

BULCNWET

PROPOSED BUNBURY HOLIDAY RESORT
LOT 5 OLD COAST ROAD AUSTRALIND

Report and Recommendations
of the
Environmental Protection Authority.

Environmental Protection Authority
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i. **SUMMARY AND RECOMMENDATIONS**

In July 1988, the Authority received a proposal for a holiday resort development located at Point Douro, Bunbury from Bunbury Holiday Resort Pty. Ltd. The Authority determined that potential environmental impacts associated with the proposal were such that it should be formally assessed under Part IV of the Environmental Protection Act, as a Notice of Intent (NOI).

The proposed Bunbury Holiday Resort involves a resort complex on 21.8 ha of land at Point Douro peninsula, on the northern side of the Collie River Delta. The area is prone to seasonal flooding, and has been largely cleared and used for grazing in the past. It is at present in a degraded condition, and has been subject to unrestricted off road vehicle activity.

The project would involve a caravan park and associated camping area, family holiday units, a restaurant, additional recreational facilities, and a boat haven, to cater for the launching and temporary mooring of shallow draught recreational boats.

Following consideration of the NOI and points raised in public submissions, the Environmental Protection Authority finds the project as described in the NOI to be environmentally acceptable, subject to the following recommendations.

RECOMMENDATION 1

The Environmental Protection Authority considers that the development proposal as described in the Notice of Intent to be environmentally acceptable subject to the proponents commitments contained within the Notice of Intent and the following recommendations.

RECOMMENDATION 2

The Environmental Protection Authority recommends that the area proposed as the Nature and Conservation Zone in the Notice of Intent be zoned a 'Recreation and Conservation Area' under the Shire of Harvey Town Planning Scheme, together with appropriate land use controls. This area, together with the existing foreshore reserve adjacent to the Resort Zone Area B, should be subject to a management plan, prepared by the proponent to the satisfaction of the Leschenault Inlet Management Authority (LIMA). Initial implementation of the Management Plan should be the responsibility of the proponent, to the satisfaction of LIMA. Until implementation of this plan, vehicle access to the site should be restricted, with the exception of vehicles involved in mosquito control, and public access managed to minimise disturbance to samphire vegetation.

RECOMMENDATION 3

The Environmental Protection Authority recommends that no dewatering be undertaken on the site associated with construction of the boat haven unless a further submission addressing this impact has been received by the EPA and approval granted.

RECOMMENDATION 4

The Environmental Protection Authority recommends that the proponent be responsible for the monitoring and management of water quality within the boat haven, and that prior to commencement of development, an appropriate water quality monitoring and management programme be prepared by the proponent to the satisfaction of the Environmental Protection Authority and Leschenault Inlet Management Authority (LIMA). Water quality in the boat haven and entrance channels should be regularly monitored by the proponent for the first three years after construction. These results should be incorporated in a report, to be submitted to LIMA and the Environmental Protection Authority for comment on an annual basis. If any problems are indicated by the monitoring programme, these should be addressed by the proponent to LIMA's satisfaction. The final location of the refuelling facility, stormwater drainage, sullage and boat pumpout facilities should be referred to the Environmental Protection Authority and LIMA for approval prior to construction.

1. INTRODUCTION

In July 1988, the Authority received a proposal for a holiday resort development located at Point Douro, Bunbury from Bunbury Holiday Resort Pty. Ltd. The Authority determined that potential environmental impacts associated with it were such that it should be formally assessed under Part IV of the Environmental Protection Act, as a Notice of Intent (NOI).

The Notice of Intent was completed and comment from identified Government agencies, local government and local ratepayer associations was sought for a 4 week period on 21 December 1988.

This assessment report has been prepared in consultation with the Leschenault Inlet Management Authority.

2. DESCRIPTION OF PROJECT

The proposed Bunbury Holiday Resort involves a resort complex on 21.8 ha of land at Point Douro peninsula, on the northern side of the Collie River Delta, as indicated in Figure 1. The area is prone to seasonal flooding, and has been largely cleared and used for grazing in the past. It is at present in a degraded condition, and has been subject to unrestricted off road vehicle activity.

