

Mindarie Keys

Smith Corporation Pty. Ltd.



Report and Recommendations
by the
Environmental Protection Authority



Department of Conservation and Environment
Perth, Western Australia

Bulletin 200 July 1985

MINDARIE KEYS
SMITH CORPORATION PTY. LTD.

Report and Recommendations
by the
Environmental Protection Authority

Department of Conservation and Environment
PERTH, WESTERN AUSTRALIA

Bulletin No. 200

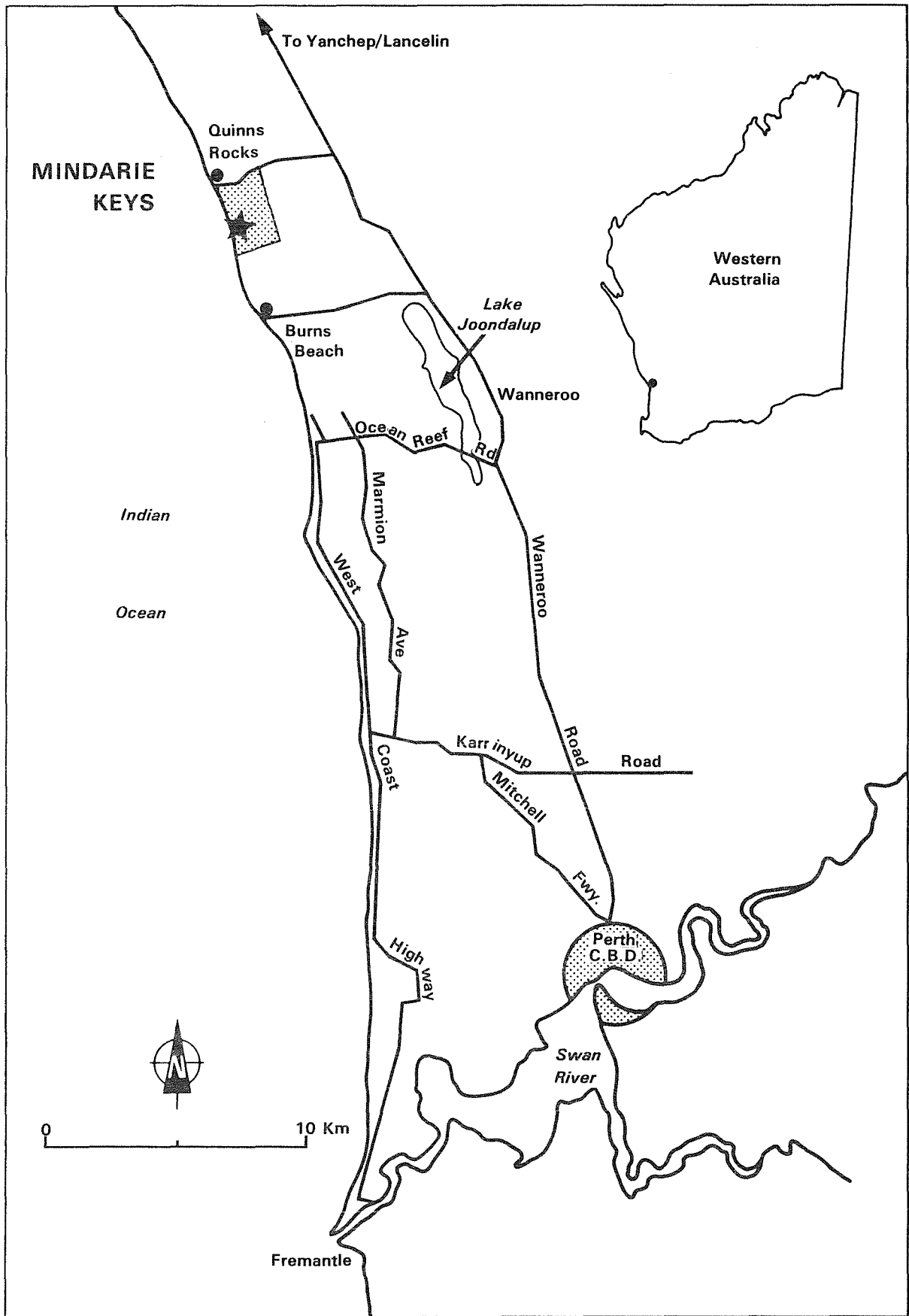
ISBN 0 7309 0426 1

July 1985

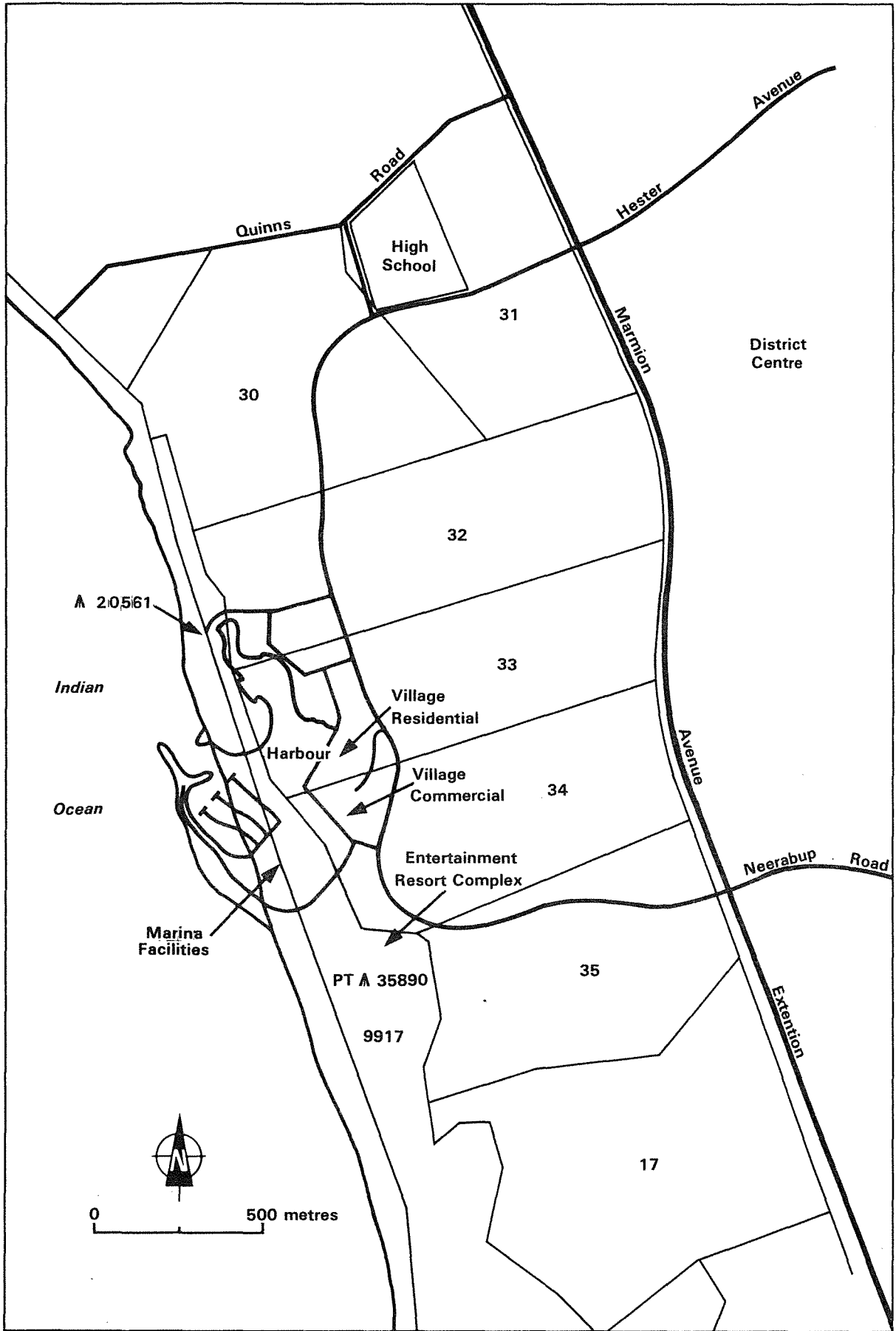
ISSN 0156-2983

CONTENTS

	<u>Page</u>
1. SUMMARY	1
2. BACKGROUND	1
3. THE PROPOSAL	2
4. ENVIRONMENTAL IMPACTS AND MANAGEMENT	3
5. PUBLIC SUBMISSIONS	14
6. SUBMISSIONS FROM GOVERNMENT AGENCIES	16
7. CONCLUSIONS	18
8. LIST OF RECOMMENDATIONS	18
9. APPENDICES	22



MINDARIE KEYS LOCALITY PLAN



MINDARIE KEYS PLAN

1. SUMMARY

Mindarie Keys is a proposal by the Smith Corporation Pty. Ltd. to develop a major urban cell focussed on an artificial harbour and marina on some 316 ha of land immediately south of the Quinns Rocks townsite.

Stage 1 of the project includes excavation of the harbour with development of commercial, recreational and marina facilities and about 100 residential lots. This is planned for completion before the defence of the America's Cup in the summer of 1986-87.

An Environmental Review and Management Programme was prepared by the proponent under guidelines issued by the EPA and subsequently released for an eight-week public review period which ended on 7 June 1985.

The EPA has assessed the environmental aspects of the project from the ERMP, public and Government agency comments on the ERMP, the proponent's response to those comments and the Authority's own investigations.

The Authority has considered that, with the exception of losses to the marine environment and consequential effect on commercial fisheries in the area, other impacts on the environment are manageable. However, it considers that the potential impact on the marine environment is in itself insufficient to recommend against the project proceeding.

Recommendation 1 The EPA has concluded that the Mindarie Keys project could proceed from the environmental viewpoint subject to compliance by the proponent with the provisions for environmental management in the ERMP and implementation of the recommendations in this report.

2. BACKGROUND

The Smith Corporation Pty. Ltd. has proposed developing some 316 ha of land immediately south of Quinns Rocks. The development would be a major urban cell with associated facilities focussed on an artificial, inland waterbody to be excavated and opened to the ocean.

While the overall project is proposed to extend over ten or more years, the proponent believes it essential for commercial reasons that the first stage, involving construction of the harbour, marina, commercial centre and some 100 residential lots, be completed before the defence of the America's Cup in the summer of 1986-87.

The Mindarie Keys project was referred to the EPA by the proponent, as well as two private citizens under the provisions of Section 56(1) of the Environmental Protection Act 1971-80. In September 1984 the Authority called for the

preparation of an Environmental Review and Management Programme (ERMP). The ERMP was prepared under guidelines issued by the EPA and released for an eight-week public review period ending 7 June 1985.

