

**Rezoning and subdivision for special residential  
development, Lot 401, La Perouse Court,  
Frenchman Bay**

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**L'Oire Nominees**

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

**Environmental Protection Authority  
Perth, Western Australia  
Bulletin 672  
January 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 29 January, 1993.

ISBN 0 7309 4733 5  
ISSN 1030 - 0120  
Assessment No.720

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## Summary and recommendations

A recent proposal to rezone and subdivide land at Lot 401 La Perouse Court, Frenchman Bay within the Shire of Albany was referred to the Environmental Protection Authority in January 1992 and the level of assessment set at Consultative Environmental Review level following appeal determination.

The property is located southeast of the town of Albany, adjacent to King George Sound and at the base of Vancouver Peninsula (see Figure 1). Lot 401 has a total area of 16.2ha with 354 metres of beach frontage to Frenchman Bay. The proposal for rezoning and residential subdivision of Lot 401 Frenchman Bay involves subdividing the subject land to create 15 housing lots ranging in size from 2000m<sup>2</sup> to 4290m<sup>2</sup>, with specific building envelopes defined for all lots (see Figure 2). The 15 housing lots will use 5.7 hectares of the site and the proponent has indicated that the remaining land will be allocated to Public Open Space or as a Conservation Reserve.

The proponent for the development is L'Oire Nominees Pty Ltd.

The existing land use for the site is relatively undisturbed bushland in which Lake Vancouver, a freshwater lake, is situated.

There were a number of issues of significance identified by public submissions and the Authority in the assessment of the proposal.

### *Coastal stability and foreshore management*

Responsibility for coastal land use planning rests primarily with the Department of Planning and Urban Development. The Country Coastal Planning Policy adopted by the State Planning Commission provides formal guidelines for the planning and management of coastal lands.

The Environmental Protection Authority notes that the proponent has proposed a reduction in the 100 metre foreshore reserve specified in the Department of Planning and Urban Development's Coastal Planning Policy. The proponent indicated that road access and lot development would be separated from Goode beach by a 30 metre wide foreshore reserve.

The Authority has recommended that during the statutory planning process appropriate building setbacks be established based upon sound land capability and land suitability analysis, the potential for erosion and likely sea level rises due to increased global warming. The width of the foreshore reserve, provision of beach access and foreshore management will also need to be carefully considered by the planning agencies.

### *Landform and soil stability*

The issue of landform and soil stability was raised as a major issue of concern by submissions. There are clearly a number of uncertainties in predicting the potential long term environmental impact arising from wind erosion associated with this proposal.

The results of a recent land capability assessment indicated that Lot 401 Frenchman Bay has a low capability for the proposed land-use. There is a high degree of physical limitations which are either not easily overcome by standard development techniques or which result in a high risk of land degradation without extensive conservation requirements.

The Department of Agriculture in its submission has indicated concerns that coastal instability would be a problem on all the dunes in the south of the proposed subdivision and suggested that this area is not suitable for housing development due to the possibility of slope erosion from wind and water.

Land capability analysis suggests that the proposal involves an inherent risk. While experience has shown that such risk can be minimised by appropriate development controls and management practices such as those suggested by the proponent for this development, it also demonstrates that the required practices can be costly and difficult to implement and enforce.

In view of the above, the Authority considers the environmental acceptability of the proposed development relies on:

- the ability of the proponent to put in place certain management measures prior to development; and
- the Shire of Albany effectively controlling development through appropriate provisions in its town planning scheme and enforcing those provisions through adequate policing.

The Authority therefore concluded that in finding the proposal environmentally acceptable, planning agencies should adopt a precautionary approach.

#### *Lake Vancouver*

Lake Vancouver is a wetland of high conservation value which is still relatively undisturbed. Submissions suggest that its significance lies in the lake's ecological, landscape, cultural, hydrological and potential palynological (study of pollens and spores in sediments) values. The proponent also considers that Lake Vancouver and its surrounding margins is a unique environmental feature of Vancouver Peninsula and as such, it warrants protection and conservation. The proponent has proposed to incorporate the lake, its margins and all of Lot 401 to the west of Lake Vancouver, in Public Open Space for the purposes of conservation as indicated in the plan of subdivision for the proposal (see Figure 2). This represents 65% or about 10.5 hectares of Lot 401. Other forms of protection for this 10.5 hectares may also be appropriate.

It is the Authority's view that uncontrolled public access could be detrimental to the ecology and well being of the lake. This issue would need to be properly managed by the Shire of Albany unless the land is vested in the National Park and Nature Conservation Authority.

#### *Water abstraction*

Beneath Vancouver Peninsula, including Lot 401, is a shallow aquifer overlying granite bedrock. Near the coastline the shallow aquifer contains fresh groundwater underlain by sea water. The proponent indicates that Lake Vancouver is hydraulic connected with the aquifer and represents an 'outcrop' of the water table. Changes in the level of the groundwater will cause changes in the level of water in the lake.

Each of the 15 residences is proposed to have a bore, for watering lawn and garden areas that will cover relatively small proportions of each property, probably in the order of 500 square metres. The proponent has concluded that water level drawdown resulting from the operation of domestic bores will be negligible in comparison with seasonal fluctuations. The proponent considers it is unlikely to have any measurable effect on lake level.

The Water Authority of WA has advised that the operation of 15 wells in this area has the potential to alter the position of the saltwater/freshwater interface.

However, the proponent expects that appropriate restrictions on bore location and bore use will be applied to ensure that salt water intrusion does not occur. The proponent has not indicated how these restrictions would be implemented or enforced.

The Authority is concerned that pumping of groundwater may progressively lead to an alteration in the position of the saltwater/freshwater interface and ultimately induce salt water intrusion into bores and Lake Vancouver. The resultant salt water intrusion could create an irreversible and unacceptable environmental impact. Accordingly, having established with the proponent that scheme water will be connected, the Authority has recommended that private bores not be permitted as part of the development.

#### *Sewage disposal*

A number of the submissions expressed concerns that effluent from septic tanks could pollute groundwater, Lake Vancouver and the marine environment, and that the septic tank density did not conform with Environmental Protection Authority guidelines.

The Environmental Protection Authority would prefer that all residential development is connected to reticulated sewerage.

The proponent, through the response to public submissions phase of the assessment process, has decided to recommend to the Shire of Albany that the use of alternative effluent disposal systems be required throughout the subdivision. For this reason the proponent has not addressed the other issues raised in relation to effluent disposal, considering the issues raised redundant on the basis of the revised effluent disposal system.

Alternative domestic wastewater treatment systems with adequate phosphorus retention capacity would be environmentally acceptable provided that the base of the systems or modified irrigation areas are above the highest known water table and they are installed to the satisfaction of the Health Department of Western Australia on advice from the Water Authority of Western Australia.

#### *Conclusions and recommendations*

The Environmental Protection Authority is aware that a number of authorities must provide approvals for a development such as this one to proceed. These other authorities, including the Department of Planning and Urban Development and the Shire of Albany, must provide planning and other approvals.

Notwithstanding the Environmental Protection Authority's advice and the Minister for the Environment's decision, the proposal may or may not be approved by other authorities.

The Environmental Protection Authority recognises that the land is inherently fragile and contains constraints to development which are at best difficult to overcome. In finding this proposal environmentally acceptable, the Authority recognises that management of the environmental impacts will rely extensively on management controls through the planning process and that the Shire of Albany will be required to implement and enforce these controls.

### **Recommendation 1**

**The Environmental Protection Authority has concluded that the proposal to rezone Lot 401 Frenchman Bay, Shire of Albany, from "Rural" to "Special Residential", as modified during the process of interaction between the proponent, the Environmental Protection Authority, the public and the government agencies that were consulted is environmentally acceptable providing the recommendations in this report are accepted.**

**In reaching this conclusion, the Environmental Protection Authority identified that the main environmental factors requiring detailed consideration as:**

- **protection of Lake Vancouver and provision of an adequate buffer of native vegetation;**
- **domestic effluent disposal;**
- **groundwater considerations;**
- **landform stability and foreshore protection; and**
- **proper management of the above.**

**The Environmental Protection Authority considers that these environmental factors have been addressed adequately by either environmental management commitments given by the proponent, or by the Environmental Protection Authority's recommendations in this report.**

**Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the Environmental Protection Authority's recommendations in this report and the proponent's commitments to environmental management (Appendix 1).**

### *Pre-development requirements*

#### **Recommendation 2**

The Environmental Protection Authority recommends that the proponent prior to development of the land or prior to development approvals under statutory planning provisions being granted:

- 2.1 set aside Lake Vancouver and its margins and all of Lot 401 to the west of Lake Vancouver as indicated in Figure 2 for conservation, to meet the requirements of the State Planning Commission on advice from the Environmental Protection Authority and the Shire of Albany;
- 2.2 construct a storm water drainage system capable of retaining on-site for three to four days a one in 10 year storm event to the satisfaction of the Shire of Albany. This drainage system should be designed so that no direct drainage enters Lake Vancouver or Frenchman Bay;
- 2.3 provide scheme water to lots within the subdivision;
- 2.4 provide adequate setback from the coast including road access, driveways and residences, taking into account land capability and suitability to meet the requirements of the State Planning Commission on advice from the Shire of Albany;
- 2.5 provide an adequate foreshore reserve and if appropriate, beach access to meet the requirements of the State Planning Commission on advice from the Shire of Albany;
- 2.6 where reticulated sewerage is not connected, provide alternative domestic wastewater treatment system approved by the Health Department of Western Australia with an adequate phosphorus retention capacity and installed so that the base of the systems or the modified irrigation areas are above the highest known water table or are installed in accordance with Health Department guidelines on advice from the Water Authority of Western Australia

### *On-going management requirements*

#### **Recommendation 3**

The Environmental Protection Authority recommends that prior to development, the proponent should develop a strategy to address the implementation and ongoing management of the following to meet the requirements of the State Planning Commission:

- 3.1 the protection of the existing vegetation and any revegetation outside the cleared area for the building envelopes, firebreaks, access and servicing;
- 3.2 the rehabilitation with indigenous species areas already cleared of indigenous vegetation and not required for building envelopes, firebreaks, access and servicing;
- 3.3 the prohibition of livestock to avoid a potential source of land degradation;
- 3.4 the prohibition of private bores to extract groundwater.

# 1. Introduction and proposal description

A recent proposal to rezone and subdivide land at Lot 401 La Perouse Court, Frenchman Bay within the Shire of Albany was referred to the Environmental Protection Authority in January 1992 and following the determination of appeals the level of assessment set at Consultative Environmental Review. Past proposals for Lot 401 and the adjacent Lot 402 have included a resort hotel and golf course development.

The property is located southeast of the town of Albany adjacent to King George Sound and at the base of Vancouver Peninsula (see Figure 1). Lot 401 has a total area of 16.2ha with 354 metres of beach frontage to Frenchman Bay. This most recent proposal for rezoning and residential subdivision of Lot 401 Frenchman Bay involves subdividing the subject land to create 15 housing lots ranging in size from 2000m<sup>2</sup> to 4290m<sup>2</sup>, with specific building envelopes defined for all lots (see Figure 2). The 15 housing lots will use 5.7 hectares of the site and the proponent has indicated that the remaining land will be allocated to Public Open Space or as a Conservation Reserve. The subdivision is separated from the adjacent Coastal Reserve by a proposed road which is also intended to provide increased public access to Goode Beach.

The proponent for the development is L'Oire Nominees Pty Ltd.

The existing land use for the site is relatively undisturbed bushland in which Lake Vancouver, a freshwater lake, is situated.

## 2. Planning context of the site

### 2.1 General

It is appropriate for environmental protection of this site to be largely secured through planning controls. It is therefore highly desirable that decisions made by the planning process on the future zoning and development of this land are made within the context of the environmental assessment provided by the Consultative Environmental Review process.

The State Planning Commission's key role is that of providing planning advice to Government. The Commission has prepared a number of policies on a statewide basis to provide guidance for decision making authorities and the general community. One of the policies adopted to date includes the Country Coastal Planning Policy, (Policy No. DC 6.1).

Lot 401 is zoned rural in the Shire of Albany District Zoning Scheme No. 3. This scheme has been in operation since 1980 and Council is in the process of preparing a new district scheme to replace it. Council is also in the process of preparing a local rural strategy for the shire to complement the new district scheme. The local rural strategy will provide a guide for future land use, zoning, subdivision and development, taking into account the land management and servicing needs of different land uses.

Council has initiated a Scheme amendment to rezone Lot 401 Frenchman Bay from "Rural" to "Special Residential" in order to permit residential development of the site. A Special Residential zoning provides for residential development on larger lots putting in place controls on clearing of vegetation, the appearance of buildings and other management measures, through to legal provisions in the scheme.



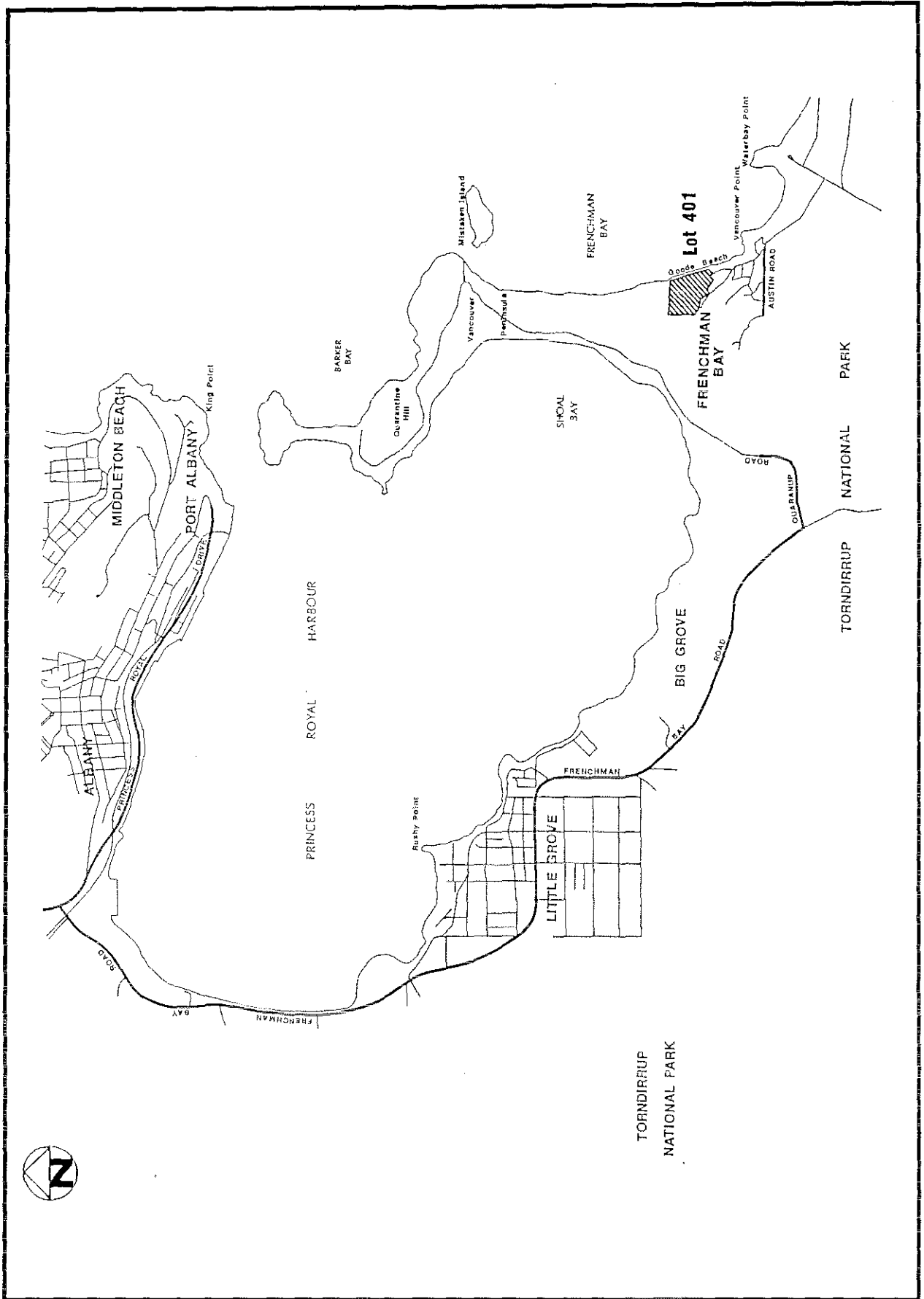


Figure 1: Location map (from Alan Tingay & Associates, CER)

