comment suggested that given the proposed beach within the Albany Foreshore Redevelopment Project could cause sand drift towards the Town Jetty, then the same could happen with regard to the service vessel facility proposal.

The proponent has advised that the CER for the Albany Foreshore Redevelopment identifies that the dominant water movement in the area is in an easterly direction. Any sand drift, should it occur, would therefore be away from the jetty. In addition, the construction of the breakwaters to the west and east of the proposed beach will ensure that beach sand is confined to the embayment.

AWMA advised that the two smaller breakwaters to be constructed to contain the proposed beach (for small boat launching/ retrieval) will effectively prevent the movement of sand over nearby seagrass areas and the boat ramp itself.

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

Water quality circulation within the service vessel facility embayment

A semi-enclosed embayment of approximately 1.5ha will be formed through the construction of the main southern breakwater and the smaller western breakwater. Water circulation of this proposed embayment is likely to be maintained through winds, tides and gravitational forces, to ensure that the water quality remains at or near that of the surrounding harbour.

This topic has been identified as an issue which requires further and detailed evaluation by the EPA (See Section 4.3.2).

Pollution Potential

Short term impact on water quality during construction (turbidity)

Dredging and reclamation activity associated with construction of the facility is likely to have an impact on water quality.

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

This topic has been identified as an issue which requires further and detailed evaluation by the EPA (See Section 4.3.1.1).

Long term impact on water quality in Princess Royal Harbour

Floating contaminants such as oil and grease from fish processing facilities in PRH may accumulate in the eastern part of the embayment, particularly under westerly wind conditions.

This topic has been identified as an issue which requires further and detailed evaluation by the EPA. (See Section 4.4)

Maintenance dredging

The ongoing maintenance of the semi-enclosed embayment in terms of depth is important to ensure a safe and navigable waterway.

This topic has been identified as an issue which requires further and detailed evaluation by the EPA (See Section 4.3.2).

Mobilisation of contaminated and nutrient enriched sediments

Sediments will be disturbed during dredging activities. Section 4.4 of the CER details sediment contamination levels found in sediment samples immediately beneath the seabed to a depth of 100 millimetres. Sampling indicated that none of the analytes measured in sample locations (1-6) 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).

This topic has been identified as an issue which requires further and detailed evaluation by the EPA (See Section 4.3.1.2).

Noise and dust control

The management of dust and noise are subject to DEP requirements and noise regulations of the Environmental Protection Act, 1986 (respectively). 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.

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

Stormwater management

A number of stormwater drains discharge into PRH in the vicinity of the proposed facility. The semi-enclosed embayment will not necessitate modification to the existing stormwater discharge arrangements, on the basis of water quality.

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

Social surroundings

Visual amenity

The service vessel facility is consistent with port-related developments. The proponent has made a commitment to ensure that the visual amenity of the Albany Foreshore is not unduly affected by the proposal. 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 detailed assessment by the EPA.

Alternative locations for the service vessel facility

Three sites were considered for the service vessel facility:

1. Remain at the Town Jetty with construction of new tug and pilot boat berths;
2. Construction of new berths to the east of Berth No. 3, adjacent to the planned land reclamation for the Port of Albany; and
3. Construction of a new service vessel facility to the west of Berth No. 1.

The preferred site (Option 3), is the subject of this assessment.

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

Community issues

Issues that were raised in submissions focussed on lack of community consultation and that the CER should have acknowledged the positive public recreational benefits of the proposal. The Ministry for Planning commented that the relocation of the existing public boat launching ramp represents safety advantages to local small boat owners as it is less exposed, however, the provision of a single public boat ramp may be inadequate to meet local requirements. The Ministry for Planning also stated that the reclamation associated with the project will supply additional space for parking adjacent to the boat ramp. This additional space may facilitate parking requirements in the event of extra boat ramps being provided and that there would also appear to be sufficient space west of the ramp to accommodate additional ramps.

The proponent advised that community consultation occurred as a result of the Foreshore Development project and that within the overall concept for the development the service vessel facility was extensively discussed.

The proponent also stated that the project will provide a much needed boat launching facility that cannot be accommodated elsewhere if the Albany Foreshore Redevelopment project goes ahead. The positive public recreational benefits that will arise from the proposal also include a public beach, specifically constructed to provide ease of public access, the ability for dinghy launching from the beach, recreational fishing from the groynes and increased public use of an area that currently has little attraction.

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

Maritime heritage artefacts

The entire foreshore area, including the area proposed for the service vessel facility has been assessed for its potential to contain maritime heritage artefacts. The service vessel facility site was assessed as not having high potential for artefact occurrence.

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

3.3.3 Summary

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

Topic	Proposal Characteristics	Government Agency Comments	Public Comments	Identification of Issues
Biophysical				
Impact on nearshore marine habitat, including seagrass	Dredging and reclamation will cause the direct loss of seagrass.	**DEP** - dredging and reclamation will impact on 0.3ha of patchy *Posidonia australis* and *Amphibolus antarctica* and 1.8ha in which there are isolated small patches of *Posidonia sinuosa* . **AWMA** - the impact on the seabed and seagrass will be localised. The service vessel facility in this location could protect other areas of the harbour which might be regarded as being more sensitive.	Concern was expressed with regard to loss of fish nursery grounds. Given that there will be a direct loss of seagrass, the proponent should fund the protection or re-establishment of a similar area of seagrass elsewhere in the harbour.	EPA evaluation required. (Issue 2, Table 2).
Coastal Stability	A semi-enclosed embayment of approx 1.5ha will be formed.		Sand drift over Town jetty.	Drift, if any, expected to be in opposite direction. This topic does not warrant further assessment by the EPA.
Water circulation	A semi-enclosed embayment of approx 1.5ha will be formed.			The issue of water circulation changes in relation to water quality is evaluated in the context of long term impact on water quality. (Issue 4, Table 1).
Pollution				
Short term impact on water quality (including turbidity)	Reclamation and dredging works.	**DEP** - increase in water column turbidity associated with dredging will be temporary. **AWMA** - Dredging/ reclamation will be undertaken in accordance with a licence to be issued by AWMA. All dredged spoil should be pumped to the foreshore and discharged within the bunded foreshore reclamation area.	The public should be given the opportunity to comment on the conditions proposed in the dredging and reclamation licence.	This issue is evaluated in the context of short term impact on water quality. (Issue 3, Table 1).
Mobilisation of contaminated and nutrient enriched sediments.	Dredging of approx 25,000m^3 of sediment.			This issue is evaluated in the context of short term impact on water quality. (Issue 3, Table 2).
Long term impact on water quality in Princess Royal Harbour.	A semi-enclosed embayment of approx 1.5ha will be formed. Possible trapping of floating contaminants.	**DEP** - notes management strategy to remove oil and grease and provision for maintenance dredging if required. Oil spill contingency plan to be extended by APA to cover service vessel facility.		This issue is evaluated in the context of long term impact on water quality. (Issue 4, Table 2).
Noise and Dust Control.	Reclamation, earthworks and construction may generate dust and noise.	**DEP** - the management of dust and noise is a standard requirement associated with construction and reclamation activities.		Subject to DEP requirements and regulations. This topic does not warrant further assessment by the EPA
Stormwater drainage.	Drains discharge into a semi-enclosed embayment of approx 1.5ha which will be formed.	**DEP** - notes that the semi-enclosed embayment will not necessitate modification to the existing stormwater discharge arrangements on the basis of water quality.		This topic does not warrant further detailed assessment by the EPA
Maintenance dredging.	Dredging works required.	**DEP** - notes proponent's commitment to undertake maintenance dredging if required.		The issue of water quality effects on maintenance dredging is evaluated in the context of long term impact on water quality. (Issue 5, Table 2).

