

Marina and boat launching facility - Dawesville Channel (east entrance)

Department of Marine and Harbours

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

**Environmental Protection Authority
Perth, Western Australia
Bulletin 698
August 1993**

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 2 September, 1993.

Environmental Impact Assessment (EIA)

Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
12/3/93	Proponent Document Released for Public Comment	
23/4/93	Public Comment Period Closed	6
11/5/93	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	2
2/7/93	Proponent response to the issues raised received	7
27/8/93	EPA reported to the Minister for the Environment	8

ISBN. 0 7309 5627 X
ISSN. 1030 - 0120
Assessment No. 785

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Summary and recommendation

In January 1993 the Department of Marine and Harbours referred a proposal to construct a public marina and boat launching facility at the east end of the Dawesville Channel, immediately north of the estuary entrance (see Figure 1). This facility is proposed to provide approximately 100 serviced pens for recreational craft, a boat ramp and parking facilities for up to 240 car trailer units. Access to the Indian Ocean would be provided via the Dawesville Channel, currently under construction.

In view of the potential environmental impacts associated with the implementation of this proposal, the Environmental Protection Authority determined that the proposal should be assessed as a 'Consultative Environmental Review'.

Following review of the CER and consideration of issues raised in public submissions received on the proposed development, environmental issues associated with this development proposal were identified by the Authority as follows:

- traffic management;
- water quality of adjacent estuary during construction and within the marina water body following construction; and
- surface water runoff management.

Following consideration of these issues and associated management of them, the Authority has determined that the proposal is environmentally acceptable.

Recommendation 1

The Environmental Protection Authority has concluded that the proposed marina and public boat launching facility is environmentally acceptable.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental issues as :

- traffic management (vehicle access to the marina);
- stormwater management; and
- water quality within the marina.

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the proponent's environmental commitments listed in Appendix 3. (Recommended Environmental Conditions are listed in Section 5)

Broader issues relating to dredge spoil disposal and the extent of reclamation into the Peel Inlet / Harvey Estuary were considered in the Environmental Protection Authority's assessment of the 'Extension of estuary foreshore reclamation associated with construction of the Dawesville Channel - change of environmental condition' in August 1992 and 'Port Bouvard urban and canal development Stage 2, Northport and Eastport' in January 1993. Government approval for these proposals has subsequently been granted, and these issues are therefore not considered here.

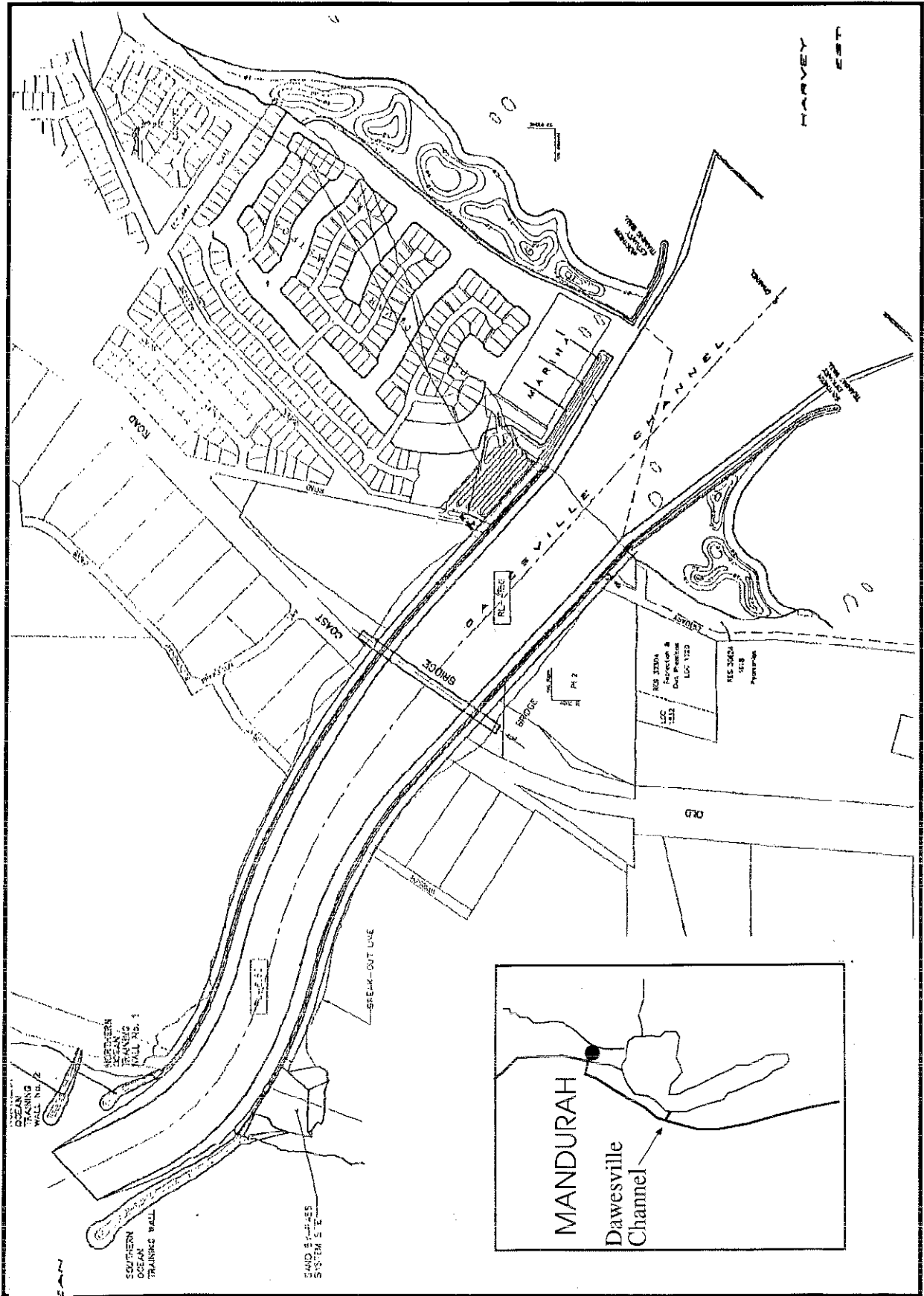


Figure 1. Location of proposed marina, Dawesville

1. Introduction

In August 1992 the Environmental Protection Authority assessed a proposal by the Department of Marine and Harbours to extend an area of estuary foreshore reclamation associated with the construction of the Dawesville Channel by 25 hectares (Bulletin 640). This was found to be environmentally acceptable, subject to specific requirements including proposed long term land use. In January 1993 the Authority assessed an urban and canal development, referred to as 'Eastport', by Wannunup Development Nominees Pty Ltd on land adjacent to the Dawesville Channel and proposed estuary reclamation (Bulletin 671). This proposal was also found to be environmentally acceptable.