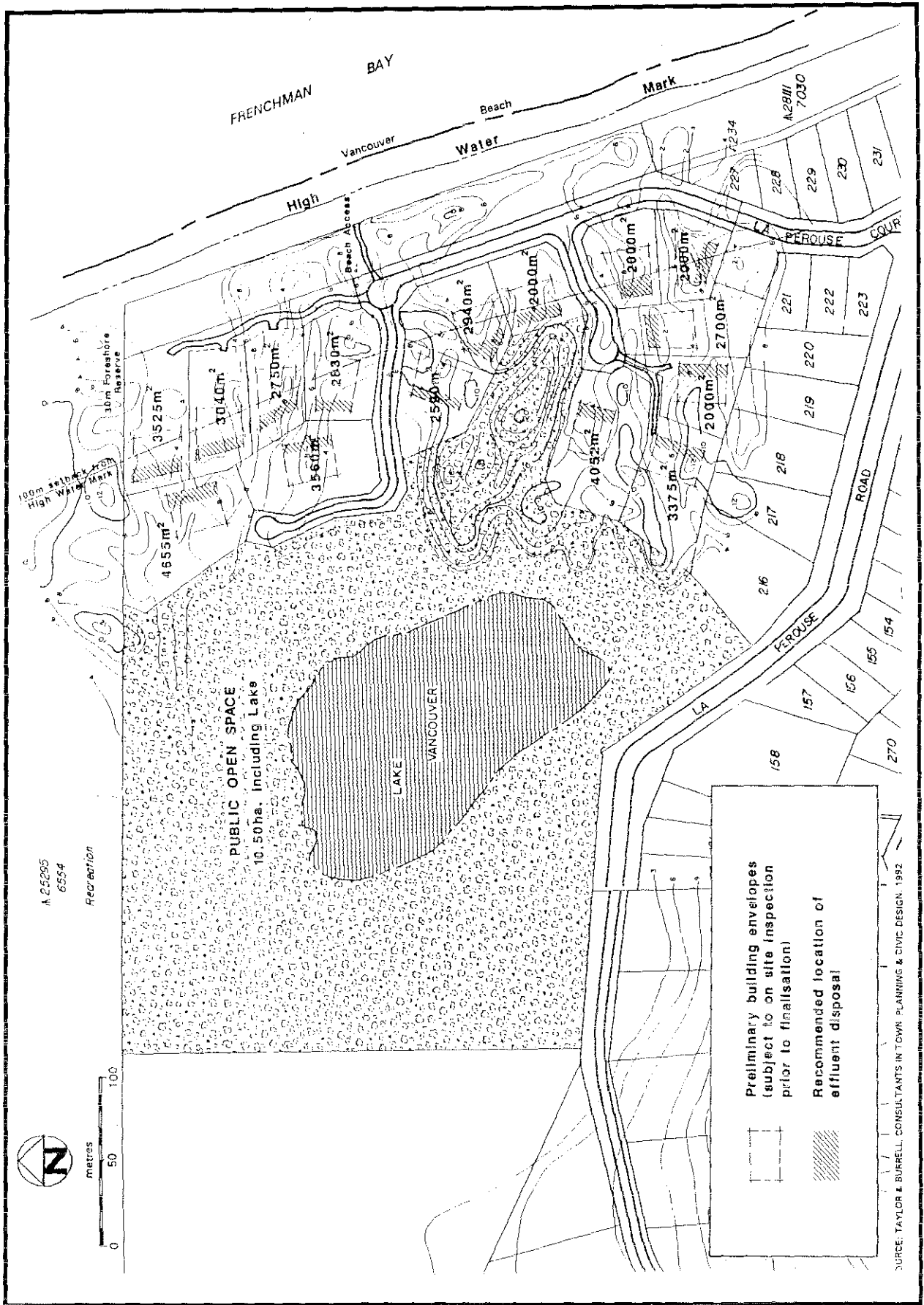


Figure 2: Plan of subdivision (from Alan Tingay & Associates, CER)

Council may ultimately adopt the amendment and submit it to the Department of Planning and Urban Development which will determine whether it accords with State Government planning policies and guidelines. The Department will then make recommendations to the Minister for Planning regarding consent to advertise.

The Minister for Planning is responsible for granting final planning approval to both Town Planning Schemes and amendments to those schemes.

The Environmental Protection Act requires that where a proposal is the subject of formal environmental impact assessment, a decision making authority, in this case either the Department of Planning and Urban Development or the Shire of Albany, shall not make any decision that could have the effect of causing or allowing the proposal to be implemented until the Minister for the Environment has set Environmental Conditions. The final approval from the Minister for Planning awaits the outcome of the environmental assessment process.

## **2.2. Coastal management planning**

Lot 401 is located on Vancouver Peninsula adjacent to King George Sound and has 354 metres of frontage to Goode Beach, Frenchman Bay. Increased public access to Goode Beach is intended to be provided as part of the subdivision proposal.

As responsibility for coastal land use planning rests primarily with the Department of Planning and Urban Development the Environmental Protection Authority does not usually make recommendations regarding coastal management issues. The Country Coastal Planning Policy adopted by the State Planning Commission provides guidelines for the planning and management of coastal lands. The policy is designed to provide a uniform approach to land use planning, development and subdivision of coastal areas of the State outside the Perth metropolitan Region. The Environmental Protection Authority has made specific recommendations regarding issues included within this planning policy and has provided general comments to assist in the planning decision making process.

The following issues relevant to this proposal are subject to the provisions and requirements of the Country Coastal Planning Policy No DC 6.1: namely

- building setbacks from the line of permanent vegetation;
- width of foreshore reserve;
- beach access;
- foreshore reserve management;
- Goode Beach dynamics; and
- visual impacts from public vantage points

## **2.3. Relationship between environmental and planning approvals**

It should be noted that the Authority's assessment of this proposal does not include planning preference which may include environmental aspects such as those identified in 2.2 above. Other planning issues such as servicing requirements, relevance of other policy such as the Government's sewage policies or the impact on the adjacent land users may also need to be addressed by the agencies with responsibility for planning approvals.

**Any environmental approval granted through this environmental assessment process does not imply that planning approval will automatically follow.**

It may be that the planning agencies require a local authority to undertake planning studies such as a local rural strategy before a development of this nature can proceed. The Authority supports the concept of such overall planning studies which take into account the broad

spectrum of planning and environmental issues in the selection of land for subdivision and development.

### **3. Submissions received**

Comments were sought on the proposal from the public, community groups and local and State Government authorities. The proponents Consultative Environmental Review document was available for public comment for a period of four weeks between 12 October 1992 and 6 November 1992.

There were 55 submissions received within the following categories;

- 45 individual letter submissions;
- four submissions from groups and organisations; and
- six submissions from interested state and local government agencies.

The principle issues raised are as follows:

- coastal stability and foreshore management;
- landform and soil stability;
- the environmental value of Lake Vancouver;
- sewage disposal;
- water quality and quantity management and protection to the groundwater, Lake Vancouver and Frenchman Bay; and
- compliance with planning provisions.

The Environmental Protection Authority's summarised list of issues raised through the public review phase and the proponents response to those issues are included within this report as Appendix 2. Many of the issues are specifically discussed in the following section of this report. However, many of the issues raised in submissions including some of those listed above are planning issues which should be dealt with by the Department of Planning and Urban Development under planning procedures.

## **4. Environmental impacts and their management**

### **4.1 Coastal stability and foreshore management**

The Environmental Protection Authority notes that the proponent has proposed a reduction in the 100 metre foreshore reserve specified in the Department of Planning and Urban Development's Coastal Planning Policy. The proponent indicated that road access and lot development would be separated from the beach by a 30 metre wide foreshore reserve.

Reduction of the development setback for this proposal to make it consistent with an adjacent subdivision may not be justifiable. The adjacent subdivision occurred prior to the Department's coastal policy which designates a guideline for setback distance and did not take into account recent knowledge of coastal processes.

The Authority has recommended that during the statutory planning process appropriate building setbacks be established based upon sound land capability, land suitability analysis and the potential for erosion and likely sea level rises due to increased global warming. The width of the foreshore reserve, provision of beach access and foreshore management will also need to be carefully considered by the planning agencies.

## 4.2 Landform and soil stability

The issue of landform and soil stability was raised as a major issue of concern by submissions. There are clearly a number of uncertainties in predicting the potential long term environmental impact arising from wind erosion associated with this proposal.

As part of work for the Shire of Albany's draft Local Rural Strategy a land capability assessment of this site has been undertaken. The results of this recent assessment indicated that Lot 401 Frenchman Bay is classified as Class 4 land. Class 4 land has a low capability for the proposed land use. There is a high degree of physical limitations which are either not easily overcome by standard development techniques or which result in a high risk of land degradation without extensive conservation requirements.

The Environmental Protection Authority in previous advice to the Shire of Albany concerning a proposed resort hotel for this site provided the following information.

Based on a land capability approach to development within the coastal sector, the following principles are generally accepted:

- (a) Erosion hazard is severe in the active foredunes and even minimal disturbance of the vegetation may result in the formation of erosional sand patches and blowouts. Relict foredune plains are relatively stable if vegetation cover is largely maintained but once disturbed, regrowth of vegetation is slow. In order to protect the active foredune plains, a substantial buffer from the seaward edge of vegetation landwards in which no development should take place would be necessary; and
- (b) Parabolic and nested parabolic dunes (high narrow ridges, steep slopes, limited soil development, and fragile vegetation cover) are unsuitable for non-managed or inappropriately managed activities as land degradation hazard is high during and after the construction or development phase. Wind erosion risk is high if vegetation cover is removed or significantly disturbed.

The Department of Agriculture in its submission on the current proposal has indicated concerns that coastal instability would be a problem on all the dunes in the south of the proposed subdivision and suggested that this area is not suitable for housing development due to the possibility of slope erosion from wind and water.

Although the proposal recognises the sensitive nature of the land and seeks to protect it by restricting the density of subdivision and including development controls designed to minimise the removal of vegetation particularly from the ridgelines of dunes, there is still a significant risk that should the development proceed, wind erosion could become a hazard particularly during the summer months when prevailing winds are quite intense.

The land capability analysis suggests that the proposal involves an inherent risk. While experience has shown that such risk can be minimised by appropriate development control and management practices such as those suggested by the proponent for this development, it also demonstrates that the required practices can be costly and difficult to implement and enforce.

In view of the above, the Authority considers the environmental acceptability of the proposed development relies on:

- the ability of the proponent to put in place certain management measures prior to development; and
- the Shire of Albany effectively controlling development through appropriate provisions in its town planning scheme and enforcing those provisions through adequate policing.

The Authority therefore concluded that in finding the proposal environmentally acceptable, planning agencies should adopt a precautionary approach.

Specifically, the Council should ensure that it has the necessary provisions in its Town Planning Scheme or through other planning measures and the appropriate resources to effectively implement and police the necessary planning conditions.

### 4.3 Lake Vancouver

Lake Vancouver is a significant wetland which is still relatively undisturbed. Submissions suggest that its significance lies in the lakes ecological, landscape, cultural, hydrological and potential palynological (study of pollens and spores in sediments) values. The proponent also considers that Lake Vancouver and its surrounding margins are unique environmental features of Vancouver Peninsula and as such warrant protection and conservation. The proponent has proposed to incorporate the lake and its margins and all of Lot 401 to the west of Lake Vancouver in Public Open Space for the purposes of conservation as indicated in the plan of subdivision (see Figure 2). This represents 65% or about 10.5 hectares of Lot 401.

The Authority considers that the wetland proper is defined by the waterbody and the wetland vegetation which in the case of Lake Vancouver is defined by the extent of the *Melaleuca cuticularis/Banksia littoralis* vegetation. These parameters help define the extent of the wetland. However, there is also the additional need to define a wetland buffer.

The physical buffer refers to an area of native dryland vegetation surrounding the wetland proper. On the eastern side of Lake Vancouver this vegetation is the *Agonis flexuosa/Adenanthos sericeus* closed scrub. This buffer has two main functions. First, it should separate the water habitat of the wetland from the variety of human activities on the surrounding land. Second, it should provide a complementary habitat for the wildlife using the wetland.

All or part of the buffer could remain in private ownership but there should be restrictions on the land use activities permitted within that zone implemented through the planning process. With the inclusion of some areas of *Agonis flexuosa/Adenanthos sericeus* closed scrub within the Public Open Space in conjunction with vegetation within adjacent lot boundaries but outside of defined building envelopes and therefore not subject to clearing, the proponent has provided an appropriate wetland buffer.

The proposal to set aside 65% of Lot 401 including Vancouver Lake, its margins and all of Lot 401 to the west of lake Vancouver in Public Open Space as described in the Consultative Environmental Review and indicated in Figure 2 of this report, meets the requirements of the Authority and is environmentally acceptable. The Environmental Protection Authority has included a recommendation in regard to Lake Vancouver which reflects the proponents intentions and the public submissions.

It is the Authority's view that uncontrolled public access could be detrimental to the ecology and well being of the lake. This issue would need to be properly managed by the Shire of Albany unless the land is vested in the National Park and Nature Conservation Authority.

#### 4.3.1. Water abstraction

Beneath Vancouver Peninsula, including Lot 401, is a shallow aquifer overlying granite bedrock. The groundwater is generated and replenished by direct infiltration of rainfall and from surface and subsurface runoff from large areas of granite to the south of Lot 401. Near the coastline the shallow aquifer contains fresh groundwater underlain by sea water. The interface between the saline and freshwater is steep and slopes westward with increasing depth. The less dense freshwater lies on the saltwater. The proponent indicated that Lake Vancouver is hydraulic connected with the aquifer and represents an 'outcrop' of the water table. Changes in the level of the groundwater will cause changes in the level of water in the lake.