Table 1. Identification of issues

Social Surroundings				
Visual impact.	Construction of breakwater and jetties.	**DEP** - notes that the proposal is consistent with port-related developments and is similar in nature to other existing development in the vicinity.		This topic does not warrant further assessment by the EPA.
Alternative sites.	Three options considered. proposal is the preferred option.	**DEP** - preferred option offers protection, direct access from Port Authority land where onshore facilities and parking may be developed, controlled access and security. **AWMA** - proposed service vessel facility offers strategic benefits in terms of planning and environmental protection in the harbour. Concentrating the service vessel facility in this area could protect other areas of the harbour which might be regarded as more sensitive in relation to seagrass. The service vessel facility will enhance the public's use and enjoyment of the harbour.	Placement of vessel facility at the end of the refurbished town jetty. Simple jetty arrangement possible. Necessity of protection from storm damage question.	This issue is evaluated in the context of dredging and reclamation of a portion of Princess Royal harbour. (Issue 1, Table 1).
Community issues.	Service vessel facility will enhance the public's use and enjoyment of the waterway.	**DEP** - notes consultation was held with a number of agencies. **AWMA** - Positive recreational benefits of the proposal should be acknowledged. **MfP** - The relocation of the existing public boat launching ramp represents safety advantages to local small boat owners as it is less exposed. The provision of a single public boat ramp, however, may be inadequate to meet local requirements. The reclamation associated with the project will supply additional space for parking adjacent to the boat ramp, which may facilitate parking requirements in the event of extra boat ramps being provided. Sufficient space west of the ramp, is provided to accommodate additional ramps.	Lack of community consultation.	Consultation part of Foreshore Development project: this topic does not warrant further assessment by the EPA.
Maritime heritage artefacts.	Historical value of town jetty.	**DEP** - notes entire foreshore area has been assessed for potential to contain maritime heritage artefacts. Service vessel facility site was not assessed as having high potential for artefact occurrence.		This topic does not warrant further assessment by the EPA.

Table 1. Identification of issues (cont'd).

The issues identified in Table 2 as requiring further evaluation by the EPA are:

1. dredging and reclamation of a portion of Princess Royal Harbour. This issue focuses on the three locations considered for the service vessel facility;

2. impact on marine habitat, including seagrass; and

3. maintenance of water quality within the service vessel facility semi-enclosed embayment, short and long term impact.

   (a) short term impact- This issue combines the following topics:
   - turbidity arising from dredging and reclamation
   - mobilisation of contaminated and nutrient-enriched sediments

   (b) long term impact- This issue combines the following topics:
   - water circulation
   - maintenance dredging

4. Evaluation of key environmental issues

4.1 Dredging and reclamation of a portion of Princess Royal Harbour

Objective

To protect the environmental values of Princess Royal Harbour, in particular marine ecosystems.

Existing Policy

Albany Harbours Environmental Study 1988 - 1989. EPA Bulletins 412 and 426.

The Albany Harbours Environmental Study was prepared in 1990 for the EPA by the Albany Harbours Technical Advisory Group. Bulletins 412 and 426 summarise work undertaken during 1988 and 1989 on the state of Princess Royal and Oyster Harbours. 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, 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

Issues	Environmental Objective	Evaluation Framework	Proponent's Commitment	EPA Recommendation
1. Dredging and reclamation of a portion of Princess Royal Harbour.	To protect the environmental values of Princess Royal Harbour, in particular the marine ecosystem.	Consideration of three locations for the service vessel facility. Compliance with AWMA policy.	Not required.	Not considered necessary.
2. Impact on marine habitat, including seagrass.	To ensure the ecological function of Princess Royal Harbour is maintained.	Protection of seagrass.	Restrict direct impact on seagrass and reclamation to a maximum area of 0.3ha (Commitment 1). Monitor seagrass over transects as determined by AWMA, before and after dredging operations in accordance with dredging licence (Commitment 2). Manage off-site impacts so that suspended material is confined to the requirements of AWMA (Commitment 3).	Proponent's commitments are considered adequate and consistent with AWMA policy.
3. Short term impact on water quality: turbidity.	To manage dredging and reclamation activities so that Waterways Commission guidelines are met.	Compliance with Waterways Commission guidelines.	Impacts from dredging and reclamation will be monitored in accordance with the dredging licence to be issued by AWMA (Commitment 2).	Proponent's commitments are considered adequate. Issue can be managed by dredging licence provisions.
4. Short term impact on water quality: mobilisation of 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.	Not considered necessary.	Tests indicate compliance with ANZECC/NHMRC guidelines.
5. Long term impact on water quality.	To manage potential sources of water quality impairment from operation and maintenance of the facility and not exacerbate affects of other discharges.	Maintenance of water quality.	A management strategy will be developed to remove any floating matter such as oil and grease from fish processing facilities , which accumulate within he service vessel facility (Commitment 6). Maintenance dredging, if required, will be undertaken in accordance with the requirements of AWMA (Commitment 7).	Proponent's commitments are considered adequate. AWMA responsible for ongoing water quality management.

Table 2. Summary of Environmental Protection Authority recommendations

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 FA1 *(This foreshore area policy is detailed in AWMA's policy manual)*

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.

Technical/ background information

The volume of trade through the Port of Albany is steadily increasing and there is a requirement for an additional tug to work in the Port (Halpern Glick Maunsell, 1996 (b)).

During the planning for the provision of a new berth for this vessel, the facilities for the existing service vessel came under review. The pilot boat, line boat and single tug currently have berths at the Albany Town Jetty. The jetty is being refurbished as part of Landcorp's Albany Foreshore Development Project (ERM Mitchell McCotter, 1995).

The planned jetty works are focused towards providing an improved public facility catering for commercial tourist operators an the loading/ unloading of commercial fishing boats. This is not compatible with APA requirements and will result in a reduction in the security of permanent moorings (Halpern Glick Maunsell, 1996 (b)). Three alternative locations for the service vessel facility were considered:

1. Remain at the Town Jetty with construction of new tug and pilot boat berths ["a" in Figure 3];

2. Construction of new berths to the east of Berth No. 3, adjacent to the planned land reclamation for the Port of Albany ["b" in Figure 3]; and

3. Construction of a new service vessel facility to the west of Berth No. 1 ["c" in Figure 3].

Comments from key agencies/interest groups

AWMA's policy stance is that reclamation and/ or a loss of seagrass can only be justified for a development if that development can be shown to be in the public's interest, and in particular is considered essential for either:

- the operational requirements of the port;
- the safeguarding of the waterways environment;
- the maintenance of safe navigation; or
- the maintenance or enhancement of the public's use and enjoyment of the waterway.

AWMA is of the opinion that the proposed service vessel facility satisfies the above policy criteria, as the provision of a service vessel facility is an essential element of any working port and the facility will enhance the public's use and enjoyment of the harbour.

With regard to the sites considered for the proposed service vessel facility, AWMA advised that options 1 and 2 were not practical or desirable. For example, protection of the vessel in the existing deepwater where there is no seagrass would be impractical as no breakwater could be used.