The resort is proposed to cater for family resort accommodation, and would include :

- . a caravan park, incorporating 194 serviced bays ;
- . a camping area;
- . 46 serviced family holiday units (in 5 separate buildings);
- . a restaurant;
- . a swimming pool;
- . recreational facilities; and
- . a 0.9 ha boat haven, including sheltered embayment for launching and temporary mooring, and include a jetty and launching ramp. It is envisaged that this will be used for boat launching and temporary storage of shallow draught (less than 0.5 m) recreational boats.

The entrance channel to the boat haven is proposed to be 20 metres wide on the southern side, to allow easy navigation and facilitate flushing. A 5 metre wide channel would also be constructed to the north to link up with Samphire Bay, primarily to provide a buffer between the developed area and the proposed Nature and Conservation Reserve. The central basin is proposed to be 80 metres wide, and would be excavated to a maximum depth of 1.8 metres AHD. Navigational aspects associated with mooring lease areas and overwater structures would be subject to on-going discussion with the Department of Marine and Harbours.

Fill provided by the excavation would be used in the development area, and extra fill would be imported from existing sand pits in the Bunbury area to raise the building height levels to + 2.4 metres AHD. The proponent has made a commitment in the NOI that there would be no building in the designated floodway area, and that all buildings would be elevated above the 100 Year flood level. The summer caravan park site is located in the floodway, however this is not considered to present a safety risk. The resort would be connected to deep sewerage.

Figure 1. Concept Plan of Proposed Bunbury Holiday Resort
(Source: Bowman and Bishaw, 1988).

It is proposed to develop the resort in two stages. The first stage is planned to commence in late 1989, and include construction of the short stay caravan park sites and camping area. The rest of the resort is planned to be constructed in 1992.

The resort and accommodation facilities would be located on 12.3 ha in the eastern part of Lot 5. An area of 8.3 ha in the north west part of Lot 5, which is primarily samphire heathland, would be preserved and retained in its present state. The proponent has acknowledged that this area has a 'relatively high conservation value', and the NOI states that this area would not be developed, but 'will be preserved for nature conservation and associated recreation purposes' (Bowman and Bishaw, 1988:26), to be managed by the proponent, and be subject to management commitments and an on-going management plan. A limestone walk trail around the Reserve would be constructed to maintain public access. The existing 30 metre foreshore reserve surrounding the peninsula would also be retained in a natural state.

The proposed development site is currently owned by Clifton Park Pty. Ltd., however Bunbury Holiday Resort Pty. Ltd. currently has the option to purchase the land if the proposal is found to be environmentally acceptable. The land is currently zoned 'General Farming' which would be changed to 'Tourist' in the Shire of Harvey Town Planning Scheme.

Following preparation of the NOI, copies were sent to the City of Bunbury and the Shire of Harvey, government authorities including the Water Authority of Western Australia (WAWA), Department of Marine and Harbours (DMH), State Planning Commission (SPC) and Leschenault Inlet Management Authority (LIMA), and local ratepayer groups for Eaton and Australind.

3. REVIEW OF PUBLIC SUBMISSIONS

Six submissions were received from the following organisations :

- . State Planning Commission (SPC);
- . Leschenault Inlet Management Authority (LIMA);
- . Water Authority of Western Australia (WAWA);
- . Shire of Harvey;
- . Department of Marine and Harbours; and
- . one member of the public.

The proposal was well received, and the general view indicated that the development is consistent with the Town of Harvey Town Planning Scheme (following rezoning), the Bunbury Region Plan and LIMA Management Programme for Leschenault Inlet.

Issues raised in submissions included the following points.

Flood Level

- . Minimum floor level should be raised from + 2.4 to + 2.5 m AHD to allow for wave generation by strong north westerly winds through the length of the Leschenault Estuary, and maybe even higher to allow for the Greenhouse Effect.