In January 1993 the Department of Marine and Harbours referred a proposal to construct a public marina and boat launching facility at the east end of the Dawesville Channel, immediately north of the estuary entrance, adjacent to the area of proposed foreshore reclamation (see Figure 1). This facility is proposed to provide approximately 100 serviced pens for recreational craft, a boat ramp and parking facilities for up to 200 car trailer units. Access to the Indian Ocean would be provided via the Dawesville Channel, currently under construction.

In view of the potential environmental impacts associated with the implementation of this proposal, the Environmental Protection Authority determined that the proposal should be assessed as a 'Consultative Environmental Review'.

2. The proposal

The proposal to construct a marina at the north eastern end of the Dawesville Channel adjoins the planned Eastport canal estate, proposed to be constructed by Wannunup Development Nominees Pty Ltd, which has been the subject of a separate assessment by the Authority (EPA Bulletin 671, January 1993). The marina is proposed to be located in part on land reclaimed as a result of construction of the Dawesville Channel, which has already been granted environmental approval (EPA Bulletin 640).

The proposed marina includes the following:

- harbour with approximate water area of four hectares with a 50 metre wide entrance channel and excavated to a depth of 3.5 metres;
- up to 100 serviced pens for recreational and commercial boats and yachts;
- a two-lane public boat launching ramp (subsequent to the preparation of the CER document and further negotiations between the proponent and City of Mandurah and community groups, this will be increased to a four lane public boat launching ramp);
- public ablution facilities, proposed to be connected to deep sewerage;
- sewerage pump out facility, also proposed to be connected to deep sewerage;
- parking for up to 200 cars and trailers over an area of 1.3 hectares (subsequent to the preparation of the CER document the proponent has advised that the car and trailer parking area has been increased to accommodate 240 cars and trailers); and
- limited commercial facilities.

The proponent also proposes to construct a public boat ramp (for dingy launching) at the estuary end of Estuary Place. Public parking will be provided adjacent to the proposed boat ramp.

The marina is proposed to be constructed in two stages. Stage 1 is proposed to involve construction of the boat launching facility and 30 marina pens, public access road and car/trailer parking area. Stage 2 is proposed to be built at a future date according to demand, and involve the construction of the additional 70 marina pens.

The marina is proposed to be excavated by dredge. Dredge spoil is proposed to be deposited on adjacent areas of estuary foreshore which have already been granted approval by the Authority for reclamation (EPA Bulletin 640, August 1992). The marina is proposed to be vested with the Minister for Transport, and proponent has undertaken a commitment to operate and manage the

marina and associated service facilities in the short term (i.e. first five years following construction) and long term (i.e. post five years following construction).

Two options for the marina layout and associated public access to the marina were considered in the Consultative Environmental Review:

- Concept A - public access via Estuary Place, with a western entrance; and
- Concept B - public access via Estuary Road, with an eastern entrance.

These options are illustrated in Figures 2 and 3. Option B with marina access via Estuary Road was favoured by the proponent in the CER document.

The Consultative Environmental Review document was prepared following consultation with officers of the Environmental Protection Authority, and was released for public comment for a period of four weeks. This period was extended to six weeks as a result of difficulty experienced by some people in obtaining a copy of the CER document, ending on 23 April 1993. A total of 20 submissions were received by the Authority. A summary of issues raised in these submissions is included in Appendix 1. A copy of the proponents response to these issues is included in Appendix 2. A copy of the proponents commitments to minimise environmental impacts associated with the proposal is included in Appendix 3.

3. Environmental impacts and their management

Following review of the CER and consideration of issues raised in public submissions, environmental issues associated with this development proposal have been identified by the Authority as follows:

- traffic management;
- water quality of adjacent estuary during construction and within the marina water body following construction; and
- surface water runoff management.

The Authority considers that these impacts can be adequately managed through compliance with commitments undertaken by the proponent. Accordingly, the Authority concludes that the proposal is environmentally acceptable.

Recommendation 1

The Environmental Protection Authority has concluded that the proposed marina and public boat launching facility is environmentally acceptable.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental issues as :

- **traffic management (vehicle access to the marina);**
- **stormwater management; and**
- **water quality within the marina.**

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the proponent's environmental commitments listed in Appendix 3. (Recommended Environmental Conditions are listed in Section 5)

