



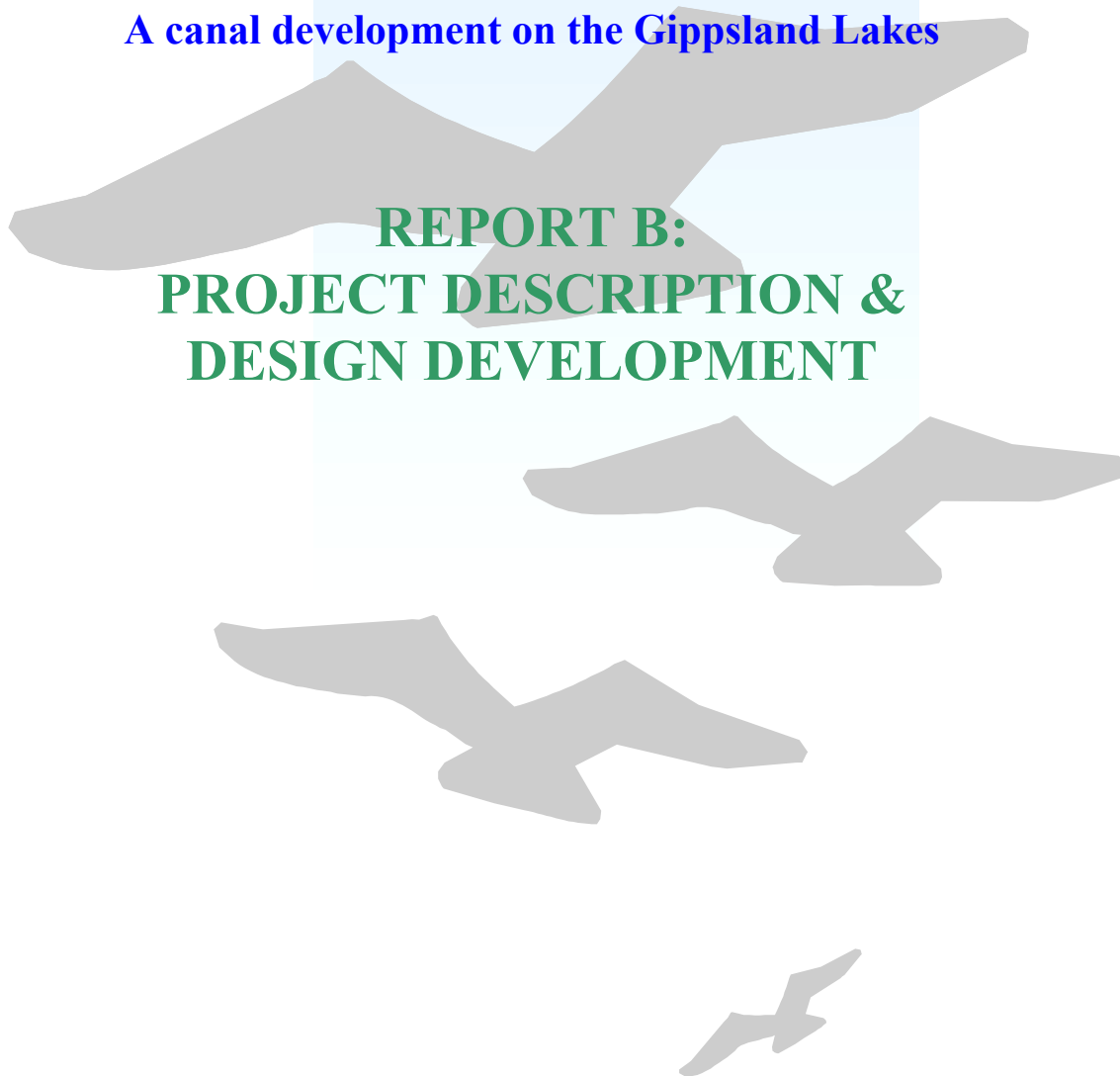
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**ENVIRONMENT EFFECTS STUDY**

**WELLINGTON WATERS**

**A canal development on the Gippsland Lakes**

**REPORT B:  
PROJECT DESCRIPTION &  
DESIGN DEVELOPMENT**





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## 1. LOCATION

The development is located on Wellington Park and this location is shown in [Report L Plans Nos 4, 5 & 6](#).

## 2. EXISTING CONDITIONS

Wellington Park is a property of 2712 hectares (6600 acres) and the Wellington Waters site of 736 hectares (1818 acres) is currently being subdivided from the main property and is the subject of the development proposal and this EES. The site has ..... metres frontage to Sperm Whale Head Road, approx 4 kms of frontage to Lake Wellington and shares a common boundary with the State Park to the east.

Wellington Park has been owned and utilized as a sheep grazing property by the proponent since 1982. The area has been grazed continuously for over 100 years. The property has been associated with the “Land for Wildlife” program since the early 1980s.