- . The relief floodway reserve, similar to that which exists from the Eaton foreshore recreation area south west to the Leschenault Estuary should be set aside from a point on the north bank of the Collie River opposite the west end end of Alexander Island and running north west to the Estuary to cater for excess flooding. This would not preclude that area from being developed for either recreation or conservation under appropriate guidelines.

Water Bird Use

- . Location of proposed units is close to Samphire Bay which is the area identified as a very significant area for waterbird use.

Conservation and Reserve Area

- . The State Planning Commission has recommended that the area be formally ceded to the crown and zoned as 'Recreation and Conservation', and until this time, public access should be restricted.
- . Proposal to deep rip area in Conservation Reserve may not be necessary, and may even exacerbate mosquito problem by creating more potential breeding sites.
- . Extent of walk trail may lead to degradation of samphire area. Path should therefore be sited in consultation with LIMA, EPA and CALM. The proponent should also make a commitment to manage this.

Mosquitoes

- . No measures to control mosquitos should be implemented without consultation with LIMA and the Mosquito Control Review Committee.

Boat Haven

- . The Department of Marine and Harbours has recommended that the depth of boat haven should not exceed the depth of the entrance, and should equal the natural depth of the river.
- . Northern channel of the proposed boat haven is too small to facilitate flushing.
- . A water quality study, including flushing time should be undertaken by the proponent.
- . Responsibility of maintenance of the boat haven should be clearly indicated in the Monitoring and Management Plan.
- . Description of dewatering for the boat haven is inadequate in the NOI. The Water Authority recommends that no dewatering should be undertaken until a hydrological survey is conducted and an assessment of the effects of dewatering done and submitted to the them for comment.
- . Navigational aspects of the channel should be referred to the Department of Marine and Harbours i.e mooring lease areas, overwater structures.

Water Supply

- . The Water Authority has stated that no groundwater license would be issued for deep aquifer use. Proposal is located within the Bunbury Groundwater License Area, and WAWA would only allow use of the shallow aquifer.

4. ENVIRONMENTAL IMPACTS

This assessment has been undertaken in close consultation with LIMA. During the preparation of this report, the following issues were identified as potential environmental impacts associated with the development proposal:

- . management of the proposed conservation reserve;
- . impact on nearby waterbird populations in Samphire Bay;
- . effect on local groundwater supplies through dewatering;
- . mosquito control;
- . water quality associated with the boat haven;
- . foreshore stabilization; and
- . landscape aesthetics.

Following consideration of these issues, the EPA has determined that the project as described in the NOI is environmentally acceptable subject to the proponent's commitments contained within the NOI and recommendations contained in the following discussion.

RECOMMENDATION 1

The Environmental Protection Authority considers that the development proposal as described in the Notice of Intent to be environmentally acceptable subject to the proponents commitments contained within the Notice of Intent and the following recommendations.

4.1 CONSERVATION RESERVE AND WATERBIRD HABITAT

Part of the Point Douro Peninsula is included within System 6 Recommendation C.66, and the Collie River Delta in Recommendation C.67. These areas have been recognised as being an area of high conservation value due to the extensive areas of samphire, and their importance as a waterbird habitat. The estuary also provides an important summer refuge for waterbirds of various types, and is a significant fish nursery area. Both Recommendations C.66 and 67 areas have been identified as areas of regional significance.

The EPA and LIMA consider that development of the type described in the NOI in these areas is an acceptable form of land use provided that the areas of high conservation value, and the waterbird nesting sites are well protected. However, the following points should be taken into consideration by the proponent.

During the construction phase of the development adjacent to Samphire Bay there should be minimal disturbance to the waterbird colonies, and on-going noise and light associated with the development should be well controlled. Advice should be sought from LIMA and the Department of Conservation and Land Management (CALM).