Following receipt of public and Government agency comments, the proponent's response to them and the EPA's own investigations the Authority has prepared this Assessment Report.

3. THE PROPOSAL

3.1 Description

The Mindarie Keys proposal envisages an inland harbour of approximately 13 ha containing a privately operated marina with ancillary facilities for approximately 250-350 craft and a six-lane public boat launching ramp. The harbour would provide the focus for commercial and retail outlets, infrastructure and accommodation facilities and the ultimate development of some 2 000 lots staged over 10 or more years.

The first stage will involve excavating the harbour and establishing the marina and associated facilities. In addition the commercial and accommodation facilities in the Mindarie Keys village will be developed along with approximately 100 residential lots in accordance with the objective of emulating a Mediterranean village concept.

3.2 Alternatives

The proponent did not look for alternative locations outside property owned or managed by the Smith Corporation Pty. Ltd. However, the following reasons were cited in the ERMP as supporting the site:

- . it is within the north-west urban corridor as designated under the Metropolitan Region Scheme;
- . the site is adjacent to the existing townsite at Quinns Rocks;
- . the proposal will complement, not compete with other marine facilities;
- . the harbour will be opened to the ocean in a stable, rocky coast.

An alternative harbour design wholly offshore was considered and rejected because of the cost and also the possible erosion effects on Quinns Beach.

A 'no build' option holds no attraction for the proponent.

3.3 Benefits and Disbenefits

In broad terms the benefits of the project proceeding have been identified in the ERMP as:

- . providing a safe haven in this section of the coast as well as providing protected mooring and boat launching facilities;
- . promoting north-south recreational movement along the coast and providing an alternative boating destination to Rottneest Island;
- . reducing river congestion by providing alternative mooring;
- . providing facilities for the America's Cup defence;
- . improving recreational fishing off breakwaters;
- . becoming an important tourist attraction;
- . stimulating the State's boat building and sales industry;
- . using a rocky coast thereby not alienating sandy beach for the development.

The broad disbenefits have been described in the ERMP as:

- . increasing noise levels, particularly during construction;
- . increasing human use pressure on the reefs and fishing grounds in the area;
- . requiring blasting of the offshore reefs nearby and impact upon commercial fishing, especially the abalone and rock lobster fisheries;
- . removal of a large area of coastal heath.

3.4 Responsibilities

In order to set out the respective responsibilities between the proponent, the State and the local authority, a legal Agreement is being negotiated between the parties. It is not proposed to ratify the Agreement in the Parliament. The Department of Conservation and Environment has had an opportunity to provide comments on a draft of the Agreement.