It is proposed that each of the 15 residences is to have a bore for watering lawn and garden areas that will cover relatively small proportions of each property, probably in the order of 500 square metres. The proponent has concluded that water level drawdown resulting from the operation of domestic bores, is calculated to be less than 0.1 metres and therefore negligible in comparison with seasonal fluctuations. The proponent considers it is unlikely to have any measurable effect on lake level.

The position of the saltwater/freshwater interface beneath Lake Vancouver is critical to its long term viability.

The Water Authority of WA suggests that the operation of 15 wells in this area has the potential to alter the position of the saltwater/freshwater interface. During summer there is a groundwater slope away from the coast downwards towards the lake. As groundwater usage would be greatest in summer this could have a significant impact on the freshwater holding back the salt water interface.

As indicated in the response to submissions, the proponent is well aware that excessive pumping from bores in the development area has the potential to alter the position of the salt/freshwater interface. The proponent expects that appropriate restrictions on bore location and bore use will be applied to ensure that salt water intrusion does not occur but has not indicated how these restrictions would be implemented or enforced.

The Authority is concerned that pumping of groundwater may progressively lead to an alteration in the position of the saltwater/freshwater interface and ultimately induce salt water intrusion into bores and Lake Vancouver. The resultant salt water intrusion could create an irreversible and unacceptable environmental impact. Accordingly, having established with the proponent that Scheme water will be connected, the Authority has recommended that private bores not be permitted as part of the development.

The proponent in response to public submissions has now indicated that the principal reason for allowing bores to be installed in the property is for emergency use such as in the event of a bushfire. Furthermore, the proponent has now also stated that without bores it would be necessary to clear more vegetation to provide an equivalent level of fire safety.

The Authority has previously stated that the vegetation within those lots adjacent to the proposed Lake Vancouver Public Open Space forms a highly important component of the overall physical buffer for the lake and also assists in maintaining landform stability.

It is the Authority's view that appropriate bush fire protection measures should be determined by the planning agencies in conjunction with the Bush Fires Board. The location of strategic bushfire breaks should be considered with regard to the vegetation removed, the potential for soil erosion and weed invasion.

#### **4.4 Sewage disposal**

A number of the submissions expressed concerns that effluent from septic tanks could pollute groundwater, Lake Vancouver, the marine environment and that the septic tank density did not conform with Environmental Protection Authority guidelines.

The Environmental Protection Authority would prefer that all residential development is connected to reticulated sewerage. Domestic septic tanks typically release about 3.5kg of phosphorus and 35kg of nitrogen into the soil each year and because it is confined and concentrated, a significant portion of this reaches the groundwater. This is particularly true in the Quindalup soil types present on Lot 401 which have a low potential for stripping nutrients.

For these systems to work effectively, the Authority considers it is necessary for the bottom of the leach drain to be a minimum of 2 metres above the highest water table, and for the system to be at least 100 metres from the nearest waterbody. In many cases this requires the creation of a mound to accommodate the leach drains. Normally, where development is on sandy soil there should be no more than one septic tank per hectare.

Conventional septic tanks are unacceptable on land classified as 'low' to 'very low' in the Department of Agriculture's land capability assessment due to high groundwater levels. However, the Health Department of Western Australia has recently approved a number of alternative domestic wastewater treatment systems (two types of 'Aerated Treatment Units' and 'a modified septic tank') which have an acceptable phosphorus retention capacity and meet the Department's health requirements.

The proponent, through the response to public submissions phase of the assessment process, has decided to recommend to the Shire of Albany that the use of alternative effluent disposal systems be required throughout the subdivision. For this reason the proponent has not addressed the other issues raised in relation to effluent disposal considering the issues raised redundant on the basis of the revised effluent disposal system.

Alternative domestic wastewater treatment systems with adequate phosphorus retention capacity would be environmentally acceptable provided that the base of the system or modified irrigation area are above the highest known watertable and they are installed to the satisfaction of the Health Department of Western Australia on advice from the Water Authority of Western Australia.

It should be recognised that these systems require a greater management commitment from the local authority than conventional septic systems.

## **4.5 Other issues**

### **4.5.1 Flora and fauna**

Many of the submissions expressed concern at the superficial investigation of the site in order to determine its conservation value for flora and fauna. It is the Authority's view that some displacement of fauna and loss of flora will inevitably occur should this proposal proceed. However, the Authority considers that the provision of 65% of the subject land to Public Open Space and the controls on clearing of vegetation should ameliorate these impacts.

The Authority received a number of submissions which expressed concerns regarding the potential impact that domestic animals such as dogs and cats could have on the wildlife in the area. This matter would need to be addressed by the local authority in the context of the overall management of the site.

### **4.5.2 Historical and cultural significance**

A number of submissions indicated the significance of the subject land and surrounding areas for its historical and heritage value, citing significant European and Aboriginal involvement with the land. In this case it is appropriate that this issue is addressed through the planning process.

### **4.5.3 Dieback**

The proponent has provided a commitment to safeguard against the introduction of dieback by performing construction in accordance with dieback hygiene strategies developed in consultation with the Department of Conservation and Land Management and the Shire of Albany.

## **5 Conclusions and recommendations**

### **5.1 Introduction**

The Environmental Protection Authority is aware that a number of authorities must provide approvals for a development such as this one to proceed. These other authorities, including the Department of Planning and Urban Development and the Shire of Albany, must provide planning and other approvals.



Notwithstanding the Environmental Protection Authority's advice and the Minister for the Environment's decision, the proposal may or may not be approved by other authorities.

The Environmental Protection Authority recognises that the land is inherently fragile and contains constraints to development which are at best difficult to overcome. In finding this proposal environmentally acceptable the Authority recognises that management of the environmental impacts will rely extensively on management controls through the planning process and that the Shire of Albany will be required to implement and enforce these controls.

## **5.2 Recommendations**

The Environmental Protection Authority advises that any environmental approval granted through this process does not imply that planning approval will automatically follow. A number of planning issues which include environmental aspects, may need further consideration.

### **Recommendation 1**

**The Environmental Protection Authority has concluded that the proposal to rezone Lot 401 Frenchman Bay, Shire of Albany, from "Rural" to "Special Residential", as modified during the process of interaction between the proponent, the Environmental Protection Authority, the public and the government agencies that were consulted is environmentally acceptable providing the recommendations in this report are accepted.**

**In reaching this conclusion, the Environmental Protection Authority identified that the main environmental factors requiring detailed consideration as:**

- protection of Lake Vancouver and provision of an adequate buffer of native vegetation;**
- domestic effluent disposal;**
- groundwater considerations;**
- landform stability and foreshore protection; and**
- proper management of the above.**

**The Environmental Protection Authority considers that these environmental factors have been addressed adequately by either environmental management commitments given by the proponent, or by the Environmental Protection Authority's recommendations in this report.**

**Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the Environmental Protection Authority's recommendations in this report and the proponent's commitments to environmental management (Appendix 1).**

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

The Authority believes that if the proposal has not been substantially commenced within five years of the date of this report then such approval should lapse. After that time further consideration of the proposal should only occur following a new referral to the Authority.

### *Pre-development requirements*

#### **Recommendation 2**

The Environmental Protection Authority recommends that the proponent prior to development of the land or prior to development approvals under statutory planning provisions being granted:

- 2.1 set aside Lake Vancouver and its margins and all of Lot 401 to the west of Lake Vancouver as indicated in Figure 2 for conservation, to meet the requirements of the State Planning Commission on advice from the Environmental Protection Authority and the Shire of Albany;
- 2.2 construct a storm water drainage system capable of retaining on-site for three to four days a one in 10 year storm event to the satisfaction of the Shire of Albany. This drainage system should be designed so that no direct drainage enters Lake Vancouver or Frenchman Bay;
- 2.3 provide scheme water to lots within the subdivision;
- 2.4 provide adequate setback from the coast including road access, driveways and residences, taking into account land capability and suitability to meet the requirements of the State Planning Commission on advice from the Shire of Albany;
- 2.5 provide an adequate foreshore reserve and if appropriate, beach access to meet the requirements of the State Planning Commission on advice from the Shire of Albany;
- 2.6 where reticulated sewerage is not connected, provide alternative domestic wastewater treatment system approved by the Health Department of Western Australia with an adequate phosphorus retention capacity and installed so that the base of the systems or the modified irrigation areas are above the highest known water table or are installed in accordance with Health Department guidelines on advice from the Water Authority of Western Australia

### *On-going management requirements*

#### **Recommendation 3**

The Environmental Protection Authority recommends that prior to development, the proponent should develop a strategy to address the implementation and ongoing management of the following to meet the requirements of the State Planning Commission:

- 3.1 the protection of the existing vegetation and any revegetation outside the cleared area for the building envelopes, firebreaks, access and servicing;
- 3.2 the rehabilitation with indigenous species areas already cleared of indigenous vegetation and not required for building envelopes, firebreaks, access and servicing;
- 3.3 the prohibition of livestock to avoid a potential source of land degradation;
- 3.4 the prohibition of private bores to extract groundwater.

## 6. References

1. Department of Planning and Urban Development (1991), Albany Regional Planning Study - Profile
2. State Planning Commission of Western Australia, Country Coastal Planning Policy No DC 6.1
3. Alan Tingay & Associates (October 1992), Residential Subdivision Lot 401 Frenchman Bay, Albany Consultative Environmental Review
4. A & SR Tingay Pty Ltd (October 1990), Lot 401, Frenchman Bay Environmental Assessment

# **Appendix 1**

## **Proponent's commitments**

## 6. COMMITMENTS

The proponent L'Oire Nominees Pty Ltd commits to carrying out the following with regard to the development of Lot 401 Frenchman Bay:

1. Prepare and implement a foreshore management plan for the Coastal Reserve adjacent to Lot 401 in accordance to the requirements of the Shire of Albany and DPUD.
2. Conform to EPA policy on domestic effluent disposal by ensuring effluent disposal systems have a minimum 100m separation from the high water mark of Frenchman Bay and from the shore of Lake Vancouver. They will also have at least a 2m vertical separation from the watertable. This will be in accordance with the requirements of the Shire of Albany.
3. Put in place measures that will limit the clearing of natural vegetation within the development to an absolute minimum as described in this CER. This will be done to the satisfaction of the Shire of Albany.
4. Take the necessary steps described in this CER to prevent the erosion of soil by wind. This will be done to the satisfaction of the Shire of Albany.
5. Safeguard against the introduction of dieback by performing construction work in accordance with dieback hygiene strategies developed in consultation with CALM and the Shire of Albany.
6. In consultation with the Shire of Albany will ensure that residences are sited and constructed in a manner designed to allow them to harmonise with the surrounding landscape elements in accordance with the Country Coastal Planning Policy of DPUD.
7. Design the stormwater drainage of the development so that drainage waters do not enter Lake Vancouver and so that they filtrate into the soil profile. This will be done to the satisfaction of the Shire of Albany.

## **Appendix 2**

**Summary of submissions and responses by the proponent**

# Summary of submissions and responses by the proponent

There are two parts to this Appendix, part 1 is the Environmental Protection Authority's summary of submissions and part 2 is the proponent's response to the issues raised. The Authority has endeavoured to interpret the specific issues of concern from the context provided in the submissions and wherever possible the submitters own words have been used.

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# Conservation value of Lot 401

## Lot 401 should be National Park

**Context 1** The CER did not discuss any alternatives such as including Lot 401 in the national park. Many submissions suggested that Lot 401 should be included in the adjacent National Park. Submissions noted the following as reasons for including Lot 401 as part of the Park.

- for its environmental, historical and landscape significance;
- because it has good quality vegetation;
- the sites pristine nature;
- because Lake Vancouver is the only freshwater lake on the peninsula;
- the area is of interest for its floristic and visual qualities; and
- it is one the very few wetlands in the South-West in its original primitive condition.

Several submissions noted that a Council resolution in 1990 to include Lot 401 into the adjacent Vancouver Peninsula Reserve was well supported by the community, but rejected by the proponent.

One submission stated that "It appears from Red Book Recommendation 2.10 that this area should have been included in Torndirrup National Park". However, the Red Book did not consider Lot 401.

One persons submission indicated that they thought Lot 401 was already a National Park when they purchased their land.

- 1.1 *The statements in the CER regarding possible government purchase of the land for reservation are unsubstantiated and for some reason do not acknowledge the government's statement in writing that they are prepared to assess the area for possible purchase/reservation.*
- 1.2 *Lot 401 should be rezoned to a conservation reserve and a management plan should be prepared (which includes a cat-proof fence and monitoring of water levels, water quality, weed infestation and dieback) to manage impacts from existing adjacent subdivisions.*
- 1.3 *Lot 401 should be included in the adjacent National Park.*
- 1.4 *The Shire and the State should combine to purchase Lot 401 for a National Park for the purchase price plus costs.*

## Restricted biological survey insufficient

**Context 2** The CER acknowledges that the flora survey was over a restricted area and time period, and that no detailed fauna/biological survey was done. Concern was expressed that the proponent was not aware of work undertaken at the adjacent National Park which shows that the important species (as listed under 2.2 below) occur near to and in similar habitat to Lot 401.

Several submissions felt that the proposal should not go ahead without further biological survey because the nature of the site meant it was likely that important or rare species would be found because;

- the area is pristine;
- the presence of the wetland which is the only permanent body of freshwater for many kilometres means that the fauna is expected to be more diverse; and

- rare species of international significance (Eg Albany Pitcher plant) have been discovered in similar, unique nearby areas of Albany.

One submission from a former nurseryman stated that he had inspected the site in spring and found no flora and fauna of significance in the area.

- 2.1 *The flora study was insufficient to determine if rare or endangered species are present.*
- 2.2 *No fauna study was conducted in the area. The presence of Southern Brown Bandicoot or potentially the Dibbler was not determined. Other possible species in the area include Carpet Python and Red-eared Firetail Finch.*
- 2.3 *The Southern Brown Bandicoot, which is classified by the State Government as "likely to become extinct" or "is rare" is attracted to wetland areas surrounded by sedgeland such as occur at Lot 401. It is essential to confirm whether this species exists on Lot 401.*
- 2.4 *Red-eared Firetail Finch have been seen and heard on several occasions in the dense bushes of the dunes of Lot 401 and around the lake.*

## **Likelihood of erosion**

### **Wind data misleading**

Context 1 The CER concluded that the landform of Lot 401 would be stable because wind data from the township of Albany indicate that winds in Albany are mostly light (< 10 km/h) all year round.

Several submissions provided their own analyses of the likely wind situation at Lot 401 based on wind information from the Bureau of Meteorology from weather stations considered to be more representative. One submission included Table One (attached) which analysed wind data from January to March from three weather stations and concluded that at Lot 401 approximately 50% of winds originate from the east, south-east or north-east (which are most likely to cause erosion) and of these a major proportion have a velocity in excess of 20km/h. Another submission prepared a wind rose which they felt more accurately represents wind conditions at Lot 401 during summer (Attached). Another submission noted that he had recorded many days of moderate to strong easterly winds up to Beaufort Scale Force 6 (25 to 30 knots) at a nearby study site.

One submission referred to the 'Beasterly Easterlies' in reference to the strong easterly winds which blow in the area during summer.

It was also stated that the existence of stunted wind-pruned vegetation on the seaward facing slopes of the dunes is inconsistent with the suggestion that winds are mostly light all year round.