AWMA further advised that the location of any service vessel facility west of the Town Jetty would require considerable dredging and impact on high quality seagrass beds and that the location of any service vessel facility east of the proposed site would require a substantial breakwater to be built and impact on a large area of seabed, as well as altering circulation patterns to the possible detriment of the harbour.

AWMA concluded that given the Albany Foreshore Redevelopment project will take up the area around the Town Jetty, the location of the service vessel facility, as proposed, would appear to be the most environmentally acceptable location. This is because the site is located as close as feasible to the port and its dredged channels without impinging on the port's operations. The need for dredging and likely impact on seagrass beds is also reduced, particularly as seagrass in the area is already of a poor quality due to ongoing port operations.

AWMA also considers that combining both public and the port's boating facilities in the one area is seen to be beneficial in the strategic planning and management of the harbour as the separation of these activities would create the need for the greater dredging, impact on seagrass and development of foreshore areas.

The Ministry for Planning commented that the proposal is complementary to the current town foreshore development proposal.

One submission from a member of the public suggested that the vessel facility could have been placed at the end of the refurbished town jetty, providing adequate security, whilst enhancing the tourist attraction of the area. It was also suggested that protection from storm damage may not be warranted and asked the proponent to consider a simple jetty arrangement to minimise environmental damage (see Appendix 2).

Response from the proponent

The proponent in response indicated that the construction of the facility (Option 3) will provide an opportunity to reclaim an area of land between the western breakwater and the DOT slipway to provide an improved parcel of land that can be used for public marine activities and provide a buffer between Albany Port Authority operations and commercial development of the foreshore.

Option 1 (remaining at the jetty) was not considered a satisfactory solution as there would be no improvement in the degree of protection from the weather, and security and access requirements would conflict with the planned foreshore development.

With regard to storm protection and a simple jetty arrangement (see Appendix 2), the proponent indicated the level of protection is an issue for all users of the Town Jetty and those seeking permanent moorings on the northern side of Princess Royal Harbour. Although the existing tug does remain at its berth in storm conditions, it is attended, and all berths beyond the end of the embankment, including mooring pens on the new jetty extension, may only be considered as fair weather moorings. For safe permanent mooring adjacent to jetty structures, full protection as provided by a rock breakwater is required. A jetty structure as outlined in Attachment 1 is not adequate in this location (Refer to Appendix 2).

EPA Evaluation

The EPA notes that three sites (or options) were considered for this facility, and that these are indicated in Figure 3.

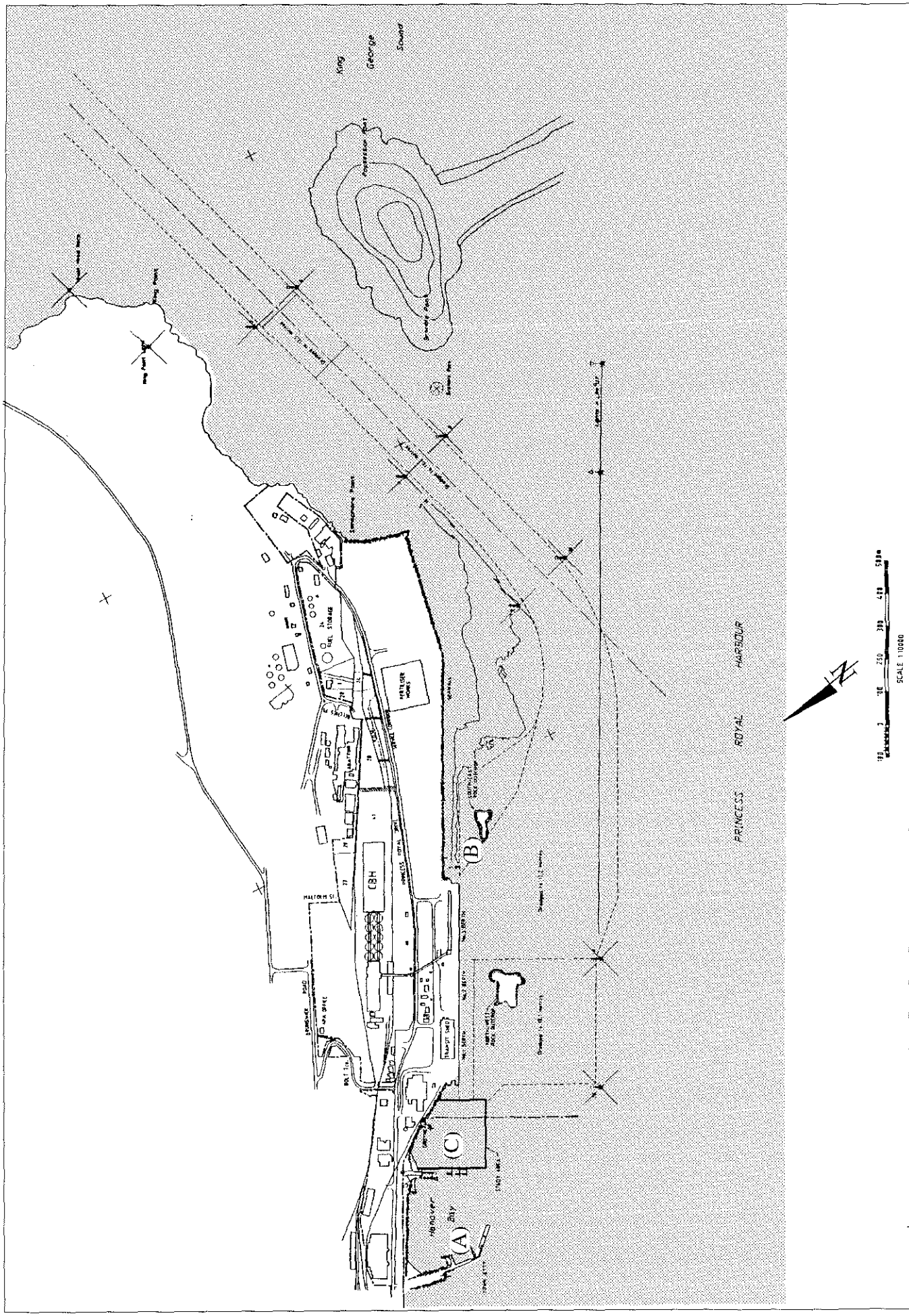

Figure 3. Sites considered for the location of the service vessel facility (Halpern Glick Maunsell, 1996 (b)).

The EPA notes:

- Option 1 (remaining at the town jetty) access requirements would conflict with the planned foreshore development and the use of the facility by Port Authority craft would conflict with long term development of the area. The EPA also notes that the location of any service vessel facility west of the Town Jetty would require considerable dredging and impact on high quality seagrass beds.
- Option 2 (construction of berths to the east of Berth No 3, adjacent to the planned land reclamation for the Port of Albany) would compromise development of new berths between Berth No. 3 and Berth No. 5. The EPA also notes if the service vessel facility was built in this location, the development would impact on a large area of seabed, alter circulation patterns and require a substantial breakwater to be built.
- Option 3 (the preferred option on which this proposal is based) does not impact on existing or future Port development, direct access is obtained from APA land where onshore facilities and carparking may be developed, access to the craft can be controlled, and an appropriate level of security obtained. The EPA also notes the this preferred site is close to the port and dredged channels and the need for dredging and likely impact on seagrass beds is reduced, particularly as seagrass in the area is of poor quality.