4. ENVIRONMENTAL IMPACTS AND MANAGEMENT

4.1 Principles of Environmental Management

The principles of environmental management against which the EPA has assessed this project include:

acceptability of the project on environmental grounds being dependent upon, amongst other factors, demonstration that potential environmental impacts can be managed adequately;

proper environmental management being demonstrated by the following factors:

- (a) responsible management authorities need clear identification and acceptance of responsibilities given. Any transfer of responsibilities needs to be based on performance, not only time criteria;
- (b) clear, legally-enforceable mechanisms should be defined;
- (c) consistent with (a), sources of capital and ongoing management resources need identification and commitments made, including contingency funding;
- (d) a timetable should be set out;
- (e) monitoring should form part of the management programme, and, where appropriate, procedures given for incorporating results into management by amendment of the management programme;
- (f) reporting of monitoring results to the appropriate authority within a specified time frame should also be part of the management programme; and
- (g) all approved management conditions and commitments should be implemented;

the EPA considering that as far as environmental management is concerned, the project is essentially a private facility and that the user-pays philosophy should apply;

approvals for further Stages of the project beyond Stage 1* being made conditional upon the State being assured of the proponent's satisfactory performance in the environmental management of Stage 1.

Recommendation 2 The EPA recommends that approvals for further Stages of development beyond Stage 1 (defined by the amendment to the Metropolitan Region Scheme) should be made conditional upon the State being assured of the proponent's satisfactory performance in the environmental management of Stage 1.

*Stage 1 of the development is defined as the amendment to the Metropolitan Region Scheme under Section 33A of the Metropolitan Region Town Planning Scheme Act gazetted on 17 May 1985 and shown on MRPA plan no.4.0810/2.

Recommendation 3 The EPA recommends, should the project proceed, that a condition of approval should be the preparation by the proponent of a comprehensive environmental monitoring and management programme to the EPA's satisfaction.

Commitment by the proponent to implement the programme should be reflected in the Agreement being negotiated between the proponent, the State and the Shire of Wanneroo.

The following elements should be included in the environmental monitoring and management programme:

- (i) the commitments made by the proponent in the ERMP;
- (ii) managing sediment movement as contained in Recommendation 5;
- (iii) preparation of a coastal management plan as contained in Recommendation 6;
- (iv) details of water quality monitoring and management as contained in Recommendation 8; and
- (v) monitoring of marine biota as contained in Recommendation 9.

It should be recognised by the proponent that some baseline work will need to commence prior to connecting the excavated harbour to the ocean and offshore blasting.

While the responsibility for implementing the monitoring and management programme and reporting regularly on results rests with the proponent, liaison should be initiated with appropriate Government agencies including the Department of Conservation and Environment, the Department of Marine and Harbours, the Town Planning Department and the Shire of Wanneroo. Reporting details should be included in the programme but should be on a regular basis. At the end of the first five years following construction, all results and interpretation of data should be incorporated in a report with recommendations for future requirements to the EPA.

Recommendation 4 The EPA recommends that the proponent liaises with relevant Government agencies during implementation of the monitoring and management programme. Reporting of results should be detailed in the programme but should be on a regular basis. After 5 years following construction, all results and their interpretation should be conveyed to the EPA with recommendations for future requirements.

The EPA notes that the ERMP commits the proponent to lodging a bond of \$250 000 with the Department of Marine and Harbours to guarantee the construction, operation and maintenance phases of the project. The bond covers specifically key environmental management issues. The Authority considers this an important commitment from the proponent because environmental management costs will be incurred from the start of the project and should be guaranteed regardless of the rate of return from land sales and commercial leases.

4.2 Environmental Impacts

4.2.1 Offshore Biota and Reefs

A major impact of the project would be the permanent loss of marine habitat including approximately 5 ha of nearshore reef. Further areas can be expected to be impacted to a lesser degree. As well, short-term impacts can be expected from increased turbidity during the construction phase. The ERMP proposes measures to minimise the latter as far as practicable.

The effects of habitat loss on commercial fisheries are discussed in Section 4.3.1 (below).

The loss of marine habitat is consequential upon the project proceeding. The EPA has considered the extent of the loss in biological and physical terms in this location and believes that the loss is insufficient reason in itself to recommend against the project proceeding for the following reasons:

- . the affected marine habitat with associated flora and fauna assemblages are neither restricted nor unique on a regional scale;
- . some of the loss will be compensated with artificial reef substrate from the breakwaters; and
- . the dimensions of the losses are acceptable on biological grounds on a regional scale.

4.2.2 Coastal Processes

The EPA accepts in general terms the hypothesis put forward in the ERMP on coastal processes and the potential impact of the project on sediment movement.

The site chosen for the project has the following characteristics which should assist to minimise potential sediment problems:

- . it is located on a limestone coast which is inherently more stable than a sandy coast;
- . it is remote from sites of sand accumulation and major longshore sediment movement; and

- . the potential is low for movement of sand inland from the coast.

If potential sediment problems occur, the main impact which could result could be exacerbation of the erosion of Quinns beach. It should be noted that Quinns beach is eroding already and it is possible that some coastal protection works may be required whether or not this project proceeds.

The ERMP set out three areas of further studies to provide baseline data against which any impacts on sediment movement can be assessed. These are:

- . sediment provenance studies to determine the source of material comprising the beach at Quinns and other areas;
- . beach profiling to determine the propagation of sediment waves between Burns Beach and Quinns; and
- . sediment tracking to determine extent of movement and distribution of sediment under summer and winter conditions.

These studies are already proceeding, and the results will be discussed progressively with the EPA, the Department of Marine and Harbours, and the local authority.

The first of the progress reports has been presented to the Authority which agrees that the results are in accord with the hypothesis prescribed in the ERMP and the consequential predictions made.

The ERMP gives a commitment that if the studies indicate that the project interferes with sediment movement, the proponent will undertake dredging of the trapped sand and return it to Quinns beach during or after winter periods, or, as required.

The EPA considers that the proposed studies and progressive results are reasonable and that the proponent's commitment is acceptable in principle. However, the Authority considers that this commitment should be reflected in the legal Agreement being negotiated between the proponent, the State and the local authority as contained in Recommendation 2.

Recommendation 5 The EPA recommends that the legal Agreement being negotiated for the project between the proponent, the State and the local authority should reflect the commitment by the proponent to by-pass sand across the entrance to the proposed harbour should a problem eventuate. This commitment should include maintaining the harbour entrance to the nominated depth.

4.2.3 Coastal Management

The development of the Mindarie Keys estate would place pressure on the existing foreshore Reserves which are subject to the EPA's System 6 Recommendation M2.

This Recommendation covers the coastal strip between Burns Beach and Two Rocks and recommends that the land be planned and managed as a Regional Park, co-ordinated by the National Parks Authority (now Department of Conservation and Land Management).

Most of the pressure would be derived directly from or be stimulated by the development. It is reasonable to expect co-operation between the proponent and the local authority, the Commissioner for Soil Conservation, the Department of Conservation and Land Management, the Department of Marine and Harbours and the Department of Conservation and Environment in the preparation and implementation of a coastal management plan: at least for the portion of the Foreshore Reserves adjacent to the development. Such co-operation was committed in the ERMP.