- 1.1 *For the CER to assert that winds are mostly light is totally wrong*
- 1.2 *Wind data from Albany Airport and Eclipse Island are more representative than Albany Town because Albany Town was sheltered, particularly from easterly winds by Mt Clarence.*
- 1.3 *Wind data only shows average wind speeds at 0900 and 1500 hours. In summer, the strong easterlies rarely reach their maxima by 1500 hours.*
- 1.4 *The easterly winds increase in intensity as it is forced up the dunes and is therefore locally exceptionally strong.*
- 1.5 *During winter the area is exposed to strong westerlies, when strong wind weather warnings are common (April, July & October data supplied in one*

*submission), and during summer (November to March) strong easterlies (30-46km/h) blow*

### **Erosion begins at less than 18km/h**

**Context 2** The CER stated that the wind speed at which erosion begins is 18 km/h.

2.1 *No mention is made in the CER of dune erosion by saltation and surface creep. Saltation begins at 3.6 km/h. Surface creep can be responsible for 75% of erosion. (Sources referenced)*

### **Historical evidence of erosion potential**

**Context 3** The CER states that historic evidence indicates little erosion occurs when vegetation cover is removed. Submissions indicate that significant wind and water erosion have occurred where vegetation has been disturbed and that it is difficult for plants to re-establish and grow because of wind pruning. Bare patches reportedly create dust problems for adjacent landholders.

Examples which demonstrate erosion potential quoted in submissions included;

- the existing paths to Goode beach (Photos showing small mobile dune and erosion enclosed with submissions);
- significant water erosion from recent road and firebreak construction (Photos enclosed);
- the mentioned limited disturbance to soil on adjoining cleared lots 227, 228 etc is partly attributable to their proximity to the granite headland. Even so workers at these sites had to wear protective clothing because of sandblasting and on occasions restricted their working times to avoid the strong easterlies;
- in 1983, when the dunes were levelled for the La Peruse Court subdivision, there was considerable sand blow. Truckloads of surface cover were carted from Lot 372, presumably to stabilise the surface; and
- the bush on Vancouver Peninsula has still not yet fully recovered after a fire lit by the Shire seven years ago. The year after the fire plumes of sand still blew towards Princess Royal Harbour. This demonstrates the fragile nature of the environment in this area.

One submission considered that regeneration following the clearing of 2000 m<sup>2</sup> in 1971 of little consequence compared to the potential clearing of 900 m<sup>2</sup> for each lot.

One submission considered that there had been little impact on the foreshore from existing developments and noted that despite walking much of the site he could not find evidence of the 2000 m<sup>2</sup> cleared in 1971.

3.1 *Historical evidence indicates erosion will be a significant problem.*

3.2 *The description of 'The Gorge' by the proponents to suggest that erosion over a long period of time is not a problem is erroneous. "The Gorge' represented the outlet of the Lake Vancouver drainage system and cannot be compared with the landform of Lot 401.*

## Assessments of erosion potential

- Context 4 Submissions quoted other studies, made their own assessments or gave reasons why they considered the site has a significant erosion potential.
- 4.1 *Land capability/suitability surveys indicate a severe erosion risk.*
- 4.2 *Coastal instability would be a problem on all the dunes in the south of the proposed subdivision. This area is not suitable for housing development due to the problem of slope erosion from wind and water.*
- 4.3 *The difference in height of the vegetation cover between the dune ridges and valleys gives the impression of a gentler terrain than actually is the case. Steep hills are prone to erosion.*
- 4.4 *Short of a blanket covering of a stable material such as a minimum of 150mm of weed harvested from Princess Royal Harbour wind erosion would be impossible to control.*
- 4.5 *Clearing for the building envelopes (of 2000 to 4655 m<sup>2</sup>) without ultimately destroying other vegetation on the lot is unlikely.*
- 4.6 *It may be some time after construction of roads and services before blocks are sold, during which erosion would/could take place.*

## Development will enhance likelihood of erosion

- Context 5 Several submissions expressed concern that people activities in the area would result in erosion occurring.
- 5.1 *Pedestrian access is limited to one access-way about halfway along the eastern side of Lot 401. This is insufficient and will result in people crossing the dunes and erosion.*
- 5.2 *Fifteen families and their visitors trampling the dunes would have a considerable effect on the dunes. Consider that people, especially children would not use access points provided.*
- 5.3 *Increased access to Goode Beach along the proposed road and adjacent coastal reserve will increase pressure on the fragile foreshore environment.*
- 5.4 *Trampling, weeds, pets and off-road vehicles will degrade the environment. Trail bikes should be prohibited.*

## Restabilising areas

- Context 6 One submission considered that restabilising areas is extremely difficult without lots of water and attention because of the strong winds in the area. Several submissions considered that the native vegetation does not display a high regenerative capacity, although one submission considered that regeneration appears to occur quickly and effectively
- The CER states that "all cleared areas will be stabilised with vegetation, mulch, brush matting and other means as soon as practicable following completion of the construction phase" and that hand planting of cut areas with native species will occur as soon as practicable"
- 6.1 *How will restabilisation as described in the CER be ensured. It would be difficult and costly for Council to administer if it was written into a zoning regulation.*
- 6.2 *The CER does not demonstrate that dune erosion would be prevented or repaired.*

# Coastal stability

## The coastline is erosional

**Context 1** The CER suggests that the coastline has remained stable over the last 35 years, but that some erosion took place in 1992 as part of the normal oscillation of the beach.

One submission noted that although there may be minor movements along the shoreline, a sketch of King George Sound made in 1792 shows a symmetry of Frenchmans Bay very similar to the present form, with Lake Vancouver being clearly marked.

Several submissions from people who have lived in the area for periods of 8 to 15 years stated that they had noticed erosion problems at Goode Beach. One submission stated that Goode Beach had a slowly receding dune line which was very noticeable in places, whilst another stated that they had noticed small trees, patches of vegetation and Council signs which had disappeared because of beach erosion.

- 1.1 *Repeated beach each erosion occurs particularly when storms occur at high tide, as has occurred on three occasions in the last two years.*
- 1.2 *Erosional benches (photo enclosed with submission) demonstrate that coast is eroding with each high tide & storm. This could be exacerbated if sea level rise from Greenhouse gasses occurs.*
- 1.3 *The predicted changes from Greenhouse gasses (Eg higher sea levels and more frequent severe storm events) has not been considered with regard to the effect on erosion rate.*
- 1.4 *There is no evidence of addition of sand by wave action to Goode Beach. The dunes were formed by wind transport of sand from the east when sea levels were lower than at present.*
- 1.5 *The morphology of the dunes (including sharp truncation by marine erosion) and drilling tests carried out by Rockwater Pty Ltd in 1986 indicate that the sand dunes once extended further eastwards, but have been extensively eroded by the sea. The dunes appears to be in a metastable condition of a cycle of long term erosion, an are currently stabilised by an intact vegetation cover.*
- 1.6 *Earlier reports by the same consultants concluded that the coastline at Lot 401 was constructive, but this has not been repeated in the CER. This implies that the original conclusion was incorrect, so we have little faith in the current conclusion.*
- 1.7 *There is no mention of increasing exposure to wave motion as one moves further away from the more protected southern end of the bay.*
- 1.8 *The aerial photos used to determine coastline change were not available in the CER so they cannot be subject to any critical appraisal by residents or the EPA.*

## Relaxation of DPUD Policy not justified

**Context 2** The proponent seeks a relaxation of Department of Planning and Urban Development Coastal Policy DC 6.1 on the basis that the coastline is stable.

- 1.1 *The Coastal Policy calls for a 100m setback for stable coastlines. Even if the coast was stable, the proponent has not justified why a relaxation should be permitted.*
- 1.2 *The coastline and dunes are unstable and therefore, in accordance with Section 3.7.2 of the coastal policy, development should not occur on or adjacent to unstable dunes.*

- 1.3 *Existing beachfront development which occurs at Goode Beach does not justify relaxation of DPUD policy. Most of the existing lots lie on granite and face north rather than east.*
- 1.4 *Concerned that if DPUD Policy is not adhered to the road adjacent to the coast (or buildings) will be washed away. This would be at cost to the Shire ratepayers, as has happened at Emu Point.*

## **Dieback**

### **Relationship of CALM policy to proposal**

**Context 1** Part of the strategy to keep dieback in check suggested in the CER is to prepare dieback hygiene strategies in consultation with Department of Conservation and Land Management and the Shire in advance of construction work.

- 1.1 *CALM Policy Statement No 3 with regard to dieback applies a seven way test in order to decide whether to accept, reject or modify a proposed activity. Using the seven way test, the proposal should be rejected because the proposal is not needed (land demand), the disease hazard is high (much susceptible vegetation, water moves to the wetland), an important wetland would be severely affected and construction, building and recreational activities from the proposal will spread the disease.*

### **Prevention of dieback post construction**

**Context 2** Whilst the CER considers prevention of the introduction of dieback during subdivision construction, the CER does not address the issue of how the introduction, spread or intensification of dieback disease will be prevented post construction. One persons submission contended that he had walked the site and found no evidence of dieback.

- 2.1 *How will dieback be controlled after subdivision*
- 2.2 *Past experience has shown that well-intentioned planning provisions are difficult to monitor and impossible to enforce.*
- 2.3 *The introduction of plants from pots could also introduce dieback into the area.*

### **Impacts of dieback**

**Context 3** Dieback could severely affect the existing vegetation and result in erosion.

- 3.1 *Of the species listed by the proponents in their limited survey many are extremely susceptible to dieback.*

## **Sewage issues**

### **EPA Policy**

**Context 1** EPA has a policy regarding septic tanks on the Swan Coastal Plain which the proponent has used to justify acceptability of the proposal. Several submissions consider that the proposal could not or does not meet the EPA Policy, which requires a vertical separation of 2 m from the groundwater table, a horizontal separation of 100 m from the nearest waterbody and a density of one per hectare (ie 10 000 square meters) in the catchment of wetlands, although one per 4000 square meters may be acceptable depending on on-site conditions.

Submission expressed concern that the vertical separation would be less than 1m at some sites and that only the minimum vertical separation requirements may be met at some locations. Concern was also expressed about the way in which the septic tank density was calculated. Several submissions calculated septic tank density and considered that the density was significantly greater than

recommended by the EPA. The most common estimate of subdivision area was 5.7 ha with 16 tanks (ie 3 500 m<sup>2</sup> per tank), however several other estimates of the number of square meters per septic tank were calculated (2000, 2800, 3500, 3800).

Several other issues associated with EPA policy were raised.

- 1.1 *The EPA Policy was not intended for this case.*
- 1.2 *A 2 m vertical separation would mean extensive sandpads are required in north-eastern part of the site.*
- 1.3 *Owners may have difficulty in keeping bare sand covering septic systems.*
- 1.4 *It is difficult to determine how the vertical separation requirement can be met without sacrificing measures to protect visual amenity.*
- 1.5 *Given the coastal instability a 100m separation from the high water mark is not adequate.*
- 1.6 *The septic tank density does not comply with EPA Policy (ie one tank per hectare) or demonstrate why the density should be one per 4000 m<sup>2</sup>.*

### **Suitability of site for disposal**

**Context 2** The suitability of the site for on-site effluent disposal is questioned

- 2.1 *The assessment in the Environmental Geology Map series indicates that septic tanks are a land use compatible with the soil type is based only on the physical characteristics (ie infiltration etc) of the soil. It does not consider other issues such as adjacent wetlands and separation from the groundwater table which make Lot 40I unsuitable for septic tanks.*
- 2.2 *The development, if it proceeds, should be subject to deep sewerage as appears to be the case in other areas such as Dunsborough.*

### **Effluent will pollute groundwater, Lake Vancouver and marine environment & manage**

**Context 3** Concern was expressed that effluent from septic tanks could pollute groundwater and as a consequence bore water supplies, Lake Vancouver and the marine environment.

- 3.1 *Where groundwater flows from west to east, as it does over most of the site during summer, bores located downstream of septic tanks could be contaminated by leachate because of the high groundwater table and the cone of drawdown created by the bore.*
- 3.2 *Given the slope of the freshwater/saltwater interface towards the east (because fresh water is less dense than seawater, freshwater would move down the interface towards the lake) and the location of the watershed (almost all septic tank sites are located on the lake side of the watershed - map provided with submission), almost all septic tank effluent would flow towards Lake Vancouver.*
- 3.3 *Groundwater levels should have been taken in autumn, when gradient towards the lake would be steepest.*
- 3.4 *Monitoring of water quality should be initiated in Lake Vancouver to ascertain impacts of run-off entering the lake from existing development on the south of the lake.*
- 3.5 *There is already potential for a problem of nearshore marine pollution from septic tanks due to the density of existing residential subdivision.*

**Context 4** One submission observed that there was no evidence of septic effluent problems (ie seepage) from the existing development and considered that septic tanks would have virtually no impact because of the low density proposed and because effluent would flow to the sea.

## Surface runoff

### Existing and likely runoff pattern

**Context 1** The CER states that Lake Vancouver already receives runoff from residential areas to the south of Lot 401. One submission provided a map which showed that runoff from the existing residential area mostly drains eastwards to the sea or out through the creek which runs between Lake Vancouver and the beach. The CER proposes measures to prevent surface runoff from Lot 401 reaching the lake.

*1.1 The proponents propose measures to prevent surface runoff reaching the Lake. Though no details are given, this implies drainage towards the beach which would result in erosion and nearshore marine pollution.*

## Groundwater (See also Context 2, Sewage Issues)

### Availability of water and shift of interface

**Context 1** The CER recognises that groundwater availability is limited. Submissions expressed concerns that without intensive management the fresh/salt water interface would shift and affect Lake Vancouver and suggested ways in which this problem could (or would) be managed.

*1.1 Underground water in this area is limited, thus any allocations would be restricted to domestic quantities only. Bores in this area will require a licence and restrictions may be placed on wells such as depth of well and allocation. The potential impact of any installation would have to be assessed before a licence is issued and restrictions could be placed on bore use if pumping was determined to be having an impact on Lake Vancouver and the surrounding environment.*

*1.2 The operation of 15 wells in this area has the potential to alter the position of the salt/freshwater interface, particularly during summer. This needs to be assessed.*

*1.3 How long before we have saltwater ingress into domestic bores*

*1.4 The amount of water extracted could not be easily monitored.*

*1.5 The proponent should be required to monitor groundwater levels and contamination*

*1.6 The CER summary expresses concern about summer use of groundwater, when demand peaks, but does not suggest management measures.*

*1.7 Groundwater use should be restricted to garden use only in the eastern lots.*

*1.8 The supply of water should be by roof catchment only. Private bores should be discouraged*

*1.9 The CER does not make it clear whether scheme water will be supplied. Consideration should be given to supplying all lots with scheme water and then not permitting bores*



## Replenishment of groundwater

**Context 2** The CER suggested that groundwater is replenished from granite areas to the south of Lot 401, which is already under residential development. However one submission demonstrated that the runoff from the granite hills goes eastward directly to the sea. (Figure supplied in submission)

2.1 *Groundwater replenishment to Lake Vancouver comes from Lot 372, not the existing town.*

## Land capability/suitability surveys

### Land capability assessment

**Context 1** A land capability assessment of the Shire was completed by a consulting group in January 1992 to assist the Shire of Albany to prepare its Local Rural Strategy. The CER did not refer to this report. Many submissions referred directly to the land capability assessment relevant to Lot 401.