The EPA notes AWMA's view that the location of the proposed service vessel facility (Option 3) offers strategic benefits in terms of planning and environmental protection of the harbour, as the site is located as close as feasible to the port and its dredged channels without impinging on the port's operations. The need for dredging and impact on seagrass beds is therefore reduced, as seagrass in the area is already of a poor quality.

The EPA concurs with AWMA's comments in relation to the preferred location (Option 3) for the service vessel facility and recognises that concentrating the service vessel facility in this area could reduce development pressures on other areas of the harbour which might be regarded as being more sensitive in relation to seagrass.

Accordingly, the EPA has concluded that the proposed reclamation and dredging of PRH can meet the EPA's objective of protecting the environmental values of Princess Royal Harbour.

4.2 Impact on marine habitats, 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 concluded that seagrass communities have declined, and that the water in the harbours is enriched with nutrients, resulting in the accumulation of macroalgae and a further decline of seagrass communities.

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

This programme was drafted to provide strategies and actions to address the issues facing the Albany waterways, with the overall aim of improving and maintaining the ecological health of the Albany harbours.

The programme is designed to guide AWMA's operations, and to provide direction for other organisations, agencies and groups in waterways management.

AWMA's Draft Policy FA1 *(This foreshore area policy is detailed in AWMA's policy manual)*

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

Pursuant to this policy, developments proposed within the Albany harbours are required to undertake a survey of seagrass, and assess the loss of seagrass likely to result from the development.

The policy seeks to better educate all parties of the effects of development on seagrass, rather than encouraging a blanket 'no' to any development over seagrass.

Technical information

The marine habitat in the project area was mapped during November 1995 (see Figure 4), and is described in Section 4.2 of the CER.

The three principal habitats that occur in the vicinity of the proposed development are:

- bare sandy seafloor which forms a band from the shoreline to approximately 1.65m CD;
- patchy *Posidonia australis* and *Amphibolus antarctica* covered in varying degrees of epiphytic growth occurring between 1.65m and 2.75m CD; and
- degraded *Posidonia sinuosa* meadow extending seaward from approximately 2.75m CD. This seagrass is either completely absent or occurs in a few isolated patches (Halpern Glick Maunsell, 1996).

Comments from key agencies/interest groups

AWMA and the Water and Rivers Commission are opposed in principle to the reclamation of the harbour and loss of further seagrass beds. However, AWMA also accepts that there may, at times, be developments proposed which require reclamation or a loss of seagrass but which can be argued to be justified on the basis of their public good. Examples of development that might be considered acceptable, even with a degree of seagrass loss, would be facilities deemed essential for the operational requirements of a port, facilities required for the amenity use of the harbours, or works to protect the environmental quality of the harbours.

AWMA is satisfied that the provision of a port services facility is a necessity for the port's operations (in accordance with its Draft Policy FA1), and that a boat ramp is required in this location. Both facilities, by their nature, require a foreshore location and an impact on the waterway is inevitable.

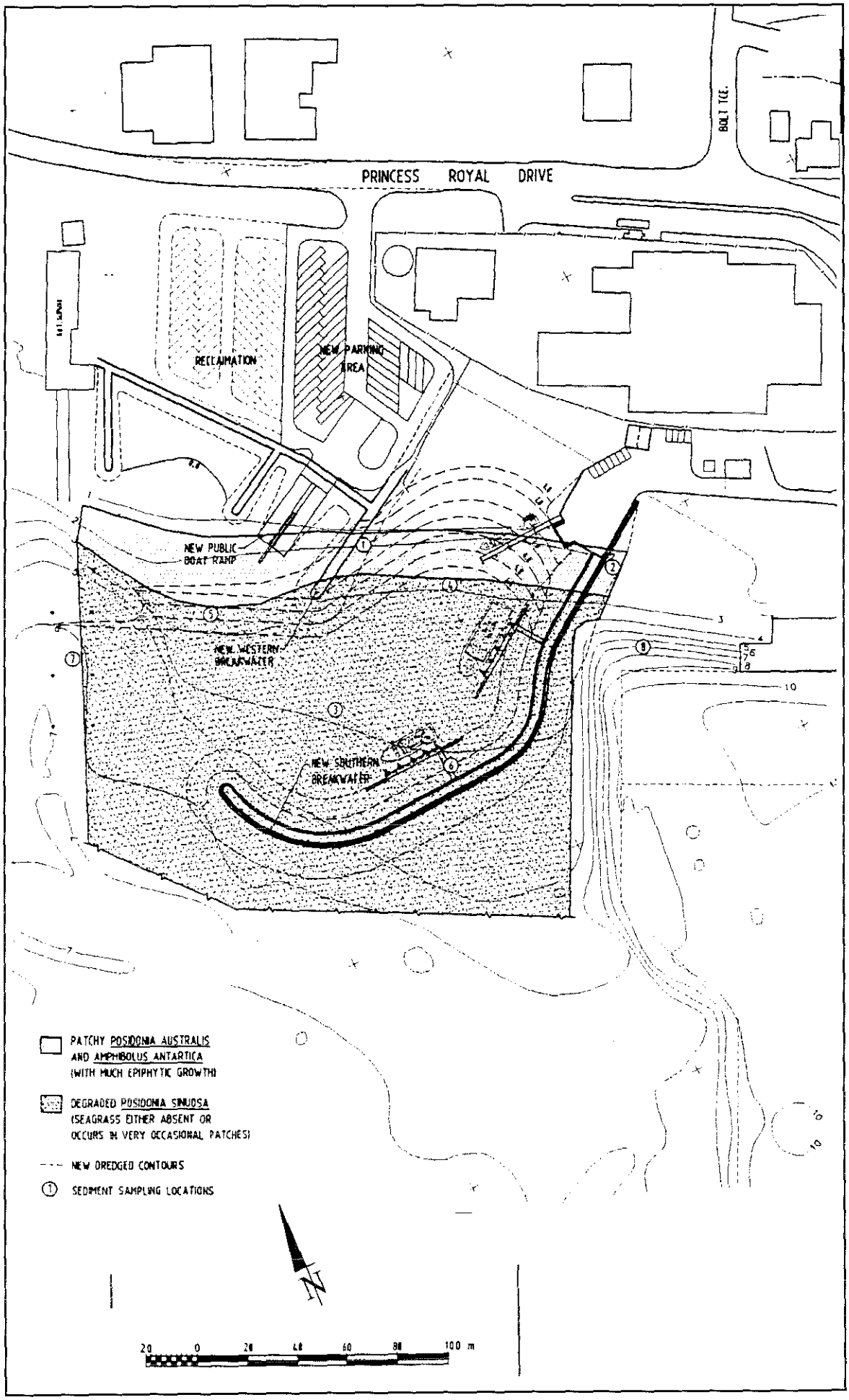

Figure 4. The proposed development in relation to habitat disturbance (Halpern Glick Maunsell, 1996).

AWMA have advised that dredging operations will be undertaken in accordance with a dredging/reclamation licence as required by the Waterways Conservation Act and that this will ensure adequate controls are provided over materials used and methods of dredging.

AWMA have also indicated that the protection of seagrass would be best achieved through the rational and proper planning of the harbours and that the concentration of the port's activities in the one area, with a boating marina and public boating facilities being located as close as safety and operational requirements permit, would best minimise disturbance to the harbour's environment and seagrass.

The DEP has advised that seagrass loss is considered to be a significant issue, and loss should be minimised where possible. The DEP concurs with AWMA's view that the impact on the seabed and seagrass will be localised and that the service vessel facility in this location could reduce development pressures on other areas of the harbour which might be regarded as being more sensitive.