However, the EPA believes that in accordance with well-established past precedents (e.g. Secret Harbour, Halls Head) it is appropriate for the proponent to prepare the coastal management plan in the first instance and to accept the responsibility for a major portion of the capital costs of implementation. Apportionment of ongoing maintenance costs should be subject to an agreement between the proponent and appropriate Government authorities including the Shire of Wanneroo. This aspect of environmental management should also be covered in the Agreement.

Recommendation 6 The EPA recommends that the proponent prepare coastal management plan for that section of the coastline affected by the development and that the proponent accept the responsibility for a major portion of the capital costs of implementation. Apportionment of ongoing costs should be subject to agreement between the proponent and appropriate Government agencies including the Shire of Wanneroo. The coastal management plan should be prepared in consultation with the Shire of Wanneroo, the Commissioner for Soil Conservation, the Department of Conservation and Land Management, the Department of Marine and Harbours and the Department of Conservation and Environment. It should form part of the overall, comprehensive monitoring and management programme outlined in Recommendation 2. The plan should include, but not be confined by, such matters as dune stabilization, public facilities, beach access, coastal rehabilitation and ongoing maintenance.

4.2.4 Erosion

Some parts of the Mindarie Keys site have the potential for wind-induced erosion. The specific requirements of the Commissioner for Soil Conservation (see summary in Section 6.1) should be met on the understanding that the provisions of the EPA's general Recommendation 11 apply.

4.2.5 Water Quality

(a) Groundwater

Excavation of the harbour could cause the freshwater-saltwater interface to move an estimated 30 m inland from the eastern side of the excavation with resultant impact on the unconfined surface aquifer. (The ERMP predicts, and the EPA accepts, that there will be no impact on the confined deep aquifer in the Leederville formation from which water supplies are drawn.) It will also intercept westerly groundwater flow.

Therefore, for the peninsula formed between the Harbour and the ocean, reticulated groundwater will need to be supplied to households, and for Foreshore Reserve requirements. It is considered reasonable for the proponent to supply such requirements.

Recommendation 7 As a condition of approval the proponent should undertake to supply fresh water requirements for the portion of Foreshore Reserve on the peninsula formed between the harbour and the ocean.

(b) Water within the Mindarie Keys harbour,

During construction the main impact would be from increased turbidity which should produce a short-term impact on marine biota. This is acceptable as a once-only effect.

During the operational phase there is potential for water quality problems to emerge in the harbour without proper management and subsequently the water to be exchanged with the ocean. The ERMP stated it could not predict the quality of water within the harbour. However, it nominated as an objective, maintenance of water quality to the criteria contained in Schedule 16 'Navigation and Shipping' of the EPA's water quality criteria.* The ERMP has stated that the intention of the harbour is for boating, not bathing, and notices to this effect will be erected around the perimeter.

The EPA is concerned about the practicality of controlling bathing in the harbour, particularly considering the proposed density of urban development around it. The Authority considers that it would be more pragmatic to set as water quality criteria objectives Schedules 1 (Direct Contact Recreation) and 16 (Navigation and Shipping) of the EPA's water quality criteria. These Schedules are at Appendices A and B respectively to this report.

*Western Australia (1981) - 'Water Quality Criteria for Marine and Estuarine Waters of Western Australia,' Department of Conservation and Environment, Western Australia. Bulletin 103.

The ERMP makes a commitment to implement a water quality monitoring programme and to take whatever action is practical to alleviate any problems which may emerge.

The EPA considers that the water quality monitoring programme should also form part of the overall environmental monitoring and management programme in Recommendation 2. As such the proponent's commitment to take action on any problems which may emerge will be reflected in the Agreement.

The Authority has been advised that it is extremely unlikely for any leachate from the proposed refuse disposal facility on Mindarie Lot 17 to interact with the Mindarie Keys harbour. However, this aspect should be considered if the refuse disposal facility proceeds.

Recommendation 8 *The EPA recommends that the criteria for water quality for the harbour should be those contained in Schedules 1 and 16 of the EPA's water quality criteria and that the objectives of a water quality monitoring programme should be set accordingly. Water quality monitoring should form part of the overall environmental monitoring and management programme described in Recommendation 2 and should include:*

- (i) measurement of physical, biological and chemical parameters, within and outside the harbour, appropriate to meeting Schedules 1 and 16 of the water quality criteria. Details should be discussed in advance with the Department of Conservation and Environment;*
- (ii) management strategies developed for implementation in the event of criteria not being met, particularly in the case of accidental spillages;*
- (iii) contingency planning in (ii) includes funding and resources;*
- (iv) monitoring and management having particular regard to oil and fuel, wastes from boats including commercial fishing vessels, anti-fouling paints, rubbish, suspended solids and nutrients; and*
- (v) taking into account possible interaction between leachate from the proposed refuse disposal site on Mindarie Lot 17 and the harbour, although it is acknowledged that any interaction is unlikely.*

(c) Seagrass wrack

The possible accumulation of seagrass wrack has the potential to be a problem for navigational, aesthetic or water quality reasons. The ERMP gives a commitment to removing the material from the harbour or on the outer margins of the break-water should a localised public nuisance accumulation occur. This commitment is reflected in part (i) of Recommendation 2.

(d) Drainage

In the ERMP, it is stated that runoff and drainage would be directed from the harbour. Subsequent to the public review of the ERMP, the proponent has notified the Authority that significant problems exist in achieving this for approximately 800 m of road and associated catchment. The proponent has proposed using inlet pits to trap sand, rubbish and other foreign material prior to discharge to the harbour.

The EPA accepts this change in the project on the understanding that the water quality criteria objectives contained in Recommendation 7 are not prejudiced.

4.2.6 Impact on Commercial Fishing

(a) Abalone

The project would destroy approximately 7.5 ha of marine habitat. While this loss would be compensated in part in a general sense by the harbour and breakwaters providing alternative habitats, the loss of habitat will impact upon commercial abalone fishing and possibly commercial rock lobster fishing. Blasting of reefs will also have an impact.

The loss of affected abalone beds is estimated in the ERMP to be 50% of the local resource near Quinns. The effects of the project on the abalone fishery will be monitored by the proponent.

The Fisheries Department has provided a figure of \$17 000 for the 1984 value of abalone fishing in the Quinns area and commented that at least 8 out of 12 abalone fishermen licensed to operate on the west coast fish the area at various times. The Fisheries Department also suggested that the impact may involve the whole inshore reef system at Quinns Rocks due to changes in currents, circulation and sediment movement.

In any event the permanent impact of the project proceeding will extend to the whole west coast abalone fishing industry.