1.1 *The land capability for the part of Lot 401 proposed for be Special Residential is classified as very low for housing development and low for on-site effluent disposal based, in part, on the following assessment;*

- *wind erosion hazard - very high*
- *visual resource impact - high*
- *water erosion hazard - moderate*
- *soil nutrient retention ability- moderate*
- *bushfire hazard - moderate.*

*The land is classified as Class 4 land (ie severely constrained - unsuitable for development). This contrasts with the conclusions in the CER. Therefore the area should not be developed for Special Residential.*

### Environmental Geology map

**Context 2** Environmental Geology Maps prepared by Geological Survey of WA in 1988 indicate the part of Lot 401 proposed for development would be unsuitable for Special Residential use.

2.1 *The following comments are made by the Environmental Geology map for the soil type on which development is proposed;*

- *a high hazard rating;*
- *settlement is common and can be uneven;*
- *low bearing capacity;*
- *Road fill - environment unsuitable or hazardous for the use;*
- *Septic tanks - land use compatible with unit;*
- *very susceptible to remobilisation where the sparse vegetation is removed.*

### Pre emptying outcome of Local Rural Strategy

**Context 3** Several submissions were concerned that this proposal is an attempt to pre-empt implementation of the Local Rural Strategy

3.1 *Consideration of the proposal should be deferred until the Shire of Albany Local Rural Strategy is in place.*

## Visual aspects

**Context 1** *The CER analysed four viewsheds (Figure 12) and stated that although there will be some changes to views, particularly from the residential areas to the South, the CER concluded that these changes would be acceptable. One submission considered that Figure 12 is grossly misleading. Submissions noted that Lot 401 is considered to be in the highest category with regard to visual resource management in the land capability study recently prepared for the Shire. Similar proposals have been reportedly been rejected by Council on the basis of landscape and vegetation protection.*

*One submission felt that if Council diligently scrutinises and sets standards, visual aspects would not be a problem.*

*The Department of Planning and Urban Development Country Coastal Policy states that views should be either protected or enhanced.*

- 1.1 *It is likely that any houses built on Lot 401 would be elevated to take advantage of ocean views. Such houses would certainly be visible from the beach, from the four viewsheds listed by the proponents, from popular tourist viewing points (Eg Frenchmans Bay Tea Rooms, Waterbay Point and Stony Hill) and from passing ships.*
- 1.2 *It is difficult to determine how the separation requirements (vertical and horizontal) for on-site effluent disposal can be met without sacrificing measures to protect visual amenity.*
- 1.3 *No houses should be permitted on elevations above 10m and where this occurs building envelopes should be shifted.*
- 1.4 *The existence of built elements in a view does not mean further built elements will not be detrimental.*
- 1.5 *The roads and services will create a horrible break up of bush*
- 1.6 *In its present state the view of Vancouver Peninsula is unaltered from the view seen by the earliest Europeans. This should be protected*
- 1.7 *We and many others, deliberately purchased a block overlooking land zoned Rural, confident that the natural, undisturbed outlook would be retained.*
- 1.8 *The proposal will not comply with Department of Planning and Urban Development Country Coastal Policy*

## Fire control

**Context 1** *Some submissions considered the assessment of the suitability of the proposed alignments fundamental to the determining the acceptability of the proposal as a whole. Issues which needed to be considered include;*

- *their effectiveness for fire prevention and fighting;*
- *the erosion risk that may be present (particularly in the sand dune country);*
- *their visual impact;*
- *the subdivision design.*

*One submission noted that firebreak erosion could be controlled if slashing, rather than cultivation was used.*

- 1.1 *Strategic firebreaks are a fundamental element of the proposal and should be assessed as part of the approval.*
- 1.2 *A strategic firebreak should be sufficient on the west side for adequate protection.*

## **Lake Vancouver**

### **European cultural significance**

**Context 1** The site has cultural significance

- 1.1 *Lake Vancouver appears on the charts of all the early explorers (Vancouver, Freycinet, Flinders & Commander Archdeacon) and is therefore significant and should be protected.*
- 1.2 *It may be reasonably conjectured that Captain George Vancouver, who was the first European to visit King George Sound, first landed in the vicinity of the coastal frontage to Lot 401. Lake Vancouver is recorded on the first chart made of the area. The Coastal frontage of Lot 401 is likely to be historically significant. Any development of the area should not affect the pristine nature of the beach and foredunes.*
- 1.3 *Lake Vancouver is of even greater heritage importance than the northern sector of Vancouver Peninsula which has been nominated for inclusion in the register of the National Estate. Protection of this site is the best monument that could be erected.*

### **Cultural heritage dispute**

**Context 2** There are some differences of opinion regarding the European cultural significance of Lake Vancouver with regard to the importance of the lake as a source of water for Captain Vancouver. One submission considered that charts of all the early explorers recorded the lake as a source of water.

Submissions which supported the belief that Lot 401 was significant a source of water for Captain Vancouver stated that;

- research conducted by Dr Charles Nadin has revealed that the early French explorers definitely used Lake Vancouver as a source of fresh water; and
- the diaries associated with Vancouver's expedition tell us that the fresh water they obtained near their landing place, although brandy colour, tasted sweet.

However the submissions which disputed this stated that research carried out by the Historical Sub-Committee of the Shire of Albany disputes the conclusion of Dr Charles Nadin and believes that records indicate that Vancouver's ships were watered from a spring near the whaling station, not Lake Vancouver which has poor water quality and access. (Copy of historical charts supplied)

### **Aboriginal significance**

**Context 3** Submissions considered that Lake Vancouver must have been of immense importance as a source of fresh water and food to the traditional residents of the area (the Nakina tribe). Vancouver recorded the presence of aboriginal communities inhabiting the area in 1791. In the light of this information, submissions felt that it was highly probable that the area would have Aboriginal significance

- 3.1 *The CER provides no indication if any active research was undertaken to determine the significance of the lake to aboriginal inhabitants.*

- 3.2 *The research undertaken by the proponent should be backed by consultation with outside sources, preferably within the Aboriginal community.*
- 3.3 *An Aboriginal Site is recorded on the lot adjacent to Lot 401.*
- 3.4 *Torndirrup National Park is among the areas being investigated for Aboriginal claim following the Mabo Case*

**Other values**

- Context 4** Lake Vancouver and Lot 401 are considered to have other values apart from conservation value.
- 4.1 *Little is known about the processes that formed Vancouver Peninsula (however Lot 401 is an important site for future study of storminess (based on the stratigraphic record). Such studies should take place before ground disturbing activity occurs. The parabolic dunes indicate an interesting interplay of forces that would change with the natural fluctuations in climate.*
  - 4.2 *Lake Vancouver should be investigated to establish its significance as a source of palynological information (concerning vegetation and climate) in the region.*

**Adverse impacts of development on lake (summary)**

- Context 5** The CER acknowledges the environmental and visual importance of Lake Vancouver and has proposed to incorporate the lake and its margins as public open space to protect the lake. However, submissions expressed concerns about potential impacts of the development as proposed on Lake Vancouver which would result in the in range of adverse impacts which would destroy the area proposed to be protected. Some of the concerns raised above are repeated here in an attempt to summarise the potential impacts of the development on Lake Vancouver.
- 5.1 *The potential influence of adjacent human occupation (including pets such as cats and dogs) on flora and fauna is difficult to determine in the absence of a biological survey.*
  - 5.2 *In the last 13 years, the bird species have dropped from 31 to 10, probably due to development - with the associated cats and dogs.*
  - 5.3 *The construction of strategic firebreaks would contribute to destruction of existing vegetation cover, damage the landscape and promote the hazard of erosion, especially if four-wheel drive access is not stopped.*
  - 5.4 *Much of the vegetation on Lot 401 is highly susceptible to dieback which is likely to be introduced with development, as has already happened from Lot 372.*
  - 5.5 *Groundwater use would shift the salt/freshwater interface causing a irreversible and detrimental salinisation of the lake.*
  - 5.6 *Cumulative residential development in the vicinity of Lake Vancouver (ie both Lots 372 & 401) could lead to eutrophication (causing midge and algae problems) which would probably be irreversible. Runoff from Lot 372 drains towards Lake Vancouver.*
  - 5.7 *The cumulative impact from Lot 401 and other developments could tip the balance and cause irreversible damage to a fragile environment.*
  - 5.8 *The tendency for developers to exploit ocean views poses a potential threat to the cultural heritage values of the area. Conditions need to be imposed to protect the cultural heritage values.*

- 5.9 *The appearance of Lake Vancouver is the same today as it was when early explorers visited the coast, as evidenced by French paintings from the 1700's. This view should be protected.*
- 5.10 *The heritage value of the area will not be appreciated until it is too late.*
- 5.11 *If the proposal is approved it would only be a matter of time before the threat of snake bite became a major issue and there would be pressure to clear native vegetation.*
- 5.12 *A lake such as Lake Vancouver presents an ideal breeding ground for the particular mosquito which carries Ross River Virus. If mosquitoes became a public health issue the lake would have to be sprayed. This would be an undesirable outcome of the development.*
- 5.13 *The area suitable for development is too narrow for sensible development.*

### **Protection by POS**

**Context 6** The CER proposes to protect Lake Vancouver through subdivision design, which includes creating Public Open Space for conservation purposes.

- 6.1 *CER claims that setback from the lake not required by any policy however Department of Planning and Urban Development Policy DC2.3 requires foreshore reserves around lakes.*
- 6.2 *As 50% of Lot 401 is usually underwater, to allocate 65% as Public Open Space is not as benevolent as it might initially seem*
- 6.3 *Conservation value of Public Open Space may be nothing if subdivision goes ahead*

## **Compliance with proposal and planning conditions**

### **Number of conditions and ability to monitor**

**Context 1** Submissions expressed concern that the Shire would not have the resources to adequately police or enforce the number of conditions that would be required to make development on Lot 401 acceptable. Several submissions indicated that if the development could not be adequately policed it should not proceed.

Many submissions specifically concluded that management/monitoring of various proposals to limit impacts on Lake Vancouver by the proposed development mostly lies with the Shire of Albany. Submissions concluded that the CER placed responsibility on the Shire of Albany for the management and monitoring associated with the following;

- foreshore reserve management;
- clearing for building envelopes, firebreaks and roads;
- locating building envelopes and septic tanks;
- prevention of erosion;
- introduction and planting of exotic species (ie weeds, such as Taylorina);
- dieback control;
- control of household pets, particularly cats and dogs;
- protection of visual amenity within coastal landscape;
- building material restrictions;
- stormwater management.

Several submissions quoted previous examples where, in their opinion the Shire had not adequately enforced conditions. The Austin Road development was quoted by submissions to demonstrate that the Shire is not able to manage the special provisions needed for development of this area. Wide clearing of road verges, extensive soil erosion from run-off, and the introduction of dieback and exotic weeds at the Austin Road subdivision were cited as examples of adverse impacts which had not been adequately controlled. Concern was also expressed that dieback from this subdivision has the potential to affect the vegetation of Lake Vancouver. Several submissions were concerned that the location of building envelopes was neither enforced or policed.

- 1.1 *Will the Shire of Albany have sufficient resources to adequately enforce proposed planning provisions.*
- 1.2 *Most proposed planning controls suggested by the proponents difficult/ impossible/ intrusive, costly and controversial/ to enforce.*
- 1.3 *Concerned that most proposed planning controls have a 'let-out' clause.*
- 1.4 *How can dogs be kept, if as in 4.3.9 fencing is not permitted. The Dog Act states that "dogs owners must provide means on their property to effectively confine their dog" that "does not include tethering".*
- 1.5 *A bond system should be used where proponents and purchasers have to lodge a large bond with an independent body which would be refunded after it has been shown that ground cover is repaired*
- 1.6 *Penalties would be of little value once damage is done.*

#### **Who is responsible for revegetation**

**Context 2** Submissions considered it is not clear who is responsible for implementing and enforcing revegetation conditions.

- 2.1 *With regards to revegetation, who is to undertake planting of local species and the on-going maintenance to ensure vegetation becomes established.*

#### **Need to implement as described**

**Context 3** The proposal may not be implemented as described

- 3.1 *Variation to the location of building envelopes is possible with DPUD and Shire approval. Past experience has shown that building envelopes are moved from that shown on subdivision plans with minimum environmental consideration because owners seek to shift them so that their dwelling has ocean views.*
- 3.2 *CER talks of specific building envelopes, yet Figure 10 mentions them being subject to on-site analysis*

#### **1987 resort development consent**

**Context 4** The 1987 planning consent to the resort development at Lot 401 was subject to 27 conditions. Submissions considered that several of these conditions were difficult to clear and that the developers were unable to comply with them.

- 4.1 *If all the conditions for both the resort development adhered and special residential development were adhered to, the special residential development could be seen as the most damaging of the options.*

## Need for the proposal

**Context 1** The CER did not demonstrate the need for the proposal.

- 1.1 *There is no rush to buy existing blocks on the market. Of 12 lots recently created 5 remain unsold.*
- 1.2 *Of 208 subdivided lots at Goode Beach, only 84 have houses and on average 20 blocks are for sale.*
- 1.3 *Even on the hottest weekends the three existing car parks at Goode Beach are not full. There is no need for more car parks or beach access.*
- 1.4 *I would like to see more places like Goode Beach developed, (such as occurred at Mc Bride St) under strict EPA Guidelines, however I consider this proposal sheer vandalism.*

## Support for the proposal

**Context 2** Submissions which considered that the development should go ahead included the following comments.

- If someone had not seen the potential that this area has and developed that area, nobody would be able to enjoy this area which has been described as 'heaven'.
- Consider it is selfish of those who live here already to oppose further development.
- I have no objection to the development.
- I have no objection to the development provided it is carried out to EPA requirements and conditions
- Complaints about Lot 401 are mostly motivated by emotive feelings and possible financial loss rather than the environment per se.

## General comments

### The proposal should not proceed

**Context 1** Submissions which considered that the development should not go ahead included the following comments.

- The consequences of the development are poorly perceived; It would be an environmental disaster with far reaching and enduring consequences
- The proposal would be to the detriment of the whole region and the area's tourist revenue.
- The proposal has not considered the wishes of the majority of residents most directly affected by the impacts of such a development.
- Protection of the environment is not adequately addressed in the CER.
- I wish to register my strongest resistance to any development and would encourage the Environmental Protection Authority to exercise all powers necessary to quash this proposed development which, in my opinion is nothing short of historical and ecological vandalism.
- The proposal should never have got this far.