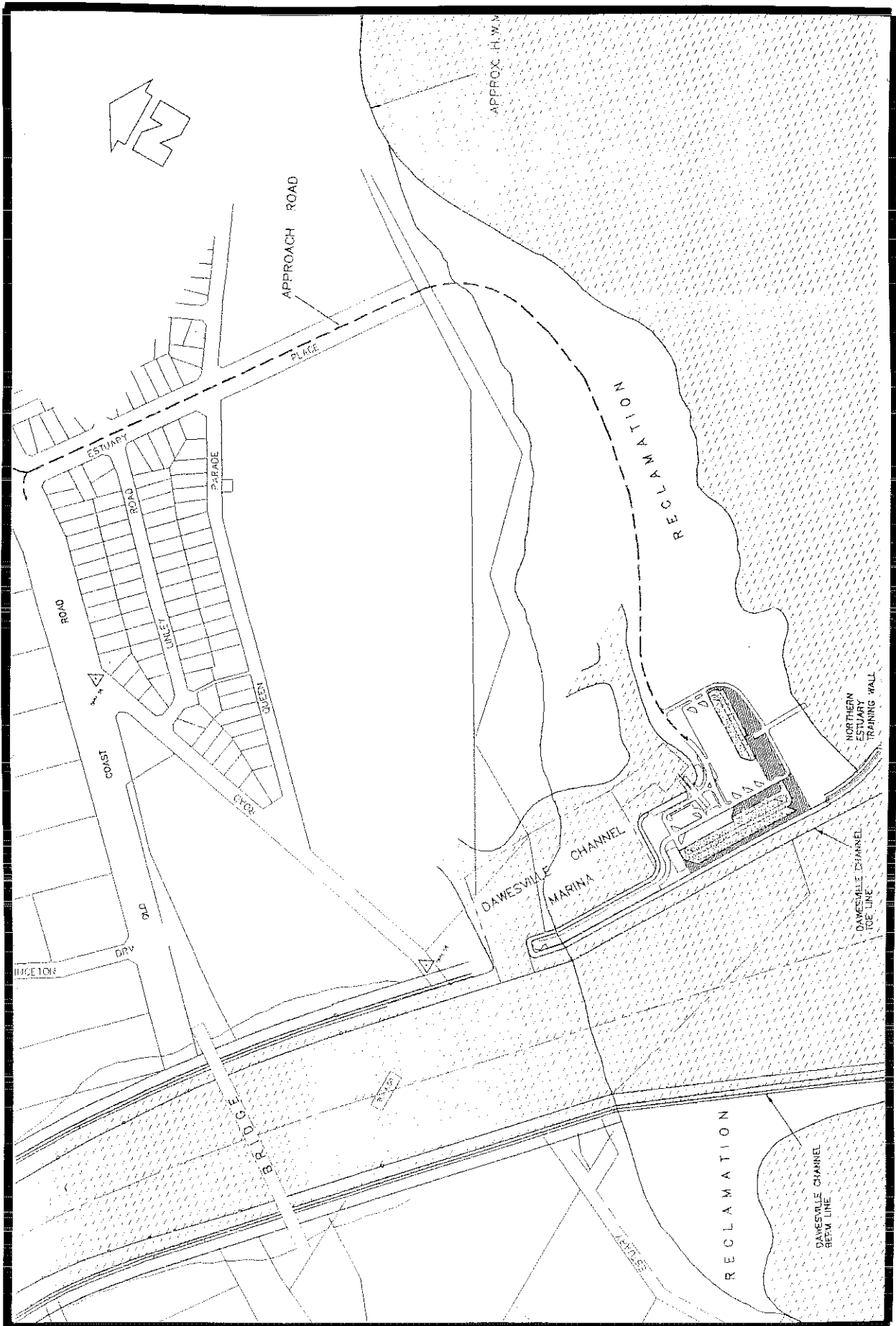


Figure 2. Marina Option A - public access via Estuary Place

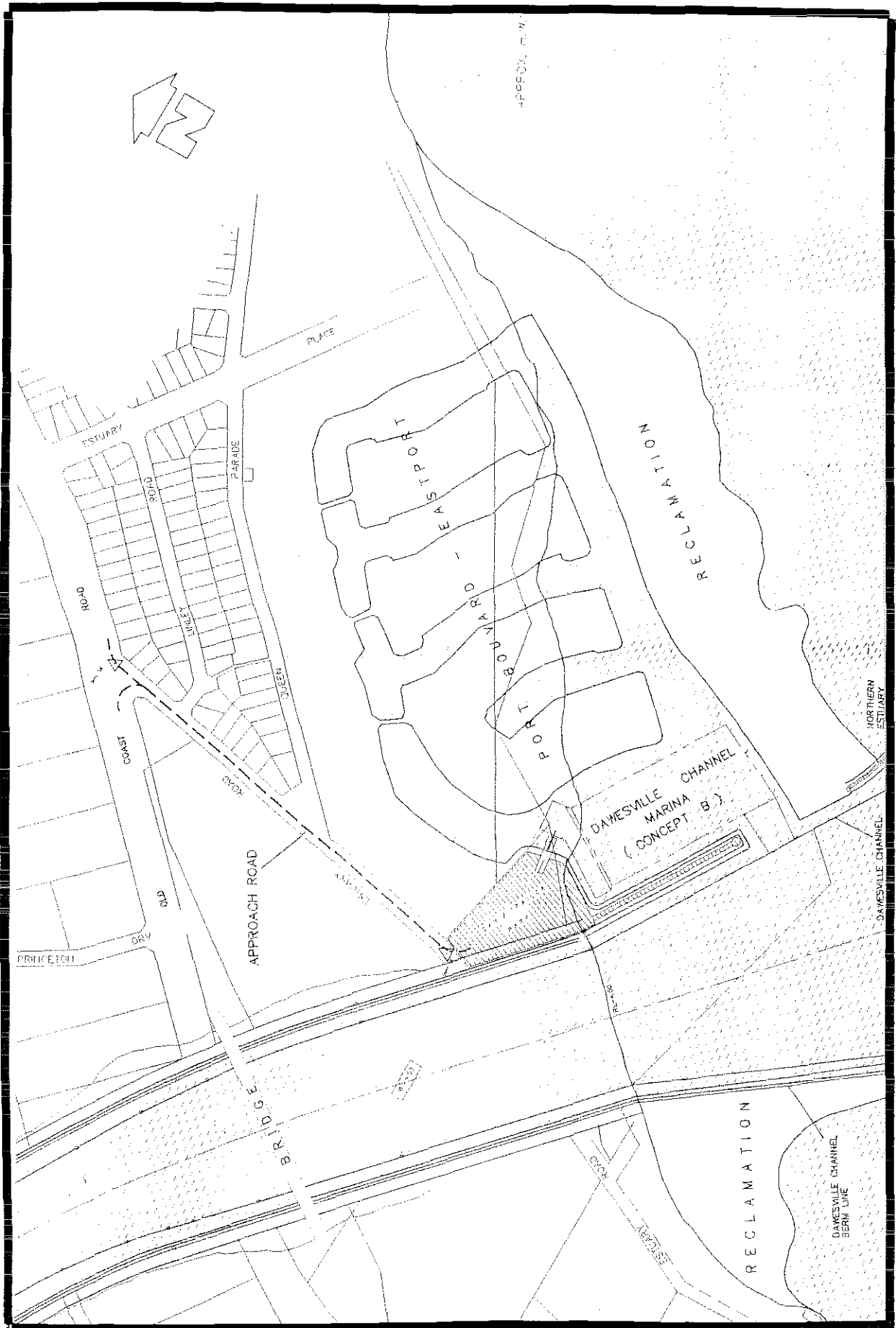


Figure 3. Marina Option B - public access via Estuary Road

3.1 Traffic management

Public access to the marina was the most commonly raised issue in submissions received by the Authority from members of the public.

The majority of submissions expressed concern that as a result of the marina proposal there will be an increase in the number of people turning into and out of Estuary Road. Further, concern was expressed that an increase in suburban and tourist traffic may lead to the intersection of Estuary Road and Old Coast Road becoming dangerously busy and congested. Further details on issues raised in relation to this issue are detailed in Appendix 1.

In response to these issues, the proponent sought additional advice from the Main Roads Department on issues associated with road safety and traffic congestion. Following receipt of this advice (Appendix 2), additional information has been presented in relation to the following issues :

- sight distance at Estuary Road when turning into Old Coast Road;
- the safety of cars and trailer waiting to turn into Old Coast Road from Estuary Road;
- the acknowledgement of the need for traffic signals at the Estuary Road - Old Coast Road intersection at a future date, when traffic volumes are expected to significantly increase; and
- the ability of the existing roads (including Estuary Road and Estuary Place) to accommodate increased traffic volumes.

It was concluded that public access to the marina via Estuary Road as proposed in the CER document could safely handle the expected traffic volumes generated by the marina.

Following consideration of the proponent's response to these concerns, the Authority considers that these issues have been adequately addressed.

The Environmental Protection Authority prefers public access to marina via Estuary Road (Option B) as implementation of this option will mean that vehicle access does not impact on the reclamation area. This view is consistent with the Authority's stated preference that the area of foreshore reclaimed as part of works associated with the construction of the Dawesville Channel should be retained 'in public ownership for the purposes of public recreation' (EPA Bulletin 640 : 4). Public access to the reclaimed area will be via a dual-use path for pedestrian and bicycle access only.