Recommendation 9 The monitoring programme mentioned in the ERMP for determining the impact of the project on commercial fisheries should form part of the environmental monitoring and management programme referred to in Recommendation 2.

The issue of compensation to the commercial fisheries was raised in submissions from the Fisheries Department and in two public submissions from commercial fishermen. The Government will make decisions on this matter.

(b) Rock Lobster

Nearshore reefs function as nursery areas for juvenile rock lobsters. Approximately 5 ha of reef would be removed which is a likely nursery area. This loss will be compensated only in part by the breakwater providing an alternative substrate. While the ERMP predicts no substantial deleterious impact on the local rock lobster fishery in the long term, the dimensions of the impact project on the rock lobster fishery in the area are acknowledged to be difficult to predict.

Therefore it is appropriate that monitoring of rock lobster be included in the programme outlined in Recommendation 8.

To minimise the impact of construction on the industry it has been suggested that reef blasting be done within a specified time period. The guidelines developed between the Australian Fishing Industry Council and mineral and petroleum exploration companies regarding offshore seismic surveys could serve as a model.

Recommendation 10 To minimise the impact of construction activities on the rock lobster industry, offshore blasting should be confined to a period of time determined by the Director of Fisheries after discussion between the parties.

It should be noted that the area is already popular for recreational fishing. The project could be expected to increase pressure on marine reserves by providing a harbour and boat launching ramps and acting as a focus in the area for marine-based activities.

4.3.2 Land Use of the Foreshore Reserves

In the ERMP and the Planning Report prepared for the project it was proposed to use some portions of the Foreshore Reserves in the locality for elements of the proposal. In compensation, a land-swap was proposed.

Prior to this report going to Government, the MRPA agreed to initiate rezoning of Stage 1 of the project. Under appeal provisions provided for in the Metropolitan Region Town Planning Scheme Act, the EPA took the unusual step of appealing to the Minister for Planning on some aspects of proposed land use of Foreshore Reserves.

The grounds on which the EPA appealed are set out in Appendix C and are self-explanatory. They are included in this Assessment Report to demonstrate the manner in which the Authority has addressed the issues.

At the time of submitting this report, the Minister for Planning had yet to determine the appeal.

4.3.3 Impact on Quinns Townsite

If the project proceeds, irreversible changes will occur to Quinns townsite. At present it is a small, satellite urban area in the Metropolitan region. It would become part of a much larger community as a consequence of the development occurring. It is a matter of perception whether the change is favourable or not. However, it is noted that normal urban facilities and infrastructure can be extended to the development without compromising the Quinns townsite.

4.3.4 Traffic and Noise

In order to minimise the increases in traffic and noise on the existing Quinns townsite, particularly during construction, access to Stage 1 of the project should be to the east of the main existing townsite, for example via the planned connection between Debbie-Lee Drive and Quinns Road just west of the designated high school site.

Recommendation 11 In order to minimise the impact of increased traffic and noise on the existing Quinns townsite, access to Stage 1 of the project should be made to Quinns Road east of the main townsite.

4.3.5 Historical, Archaeological and Ethnographic Sites

It is noted that the only known sites are abandoned lime kilns which will be accommodated in future public open space.

4.3.6 Boating Safety

Concern was raised in the public submission over possible safety aspects of boats navigating in waters containing reefs.

This matter falls within the jurisdiction of the Department of Marine and Harbours and should be addressed by that Department if the project proceeds.

4.3.7 Costs and Benefits

Some public submissions were concerned about the costs and benefits of the project, particularly costs which may accrue to the State if the proponent defaults or the project proves economically unviable.

It is not the EPA's role to assess the economic viability of the project nor to provide advice on the overall costs and benefits of it to the community. However, the Authority believes that as far as environmental monitoring and management are concerned, the user-pays philosophy should apply.

5. PUBLIC SUBMISSIONS

The Mindarie Keys ERMP was released for an eight-week public review period which ended on 7 June 1985. During this time 13 comments were received: 7 from Government agencies and 6 from the public. In the latter category were two from professional fishermen.

Public submissions were received from:

Mr J. Hobbs
Quinns Rocks

Mr F. Jacobi
Quinns Rocks

Mrs A. Pericic
Quinns Rocks

Mr D. Pozzi (on behalf of four commercial rock
lobster fishermen residing in the area)
Quinns Rocks

Mr D. Wake
Quinns Rocks

West Coast Abalone Divers' Association

In summary, issues raised in public comments were:

- (a) Impacts on the physical and biological environment
 - . loss of offshore habitat and destruction of marine biota, particularly for commercial abalone and rock lobster fisheries. Suggest moving harbour entrance 600 m south;
 - . potential to increase erosion of Quinns Beach and siltation of harbour entrance;
 - . effect of wind across harbour on houses;

- . despoiling the natural environment, both marine and coastal heath;
- . over-exploitation of adjacent marine area from recreational fishermen due to increased accessibility;
- . impact on Foreshore Reserves subject of System 6 Recommendation M2;
- . potential problems with water quality within and outside the harbour including from seagrass wrack;
- . possible deleterious interaction between the rubbish tip proposed for Mindarie Lot 17 and the harbour; and
- . ERMP seen as a whitewash document.

(b) Impacts on the social environment

- . question the need for the development and suggest that the following factors will affect demand for urban land:
 - effect of oil prices
 - commuting distance
 - economic uncertainty
 - location of proposed rubbish tip
 - over-supply of boating facilities
 - increasing costs of boating;
- . isolation from law enforcement could lead to increased crime;
- . safety problems with boating near reefs;
- . increased traffic on Quinns Road;
- . change in lifestyle for Quinns townsite residents;
- . increased access to undeveloped areas for off-road vehicles;
- . Commercial fisheries:
 - both abalone and rock lobster fishermen objected to the project because of the effects destruction of biota and habitat would have on their industries, particularly as the site is a nursery area for juvenile species;
 - financial bases to the industries are quantifiable and should be compensated;

- possibility of 10-20% reduction in permitted commercial fishing in the future so loss of areas unacceptable;
- blasting of reefs in October-December unacceptable because of impact on migrating rock lobsters;
- loss of resource will lead to over-exploitation of other areas already heavily fished;
- significant habitat destruction already caused by Two Rocks Marina and Ocean Reef boat launching facility;
- alleged a number of incorrect or misleading statements in the ERMP.

6. SUBMISSIONS FROM GOVERNMENT AGENCIES

Submissions were received from the following Government agencies:

Department of Agriculture
 Fisheries Department
 Metropolitan Region Planning Authority
 Urban Lands Council
 Town Planning Department
 WA Museum
 Shire of Wanneroo

Recommendation 12 Except where the EPA has made a specific recommendation in this report, the Authority recommends that the proponent takes the comments made by Government agencies into account if the project proceeds, and takes action upon them where appropriate.