### Quality of the document

- 1.1 *The entire CER document is a most superficial analysis of the environment based on scant information of dubious quality.*

**POS Not recreation**

- 1.1 *The Public Open Space for this development should be for conservation only and should not be thought of as recreational land.*

**Existing development rights**

- 1.1 *The statement by the proponent that the present Rural zone permits the property to be cleared and used for grazing of stock is fallacious. The Commissioner for Soil Conservation is required to consider clearing applications.*

**Other approvals for this proposal**

- 1.1 *Planning consent from the Shire and from the Commissioner for Soil Conservation is required, for extent of clearing for service provision*

**Pets**

- 1.1 *If the proposal proceeds domestic animals such as cats, dogs and grazing animals such as horses should be banned.*

**Denseness of vegetation around Lake Vancouver**

- 1.1 *We suggest that the dense vegetation around Lake Vancouver is probably because of the availability of water, rather than the absence of regular burning.*

**Weeds**

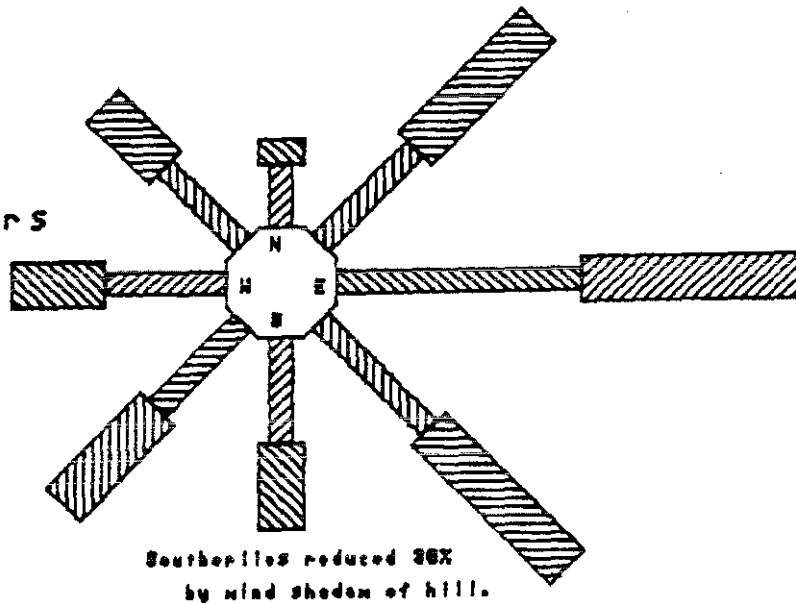
- 1.1 *Taylorina and Teatree have potential to become established. As they are widely distributed without public concern, their presence will not be a major concern.*



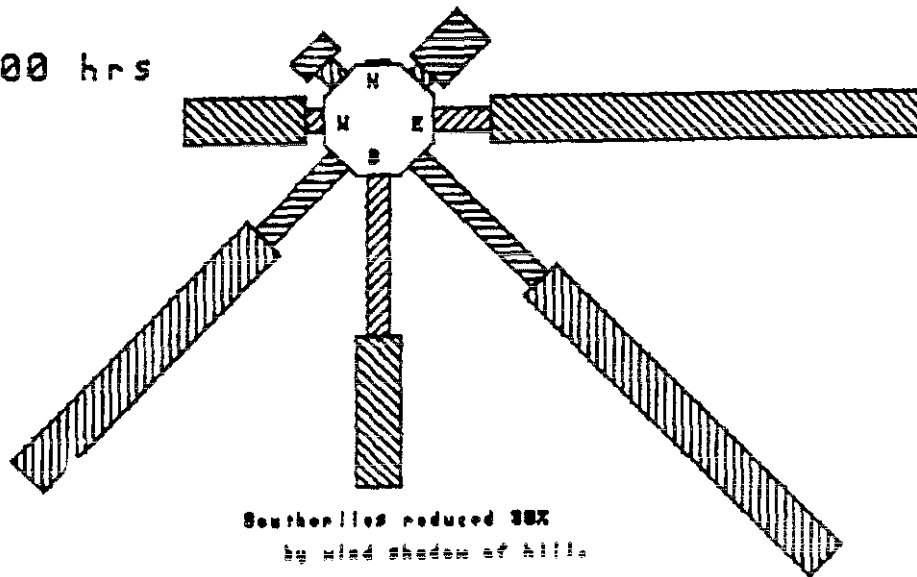
**Table 1** *Wind data analysis for January to March at weather stations around Albany.*

|  | <i>% winds from<br/>E, SE &amp; NE</i> | <i>% winds &gt;<br/>20km/h</i> |
|--|--|--------------------------------|
| <b><i>Albany Town</i></b>                        |  |                                |
| <i>January</i>                                   | 46-57                                  | 12-39                          |
| <i>February</i>                                  | 41-54                                  | 12-35                          |
| <i>March</i>                                     | 31-44                                  | 9-26                           |
| <b><i>Albany Airport</i></b>                     |  |                                |
| <i>January</i>                                   | 45-46                                  | 41-78                          |
| <i>February</i>                                  | 52-56                                  | 42-72                          |
| <i>March</i>                                     | 48                                     | 42-62                          |
| <b><i>Eclipse Island (King George Sound)</i></b> |  |                                |
| <i>January</i>                                   | 52-54                                  | 48-70                          |
| <i>February</i>                                  | 56-58                                  | 56-69                          |
| <i>March</i>                                     | 46-49                                  | 50-61                          |

0900 hrs



1500 hrs



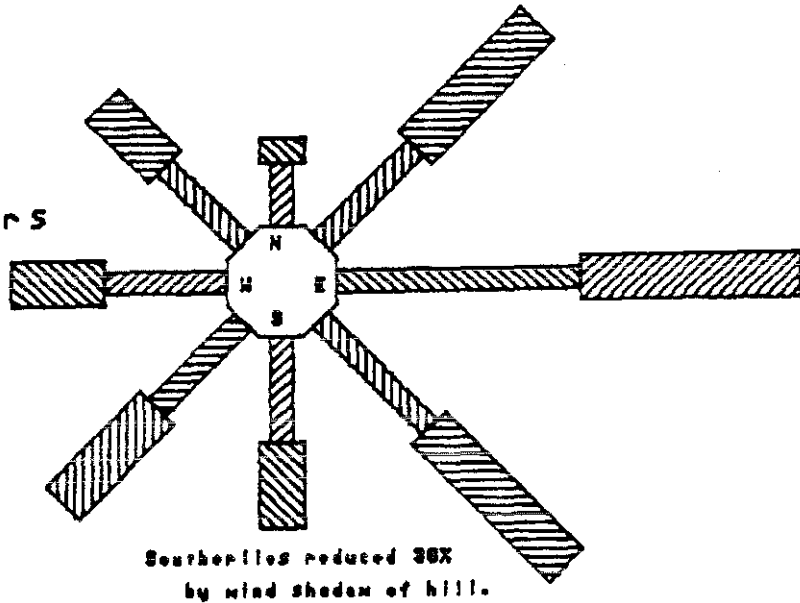
WINDSPEED  
LEGEND

  
<20kph >20kph (Erosion day.)

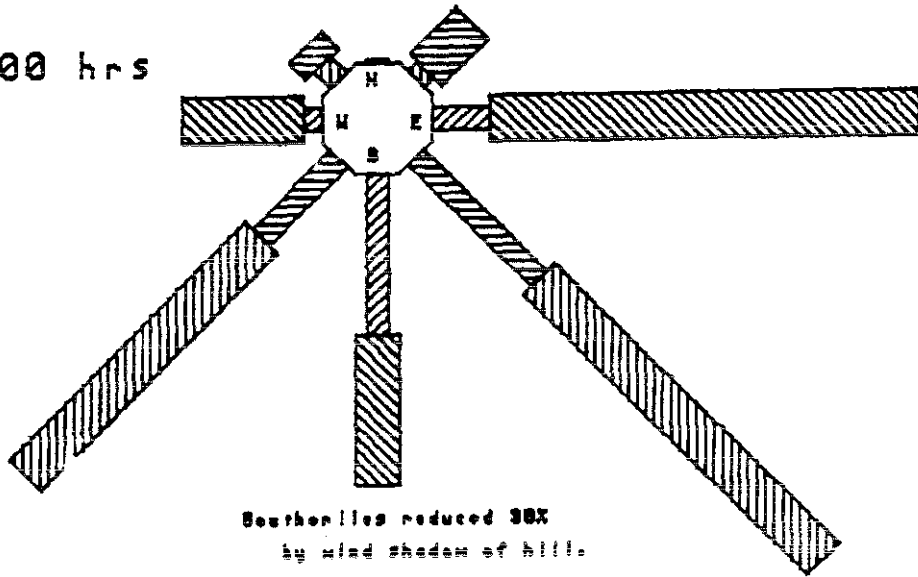
## Lot 401 WIND ROSE

(Jan/Feb/Mar Average Eclipse Is and Airport.)

0900 hrs



1500 hrs



WINDSPEED  
LEGEND

  
<20kph >20kph (Erosion day.)

Lot 401 WIND ROSE

(Jan/Feb/Mar Average Eclipse Is and Airport.)

## Part 2

### REZONING AND SUBDIVISION FOR SPECIAL RESIDENTIAL DEVELOPMENT

#### LOT 401 LA PEROUSE COURT, FRENCHMAN BAY

#### RESPONSE TO QUESTIONS RAISED BY PUBLIC SUBMISSIONS TO THE CONSULTATIVE ENVIRONMENTAL REVIEW BY L'OIRE NOMINEES PTY LTD

#### 1. Conservation of Lot 401

##### 1.1 Lot 401 should be part of the Torndirrup National Park.

(1.1 - 1.4) The proponent understands that the Shire of Albany wrote to the State Government in 1990 regarding the possible purchase of Lot 401 for conservation purposes and were advised that the Government did not see this purchase as a priority and would not have funds available in the foreseeable future for such action. In addition, the Government would only consider such a purchase if the owners were willing to sell (i.e. resumption would not be contemplated) The Shire also advise the owners that they have no funds available for such a purchase.

The proponent therefore maintains that the only possible way that the most important features of Lot 401 (namely Lake Vancouver and its immediate surrounds) can become part of the conservation estate, is for the present rezoning of subdivision proposal to proceed. The proponent is prepared to cede approximately 70% of Lot 401 including Lake Vancouver and its surrounds to the State for inclusion in a National Park as part of this proposal if this move is supported by the Shire of Albany and the Minister for Conservation and the Minister for Planning. Alternatively the proponent is prepared to allocate the area as Public Open Space or for inclusion in the Reserve to the north.

The present proposal to develop the eastern section of Lot 401 therefore enables Lake Vancouver and the remainder of the property to be set aside for conservation purposes without any cost to the State or to the Shire.

The area proposed for development is relatively small and supports vegetation and fauna habitat which is well represented in the Reserve to the north. Purchase of the entire property for conservation purposes (even if this were possible) merely to protect this small area would be inappropriate in the above circumstances.

##### 1.2 Restricted biological survey insufficient.

(2.1) It is considered very improbable that any rare and endangered species of plants or animals occur in the part of Lot 401 that will be affected by the development proposal. The development area was surveyed

for plant species and the likelihood of rare and endangered species being present was also checked against the CALM list of such flora for the Albany region. That list indicated that no species were likely to be present on the soil type in the development area.

If the Albany Pitcher Plant which was mentioned in one submission, was present it would occur in moist habitats associated with Lake Vancouver rather than on the sand dunes. The potential habitat of this species will not be affected by the development proposal but rather will be protected and ceded to the State or to the Local Authority for conservation purposes.

(2.2 - 2.4) Similarly, the most probable habitats for the vertebrate fauna mentioned in submissions also are those surrounding the lake which are to be allocated for conservation purposes. This is particularly the case for the Red-eared Firetail (*Emblema oculata*) and the Southern Brown Bandicoot (*Isoodon obesulus*) and Carpet Python (*Morelia spilota*) which may be present but which prefer dense habitats. The Dibbler mentioned in one submission are most unlikely to occur on Lot 401.

## **2. Likelihood of Erosion**

### **2.1 Wind data misleading/Erosion begins at less than 18km per hour/Historical Evidence**

The proponent and their consultants accept that the wind data from Albany Airport may provide a better indication of existing conditions at Frenchman Bay than the records from Albany Town which were presented in the CER. However the data submitted on Eclipse Island is less reliable as this weather station is in an isolated situation some 6km from the mainland and is extremely exposed to winds.

The submissions regarding prevailing wind conditions have failed to recognise that the main evidence for coastal stability at Frenchman Bay is the lack of mobile sand in the area and the historical evidence of rapid natural revegetation of cleared sites.

There is no indication that easterly winds are eroding the foredunes on any part of Lot 401 or the relatively exposed areas fronting established lots between La Perouse Court and the sea. The latter areas have been levelled, seeded and planted without undue problems for a period of some 12 years. It is acknowledged, however, that the clearing of these lots occurred in winter months when wet conditions generally mitigate against sand movement. Seasonal timing of clearing is also proposed for the development on Lot 401.

Moreover, the proposal does not involve extensive clearing of vegetation nor removal of vegetation near the beach where any potential for wind erosion would be greatest. The proposal also involves specific strategies designed to further limit the potential for erosion such as restriction of

clearing to areas specifically required for roads, services and houses and immediate initiation of revegetation of cleared areas after construction of roads, etc. The owners of lots within the development will not be allowed to clear the building envelope of vegetation until just prior to the start of construction.

With respect to the historical evidence of erosion potential, the dunes were not levelled to create La Perouse Court and Lot 227, 228, etc as claimed in the submission. At the commencement of the Frenchman Bay subdivision in 1962, this area comprised approximately 1ha of sand in a deflation basin to about sea level and surrounded by dunes on which the inner faces were unvegetated. These surrounding dunes were pushed into the basin to create two terraced areas as now exist. Similarly, topsoil was not taken from Lot 372 as stated but approximately 150mm of topsoil containing fibrous root material was imported and was spread over the entire site.

There are, however, two historical examples of erosion on Lot 401. These are as follows:

- An area of approximately 2000m<sup>2</sup> was cleared and levelled in the north-east corner of Lot 401 in 1971. Despite the fact that there were no attempts to revegetate the exposed sand, the area is now about 50% covered by natural vegetation and the process of revegetation appears to be continuing.
- The "gorge" which is referred to in the CER. This was separated from Lake Vancouver by approximately 300m of high vegetated sand ridges and there is nothing to suggest that it once formed a drainage line from the lake as suggested in the submission. In wet winters the lake floods to the west and there are defined depressions through to Princess Royal Harbour which then fill with water.

With respect to recent examples of erosion, the proponent maintains that:

- If existing paths to Goode Beach were properly constructed the potential for local erosion would be minimised.
- Proper drainage systems designed to direct stormwaters into soils would prevent localised water erosion from roads and firebreaks.
- Any sandblasting of workers on recent building sites is a transitional phenomenon which occurs immediately after vegetation removal but the lots are easily stabilised by housing construction and development of gardens.

Finally, the submission which refers to the fire on the Reserve north of Lot 401 fails to mention the fact that the reason why the vegetation on Lot 401 is in such good condition at present is because the owners expressly prevented the burning of this lot at the same time that the reserve was

burnt. Without this action, the dense vegetation surrounding Lake Vancouver and the fauna habitat which it provides would have been destroyed.

## 2.4 Assessments of erosion potential.

(4.1 - 4.3) The proponent maintains that submissions which have referred to land capability/suitability surveys have interpreted those surveys too literally. Such surveys should be used to provide an indication of what limitations to development may be present on the site and correspondingly what management and development measures may be needed to overcome such limitations. The latter approach has been used in formulating the development proposal for Lot 401 and the specific and extensive management treatments have been fully documented in the CER.