It is noted that the proponent plans to establish a Nature and Conservation Reserve in the north-west section of the site to protect the samphire vegetation, and the proponent has made a commitment to take responsibility for the on-going monitoring and management of the Reserve, and maintain public access to it. On-going maintenance of the Reserve could be expensive and require extensive management control to ensure that it is maintained in an environmentally acceptable state given increased public access associated with the development proposal. Both the EPA and LIMA consider that the long term management responsibility of the area should rest with the LIMA, and that the area proposed as the Nature and Conservation Zone be zoned for 'Conservation and Recreation' under the Shire of Harvey Town Planning

Scheme. However, acceptance of this responsibility would require the land to be ceded to the Crown and this is not favoured by the proponent. The Authority considers that this area should be zoned for 'Conservation and Recreation', and be subject to a management plan, prepared in consultation with LIMA. The NOI indicates that the proponent would be responsible for the Conservation and Recreation Reserve. Such an agreement is acceptable to the EPA and LIMA until long term management and ownership matters are resolved. Until the plan is finalised, public access to the Conservation and Recreation area should be limited. Ownership of this area should be the subject of on-going negotiation between the proponent, the Shire of Harvey and LIMA.

It would be appropriate for the on-going management of the Conservation and Recreation area, including the siting of the walk trail to ultimately become the responsibility of LIMA.

RECOMMENDATION 2

The Environmental Protection Authority recommends that the area proposed as the Nature and Conservation Zone in the Notice of Intent be zoned a 'Recreation and Conservation Area' under the Shire of Harvey Town Planning Scheme, together with appropriate land use controls. This area, together with the existing foreshore reserve adjacent to the Resort Zone Area B, should be subject to a management plan, prepared by the proponent to the satisfaction of the Leschenault Inlet Management Authority (LIMA). Initial implementation of the Management Plan should be the responsibility of the proponent, to the satisfaction of LIMA. Until implementation of this plan, vehicle access to the site should be restricted, with the exception of vehicles involved in mosquito control, and public access managed to minimise disturbance to samphire vegetation.

4.2 GROUNDWATER

As the proposal is located in a Groundwater Licence Area, use of groundwater would be restricted to use of the shallow aquifer. As indicated by the Water Authority of Western Australia, further information is required regarding the dewatering operation associated with the construction of the Boat Haven. The shallow aquifer may be affected by the proposed development and this needs to be recognised.

RECOMMENDATION 3

The Environmental Protection Authority recommends that no dewatering be undertaken on the site associated with construction of the boat haven unless a further submission addressing this impact has been received by the EPA and approval granted.

4.3 MOSQUITO CONTROL

Mosquitos breed prolifically in the estuarine environment adjacent to the development site. Small depressions within the samphire flats and in tyre tracks form temporary pools of water which provide ideal breeding sites, in particular during the summer months.

As indicated in the NOI, the proponent has made a commitment to implement all mosquito control measures in accordance with the advice of the Mosquito Control Review Committee and LIMA, both within the proposed Conservation and Recreation Area and in the proposed development area. Local authorities are

responsible for mosquito control in Western Australia, and hence on this site. Effective control in the Conservation and Recreation Area would need to be an important consideration in the management plan and should be conducted in accordance with that plan.

Rehabilitation of disturbed or compacted areas in the development area should include revegetation wherever feasible.

4.4 WATER QUALITY

The question of water quality within the proposed boat haven was briefly addressed within the NOI, and the proponent has included a commitment to routinely monitor water quality in the boat haven and adjacent Collie River.

Recent information from the Waterways Commission (pers. comm.) indicates that Collie River water immediately upstream of the proposed development has shown regular deterioration in water quality, as evidenced by low dissolved oxygen levels and high phytoplankton cell counts during summer. Blooms of macroalgae in the central and northern sections of Leschenault Inlet have also been recorded recently.

The Collie River is a salt-wedge estuary which has both a seasonal and diurnal variation in its salinity structure and hydrodynamic behavior. As is typical for similar estuaries in the south-west of Western Australia, the water quality and biological state of such an estuary often reflects the physical structure of the water, both horizontally and vertically.