A summary of key points raised in Government agency comments follows:

- 6.1 Offshore impacts. Proper studies should be conducted to quantify predicted sediment movement.
- 6.2 Onshore impacts.
 - . a Foreshore Management Plan should be prepared by the proponent and address dune stabilization, public facilities, beach access, coastal rehabilitation and ongoing maintenance;
 - . some areas on the site have potential soil erosion problems;
 - . one particular area is a system of Holocene nested parabolic dunes on Lots 35 and 17 with a high potential for soil erosion and

slope movement which should be recontoured and stabilized to the satisfaction of the Commissioner for Soil Conservation prior to construction.

6.3 Impacts on fisheries

- . the project is in an area which supports both commercial and recreational fishing;
- . the project will have a direct impact on the commercial abalone fishing by destruction of 5 ha of reef habitat and indirect effects caused by alteration to current movements. Evidence from construction of facilities at Ocean Reef and Two Rocks supports the premise. The extent of habitat effected is difficult to estimate but could involve the whole inshore reef system at Quinns Rocks;
- . the project will impact on the whole west coast abalone industry because at least 8 out of 12 licensed fishermen use the area commercially. Loss of revenue will add pressure elsewhere;
- . the effects of reduced water quality and more particularly the impact of heavy metals from anti-fouling paints will need monitoring to determine the effect on offshore habitats;
- . results of monitoring may necessitate modifications to the project;
- . maintenance of the harbour should be a permanent obligation of the proponent or his successors irrespective of the financial success of the project;
- . a management plan should be required to prevent degradation of the adjacent marine environment because of increased public access; and
- . a condition of approval to proceed should involve compensation for the abalone fishing industry, for example, for the proponent to buy back licences equivalent to the stock lost at Quinns Rocks. The matter of compensation should be discussed with all concerned parties.

6.4 Land Use

- . the project, subject to the commitments in the ERMP, would assist the Urban Lands Council to meet its objectives as a Government Land Development Agency.

6.5 Environmental Management

- . conditions of approval should include the proponent's commitment to:
 - bypass sediment if necessary
 - remove seagrass wrack
 - prepare a foreshore management plan;
- . access east of Quinns townsite should be considered to reduce noise.

7. CONCLUSIONS

The EPA considers that the main environmental impact of the project proceeding which cannot be managed is the loss of marine habitat which not only alters the offshore environment physically and biologically but also will impact significantly upon the commercial west coast abalone fishing industry and may well impact on the local commercial rock lobster fishery.

With respect to other impacts, the EPA believes these will be manageable but that it considers the project a private facility from the environmental viewpoint and therefore, consistent with the user-pays philosophy, the proponent should accept responsibility for fulfilling the principles of environmental management contained in Section 4.1 and Recommendations 2, 3 and 4 of this report.

Accordingly, the EPA has recommended that, as a condition of approval, a comprehensive monitoring and management programme be prepared by the proponent which includes such issues as sediment movement, coastal management, water quality and monitoring offshore biota, and that the proponent be committed to its implementation through the legal Agreement being negotiated with the State and the local Authority. The Authority is of the view that the general community should be protected in perpetuity from having to meet the environmental management costs of the project should the proponent default or the proposal proves uneconomical. This is consistent with the similar projects such as the Secret Harbour project.

The EPA has concluded that the project could proceed from the environmental viewpoint subject to compliance by the proponent with the provisions for environmental management in the ERMP and the Recommendations in this report.

8. LIST OF RECOMMENDATIONS

Recommendation 1 The EPA has concluded that the Mindarie Keys project could proceed from the environmental viewpoint subject to compliance by the proponent with the provisions for environmental management in the ERMP and implementation of the recommendations in this report.

Recommendation 2 The EPA recommends that approvals for further Stages of development beyond Stage 1 (defined by the amendment to the Metropolitan Region Scheme) should be made conditional upon the State being assured of the proponent's satisfactory performance in the environmental management of Stage 1.

Recommendation 3 The EPA recommends, should the project proceed, that a condition of approval should be the preparation by the proponent of a comprehensive environmental monitoring and management programme to the EPA's satisfaction.

Commitment by the proponent to implement the programme should be reflected in the Agreement being negotiated between the proponent, the State and the Shire of Wanneroo.

The following elements should be included in the environmental monitoring and management programme:

- (i) the commitments made by the proponent in the ERMP;
- (ii) managing sediment movement as contained in Recommendation 5;
- (iii) preparation of a coastal management plan as contained in Recommendation 6;
- (iv) details of water quality monitoring and management as contained in Recommendation 8;
- (v) monitoring of marine biota as contained in Recommendation 9.

Recommendation 4 The EPA recommends that the proponent liaises with relevant Government agencies during implementation of the monitoring and management programme. Reporting of results should be detailed in the programme but should be on a regular basis. After 5 year following construction, all results and their interpretation should be conveyed to the EPA with recommendations for future requirements.

Recommendation 5 The EPA recommends that the legal Agreement being negotiated for the project between the proponent, the State and the local authority should reflect the commitment by the proponent to by-pass sand across the entrance to the proposed harbour should a problem eventuate. This commitment should include maintaining the harbour entrance to the nominated depth.

Recommendation 6 The EPA recommends that the proponent prepare a coastal management plan for that section of the coastline affected by the development and that the proponent accept the responsibility for a major portion of the capital costs of implementation. Apportionment of ongoing costs should be subject to agreement between the proponent and appropriate Government agencies including the Shire of Wanneroo. The coastal management plan should be prepared in consultation with the Shire of Wanneroo, the Commissioner for Soil Conservation, the Department of Conservation and Land Management the Department of Marine and Harbours and the Department of Conservation and Environment. It should form part of the overall, comprehensive monitoring and management programme outlined in Recommendation 2. The plan should include, but not be confined by, such matters as dune stabilization, public facilities, beach access, coastal rehabilitation and ongoing maintenance.

Recommendation 7 As a condition of approval the proponent should undertake to supply fresh water requirements for the portion of Foreshore Reserve on the peninsula formed between the harbour and the ocean.

Recommendation 8 The EPA recommends that the criteria for water quality for the harbour should be those contained in Schedules 1 and 16 of the EPA's water quality criteria and that the objectives of a water quality monitoring programme should be set accordingly. Water quality monitoring should form part of the overall environmental monitoring and management programme described in Recommendation 2 and should include:

- (i) measurement of physical, biological and chemical parameters, within and outside the harbour, appropriate to meeting Schedules 1 and 16 of the water quality criteria. Details should be discussed in advance with the Department of Conservation and Environment;
- (ii) management strategies developed for implementation in the event of criteria not being met, particularly in the case of accidental spillages;
- (iii) contingency planning in (ii) including funding and resources;
- (iv) monitoring and management having particular regard to oil and fuel, wastes from boats including commercial fishing vessels, anti-fouling paints, rubbish, suspended solids and nutrients; and
- (v) taking into account possible interaction between leachate from the proposed refuse disposal site on Mindarie Lot 17 and the harbour, although it is acknowledged that any interaction is unlikely.