3.2 Water quality

3.2.1 During construction of marina

The CER states that excavation of material during construction of the marina will be carried out in accordance with the 'Spoil Disposal and Management Plan', prepared by the proponent as required as part of requirements of Environmental Conditions imposed on the construction of the Dawesville Channel, set by the Minister for the Environment in January 1988, following the assessment of the 'Peel Inlet and Harvey Estuary Management Strategy Environmental Review and Management Programme Stage 2' (EPA Bulletin 363, November 1988).

This Spoil Disposal and Management Plan is being prepared in four stages. Stage 3 addresses the environmental impacts associated with dredging of the estuary end of the Dawesville Channel and reclamation of adjacent estuary foreshore, and was forwarded to the EPA for approval in July 1993. Commitments undertaken by the proponent to minimise adverse impacts on water quality within the estuary include:

- careful operation of the suction dredge to minimise turbidity during dredging operations;
- deposition of dredged material into two bunded areas, which would contain water to estuary tide level; and
- regular monitoring of water quality within 50 metres of the estuary training walls during dredging, in consultation with the Peel Inlet Management Authority.

Dredging proposed to be undertaken as part of work associated with construction of the Dawesville Channel is expected to be undertaken over a period of six months. Excavation of the marina basin is planned to be completed as part of these works.

3.2.2 Following construction of the marina

The proponent has undertaken a commitment to maintain water quality within the marina following construction so as to satisfy Beneficial Use No. 1 Direct Contact Recreation (DCE Bulletin 103). Water is proposed to be inspected on a frequent basis by officers of the Department of Marine and Harbours, and routine maintenance is proposed to include removal of all accumulated rubbish and debris. The proponent has also undertaken a commitment to implement a water quality monitoring and management programme following construction of the marina, in consultation with the Peel Inlet Management Authority and the EPA (CER Section 7.2, Commitment X). Results of this programme are proposed to be forwarded on a regular basis to the EPA and Peel Inlet Management Authority for the first five years following construction.

3.3 Stormwater management

The Consultative Environmental Review states that surface water runoff from roads and verges will be collected and screened for pollutants before release into the Dawesville Channel for all flows up to the one-in-one year flood event (CER Section 4.9).

The Environmental Protection Authority considers that stormwater should be disposed of in a manner consistent with the principles set down in the 'Statement of Planning Policy No 2' - Peel Harvey Coastal Plain Catchment (Department of Planning and Urban Development).

4. Conclusion

The Environmental Protection Authority concludes that the proposal is environmentally acceptable provided the proponent's commitments and the recommendation of this report are implemented. The Authority has established an implementation and auditing system which requires the proponent to advise the Authority on how it would meet the requirements of the environmental conditions and commitments of the project. The proponent would be required to develop a Progress and Compliance report for this project as a section of the recommended audit programmes.

The Authority's experience is that it is common for details of the proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have positive effects on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve the environmental performance and protection, should be provided for.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, 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 Authority.

5. Recommended environmental conditions

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

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 (which are not inconsistent with the conditions or procedures contained in this statement) made in the Consultative Environmental Review and in response to issues raised following public submissions. These commitments are consolidated in Environmental Protection Authority Bulletin 698 as Appendix 3. (A copy of the commitments is attached.)

2 Implementation

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

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 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 the 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 by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)

5 Compliance Auditing

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

- 5-1 The proponent shall prepare periodic "Progress and Compliance Reports", to help verify the environmental performance of this project, in consultation with the Environmental Protection Authority.

Procedure

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

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

6. References

Department of Conservation and Environment (April 1981) Water Quality Criteria for Marine and Estuarine Waters of Western Australia ((Bulletin 103)

Environmental Protection Authority (November 1988) 'Peel Inlet and Harvey Estuary Management Strategy - Environmental Review and Management Programme Stage 2' (Bulletin 363)

Environmental Protection Authority (August 1992) Extension of estuary foreshore reclamation associated with construction of the Dawesville Channel - change of environmental condition (Bulletin 640)

Environmental Protection Authority (January 1993) Port Bouvard urban and canal development Stage 2 - Northport and Eastport (Bulletin 671)

Department of Planning and Urban Development 'The Peel - Harvey Coastal Plain Catchment. Statement of Planning Policy No.2'. Section 5 AA Town Planning and Development Act (1928)

Appendix 1

Issues raised in public submissions

DAWESVILLE CHANNEL PUBLIC MARINA PROPOSAL ISSUES RAISED IN PUBLIC SUBMISSIONS

The public submission period for the CER commenced on 12 March 1993 and was extended to 23 April 1993 in view of the difficulty experienced by some people in obtaining a copy of the CER document.

20 submissions were received by the Authority. These included submissions from the City of Mandurah, Department of Land Administration, the Waterways Commission, and 17 from interested members of the public.

Most submissions expressed support for a facility of this kind at the proposed location, which is expected to provide safe access for boats to and from the Ocean south of Mandurah. The opinion was expressed that it is considered to be a good idea to have services such as water, power and telecom available, and is likely to service a wide cross section of the community, and will be of benefit to the tourist industry, local recreational and professional water enthusiasts and fishermen.

The following issues were raised :

- need for a Marina
- road safety issues
- traffic congestion;
- dredging of the Marina entrance channel;
- water quality within the Marina;
- parking and boat launching ramps;
- public access to the Estuary foreshore reserve; and
- dust control (during marina construction).

Need for a Marina

One submission claimed that there was no clear case presented in the CER for the need for a marina of this size to be located at the proposed site, if it is just to accommodate 100 pens to house yachts and power boats in excess of the 10 metre limit, as stipulated by the proposed canal estates. Such large boats are clearly not suited for use in the predominantly shallow estuary. It was also claimed in one of the submissions that facilities provided in this marina will duplicate those facilities already available as part of the Mandurah Ocean Marina.

Road safety

The majority of submissions expressed concern that as a result of the Marina proposal (and Eastport canal estate) there will be an increase in number of people turning into and out of Estuary Road. Concern was expressed that this increase in suburban and tourist traffic may lead to the intersection of Old Coast Road and Estuary Road becoming dangerously busy and congested. It was claimed that at the existing intersection, there is only limited sight distance, as Estuary Road joins Old Coast Road at the foot of a steep incline, with traffic from Estuary Road having little time to view fast flowing traffic approaching from the south, including heavy transport vehicles and buses travelling from the south west. Traffic flowing north along Old Coast Road is likely to experience a similar problem anticipating vehicles turning out from Estuary Road. The intersection would always be expected to be busy, but at peak holiday season, the situation would become chaotic. The problem would be exacerbated by the fact that many vehicles turning out from Estuary Road would have a trailer, slowing down the vehicles and possibly overhanging the turning and deceleration lanes too close to the bridge. In summary, this intersection is considered dangerous, and increased use may lead to accidents occurring, creating a 'blackspot', which is inconsistent with the Federal Government's 'Road Safety -Black Spot Programme'.