The EPA and LIMA consider that an appropriate water quality monitoring and management programme should be prepared by the proponent, to their satisfaction. This programme should include monitoring of water quality both within the boat haven itself, and in the north and south channels. The monitoring programme should be tailored to capture the physical and biological characteristics of the boat haven and adjacent waters during relevant hydrodynamic phases of the system. It is therefore considered that appropriate field exercises be designed in consultation with the EPA and LIMA, and conducted during the following conditions :

- . post winter salt wedge intrusion;
- . typical mid-summer diurnal period;
- . mid-summer low wind period;
- . mid-summer strong wind period; and
- . winter low wind period.

The mid-summer and winter exercises should be conducted during periods of neap tides.

Biological parameters to be measured should include pH, nutrient content, and chlorophyll "a" concentrations of surface and bottom waters (or, above and below the halocline or thermocline during stratification of salt or temperature respectively), and nutrient content of sediments. Further, salinity, temperature and dissolved oxygen data should be collected throughout the water column at a minimum of 0.2 metre depth intervals above and within the halocline or thermocline, and at 0.5 metre depth intervals in the remainder of the water column. The horizontal spacial resolution of profiling should be adequate to capture any spacial variability in the parameters being monitored. It is therefore suggested that an adequate number of sites both within and adjacent to the boat haven be monitored, to the satisfaction of EPA and LIMA.

RECOMMENDATION 4

The Environmental Protection Authority recommends that the proponent be responsible for the monitoring and management of water quality within the boat haven, and that prior to commencement of development, an appropriate water quality monitoring and management programme be prepared by the proponent to the satisfaction of the Environmental Protection Authority and Leschenault Inlet Management Authority (LIMA). Water quality in the boat haven and entrance channels should be regularly monitored by the proponent for the first three years after construction. These results should be incorporated in a report, to be submitted to LIMA and the Environmental Protection Authority for comment on an annual basis. If any problems are indicated by the monitoring programme, these should be addressed by the proponent to LIMA's satisfaction. The final location of the refuelling facility, stormwater drainage, sullage and boat pumpout facilities should be referred to the Environmental Protection Authority and LIMA for approval prior to construction.

4.5 FORESHORE STABILIZATION

The estuarine foreshore area is already vulnerable to erosion through local fishing activity and boat wash, and recreational activity in the area is expected to increase as a result of the development proposal.

The EPA and LIMA support the proponent's commitment to control erosion in the foreshore areas.

4.6 LANDSCAPE AESTHETICS

Point Douro peninsula provides a significant visual focal point to motorists passing along the Old Coast Road between Australind and Bunbury. While at present the landscape is relatively disturbed and not visually appealing, any development at this location will provide a visual focus for travellers in the area. The Authority considers it important that the development proposal be aesthetically sensitive to the existing estuarine environment.

The Authority therefore considers that structures and landscape details associated with the development should be designed so as to be compatible with the existing environment as far as possible. Housing structures should be designed so as to reduce visual impact, and areas of reticulated lawn should be kept to a minimum to reduce the demand for reticulation water from the shallow aquifer.

5. CONCLUSIONS

Following consideration of these issues, the EPA has determined that the project as described in the NOI is environmentally acceptable subject to the proponent's commitments contained within the NOI and recommendations relating to:

- . Rezoning of the proposed Nature and Conservation Zone to 'Recreation and Conservation Area' under the Shire of Harvey's Town Planning Scheme.
- . Dewatering associated with the construction of the boat haven. No dewatering should be undertaken unless a further submission addressing this impact has been received by the EPA and approval granted.
- . Water Quality Monitoring and Management Programme. An appropriate water quality monitoring and management programme should be prepared by the

proponent to the EPA's and LIMA's satisfaction prior to commencement of the development. Details to be addressed within this programme are described in Section 4.4 of this report.

6. **REFERENCES**

Bowman Bishaw and Associates (December 1988) Proposed Bunbury Holiday Resort, Lot 5, Old Coast Road, Australind - Notice of Intent.

Department of Conservation and Environment (1983) The Darling System - System 6. Part II Recommendations for Specific Localities.