There are many examples along the west coast of the Swan Coastal Plain where extensive residential developments have been sited on land which would be classified in the strict sense as being unsuitable for such use in terms of land capability assessment. For example, the town of Yanchep was located on a mobile sand dune. However, the developments themselves, in these cases, provides a new form of stabilisation which prevents ongoing erosion or replaces existing vegetation.

Similarly, in the development area of Lot 401, total removal of the vegetation would not be appropriate as suggested by the land capability assessment and will not occur, and removal of vegetation in limited areas followed immediately by construction of roads, services, and houses on those areas and revegetation where appropriate, will prevent any erosion.

With respect to the submission which states that the terrain of Lot 401 is actually steeper than that shown in the CER, it is pointed out that the contour plans presented in the CER were derived from ground survey and hence display an accurate picture of the dune slopes.

With respect to the area not being suitable for housing, in fact the houses developed on Lot 401 will be much better protected from the elements and the potential for erosion than the existing houses on sand dunes to the south as a result of the environmental management measures which are inherent in the development proposal.

(4.4) Use of harvested algae from Princess Royal Harbour on exposed sand areas may be part of the interim erosion control measures for initial roadworks. It is not expected that house pads would require such measures as these will be developed only immediately prior to construction and will be covered by buildings, paved areas and owner controlled yards.

(4.5) Building envelopes are not 2000 to 4655m<sup>2</sup> in area as claimed in the submission, they vary from 600 to 800m<sup>2</sup>. The envelopes are generous and compare closely to lot areas in conventional residential subdivisions.

Therefore there is expected to be little need to extend clearing beyond the limits of the envelopes.

(4.6) No clearing of buildings envelopes will be carried out by the developers but will be the responsibility of the individual lot owners. Restrictions will be imposed such that clearing of building envelopes only occurs immediately prior to house construction.

## 2.5 Development will enhance likelihood of erosion.

(5.1) It is considered that one dune crossing will be adequate given the small size of the subdivision. This pathway will be signposted, formed and fenced and there is evidence from elsewhere that the general public is sufficiently responsible and aware of dune stability to use such a facility. However, additional paths could be provided if required by the appropriate authorities.

(5.2) The proponent contends that families buying any of the lots in the subdivision will be aware of the fragility of the dunes and will be the first to ensure that no "trampling of the dunes" occurs.

(5.3) It is expected that most access to Goode Beach will continue to be from carparks where there are toilet facilities and that the extension of the coastal road will not affect this. Moreover, the extension of the road is not likely to significantly add to the existing visitor pressures as it constitutes only a minor improvement to beach access.

Limitations on clearing and rapid revegetation methods will limit the potential for introduction of weeds and the spread of weeds on Lot 401.

(5.4) Individual lot owners will undertake not to have cats and are not likely to own large dogs given the restrictions on fencing that will apply. Large grazing animals will also not be permitted in the development area. Off road vehicles and trail bikes will be precluded from using any of the private land and it is expected that they will be prevented from using those parts of Lot 401 that will be ceded for conservation purposes.

## 2.6 Restabilising areas.

(6.1) The developers will be responsible for the revegetation of areas as part of the initial development of the site. Any revegetation of building envelopes which may be required will be the responsibility of the individual lot owners.

(6.2) Dune erosion is considered to be highly unlikely due to the imposition of clearing controls, immediate revegetation measures, and low erosion potential of the site. However, if any erosion does occur during the construction stage the proponent will stabilise and revegetate any such areas immediately.



### 3. Coastal Stability

(1.1 - 1.2) It is stated in the CER that beach erosion may occur in the short term during storm events and as a result of seasonal processes. However, such erosion events are balanced by return of sand in other seasons. This overall balance is reflected by the fact that the eastern coastline on Vancouver Peninsula is obviously stable and is not accreting or eroding overall.

(1.3) Any increase in sea level would have to be substantial to erode the coast sufficiently to affect the easternmost houses in the proposed development area. Such an increase in sea level would affect a large part of the Town of Albany and a number of existing houses at Frenchman Bay before it affected houses in the development area.

(1.4) This is a possibility.

(1.5) The proponents and their consultants are not aware of any data including any information presented in the Rockwater reports that suggested that the sand dunes once extended further eastwards although this is a possibility. Whatever may be the case, it is agreed that the current dunes are stable and that the extensive intact vegetation cover is evidence of that stability.

(1.6) It is not clear what is meant by the statement that the coastline at Lot 401 is "constructive". There is considerable evidence that the coastline is stable and no evidence that it is subject to ongoing erosion.

(1.7) There is no evidence of continuing wave erosion on the eastern coastline of Vancouver Peninsula adjacent to Lot 401.

(1.8) Inclusion of aerial photographs in the CER would have been cost prohibitive and was not considered to be necessary as other historical information is readily available.

### 3.2 Relaxation of DPUD policy

(2.1) The application of the Coastal Policy is a matter for DPUD to determine. The proponent seeks relaxation of the policy so that houses can be set back further from Lake Vancouver than would otherwise be possible. There is no technical reasons for increasing the setback from Lake Vancouver as the direction of groundwater flow prevents any possibility of contamination by leachate from septic tanks. Moreover the proponents will now recommend compulsory use of biocycle systems to the Shire of Albany to remove any residual uncertainty which may exist regarding septic tanks in this respect.

The proponents and their consultants firmly believe that it is preferable to provide a buffer for conservation purposes around Lake Vancouver and to allow development closer than 100m to the coast than to rigidly adhere to

the DPUD Policy at the cost of closer development to the lake. However, the proponents will move the development further west if required to do so.

(2.2) There is no evidence that the coastline and dunes on the eastern side of Vancouver Peninsula adjacent to Lot 401 are unstable.

(2.3) Most of the existing houses close to the beach are situated on the same sand formation as occurs immediately to the north in the proposed development area on Lot 401. All of the existing houses close to the beach face east and are closer than any of the proposed houses in the new subdivision.

(2.4) There is no reason to believe that the extension of the existing road into Lot 401 will be washed away. There is no basis for comparison of Lot 401 with the situation at Emu Point as the latter is subject to flow from the King and Kalgan Rivers, dumping of dredged spoil from the entrance channel to Princess Royal Harbour and dredging within Oyster Harbour.

#### **4. Dieback**

##### **4.1 Relationship of CALM policy to proposal**

(1.1) There is no evidence that the existing subdivision at Frenchman Bay has introduced or spread dieback despite a total lack of hygiene measures during construction and at present. Therefore there is no reason to suspect that the present proposal will be a major source of dieback introduction.

##### **4.2 Prevention of dieback post construction**

(2.1) (2.3). See above response.

(2.2) The proponent maintains that the attempt to provide desirable environmental protection measures in the present proposal should be applauded and that the proposal could become a precedent for development elsewhere in the Albany Region. It is not the case that such provisions are difficult to monitor and impossible to enforce.

##### **4.3 Impacts of dieback**

(3.1) A response to this comment is provided above.

## **5. Sewage Issues**

### **5.1 EPA Policy**

General Response. The proponent believes that the proposal to use septic tanks for sewage disposal within the proposed subdivision is appropriate and would present no environmental difficulties. However, the proponent is aware that the use of septic tanks is of concern and therefore has decided to recommend to the Shire of Albany that the use of biocycle systems be required throughout the subdivision. The use of such systems will remove any possibility of leachate contamination of Lake Vancouver, or the underlying superficial aquifer. The various submissions which deal with the suitability of septic tanks are therefore no longer relevant.

There are a number of inaccuracies in the submissions dealing the potential effluent pollution of the groundwater including statements about the direction of flow. The correct information is presented in the CER.

## **6. Surface Runoff**

(1.1) Runoff from roads, roofs, and other areas will be directed into the soil profile through specific design measures. The use of such measures in road design is now becoming conventional and include appropriately designed kerbing and the use of localised drainage sumps. With such measures it is a relatively easy matter to ensure that no surface runoff reaches Lake Vancouver nor runs to the beach.

## **7. Groundwater**

(1.1) This submission provides an accurate account of the general licensing requirements that will apply to any bores in the development area.

(1.2) The proponent is well aware that excessive pumping from bores in the development area has the potential to alter the position of the salt/freshwater interface and this possibility is noted in the specialist report by Rockwater Pty Ltd. It is expected that appropriate restrictions on bore location and bore use will be applied to ensure that salt water intrusion does not occur.

(1.3) See response to 1.2 above.

(1.4) In fact it is an easier matter to monitor the amount of groundwater extracted from the bore if such monitoring is considered necessary.

(1.5) The requirements of each bore licence will be determined by the appropriate authorities.

(1.6) The principal reason for allowing bores to be installed in the property is for emergency use such as in the event of a bushfire. It is not expected that such bores will be used to provide large amounts of water for other purposes as general water demand is likely to be relatively low given the restrictions on the development of extensive gardens that will apply.

(1.7) See response to 1.6 above.

(1.8) Individual land owners may seek to install water tanks linked to roof catchments.

(1.9) There are no valid reasons why domestic bores should not be installed according to the recommendations of the hydrological consultants Rockwater Pty Ltd. The draws from such bores is likely to be limited both because of restricted household demand and because of licence restrictions which may apply. However, bores should be permitted as a safety measure as they will provide the principal source of water in the event of a bushfire. Without such bores it would be necessary to clear more vegetation to provide an equivalent level of fire safety.

## 7.2 Replenishment of Groundwater

(2.1) Some groundwater replenishment to Lake Vancouver does come from the west but a substantial amount derives from the tall granite outcrop to the south and flows under the existing subdivision. The present residents need to acknowledge that their own properties are much more likely to have implications for water quality in Lake Vancouver than does the proposed development. The fact that the lake does not seem to be affected by the existing development is therefore further evidence that the proposed subdivision is most unlikely to effect the lake.

## 8. Land Capability/Suitability Surveys

(1.1) There is no evidence to suggest that the wind erosion hazard associated with the proposal is very high. On the contrary, the natural stability of the area combined with erosion management measures inherent in the proposal will ensure that wind erosion does not occur.

Similarly, there is no evidence to suggest that the visual impact of the development will be high given the landscape protection and building conditions that will apply. If the development proposal was the first on Vancouver Peninsula then a case could be made that it would be a visual intrusion despite the landscape measures proposed. However, in fact the development is a minor extension of the existing township which is extremely visible as no attempt has been made to integrate it into the existing landscape. It is expected therefore that the new development will provide a marked contrast to the existing township in terms of its integration with the landscape.

There is no reason to conclude that the proposed development is unsuitable for Lot 401 as it has been planned to take account of the environmental constraints of the site.

## 8.2 Environmental Geology Map

(2.1) The land use capability rating presented in the environmental geology map was a fundamental factor in determining the specific approach to subdivision of Lot 401 that has been proposed.

## 8.3 Pre-empting Outcome of Local Rural Strategy

(3.1) This matter is for the Shire of Albany to determine.

## 9. Visual Aspects

(1.1) The proponent stands by the visual analysis presented in the CER. It is likely that parts of houses in the development area will be visible from various nearby locations but the development will be integrated with the landscape. The extent of visual intrusion of the existing township of Frenchman Bay is so great that the new development is not likely to be noticed or will provide a dramatic and contrasting example of how coastal development should be planned.

(1.2) This submission is answered in Section 5 above which deals with the sewage issues.

(1.3) All of the proposed building envelopes are sited on slopes of dunes or in depressions between dunes and this measure is considered to be sufficient to ensure visual acceptability combined with building restrictions.

(1.4) It is accepted that some existing residents of Frenchman Bay may feel that the view from their houses is of a lesser quality as a result of the development. However, those residents should acknowledge that they have no right to expect that private land owners should be obliged to continue to provide such views. Every attempt has been made in the proposal to ensure that the visual intrusion is minimised and the extent of the development is such that it is not likely to detract from the primary elements of the view which include Lake Vancouver, all of the remainder of Vancouver Peninsula and the ocean and islands of Frenchman Bay and King George Sound.

(1.5) The roads and services will be installed in such a manner that no unsightly and permanent damage to adjacent bushland occurs. The majority of Lot 401 will be ceded for conservation purposes and will not be affected by the proposal.

(1.6) It is difficult to accept the suggestion that the view of Vancouver Peninsula is unaltered from that seen by the earliest Europeans given the very prominent existing houses in the Frenchman Bay development.

(1.7) The proponent sympathises with the respondents but cannot be held responsible for their failure to check on the current zoning of land which is within their viewshed. The current zoning of Lot 401 permits the development of a resort hotel between Lake Vancouver and the coast. This zoning has been in place for several years.

(1.8) This submission is addressed in Section 3.2 above.

## **10. Fire Control**

(1.1 and 1.2) It is agreed that strategic firebreaks are a fundamental element to the proposal and that the strategic firebreak on the west side is adequate for protection of the subdivision.

## **11. Lake Vancouver**

### **11. European Cultural Significance**

(1.1) Lake Vancouver will be protected as part of the development proposal and will become part of the conservation estate.

(1.2) There is no clear evidence to suggest that Captain George Vancouver first landed in the vicinity of the coastal frontage to Lot 401 or indeed that he actually visited Lake Vancouver. A map of the area showing the actual routes of Vancouver and Menzies in their exploratory trips of King George Sound in September and October in 1791 has been supplied to the EPA by the proponent. The historical records indicate that Vancouver and his party made landings to the south-east of Vancouver Peninsula rather than on the Peninsula itself.

(1.3) See responses above.

### **11.2 Cultural Heritage Dispute**

While the cultural heritage dispute is of interest it is not directly relevant to the Environmental Assessment process. However, the proponent has undertaken careful research of the exploration routes of Captain Vancouver for their own interest and firmly believes that Lake Vancouver was not used as a source of freshwater. The primary source of water for the expedition in the Frenchman Bay area was a beach spring located in the vicinity of the former whaling station.

Whatever the case, Lake Vancouver will be protected by the proposal. Correspondingly, unless the proposal is implemented, Lake Vancouver will remain in private ownership and its protection will largely be due to the good will of the owners as it has been to date. As it is possible that the ownership of the property could change hands in the future, reliance on voluntary cooperation and good will from the owners for the protection of important environmental features such as Lake Vancouver is not as reliable as management by appropriate authorities.

### 11.3 Aboriginal Significance

(3.1 to 3.4) While there is no documented evidence of Aboriginal significance, the proponents acknowledge that it is possible that Lake Vancouver may have been, or may be at present, a site of significance to local Aboriginal communities. It is assumed that such communities would be very supportive of the protection of the lake that would result from approval of the subdivision proposal.

### 11.4 Other Values

(4.1) Parabolic dunes are extensive on the eastern side of Vancouver Peninsula to the north of Lot 401. Therefore, the development proposal will not reduce any potential for studies of stratigraphy that may occur in the future. Moreover a considerable part of the development area will be left in a natural state and would also be available for such studies.

(4.2) Lake Vancouver will be protected as part of the present proposal and will continue to be available for scientific research.

### 11.5 Adverse Impacts of Development on Lake

(5.1) The potential influence of adjacent human occupation on flora and fauna around Lake Vancouver already exists and the proposed development will not significantly alter the present situation particularly given the constraints that will be applied.