Recommendation 9 The monitoring programme mentioned in the ERMP for determining the impact of the project on commercial fisheries should form part of the environmental monitoring and management programme referred to in Recommendation 2.

Recommendation 10 To minimise the impact of construction activities on the rock lobster industry, offshore blasting should be confined to a period of time determined by the Director of Fisheries after discussion between the parties.

Recommendation 11 In order to minimise the impact of increased traffic and noise on the existing Quinns townsite, access to Stage 1 of the project should be made to Quinns Road east of the main townsite.

Recommendation 12 Except where the EPA has made a specific recommendation in this report, the Authority recommends that the proponent takes the comments made by Government agencies into account if the project proceeds, and takes action upon them where appropriate.

APPENDIX A

SCHEDULE 1

MARINE AND ESTUARINE WATER QUALITY CRITERIA FOR DIRECT CONTACT RECREATION

Parameter	Criterion	Source
Aesthetic Considerations	As on page 8.	USA EPA (Comp)
Physical Hazards	The water in bathing and swimming areas should be free of submerged bodies and other subsurface hazards.	NH&MRC
Light Penetration	A Secchi disc should be visible to a depth of 2m except in "learn to swim" areas where a Secchi disc should be visible on the bottom.	NH&MRC
pH	6.5-8.5, except for waters with a low buffer capacity where a range of pH between 5.0 and 9.0 may be tolerated.	NH&MRC
Chemicals and Biological Materials	The waters should not contain chemicals and biological materials in such concentrations as to be irritating to the skin or mucous membranes of the human body upon brief immersion. In addition, they should not contain chemicals and biological materials in such concentrations as to be toxic to man if small quantities are ingested.	NH&MRC
Faecal Coliforms	<p>A health investigation level for water in open and unenclosed bathing and swimming areas may be established on the basis of a minimum of five samples taken over not more than a 30-day period under conditions representative of the water quality to which users are commonly exposed, and is reached either when the median reading of such samples exceeds 150 organisms/100mL, or when more than 20% of the total samples during this period exceed 500/100mL. For this purpose samples during the wettest quarterly interval may be omitted if users are not commonly exposed during that interval.</p> <p>The water in bathing and swimming areas in which the median reading ordinarily exceeds 50/100mL and/or in which more than 20% of samples ordinarily exceed 150/100mL, should be protected against any degradation in that quality from a new or increased source of pollution. Water of higher quality should be similarly protected against degradation beyond the levels mentioned in this paragraph.</p>	WG
Faecal Material	The water in bathing and swimming areas should be protected against direct contamination with fresh faecal material of human or domesticated animal origin.	WG
Radioactive Substances	The waters should not contain radioactive substances in such concentrations as to be deleterious to man if small quantities are ingested.	DH&MS

**BENEFICIAL USE NO. 16
NAVIGATION AND SHIPPING**

Waters for navigation and shipping should satisfy the following three requirements:

- Suitability for unobstructed passage of shipping and boats.
- Satisfactory physical and chemical properties for intake for engine room, motors and other uses.
- Physical, chemical and biological properties which will afford reasonable protection of port facilities, installations and equipment, and not cause unpleasant or unsafe conditions for crew, manpower, passengers and the general public.

The criteria set out in Schedule 16 are designed to give a reasonable level of protection to shipping, port facilities, installations and equipment and also to personnel. They are mostly derived from water quality criteria for ocean waters published by the State Water Resources Control Board, California, USA.

SCHEDULE 16

MARINE AND ESTUARINE WATER QUALITY CRITERIA FOR NAVIGATION AND SHIPPING

Parameter	Criterion	Source
Aesthetic Considerations	As on page 8.	USA EPA (Comp)
Floating or Submerged Material or Objects	Waters should not contain floating or submerged material, or objects including solids, liquids, foams, and scum, in concentrations or amounts that cause nuisance or adversely affect this beneficial use.	Calif.
Odour	Waters should not contain odour-producing substances, in concentrations that cause nuisance or adversely affect this beneficial use.	Calif.
Settleable Matter	Waters should not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affects this beneficial use.	Calif.
Suspended Solids	Waters should not contain suspended material in concentrations that cause nuisance or adversely affect this beneficial use.	Calif.
pH	6.0-9.0	WG
Surfactants	Waters should not contain surfactants in quantities that give rise to foam resulting from movement or use of the waters.	Hart/WG
Oil and Grease	Waters should not contain oil, grease, wax or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect this beneficial use.	Calif.
Chemical Constituents	Waters should not contain chemical constituents in concentrations that result in deterioration, excessive scale-formation or corrosion in or on vessels, port installations and structures, that cause nuisance, or that otherwise adversely affect this beneficial use.	FPA/WG
Radioactive Substances	Waters should not contain radioactive substances in concentrations that would cause their use as ballast water to be unacceptable or that would endanger the crews of vessels.	WG
Nutrients and Other Biostimulants	Waters should not contain nutrients or growth stimulants in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect this beneficial use.	Calif.

METROPOLITAN REGION TOWN PLANNING SCHEME ACT 1959 (AS AMENDED)

NOTICE OF APPEAL

To the Hon. Minister :

I the undersigned, hereby appeal under Section 33A of the Act against the amendment to the Metropolitan Region Scheme published in the Government Gazette on the ..Seventeenth..... day ofMay..... 1985., and in the (newspaper) on the day of 19.....; so far as it affects the following land:-

Crown Reserves ~~xxxxx~~ 20561 & 35890. Street MRPA Plan No 4,0810/2

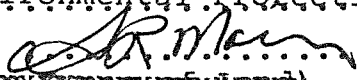
Location No Mindarie Keys. Certificate of Title Vol.

Fol. Situated in the ~~City/Town~~/Shire of Wanneroo....

The nature of my interest being Proposed zoning of Crown Reserves

Grounds of Appeal: (attach additional sheets if necessary)

See attached.

Name Professor A R MainAddressChairman
.....Environmental Protection Authority.....
Signature Date 30 May 1985
(Signed by Owner of Land)

Note: This form to be lodged at the office of the Minister for Planning, ~~32 St George's Terrace, Perth~~ and a copy served on The Metropolitan Region Planning Authority, 22 St George's Terrace, Perth.



ENVIRONMENTAL PROTECTION AUTHORITY

BP HOUSE,
1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000
Telephone 322 2477

HON MINISTER FOR PLANNING

Your Ref.

Our Ref. 94/84

My Dear Minister

NOTICE OF APPEAL: MRS AMENDMENT NO. 592/33A,
FILE NO. 833/2/30/38, MINDARIE KEYS, SHIRE OF WANNEROO

The Environmental Protection Authority gives notice of appeal under Section 33A of the Metropolitan Region Town Planning Scheme Act (as amended) against the proposed rezoning of portions of Crown Reserves 20561 and 35890 and the proposed rezoning of a portion of land reclaimed from the ocean as part of the Mindarie Keys project.