Submissions from members of the public expressed concern with regard to the loss of seagrass and loss of fish nursery grounds. It was also suggested that given that there will be a direct loss of seagrass, the proponent should fund the protection or re-establishment of a similar area of seagrass elsewhere in the harbour.

Response from the proponent

In response, the proponent indicated that Fisheries Department advice on the Albany Foreshore Redevelopment Project was that, although the project would result in habitat loss, this loss would have no discernible impact on fish resources in the harbour. The proponent argues, that a similar position can be taken for the development of the service vessel facility and adds that most of the project area has limited value as a nursery due to the absence of suitable habitat to provide shelter.

With regard to the re-establishment of seagrass, the proponent indicated that the impact on seagrass will be limited to 0.3 hectares, and that it was not the Port Authority's intention to attempt to re-establish seagrass elsewhere in the harbour.

EPA Evaluation

The EPA acknowledges the important role provided by seagrass communities in the overall health of the marine ecosystem within PRH. It is also aware of the extensive loss of seagrass in the Harbour since the mid 1970's (EPA, 1990) and that approximately 80% of the original seagrass meadows in Princess Royal and Oyster Harbours have been lost, principally as a result of pollution of the water bodies (State of the Environment Report, 1992 :50).

The EPA has reviewed the information provided in the CER document on the area of seagrass meadow proposed to be impacted by the dredging and reclamation. This information indicates that the proposed dredging and reclamation will impact on 0.3 hectares of patchy *P. Australis* and *A. antarctica* and 1.8 hectares in which there are isolated small patches of *P. sinuosa*.

The EPA notes that AWMA requested the proponent to undertake a survey of seagrass (in accordance with Draft Policy S1) and that the results from this survey indicate that the design of the project (in terms of location of breakwater, area of reclamation and dredging) cannot be further modified to reduce its impact on seagrass. The EPA also notes that AWMA considered the patchy and degraded state of the seagrass in the project area to be not surprising, given its location in close proximity to the Port's operations.

The EPA also notes that the proponent has undertaken commitments to restrict direct impact on seagrass due to dredging and reclamation to a maximum area of 0.3ha (Commitment 1); to monitor seagrass over transects as determined by AWMA, before and after dredging operations (Commitment 2) and to manage off-site impacts to the requirements of AWMA (Commitment 3).

The EPA's preferred position is that there should be no further net loss of seagrass in PRH, however it is acknowledged that some loss of seagrass is inevitable if the proposed service vessel facility proceeds.

The EPA notes that the design and construction management procedures detailed in the CER were developed and modified in consultation with AWMA so as to minimise possible impacts on seagrass beds. The EPA considers that the impact on the seagrass will be localised and recognises that concentrating the service vessel facility in this area could reduce development pressures on other areas of the harbour which might be regarded as being more sensitive.

The EPA recognises that although there will be some loss of 'patchy' marine faunal habitat, the proponent has designed the project, in accordance with seagrass surveys as requested by AWMA, in such as way that the design of the project (in terms of breakwater location, dredging and reclamation) cannot be further modified to reduce its impact on seagrass.

The EPA considers that through the commitments made by the proponent (notably Commitment 1, which restricts direct impact on seagrass to a maximum area of 0.3 ha), 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 Maintenance of water quality within Princess Royal Harbour

Topics raised in relation to this issue can be separated into two main categories, short term and long term impacts on water quality.

4.3.1 Short term impact on water quality in Princess Royal Harbour

In relation to short term impacts from dredging there are two issues, the potential for turbidity and the mobilisation of contaminants in sediments from dredging or reclamation.

4.3.1.1 Turbidity

Objective

To manage dredging and reclamation activities so that Waterways Commission guidelines are met.

Existing Policy

A dredging licence will be issued by AWMA in accordance with Waterways Commission Guidelines No. 9 (1995). The main theme of the dredging/ reclamation licence will be to control sediment in the water column. The dredging licence will include time schedules, analysis of sediments and sediment size, monitoring of sediment plumes through secchi depths, 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;
- dredging will be undertaken with a small cutter-suction dredge with discharge via surface floating pipes. The dredge material will be deposited within the area to be reclaimed using bunds overlain by a filter cloth. 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

concentrations with little discolouration. In the event that the dredging discharge exceeds the rate at which the excess water can pass through the bund, an overflow section will also be provided in the eastern part of the reclaimed area. This overflow section will comprise a discharge culvert set approximately 2m above High Water to provide 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 the western seagrass beds;

- the breakwaters will be made from rock. The main breakwater will be created before the reclamation begins and the beach breakwaters will be built before the beach is created; and
- impacts from dredging and reclamation activities will be monitored by the proponent in accordance with the dredging licence.

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 have advised that the monitoring programme for this proposal will be similar to the Emu Point dredging operation and that any sediment plume extending beyond a certain distance (approximately 300 m) will be measured through secchi depth. The objective of the monitoring is to ensure that off-site impacts on seagrass and water quality are minimised and readings less than 50% of background secchi depths will be notified to AWMA and works will cease until clarity improves. This system will be readily monitored, as the Town Jetty will be used as a monitoring point, allowing easy access at all times for AWMA officers.

AWMA also advised that the area to be dredged has been analysed for sediment size and that this will influence the schedule of dredging to minimise the likelihood of sediment plumes and to ensure the cleaner sand is used for the beach area.

AWMA indicated that the proponents have taken on board all advice provided by AWMA officers and that dredging operations will be consistent with the Waterways Commission dredging guidelines. In response to the CER being released for public comment, AWMA sought clarification that all dredged spoil would be pumped to the foreshore and discharged within the bunded foreshore reclamation area.

One submission suggested that the public should be given the opportunity to comment on the conditions proposed in the dredging and reclamation licence.

Response from the proponent

In response, the proponent indicated that all dredged material will be discharged within a bunded reclamation area designed to minimise the movement of any sediment mobilised during dredging works. The proponent also commented that reference to an earlier concept of disposing of some of the spoil beneath the breakwater was inadvertently left in the CER.

EPA Evaluation

The proponent has outlined a Dredging Management Strategy in Section 4.5.2 of the CER, to manage potentially adverse impacts on adjacent seagrass beds to the west of the proposed development.

The EPA notes that dredging operations will be undertaken by a suction dredge, and the dredged material will be deposited within the area to be reclaimed using bunds overlain by a filter cloth. The EPA also notes that an overflow section will be provided in the eastern part of the reclaimed area in the event that dredging discharge exceeds the rate at which excess water

can pass through the bund. This overflow section will include a separate bunded sedimentation basin to allow maximum sediment settling prior to overflow to the harbour. The EPA also notes that discharge from the eastern section of the reclamation area will ensure that any remaining sediment in suspension is discharged at the maximum distance from the western seagrass beds.

The EPA notes that the proponent has undertaken to monitor impacts from dredging and reclamation activities (Commitment 2) in accordance with a dredging licence to be issued by AWMA. The EPA also notes Proponent Commitment 3, which states that dredging operations will be managed so that suspended material is confined as far as practicable to areas in close proximity to the beach to the requirements of AWMA.

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

4.3.1.2 Mobilisation of contaminated and nutrient-enriched sediments

Objective

To ensure sediment disturbance does not result in the mobilisation of contaminants which exceed ANZECC & NHMRC guidelines.

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;
- sampling of sediments from the area to be dredged has been conducted (see Section 4.4 of the CER); and
- results from the sampling programme indicate that none of the analytes measured in Sites 1-6 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).