One submission claims that the Department of Marine and Harbours did not adequately consult with the Main Roads Department during the preparation of the CER document. Whichever option occurs, it was claimed that some modification of Old Coast Road appears to be inevitable.

One submission suggested that additional funds should be spent now to rectify this potential problem, rather than waiting until after they occur before trying to fix them.

Two submissions claimed that Option B has only been adopted due to the fact that it is a cheaper option, and the fact that it creates a busy intersection with poor visibility is unacceptable. The cost factor should not take precedence over safety issues.

Five submissions suggested that perhaps a 'slip road' could be incorporated into the design of the traffic bridge currently under construction across the Channel similar to those utilised a part of the Narrows Bridge interchange in Perth, which could accommodate traffic travelling to and from Estuary Road onto Old Coast Road. Several submissions expressed the view that Marina Option B, with slip roads on and off the bridge and travelling the short distance alongside the Channel to the proposed car park would provide safer access to and from Old Coast Road, and service the whole area.

Another submission made the suggestion that an exit point from the marina should be considered further north of the proposed exit at Estuary Road, which would allow greater visibility and so reduce danger to traffic. This could be achieved by establishing an entrance road to the Marina via Estuary Road (and make that road 'one way' between Old Coast Road and Queen Parade), and an exit road via Estuary Place, or further north, where there is improved visibility as Old Coast Road follows a straighter, more level alignment.

Several submissions expressed strong opposition to Option B in view of the potential traffic danger. Six submissions expressed support for Option A, as it would not encourage traffic along Estuary Road. Estuary Place is considered to be a safer route for traffic generated by the Marina and as indicated above, Old Coast Road is level and straight near Estuary Place, and is a reasonable distance from the bridge.

One submission expressed the view that following consideration of potential traffic problems indicated above, if these are not able to be resolved, it may be better not to pursue the marina option at all.

Traffic congestion

The potential for increased traffic congestion near the intersection of Estuary Road and Old Coast Road was raised in several submissions in varying degrees of detail.

Several submissions quoted the number of traffic movements included within the CER for anticipated trailer movement, i.e.

facility to cater for 600 trailered boats = 1200 movements (entry and exit)
spread evenly over a 12 hour period = 100 movements per hour (1 per minute)

It was claimed that these figures do not take into account local traffic, which is likely to at least double due to planned extra housing lots, canal estates, vehicle access to the Channel, and access to proposed picnic facilities along the Estuary foreshore. The combination of car and trailer movements is likely to lead to a build up of traffic in the vicinity of the intersection of Estuary Road and Old Coast Road, as it is considered that the traffic movements would not be spread evenly over several hours, but build up at peak periods. This is significant, especially when most vehicles would be expected to be towing trailers.

It is claimed that this increase in traffic flows past existing and proposed houses along Estuary Road as a result of the marina construction is unacceptable. Concern was expressed that Marina Option A was not favoured in the CER due to the potential side effects of increased traffic flow on residents living in the vicinity of Estuary Place. It is claimed that the effects of increased traffic flows on residents living in the vicinity of Estuary Road as a result of the favoured Marina Option B has not been adequately considered.

Another submission suggested that a new road be constructed to service the Marina, thereby avoiding using either Estuary Road or Estuary Place. This option would avoid upsetting existing residents along either road, and anyone buying adjacent to the new road would know what to expect in terms of traffic flows, and blocks could be valued accordingly.

Another submission stated the view that no matter where the traffic is channelled, it will detract from the existing land values adjacent to the road, including Queen Parade. This may lead to land owners claiming compensation for lost land values. It was suggested that this factor should be taken into account when costing alternative traffic routes.

Only one submission expressed strong support for using Estuary Road (Option B), as it would inconvenience less residents in the Wannunup area, be the shortest and most direct route between the Marina and Old Coast Road and therefore be less costly.

Dredging of entrance channel

One submission claims that it is inappropriate for the Department of Marine and Harbours to undertake responsibility for the maintenance dredging of the marina entrance channel. This would effectively mean that funding for the maintenance of the entrance channel to the proposed Eastport canal estate would come from the 'public purse', which is considered inappropriate. It was claimed that this dredging should be the responsibility of Wannunup Development, as proponent of Eastport.

Water Quality

One submission claimed that due to the proximity of the proposed marina to the estuary, there is a risk for any pollution originating from the marina (or adjoining Eastport canals) and may lead to pollution of the estuary.

Another submission suggests that from a water quality point of view, it is logical to have the opening to the Marina on the western side (i.e. Option A), as the marina and adjacent canals would be more effectively flushed via tidal exchange. The CER does not include enough detail as to how this flushing issue has been considered, particularly as Option B is the preferred DMH option.

Parking and boat launching ramps

One submission expressed the view that Marina Option A is more acceptable because parking facilities would be larger, and would effectively accommodate increased vehicle numbers. Option B does not allow for potential expansion of the carpark.

Another submission stated that there are insufficient parking areas and boat launching ramps proposed in the CER as part of the marina development, in view of the anticipated popularity of these facilities and the likely number of people living in the vicinity once the proposed canal and housing estates are completed.

One submission makes reference to the statement within the CER that 'it is not feasible to construct an Estuary boat ramp'. Option B does not indicate an Estuary boat ramp, however Option A does. In view of this difference, Option A was supported, to allow people to launch boats into the Estuary outside the Marina.

Public access to foreshore reserve

Two submissions claimed that Marina Option A , which proposes a car park to service the main Marina as well as providing access to the recreation activities afforded by the estuary foreshore for the non - boating public, is more favourable than Option B. Option B provides inadequate parking facilities, and people wanting to use the area may create their own access, resulting in encroachment of vehicles onto the foreshore and possible degradation of the area. It was argued that short term cost savings through the adoption of Option B should not compromise the conservation value of the foreshore.

Dust control (during construction)

One submission received from a resident of Estuary Road expressed concern regarding dust control measures proposed to be used during the construction of the Marina. During construction of the Dawesville Channel, dust control became a problem at the residence and watering techniques employed as part of Channel works were not considered to have been effective. Therefore commitments contained within the CER that 'appropriate dust suppression techniques will be employed' are not considered to be adequate. The submission includes the suggestion that the contract earth mover be required to spay all open areas with appropriate material to suppress dust, and that sprinklers be installed on site in open areas.