1. Reasons for the Notice of Appeal

The EPA has decided to present this appeal because of unusual circumstances.

The Authority is cognisant that the proponent is keen to have Stage 1 of the Mindarie Keys project completed in time for the America's Cup defence and that this entails a tight timetable. In a spirit of cooperation, the EPA agreed that the Environmental Review and Management Programme (ERMP) prepared for the project by the Smith Corporation should not be delayed in being released for public review but that the Authority would use the planning appeals mechanism for expressing its concerns on planning matters with environmental implications.

Under normal circumstances the EPA would express such concerns in its report and recommendations to Government on the project but because this Section 33A Amendment has been initiated by the MRPA in advance of the EPA reporting, use of the appeals mechanism is necessary in order that these concerns are not pre-empted by planning decisions.

2. Nature of Appeal

2.1. The area of land marked 'D' on Figure 13 of the Planning Report by the Smith Corporation dated October 1984 comprising portion of Crown Reserve 20561 should remain Crown Reserve but with power to lease and remain zoned Parks and Recreation under the MRS.

- 2.2. The area of land marked 'D' on Figure 13 of the same report as in 2.1. comprising portion of Crown Reserve 35890 should remain Crown Reserve but with power to lease and remain zoned Parks and Recreation under the MRS.
- 2.3. The area of land marked 'E' on Figure 13 of the same report as in 2.1, presently sea floor but proposed to be raised above sea level by construction of a sea wall, and therefore become Crown land, be created a Crown Reserve and be reserved Parks and Recreation under the MRS.
- 2.4. The portions of Reserves 20561 and 35890 proposed to be excavated for access of the Mindarie Keys marina and therefore removed from existing Parks and Recreation land use should be included in land exchange calculations.

3. Grounds of Appeal

- 3.1. The EPA believes that the area of land marked 'D' on Figure 13 of the Mindarie Keys Planning Report should remain Crown Reserve for Parks and Recreation with power to lease for the following reasons:
 - (a) The land is subject to EPA System 6 Recommendation M2 (copy attached). Freehold land zoned urban is incompatible with the objectives of the Recommendation. However the EPA has no objections to this part of the Reserve being leased to the proponent with appropriate conditions for the purposes of parking and marina facilities;
 - (b) No justification for freeholding this land and zoning it urban has been given. In particular, an urban zoning does not seem appropriate for parking and marina facilities. Urban zoning may allow inappropriate future land uses having undesirable environmental implications. Environmental controls are more effective and secure on Crown leasehold than on freehold land;
 - (c) Transferring land on the coast from Crown to private ownership may set an undesirable precedent, particularly considering the lack of justification;
 - (d) The decision taken by the MRPA to rezone the land under Section 33A was taken prior to the EPA reporting on the project. This may pre-empt EPA recommendations to Government. It is also against established precedent for assessing water-based developments and is contrary to the philosophy of the Canals Committee's Guidelines under which such projects as Secret Harbour, John Holland (Constructions) Pty Ltd.'s Waterways project and Parrys Esplanade Ltd.'s Halls Head Waterways Land project were assessed.

3.

The Canals Committee recommended that rezoning of land not occur until all studies have been completed;

- (e) Use of the foreshore Reserve in this manner is inconsistent with previous projects, eg. Two Rocks marina, and proposed projects, eg. Port Kennedy Regional Recreation Centre: 'Guidelines for Applicants proposing to register their interest in being appointed as developers.'

3.2. The EPA considers that the area of land marked 'E' in Figure 13 of the Mindarie Keys Planning Report should, if and when it is reclaimed from the ocean, remain Crown land and be created a Reserve for Parks and Recreation with power to lease for the following reasons:

- (a) There is no justification given for transferring this land to freehold tenure and zoning it urban. This is against well established past precedent. An urban zoning seems especially incongruous for a sea wall with future land uses indicated as marina purposes and parking, and a family restaurant. These land uses could be accommodated under Crown leases on a Parks and Recreation Reserve. The EPA is concerned that freehold tenure and urban zoning may allow inappropriate future land uses having undesirable environmental implications;
- (b) Use of reclaimed land in this manner is inconsistent with similar projects such as Secret Harbour, Two Rocks marina, Ocean Reef and the proposed Sorrento Boat Harbour;
- (c) The proponent of this project is keen for the State to take over future management of the sea walls and harbour entrance. The EPA considers that as this is an essentially private development, the State should not accept these responsibilities. Nevertheless there is a conflict between the proponents intent to have the State manage the sea walls but have a considerable proportion of them in private ownership.

The status of this matter should be made clear in the Agreement being drawn up for the project. It is of some concern that only one draft of this Agreement dated 11 January 1985 has been seen by the Department of Conservation and Environment to date.

3.3. The EPA considers that the portions of Reserves 20561 and 35890 proposed to be excavated to allow access to the marina should be included in land exchange calculations for the following reasons:

4.

- (a) The land is part of System 6 recommendation M2 and is thus identified as having value for Parks and Recreation in the regional context;
- (b) The value for Parks and Recreation will change when the land is excavated for an essentially private development.

4. Additional Concerns

While not forming part of the formal appeal the EPA wishes to draw your attention to two matters of concern to the Authority.


- 4.1. Just north of the proposed harbour entrance, the area of land marked 'C' on Figure 13 of the Mindarie Keys Planning Report comprises Crown Reserve proposed for exchange for other freehold land. This portion of Reserve does not have direct coastal access and provided it is exchanged on an equitable basis, the EPA has no objections. However it has some concerns with adequate facilities for the public not being provided as part of the future land use.

Some demand can be expected to be generated for ocean access by residents in that vicinity, particularly the proposed group housing land. In addition, because the access road would terminate at this point, members of the public may well elect to park and walk to the coast. Effective coastal management techniques will be required if future environmental problems are to be avoided. Demand for coastal access could be expected to increase if a small sheltered family beach is formed north of the northern breakwater.

- 4.2. The EPA seeks clarification on the criteria used for deciding when an MRS amendment under Section 33A is appropriate. The Authority has been under the impression to date that Section 33A was designed for insubstantial amendments. The EPA also seeks clarification of the status of the Amendment in the event of the Government not receiving the EPA's report prior to the close of the 60 day appeal period.

Finally for your information the points on which the EPA has raised objections were made in writing to the Acting Commissioner for Town Planning from the Director of Conservation and Environment on 5 February 1985 as part of comments on the draft Agreement proposed for this project.

Yours sincerely


G. R. MAIN
CHAIRMAN
30 May 1985

cc Secretary MRPA
Hon Minister for the Environment