Comments from key agencies/interest groups

AWMA advised that the proponent, as required, undertook sampling of the area to be dredged to ensure no contamination exists. The results of 8 sample sites show no environmentally unacceptable levels of heavy metals, compared with the Guidelines for the Assessment of Contaminated Sites.

Proponent response

Table 4.1 of the CER demonstrates that sediments to be dredged do not carry "a high nutrient load".

All potential impacts can be adequately managed through adherence to the Dredging/ Reclamation Licence which will be issued for the project by AWMA.

EPA Evaluation

The EPA has concluded that the EPA's objective has been met, as the proponent has undertaken sediment sampling and demonstrated that the analytes measured do not exceed levels that would require an environmental investigation, as specified in the ANZECC & NHMRC guidelines.

4.3.2 Long term impact on water quality in Princess Royal Harbour

Objective

To manage potential sources of water quality impairment from operation and maintenance of the facility and not exacerbate effects of other discharges.

Technical information

Princess Royal Harbour is a roughly oval shaped, marine embayment. The harbour is approximately 8km long and 4km wide and orientated in a north-west to south-east direction. The total area of the harbour is approximately 29km^2 (Waterways Commission, 1995).

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

The moderate prevailing winds are south-easterlies in summer and north-westerlies (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, 000m^3 of water may enter or leave PRH within 8 to 16 hours of rising or falling tides respectively (Alan Tingay and Associates, 1996).

Halpern Glick and Maunsell (1996) have calculated that complete volume replacement of the semi-enclosed embayment will occur within 10 days, using the tidal prism method. More importantly, any winds greater than 8 knots will be sufficient to cause complete exchange within 1 day, independent of tidal processes. For a 4 knot wind, complete exchange will occur within 2 days.

EPA Evaluation

The EPA recognises that AWMA is responsible 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 several sources of significant nutrient inflows to waters in the port area ceasing. These include the Albany Woollen Mills, the Kalis and France Fish Processing Works, and the Metro Meats Abattoir, improvements to the CSBP Farmers operations and associated discharges into Robinson Street Drain (Alan Tingay & Associates, 1996).

The EPA also notes that the proponent has indicated that flushing of the embayment by winds, tides and gravitational forces is sufficiently rapid so as to ensure that the water quality in the enclosure remains at or near that of the surrounding harbour. The proponent has indicated that the design of the semi-enclosed embayment is such that the entrance and the horizontal length of the embayment is approximately the same and that denser water will not be trapped within the embayment as dredged grades will fall out towards PRH.

The EPA notes Proponent Commitment 6 to develop a management strategy to remove floating contaminants such as oil and grease from fish processing facilities that may accumulate in the eastern part of the embayment, particularly under westerly wind conditions. It is also noted that oil and grease are best contained at source and it is understood that the AWMA has already sought improvements to the discharge licences for the relevant foreshore industries.

The EPA also notes that the proponent has made a commitment to undertake maintenance dredging (Commitment 7) to ensure a safe and navigable facility in accordance with AWMA requirements. The proponent has indicated that it doesn't believe maintenance dredging will be necessary, however, in the event that it is required they have made a commitment to undertake maintenance dredging in accordance with AWMA's requirements. In advice received from AWMA, AWMA indicated that spoil would not be allowed to be disposed of in Princess Royal Harbour and that any spoil would need to be disposed of on land away from the waterways environment.

The EPA notes that the proponent has stated that the service vessel facility will not necessitate modification to the existing stormwater discharge arrangements on the basis of water quality and that the proponent has already established emergency procedures which are designed to provide a co-ordinated and comprehensive response to oil pollution, fire and other accident events, and that these procedures will be extended to apply to the service vessel facility.

The EPA has concluded that water circulation will not be adversely affected, and that given vessels will not be refuelled or serviced at the facility, and that there are no other facilities associated with the development (other than dredging and reclamation) which will impact on water quality in PRH, the EPA's objective can be met.

5. Conclusions and recommendations

5.1 Conclusion

Following review of the proponent's Consultative Environmental Review, the issues raised in the public submissions, advice from government departments, relevant literature and the proponent's revised environmental management commitments, the EPA concludes on the information currently available, that the proposal by Albany Port Authority for the development of a service vessel facility in Albany can be managed to meet the EPA's objectives.

5.2 Recommendations

Noting the conclusion reached, the EPA submits the following recommendations to the Minister for the Environment.

Recommendation 1

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

Recommendation 2

That, if the Minister for the Environment provides environmental clearance that the proposal may be implemented, that clearance be subject to the Conditions set out in Section 6 of this report.

6. Recommended environmental conditions

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: SERVICE VESSEL FACILITY, PRINCESS ROYAL HARBOUR, ALBANY (1028)

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 (May 1996) were published in Environmental Protection Authority Bulletin 820 (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.

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.

7. References

Albany Waterways Management Authority Draft Policy Manual (1995). [Policy Manual contains AWMA Policy FA1 and S1].

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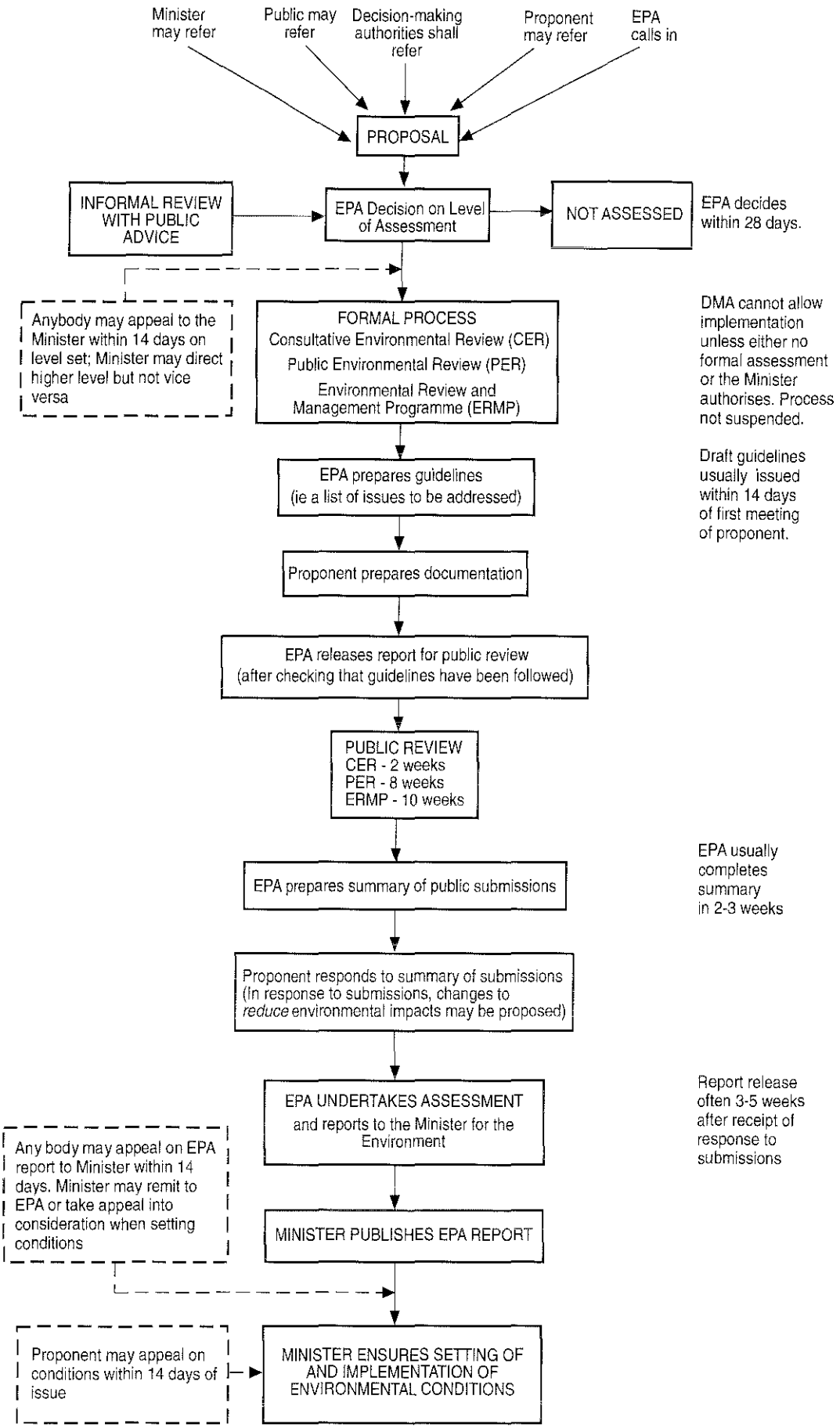
Waterways Commission (1995), *Guidelines for the Preparation of a Dredging and Dredge Spoil Disposal Management Plan; A Guide for Proponents,* Waterway Commission Guidelines No. 9.