(5.2) This submission, if correct, supports the reply given above that the existing development has the potential to affect Lake Vancouver. The new proposed subdivision will not add significantly to the existing pressures given the constraints that will be applied.

(5.3) Strategic firebreaks are considered to be an essential element of the proposal but it is considered that they should be installed to protect the vegetation of Lake Vancouver from fires originating on Vancouver Peninsula whether or not the present proposal proceeds.

(5.4) The issue of dieback has been addressed in Section 4 above.

(5.5) The issue of the salt/freshwater groundwater interface has been addressed in Section 7 above.

(5.6) There is no potential for eutrophication of Lake Vancouver from the proposed development of part of Lot 401 as no surface or subsurface runoff will be directed to the lake.

(5.7) There is no reason to believe that the development proposal for Lot 401 could cause irreversible damage to a fragile environment as suggested.

(5.8) Specific measures are proposed in the CER to ensure that the new development fits into the existing landscape in an acceptable manner and that Lake Vancouver, which is the most probable site, if any, of cultural significance, is protected.

(5.9) Lake Vancouver will be protected as part of the proposal.

(5.10) Information presented in the public submission regarding Heritage values identifies Lake Vancouver as possibly having historical significance. Lake Vancouver will be protected in the development proposal.

(5.11) The potential for snakes exists in the present development area at Frenchman Bay and the proponent is not aware that this has been a significant cause for vegetation removal.

(5.12) The potential for mosquitoes from Lake Vancouver already exists and the new subdivision will not alter that situation nor any potential requirement for management measures in the future.

(5.13) The question of whether the area is suitable for development is one for the appropriate planning authorities to determine.

#### 11.6 Protection by Public Open Space

(6.1) DPUD Policy DC2.3 states that the State Planning Commission may require provision of a Foreshore Reserve and that in general this may be 30m wide. In the case of Lake Vancouver a surrounding foreshore area wider than 30m is provided in the proposal.

(6.2) At most in any year, there is an overflow of Lake Vancouver for 6 months and in such cases the inundated area does not exceed 33% of the entire lot area. The submission is therefore incorrect. The allocation of Open Space is also not a question of benevolence but is a sincere desire on the part of the owners to set aside Lake Vancouver as a Conservation Reserve.

(6.3) The conservation value of Lake Vancouver and the western part of Lot 401 is considered to be high by the present owners and the owners also believe that these values can only be maintained in the long term if the subdivision proceeds and the land can be allocated for conservation purposes.



## 12. Compliance with Proposal and Planning Conditions

(1.1 - 1.5) The Shire of Albany in agreeing to initiate a rezoning to Special Residential will assess their requirements for policing controls. Although the Shire has no Special Residential zones to date, they do have 6 Special Rural zones and therefore have experience in special control requirements. Many such requirements are, in any case, a routine part of any subdivision development.

The final location of building envelopes has always been subject to assessment by prospective owners and the Council and in most cases results in improvement to the initial guideline plan indicating the overall position of the envelope. Until precise on-ground position of boundaries and roads are known it is difficult to select a definite envelope location.

The proponents have no objections to the exclusion of dogs and cats if this is considered desirable and have indeed suggested that cats will be restricted. However, it is pointed out that there are no such controls on the approximately 150 lots in the adjoining approved subdivision.

### 12.2 Responsibility for Revegetation

The proponent will be responsible for revegetation except for any that may result from clearing of building envelopes which will be the responsibility of the individual lot owners.

### 12.3 Need to Implement as Described

(3.1) The proponent cannot control future actions of the Local Authority and DPUD but assumes that these agencies will operate in accordance with the environmental control specified in the CER and through the EPA assessment process. It is probable that owners and the Shire will agree to some variations in the buildings envelopes in order to achieve a better result in terms of environmental management when the precise designs of each house is known.

(3.2) See response above.

### 12.4 1987 Resort Development

(4.1) The proponent contends that this public submission has not taken account of the implications of the resort development proposal which would include total clearing of the development area, levelling of the site, recreational use of Lake Vancouver, and higher groundwater extraction and visitor numbers than in the current conventional subdivision proposal.

### **13. Need for the Proposal**

(1.1 - 1.4) The proponent foresees no difficulty in selling blocks in the new subdivision given the environmentally sensitive approach which is inherent in the development. It is expected that buyers will seek and appreciate the unique living environment that the subdivision will offer and the security of knowing that neighbours will also be complying with environmental protection controls.

There is nothing unusual about 5 lots out of 12 being unsold in a country area over a period of 3 to 4 years particularly during a time of acknowledged recession. The existing 175 lots at Frenchman Bay which have been sold were purchased at an average rate of 5.8 per year.

With respect to carpark, the present proposal need not necessarily include a further carpark at this stage if it is not considered to be necessary.

#### **13.2 Support for the Proposal**

The proponent notes that a number of submissions apparently have supported the proposed subdivision of Lot 401.

### **14. General Comments**

#### **14.1 Quality of the Document**

(1.1) It is for the EPA to determine whether the CER has presented a superficial analysis of the issues posed by the proposal.

#### **14.2 Public Open Space Not Recreation**

(2.1) The proponents would support the Public Open Space area in Lot 401 being allocated solely for conservation purposes.

#### **14.3 Existing Development Rights**

(3.1) It is correct to suggest that other constraints may apply to the use of Lot 401 for agricultural purposes but nevertheless the zoning does permit agricultural use.

#### **14.4 Other Approvals**

(4.1) It is agreed that planning consent from the Shire of Albany is required for the development to proceed. However it is very unusual for the Commissioner for Soils Conservation to be involved in the small amounts of clearing required for Special Residential developments of this nature. Moreover, the Town Planning Act must be taken account in terms of the application of the Soil Conservation Act.

#### 14.5 Pets

(5.1) The proponent believes that no large grazing animals should be permitted within the development area.

#### 14.6 Density of Vegetation Around Lake Vancouver

(6.1) It is possible that the dense vegetation around Lake Vancouver is partly due to the availability of water. However, it is also likely that the absence of burning has been a factor which has enabled the vegetation to develop to its present density.

#### 14.7 Weeds

(7.1) The limited amount of clearing that is involved in the proposal and the revegetation measures which will be applied will mitigate against the establishment of exotic weed species.

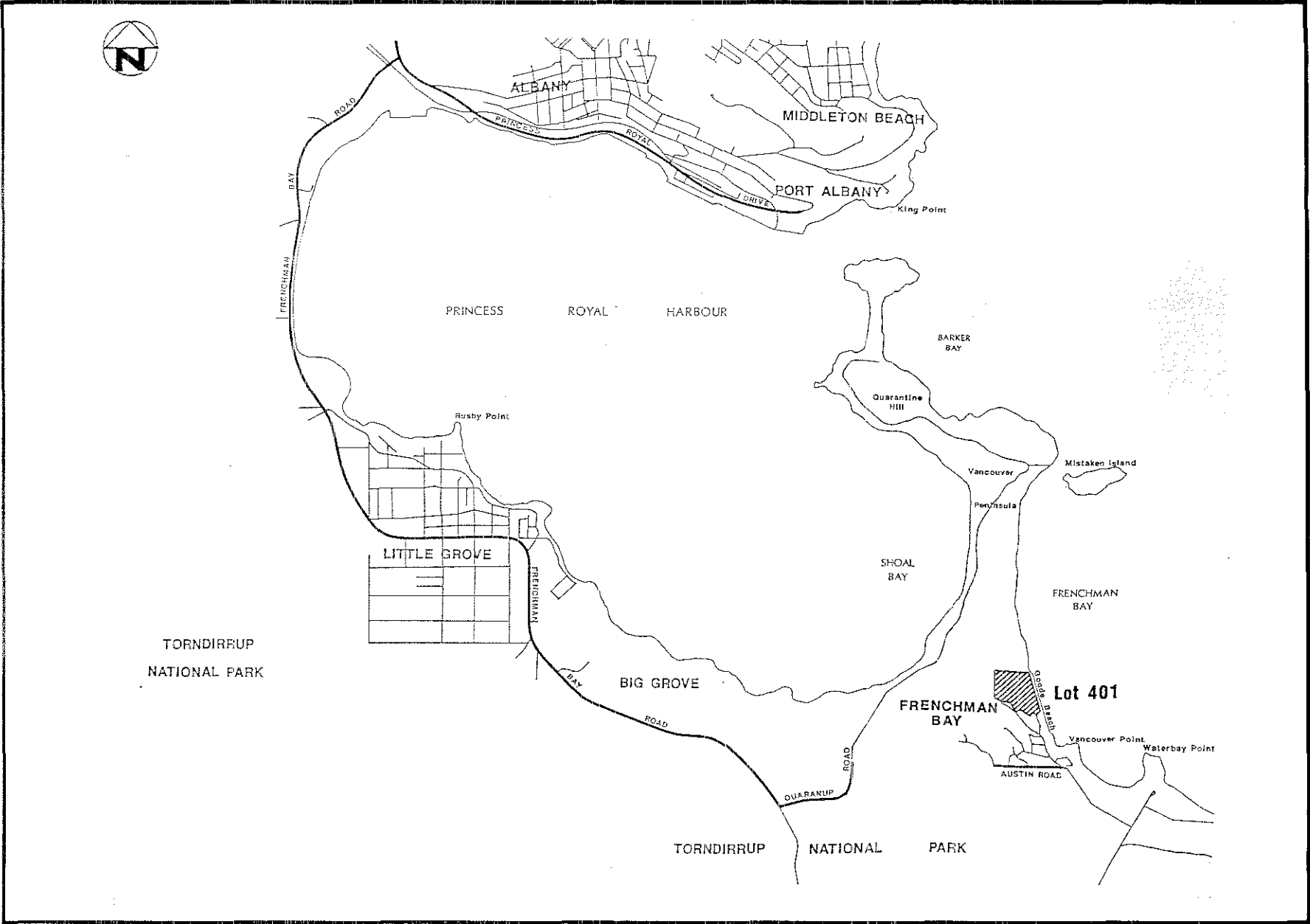


Figure 1: Location map (from Alan Tingay & Associates, CER)

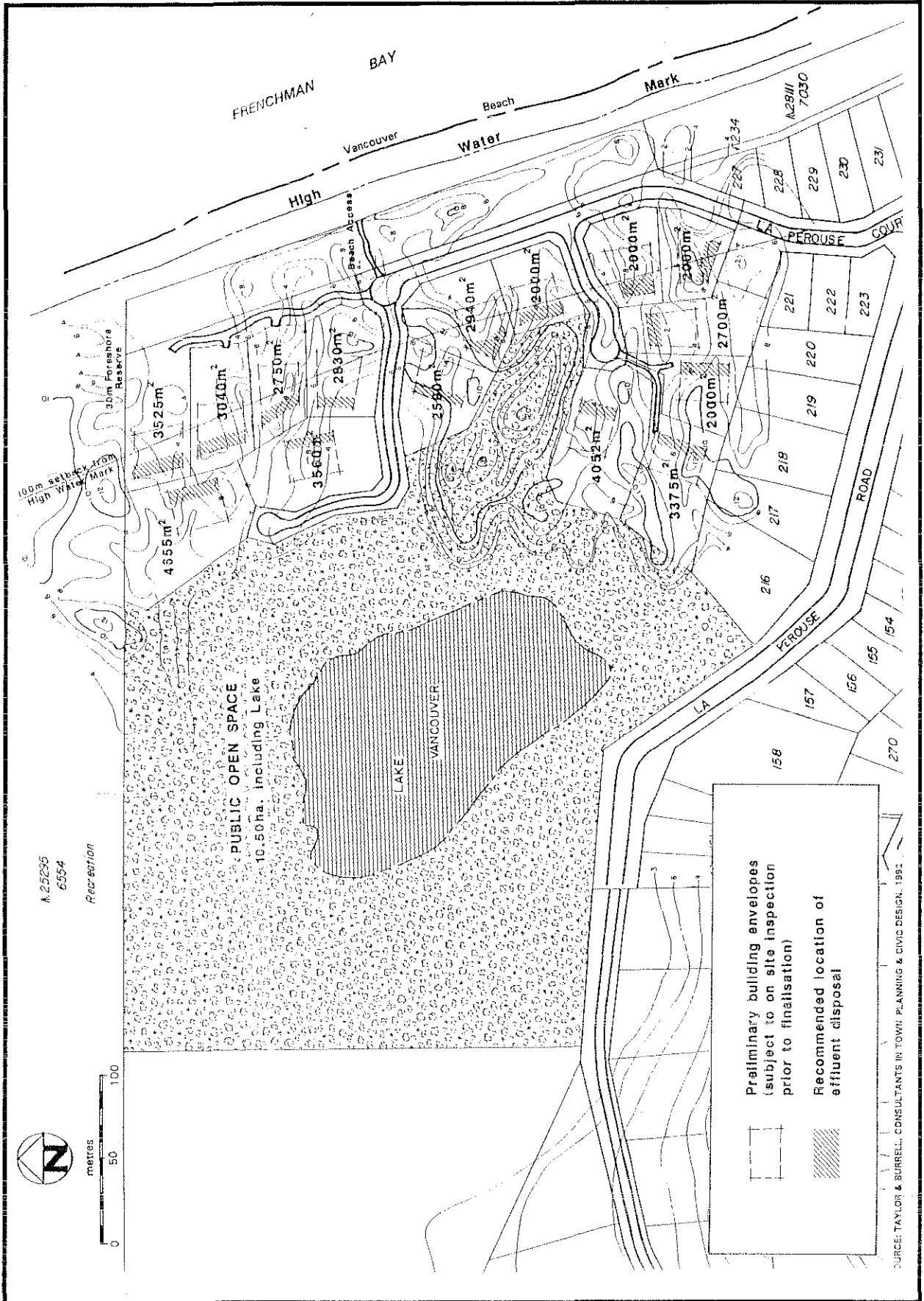


Figure 2: Plan of subdivision (from Alan Tingay & Associates, CER)

## 6. COMMITMENTS

The proponent L'Oire Nominees Pty Ltd commits to carrying out the following with regard to the development of Lot 401 Frenchman Bay:

1. Prepare and implement a foreshore management plan for the Coastal Reserve adjacent to Lot 401 in accordance to the requirements of the Shire of Albany and DPUD.
2. Conform to EPA policy on domestic effluent disposal by ensuring effluent disposal systems have a minimum 100m separation from the high water mark of Frenchman Bay and from the shore of Lake Vancouver. They will also have at least a 2m vertical separation from the watertable. This will be in accordance with the requirements of the Shire of Albany.
3. Put in place measures that will limit the clearing of natural vegetation within the development to an absolute minimum as described in this CER. This will be done to the satisfaction of the Shire of Albany.
4. Take the necessary steps described in this CER to prevent the erosion of soil by wind. This will be done to the satisfaction of the Shire of Albany.
5. Safeguard against the introduction of dieback by performing construction work in accordance with dieback hygiene strategies developed in consultation with CALM and the Shire of Albany.
6. In consultation with the Shire of Albany will ensure that residences are sited and constructed in a manner designed to allow them to harmonise with the surrounding landscape elements in accordance with the Country Coastal Planning Policy of DPUD.
7. Design the stormwater drainage of the development so that drainage waters do not enter Lake Vancouver and so that they filtrate into the soil profile. This will be done to the satisfaction of the Shire of Albany.