Appendix 2

Proponent's response to issues raised in public submissions

Your Ref:
Our Ref: 400/92
Enquiries: Mr R Wallwork

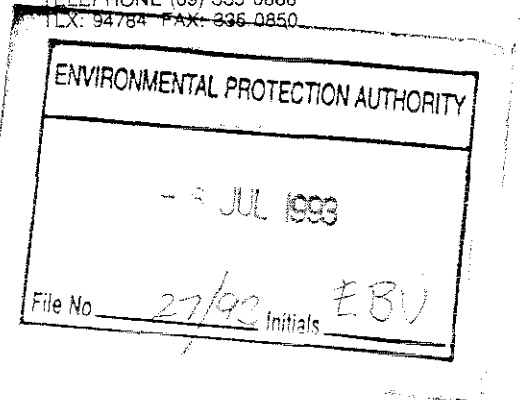
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ATTENTION : Mr RAD Sippe
Director Evaluation Division



DAWESVILLE CHANNEL
PUBLIC MARINA AND BOAT LAUNCHING FACILITY
CONSULTATIVE ENVIRONMENTAL REVIEW

Thank you for your letter of 11 May 1993.

I present the following as a formal response to the ^{subp 2.1.1} matters raised in the Consultative Environmental Review.

Need for a Marina

The need for the marina was established in the analysis of the demand for boating facilities included in Appendix A of the CER. It is envisaged that most of the boats using the marina will be ocean bound, not estuary bound. Existing estuary shore facilities already cater for small craft and the Department plans to include a dinghy launching ramp at the end of Estuary Place. It is notable however that there is no year round ocean access facility in Mandurah.

The Mandurah Ocean Marina will have similar facilities but access to and from the ocean is subject to clearance through the natural ocean entrance. Dredging is required every year and is subject to government funding being available. At the present level of funding the entrance is safely traversable on average only nine months of the year. At times it develops conditions that are dangerous for mariners, especially in small recreational vessels.

From the proposed Dawesville Marina to the ocean there will be a minimum of 3.75 metres water depth and a vertical clearance under the bridge of 19 metres. The channel entrance will be maintained at depth by use of a sand bypassing system. This will prevent shoaling similar to that which occurs at the natural entrance.

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Road Safety

Advice was sought from the Main Roads with respect to the safety of the intersections with Old Coast Road. These were the main points:

- * the sight distance at the Estuary Road (now Rees Road) intersection is adequate at present for the zoned speed on Old Coast Road. When construction of the new connection to the channel bridge is completed the sight distance at the intersection will be significantly increased;
- * at Estuary Road the median is approximately 10.7m from kerb to kerb and the kerbs are set back 0.5m from the edges of the through lane. Allowing for the skew when waiting in the median vehicles up to a total length of about 14.0m could make the entering right turn in a two stage process by sheltering safely in the median;
- * if the Estuary Place intersection is developed, as is proposed, then the median would be approximately 5.5m between kerbs which again would be offset 0.5m from the through lanes. This would result in vehicles up to a length of about 6.5m being able to shelter safely in the median when making the entering right turn;
- * the sight distance at the Estuary Place intersection would be greater than at the present Estuary Road intersection.

The conclusions drawn by the Main Roads were:

- * a greater number of vehicles towing boats could shelter safely in the median at Estuary Road than at the proposed intersection at Estuary Place. When comparing the two locations, Estuary Road is the best to serve the proposed marina in the short to medium time frame;
- * the sight distance at both intersections significantly exceeds or will exceed minimum standards.
- * Eventually with considerable traffic growth, insufficient gaps in the traffic will be available to enable traffic to access the Old Coast Road from the adjoining developments. When this occurs a need to signalise a number of intersections will become evident. It is difficult to predict at present which ones will be best suited to signalisation. It is therefore important to retain links within the developments to enable traffic to access the intersections that will be signalised. In this instance it is important that access within the development be available to enable travel between Estuary Road and Estuary Place. Drivers of vehicles towing boats would obviously favour the use of the intersection with signals to access Old Coast Road.

Traffic Congestion

The point is well made that traffic figures included in the CER do not allow for the proposed adjoining developments. The figures apply to the Marina only.

The Department has had a traffic study done which includes the marina and the proposed Eastport development. The diagrams in Appendix A show theoretical traffic volumes for marina Concepts A and B. The traffic volumes that emerged from the modelling can be summarised as follows:

Concept	Vehicles per day (weekend) Old Coast Road junctions	
	Estuary Road	Estuary Place
A	330	3500
B	840	3400

The following comments were made by Main Roads on traffic volumes:

* *Old Coast Road*

On Old Coast Road in this vicinity average annual daily traffic counts of about 4500 vehicle per day have been recorded for the last few years. This can be expected to increase slightly as a result of development associated with the channel and also a slow increase resulting from general development in the corridor.

* *Estuary Road*

The marina development and other development associated with the channel will cause an increase in traffic at this intersection. The increase would be greater under Concept B.

It should be noted that until recently Estuary road was the northern access to the estuary scenic drive and a significant drop in traffic at this intersection has resulted from the closure at the channel construction.

* *Estuary Place*

Under both options an increase in traffic can be expected in Estuary Place as development takes place and it is made a better connection to Old Coast Road. The increase would be greater under Concept A.

* *General*

Growth has taken place at similar intersections along Old Coast Road as areas alongside have been developed. The only significant difference here is that under Concept A Estuary Place will carry a higher proportion of boat-towing traffic. Under Concept B Estuary Road will carry this higher proportion of boat towing traffic.

When assessed under the Austroads Guide to Traffic Engineering Practice, the traffic volumes predicted at both of the intersections concerned can be accommodated without significant delays. Enough gaps are predicted in the

highway flow to enable safe entry of vehicles from the side road. This has been based on entry in a one stage process (ie with no wait in the median area).

A comparison has been made with similar intersections and again no problems can be foreseen in the short term.

From the point of capacity and safe operation it is probably best that the traffic be shared evenly between the two intersections.

It is evident from this advice that Estuary Road as it is presently configured could safely handle the expected traffic volumes generated by the marina.

Dredging of Marina Entrance Channel

As proponent for the marina project the Department was obliged to guarantee navigability into the marina basin. How this guarantee is facilitated will be a matter for negotiation between the Department and Wannunup Development Nominees, (WDN). There will be some form of cost sharing.

Water Quality

Water quality will be maintained at the standard of the source water by various pollution control measures described in the CER. The source water will be a mixture of marine and in lesser proportion estuarine water.

With respect to positioning of the marina entrance there is very little difference in water exchange between Options A and B given that the dominant mechanisms are wind and tide. It is also noteworthy that the Channel was designed to maintain a constant velocity with respect to position along it (although not with respect to time obviously). This means that theoretically at any given time the flow velocity in the bell mouth should be the same as the flow velocity in the Channel proper. Flow passed either entrance should have the same velocity.