Appendix 1

Environmental impact assessment flowchart

EIA PROCESS FLOW CHART



Appendix 2

Summary of submissions and proponent's response

SERVICE VESSEL FACILITY, PRINCESS ROYAL HARBOUR, ALBANY (1028)

SUMMARY OF SUBMISSIONS

The public submission period for the Service Vessel Facility, Princess Royal Harbour, Albany commenced on 13 May 1996 for a period of two weeks, ending on 27 May 1996.

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

The proponent is asked to address all issues and questions.

In summary, the principle issues were identified as:

A. Land impacts
Coastal Stability

B. Marine impacts
Impact on seagrass
Principle of reclamation and seagrass loss
Turbidity

C. Other
Justification for the proposal
Alternative locations
Boat ramp facilities
Community Issues
Maritime heritage artefacts

A. LAND IMPACTS

1.1 Coastal stability

Given that the proposed beach within the Residential Foreshore project by Landcorp could cause sand drift towards the Town Jetty, could the same not happen for this proposal?

Can the proponent comment on the effect of the proposal on sand drift towards the Town Jetty, and state whether any monitoring will be carried out.

Response:

The CER for the Albany Foreshore Redevelopment identifies that the dominant water movement in the area is in an easterly direction. Any sand drift, should it occur, would therefore be away from the jetty.

In addition, the construction of breakwaters to the west and east of the proposed beach will ensure that beach sand is confined to the embayment.

It is not proposed to undertake monitoring of sand drift.

B. MARINE IMPACTS

2.1 Impact on seagrass

2.1.1 The proposed service vessel facility will cause a direct loss of 0.3ha of patchy *P. Australis* and *A. Antarctica* seagrass. In addition to this, fish nursery grounds will also be lost.

Can the proponent comment on the impact of the proposal on fish nursery grounds within the project area.

Response

Fisheries Department advice on the Albany Foreshore Redevelopment Project was that, although the project would result in habitat loss, this loss would have no discernible impact on fish resources in he harbour.

A similar argument can be advanced for development of the service vessel facility. In addition, most of the project area has limited value as a nursery due tote absence of suitable habitat to provide shelter.

2.1.2 Given that the service vessel facility will disturb 2.1 hectares of seagrass, it is considered that the port should fund the protection or re-establishment of a similar area of seagrass elsewhere in the harbour.

Is it the Port Authority's intention to re-establish seagrass elsewhere in the harbour?

Response

The impact on seagrass will be limited to 0.3 hectares. It is not the Port Authority's intention to attempt to re-establish seagrass elsewhere.

2.2 Principle of reclamation and seagrass loss

AWMA's policy stance (as detailed in its policy manual) is that reclamation and/or loss of seagrass can only be justified for a development if that development can be shown to be in the public's interest, and in particular is considered essential for either:

- the operational requirements of the port;
- the safeguarding of the waterways environment ;
- the maintenance of safe navigation; or
- the maintenance or enhancement of the public's use and enjoyment of the waterway.

It is felt the proposed service vessel facility satisfies the above policy criteria, as clearly the provision of a service vessel facility is an essential element of any working port. As such I can advise that AWMA has no objection in principle to the above proposal.

Similarly the proposed reclamation to help create a boat ramp and associated car parking is also supported by the Authority. The need for such a facility is well documented, and will enhance the public's use and enjoyment of the harbour.

The reclamation area was originally proposed to be used exclusively for public access and car parking for the boat ramp and launching beach. AWMA has been supportive of this reclamation in the past as such a facility normally requires approximately 1 hectare of land area. However, it is noticed in the latest plans (CER, March 1996) that the full use of the reclamation area is not made clear, and indeed only half the area is shown to be public parking. AWMA would object to this reclamation if it is shown that it is not needed for the types of development detailed above.

Could the proponent clarify the future use of all the reclamation area?

Response

The entire area of reclamation is available for public parking. It is envisaged that the area will be progressively developed as dictated by public demand, and the eastern array of parking, as identified in Figure 4 would satisfy this initial demand.

2.3 Turbidity

The proposed works will be managed under AWMA's licensing powers. The dredging licence to be issued by AWMA will need to ensure sediment plumes are minimised. The CER details how this will be achieved, using bunding and silt curtains, and also details how monitoring will be used to impose this requirement. AWMA is supportive of these measures, and has assisted in the design of these works.

The CER indicates dredge spoil will be used to build up the level of the seabed before construction of the rock breakwater. This is directly in opposition to AWMA officer past advice, which stated such work would create unacceptable sediment plumes and turbidity over an extensive area. The use of dredged spoil to build up the seabed would also extend the impact on the seabed over a considerably larger area that would be required for simply a rock breakwater.

In light of these concerns and past advice, AWMA would not support the use of direct discharge of dredge spoil into the waterway to build up the seabed. AWMA would recommend that the breakwater be entirely constructed of rock, with all excess dredge spoil deposited on land and if need be removed from the site.

Will all dredged spoil be pumped to the foreshore and discharged within the bunded foreshore reclamation area, as indicated in the Notice of Intent, prepared by Halpern Glick Maunsell in January 1996?

Response

There will be no disposal of dredged spoil other than within the bunded foreshore reclamation. Reference to an earlier concept of disposing of some of the spoil beneath the breakwater was inadvertently left in the CER.

C. Other

3.1 Justification for proposal

3.1.1 The planned jetty works are focused towards providing an improved public facility catering for commercial tourists operators and the loading/ unloading of commercial fishing boats.

Why does this project intend to erect three piled jetties outside of the vessel facility?

Response

Three new jetties are required for the safe, secure permanent mooring of Albany Port Authority service vessels. These permanent moorings are not available on the refurbished Town jetty.

3.1.2 The service vessel facility should have been included in the recent Albany Port Developments CER so that the combined effect of these developments on the environment could have been assessed.

Can the proponent comment on this?

Response

The service vessel facility is a completely separate development to that covered by the Albany port Developments CER. While both require dredging and reclamation, the nature and scale of the works is quite different. It was considered more appropriate to have the developments reviewed independently.

3.1.3 Part of the reason given for the need for this facility is improved storm weather protection for crafts and lack of security, yet no factual data is given of instances of where craft have been damaged in their current location.

Can the proponent comment on this.

Response

Unauthorised boarding of vessels and vandalism is a problem where security is not provided. Refer section 3.2.3 with regard to protection.

3.1.4 Can the proponent justify the need for the proposed reclamation and state the necessity for this part of the development.

Response

The proposed reclamation is to provide access and car parking for a new public boat ramp as outlined in Section 2.2

With the foreshore redevelopment, a new location for a public boat ramp on Princess Royal harbour was required and it is considered that the proposed location provides the best solution.

3.2 Alternative locations

3.2.1 The need to have a separate facility is questionable given the overall effect on Princess Royal Harbour. The cost of design plans to meet the Albany Port Authority's requirements are considerable. The vessel facility could have been placed at the end of the refurbished town jetty, providing adequate security, whilst enhancing the tourist attraction that venue.

Could the proponent please provide comment on this alternative location for the service vessel facility.

Response

The option of locating the facility in its proposed location and the reasons for rejecting the jetty option are outlined in Section 3.1 of the CER and in response to Section 3.2.2 of this document.

3.2.2 The location of the proposed service vessel facility offers strategic benefits in terms of planning and environmental protection of the harbour. The site chosen is located as close as feasible to the port and its dredged channels without impinging on the port's operations. This reduces the need for dredging and also reduces the likely impact on seagrass beds, as seagrass in the area is already of a poor quality due to ongoing port operations.

The combining of both public and the port's boating facilities in the one area has to be seen as beneficial in the strategic planning and management of the harbour. To separate these issues would create the need for the greater dredging, impact on seagrass and development of foreshore areas.

The port's consideration of alternative sites is well detailed in the CER. It is AWMA's opinion that the alternative sites are unlikely to be so favourable from an environmental perspective. The location of any service vessel facility west of the Town Jetty would require considerable dredging and impact on high quality seagrass beds. The location of any service vessel facility east of the proposed site would require a substantial breakwater to be built and impact on a large area of seabed, as well as altering circulation patterns to the possible detriment of the harbour.

With the Albany Foreshore Redevelopment taking up the area around the Town Jetty, the location of the service vessel facility as planned would appear to be the most environmentally acceptable location.

Response

The proponent agrees with these observations

3.2.3 Could the proponent provide comment on whether protection from storm damage is necessary and whether a simple jetty arrangement (see Attachment 1) could be constructed to minimise environmental damage.

Response

The level of protection is an issue for all users of the Town Jetty and those seeking permanent moorings on the northern side of Princess Royal Harbour. Although the existing tug does remain at its berth in storm conditions, it is attended, and all berths beyond the end of the embankment, including mooring pens on the new jetty extension, may only be considered as fair weather moorings. For safe permanent mooring adjacent to jetty structures, full protection as provided by a rock breakwater is required. A jetty structure as outlined on Attachment 1 is not adequate in this location.

3.3 Boat ramp facility

The relocation of the existing public boat launching ramp to the proposed service vessel facility site represents safety advantages to local small boat owners as it is less exposed. The provision of a single public boat ramp, however, may be inadequate to meet local requirements. Reclamation associated with the project will supply additional space for parking adjacent to the boat ramp, which may facilitate parking requirements in the event of extra boat ramps being provided. There would also appear to be sufficient space west of the ramp to accommodate additional ramps.

Can the proponent comment on the adequacy of boat launching ramps?

Response

It is recognised that a single public boat ramp may be inadequate to meet user demand. The proposal is that a double ramp be constructed and it is considered that this will be adequate to meet foreseeable community requirements. The reclamation will allow development of parking area required for a fully utilised double ramp.

3.4 Community

3.4.1 Community Consultation

There has been very little community consultation, other than between Government Departments. It is considered that the proponent has not met environmental management requirements.

Can the proponent outline what measures have been undertaken to ensure the community has been consulted with regard to the proposal.

Response

Over 18 months of consultation has occurred as a result of the Foreshore Development Project. Within the overall concept for the development, the service vessel facility was extensively discussed.

3.4.2 Community Benefit

The CER does not detail the positive public recreational benefits of the proposal. The project will provide a much needed boat launching facility that cannot be accommodated elsewhere if the Albany Foreshore Redevelopment project goes ahead. It is recommended that this be acknowledged in the judgement of the proposal, particularly as the CER is required to examine the projects impact on the existing community use of the area concerned.

Could the proponent provide comment on the positive public recreational benefits of the proposal and comment on the projects impact on the existing community use of the area concerned.

Response

Substantial and positive public recreational benefits will arise from the proposed development. These include:

- a dedicated public boat launching facility with ample capacity for trailer parking
- a public beach, specifically constructed to provide ease of public access;
- the ability for dinghy launching from the beach;
- recreational fishing from the groynes; and
- increased public use of an area that currently has little attraction.

3.5 Maritime Heritage

Has the area proposed for the service vessel facility been searched for maritime heritage artefacts?

Response

The entire foreshore area, including the area proposed for the service vessel facility, has been assessed for its potential to contain maritime heritage artefacts. The site of the service vessel facility was not assessed as having high potential for artefact occurrence.

Appendix 3

List of submitters

State and local government agencies

Albany Waterways Management Authority
Ministry for Planning

Organisations

Conservation Council of WA

Members of the public

Mr A Newman
Mr R Sadlier
Mr P Sanford

Appendix 4

Summary of proponent commitments

ENVIRONMENTAL COMMITMENTS

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

1. Objective: Minimise direct impacts on seagrass.

   Direct impacts on seagrass due to dredging and reclamation will be restricted to a maximum area of 0.3ha. This will be to the requirements of the Albany Waterways Management Authority.

2. Objective: Ensure that off-site impacts on seagrass and water quality are minimised.

   The impacts from dredging and reclamation activities will be monitored consistent with the dredging licence which will be issued for the development. Monitoring will include secchi disk measurements (to ensure that secchi depths are not reduced by more than 50% of background at 300m from the dredge) and seagrass monitoring (to assess any long term changes in adjacent seagrass beds). Readings less than 50% will be notified to he Albany Waterways Management Authority and works will cease until water clarity improves. Continuous incidents of less than 50% will result in the implementation of alternative means of containing spoil. This will be undertaken and reported of the requirements to the Albany Waterways Management Authority.

3. Objective: Restrict movement of suspended material.

   Dredging operations will be managed so that suspended material is confined , as far as practicable, to areas in close proximity to the beach. This will be to the requirements of the Albany Waterways Management Authority.

4. Objective: Manage dust to acceptable levels.

   Dust generated during earthworks associated with reclamation activities will be managed in accordance with Environmental Protection Authority Dust Control Guidelines to ensure the public amenity is maintained.

5. Objective: Manage noise to acceptable levels.

   Noise Regulations of the Environmental Protection Act 1986, will be complied with during site works.

6. Objective: Ensure that floating matter is regularly removed.

   A management strategy will be developed to remove any floating matter which accumulates within the Service Vessel Facility. This will be to the requirements of the Albany Waterways Management Authority.

7. Objective: Maintain a safe and navigable facility.

   Maintenance dredging, if required, will be undertaken consistent with the requirements of the Albany Waterways Management Authority.