Parking and Boat Launching Ramps

In the CER Concept A does have a greater car and trailer parking capacity than concept B. This is now not the case. The Department has purchased land from WDN to increase the Concept B area to cater for 240 car/trailer bays.

The point is well made that there is not room for further expansion of the Concept B area and this will limit the capacity and development of this concept, as stated in the CER.

With respect to an estuary boat ramp the Department will construct one at the end of Estuary Place regardless of which concept goes ahead. This will take some pressure off the marina facilities.

Public Access to Foreshore Reserve

As described, the Concept B car parking area has been increased.

It is considered that access to the foreshore can be adequately restricted to pedestrians and bicycles and the like by provision of a dual use path only. This is the intention for Concept B. In the case of Concept A larger vehicles would have full road access along the foreshore right to the channel. This would have a more intrusive effect and greater possibility of damage than a dual use path.

Dust Control (During Construction)

It is highly likely that the marina earthworks will be undertaken by dredge. The material will be saturated during handling and placement and therefore dust generation will be minimal. Other site works such as filling and preparation at the car parking areas will be relatively short in duration and over a small area. The car park will be sealed and verges and drainage basins will be grassed and vegetated as winter rains allow.

Overall, dust nuisance due to marina construction activities will be minimal.

Points Raised by the City of Mandurah

Several points relate to ongoing management. The Department will provide:-

- * an emergency strategy for large oil and petrol spills. Fire fighting facilities will be a requirement of any refuelling installation;
- * a maintenance program for cleaning of the marina as required;
- * a maintenance program for grassed and planted areas;
- * security for pens;
- * drainage for a 1 in 10 year rainfall event; and
- * deterrence of the use of certain anti-fouling paints by exclusion from the Marina.

After consultation with the community and the City of Mandurah the Department has decided to increase the size of the boat ramp from two to four lanes.

Advice from Main Roads indicates that the existing Estuary Road junction will be adequate for up to 1000 vpd along Estuary Road even allowing for growth in traffic along Old Coast Road.

Maintenance on boats in the Marina will be restricted to minor repairs.

Public consultation has been undertaken by the Department both through the CER process and in the form of door knocking of nearby residents.

Public parking and a dinghy launching ramp will be provided at the end of Estuary Place.

Road upgradings associated with the Old Coast Road intersections will be undertaken as required by the Main Roads of Western Australia. It is not envisaged that local road works will be required other than minor treatments such as signing and a tie-in at the actual marina entrance.

The foreshore created by the reclamation process will be landscaped as per drawings prepared by consultants for DMH, copies of which have been given to the City of Mandurah and the Shire of Murray. Management of the foreshore is dependent on an

"owner" being identified. This will be possible once the issue of the local authority boundary relocation is resolved. DMH has initiated this process.

Points raised by the Peel Inlet Management Authority

PIMA's request that compensating basins be installed to collect the run off from paved areas is well made. The capacity suggested, being retention of water from the 1 in 10 year storm for a period of 5 days, is very stringent however. The Department is designing the car park as a large basin with an unlined sump in its centre to collect run off. The retention period will depend on the permeability of the underlying soil. The basin geometry is such that it will hold a 1 in 10 year event, although this will reduce the amenity of the car park until the water level recedes. This is considered to be a cost effective and appropriate measure for complying with the Authority's drainage requirement. Responsibility for the compensating basin as described will rest with the manager of the facility.

It should be noted that design and construction of the canals is not part of this marina proposal.

Dewatering into the estuary has been the subject of PIMA and DMH correspondence and was resolved at the PIMA meeting of 28 May 1993. The Authority approved a dewatering operation provided certain water quality levels were met.

As stated in the CER the water quality monitoring program will be designed in consultation with PIMA and the EPA.

Please contact Mr Nello Siragusa or Mr Rob Wallwork of this office if you require further information or clarification of this response.

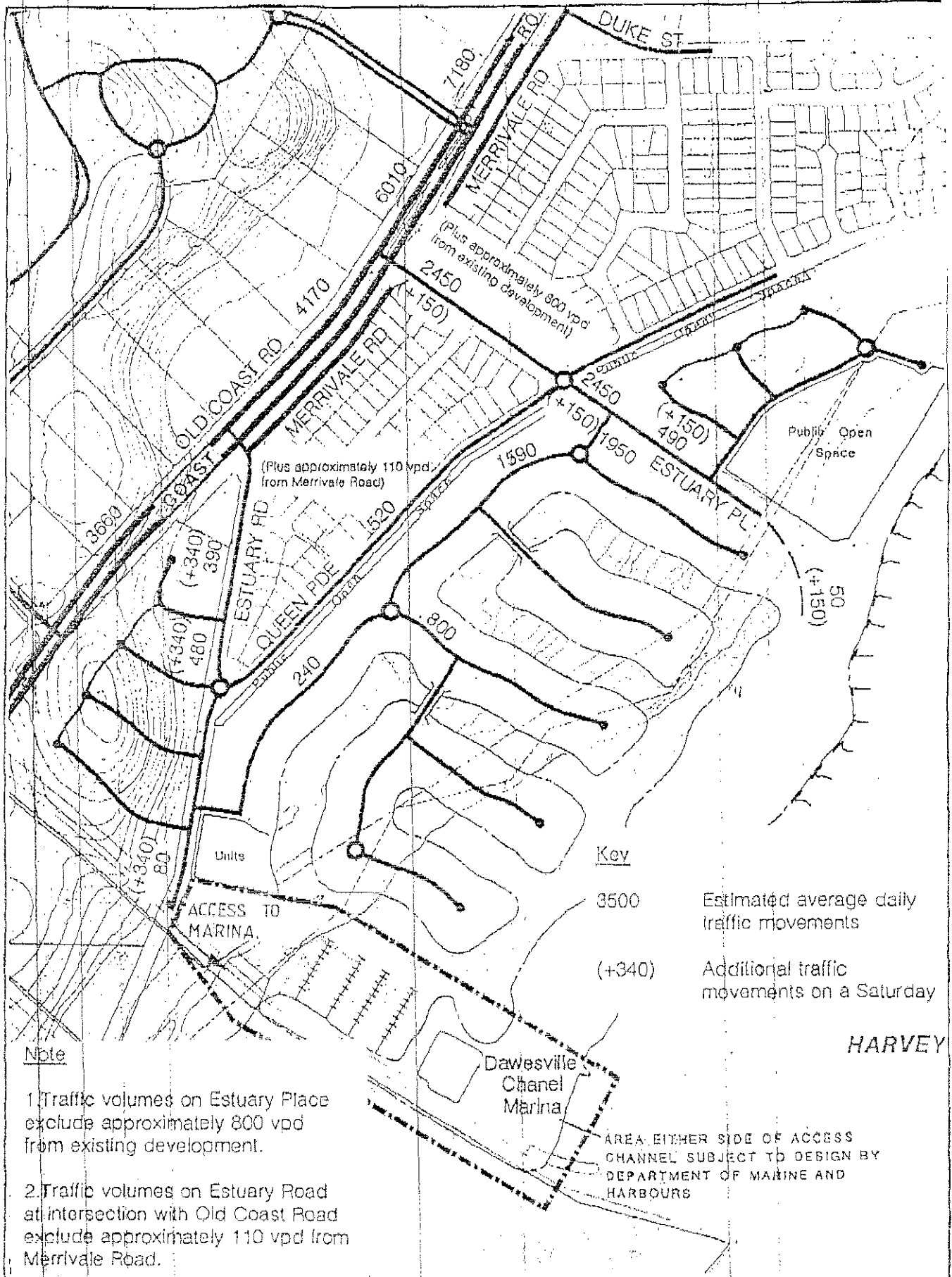
Yours faithfully



S HICKS
EXECUTIVE DIRECTOR
DEPARTMENT OF MARINE AND HARBOURS

29 June 1993

APPENDIX A
TRAFFIC MODELS FOR MARINA CONCEPTS A AND B



<p>SINCLAIR KNIGHT BUCHANAN</p>	<p>Title</p> <p>REVISED FORECAST DAILY TRAFFIC MOVEMENTS SECTOR C</p>	<p>Figure</p> <p>1</p>
<p>Dawesville Traffic Study</p>		



KEY

- 3500 ESTIMATED AVERAGE DAILY TRAFFIC MOVEMENTS
- (+200) ADDITIONAL TRAFFIC MOVEMENTS ON A SATURDAY

NOTE

TRAFFIC VOLUMES ON ESTUARY PLACE EXCLUDE APPROXIMATELY 800 VPD FROM EXISTING DEVELOPMENT.

AREA EITHER SIDE OF ACCESS CHANNEL SUBJECT TO DESIGN BY DEPARTMENT OF MARINE AND HARBOURS

HARVEY

SINCLAIR KNIGHT BUCHANAN

Dawesville Traffic Study

Title

FORECAST DAILY TRAFFIC MOVEMENTS
SECTOR C

Figure

5.4

Appendix 3
Proponent's list of commitments

DAWESVILLE CHANNEL
PUBLIC MARINA AND BOAT LAUNCHING FACILITY
COMMITMENTS MADE BY THE PROPONENT

The following commitments are divided into pre-construction, construction and post construction tasks, as appropriate.

Pre-construction

1 Estuary Reclamation

A portion of the marina site will be formed by reclaiming some of the Harvey Estuary. The site will be contained within the area approved for reclamation by the Minister for Environment.

2 Licences

A dredging licence will be sought from the Peel Inlet Management Authority.

3 Water Quality Management Plan

The proponent will prepare a water quality monitoring programme to the satisfaction of the EPA prior to completion of the marina. The Management Plan will outline strategies necessary to maintain water to a standard compatible with the following range of beneficial uses:-

- .occasional human immersion;
- .boating;
- .adjacent residential development; and
- .passive recreation.

Parameters to be monitored are as follows:

- .suspended solids
- .chemical constituents
- .pH
- .dissolved oxygen
- .nutrients

During Construction

4 Dust and Noise

Activities on site necessary for construction will be managed so as to minimise nuisance arising from dust and noise. Finished earthworks within the Marina precinct will be stabilised to the satisfaction of the Environmental Protection Authority with a biodegradable emulsion or vegetation cover.

5 Dredge Spoil Management

Excavation will be carried out in accordance with the Spoil Disposal and Land Management Plan prepared in compliance with Recommendation 7 of EPA Bulletin No. 363 (1988).

The marina basin will be excavated by dredge. The excavated material will be deposited on the surrounding land and reclaimed estuary to a height suitable for landscaping. It will be contained within bunds. This will aid settlement and compaction and facilitate control of run-off water quality to a standard acceptable to EPA and the Peel Inlet Management Authority.

Post Construction

6 Water Quality Management

The Proponent will monitor the water quality within the marina and entrance channel. The results will be forwarded to the EPA as soon as possible after testing. In the event that water quality is found to be inadequate the Proponent will undertake whatever steps necessary to achieve the required standard.

Results of monitoring of the adjoining canals, carried out by others, will be included in any analysis of problems with the water quality.

The Proponent will deter the use of TBT anti-fouling paints on vessels within the Marina.

7 Revetment Walls, Pens, Walkways and Other Marine Structures.

The condition of the marina revetment walls, pens, walkways and other marine structures will be maintained by the proponent. Inspections will be carried out on at least an annual basis.

The proponent will provide a dinghy launching ramp at the end of Estuary Place.

8 Maintenance Dredging

Although it is anticipated that maintenance dredging requirements will be minimal, maintenance dredging will be carried out if necessary.

Maintenance of the depths of the marina basin will be undertaken by the Proponent. Any plans for dredging and disposal of dredged material will be referred to the EPA prior to implementation. Water depths will be monitored by the Proponent staff on a regular basis.

Maintenance dredging of the Entrance Channel will be undertaken in consultation with the Waterway Manager for the proposed Eastport Canal development.

9 Drainage

All stormwater will be disposed of in a manner consistent with the principles set down in the "Statement of Planning Policy No. 2 for the Peel Harvey coastal plain Catchment" (DPUD 5AA Policy).

10 Rubbish Collection, Effluent Disposal

Rubbish collection will be undertaken on a regular basis under contract with the City of Mandurah.

Effluent from the sewerage pump out facility will be removed as use dictates and disposed of in accordance with common practice of the City of Mandurah or as required by the Health Department of Western Australia and the Water Authority of Western Australia.

11 Oil Spill Contingency

The Department of Marine and Harbours (DMH) is the premier oil spill management authority in the State. DMH will maintain ready access to equipment suitable for minimising the effects of an oil spill in the marina. An action plan will be prepared prior to the marina becoming operational.

12 Fuel Facilities

If fuel facilities are provided then they will be situated on a land backed berth within the marina. Fire fighting equipment will be installed. Drainage will be provided to catch any spillage on the deck areas. Spillage over the water in the act of filling vessel tanks will be minimised by allowing only trained operators to carry out the refueling activity.

A fuel spill contingency plan will be prepared to the satisfaction of the Environmental Protection Authority prior to the construction of any fuelling facility.

13 Implementation of the Water Quality Management Plan and Shore Facilities Management.

The water quality management plan and shore facilities management will be implemented by the proponent at the conclusion of the construction phase.

14 Long Term Management

The Marina will be vested with the Minister for Transport. DMH will be solely responsible for the marina in the short term, say during the first five years. In the longer term it is possible that such responsibility will be passed on to another authority. It would be a condition of any such transfer that all existing commitments were undertaken by the new owner.