A large proportion of Wellington Park (approx 30 %) is low lying, flood prone land that fluctuates annually between wetland and dryland (classified as Coastal Saltmarsh). See [Report L Plans No 7](#) and [Report M Photographs Nos 1, 2, 3 & 4](#). This land is in a poor, degraded condition and is deteriorating through increased salinity.

Since the opening of Lakes Entrance in 1890 the whole lakes system has been gradually changing from a fresh to a saline environment with all the lakes to the east of McLennan Straits now permanently saline.

Lake Wellington and its surrounding wetlands fluctuate between fresh and saline depending on the river flows entering from the Latrobe/Thompson and Avon/Perry river systems. During the last 6 years of drought the system has remained saline and is now so established that it will most likely only become fresh after flood occurrences. This situation has created significant change on the flora in the wetland area of Wellington Park with healthy estuarine wetland deteriorating to totally arid saltpan. The sequencing of this degeneration is captured on photos see [Report M Photographs Nos 7, to 14](#). The dead scrub shown on [photo No. 10](#) was alive and healthy in 1996 as can be seen on the aerial photo taken at that time see [Report M Photographs No. 5](#). The vegetation in question can be seen slightly to the north of the “NG” of “WELLINGTON PARK” superscribed on the photo.

The salination of this land is happening through salt water flowing back across from the State Park to our east, becoming trapped and then concentrating through transpiration. The resultant hypersaline solutions gradually kill off any remnant vegetation. Tests taken of these hypersaline solutions in the past have given salt readings greater than sea water. This salt deposition process is different to salination processes experienced elsewhere in Australia where salination is often the result of rising watertables.



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The vegetation covering 90% of this area consists of only two species, namely glasswort and tussocks see [Report M Photographs No. 6](#). There is a small stand of phragmites that has been gradually diminishing.

Evidence of this area having been quite different in the past is the existence of old fencelines cutting the area into small paddocks meaning that the country must have once had good grazing capability. Also visible across most of the area are dead stumps that show the area was once covered with tea-tree or similar.

### **3. PROJECT PLANNING**

Planning for this project began in early 1999 and has been developing continuously since. The underlying principle is to create a water based, eco-living development that is linked to the Gippsland Lakes whilst repairing and improving the wetland environment adjacent to Lake Wellington. In many ways the project has encompassed ground breaking approaches to land development where housing development has been designed to work in conjunction with environmental enhancement.

### **4. PLANNING PRINCIPLES**

A number of base parameters were established for the development which were then to guide the development process. They were:

#### **4.1 Environmental**

- The project to address the current declining status of the area and to encourage stabilization and reversal of that process.
- Acknowledgement of feral cats and foxes as the single greatest threat to our native fauna
- The possibility of increasing floral biodiversity by the removal of stock and rabbits
- The need to maintain healthy habitats for migratory species that visit the area
- Acknowledgement of the need to direct substantial capital to achieve positive environmental outcomes and that such capital can only be logically sourced from associated development
- Acknowledgement of the declining fish stocks and diversity in the lakes and rivers that are partly caused by the removal of fish breeding habitat
- The need to protect and enhance existing waterways
- The need to accommodate irregular floods and the kinetics of the flood plain



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## 4.2 Tourism

- The desire as expressed by Tourism Vic to create a four star tourist development on the Lakes
- The need for a new activity node to create a destination point on Lake Wellington

## 4.3 Planning

- The need to create a sustainable activity node with fully serviced infrastructure rather than dispersed development as outlined in the Coastal Strategy prepared by the Gippsland Coastal Board
- The preference to deliver a living environment where residents can experience and feel part of both the wetland and rural settings

## 4.4 Economics

- The need for the project to be economically sustainable both in the short and longer term.
- The need to comply with Regional Development and Shire development strategies and guidelines

These parameters formed the basis of the design and planning process. A team of expert consultants were selected and commissioned to develop the project who have been encouraged to have close co-operation and interaction with the local shire and relevant Government departmental personnel. James Troedel has owned the land for 20 years and Peter Reilly (the current Manager of Wellington Park) has been intimately involved with the land for 12 years and both have a wealth of detailed knowledge of the site. They have both been closely involved with the planning of the development throughout and their combined invaluable experience has contributed significantly to the process.

Some evolution of the original concepts have occurred, however, the original conceptual vision has been maintained.



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## 5. DETAILED PLANNING STEPS

### 5.1 Habitat Studies

The site was surveyed to establish the vegetation types and their extent and location [see Report D Biodiversity and Report L Plans No.7.](#)

Each vegetation area was mapped and investigated to establish its diversity and characteristics. To appreciate what has been developed it must be understood that the vegetation types vary dramatically over quite short distances. Largely this diversity is driven by the height of the land where a rise of less than half a meter can totally change the diversity and health of the vegetation.

The vegetation areas were then classified according to their importance and their preservation status.

### 5.2 Initial Layout

An initial layout (**Option 1**) was prepared which was carefully designed to skirt the areas that included healthy diverse habitat wherever possible so that excavation and earthworks would be restricted to the most degraded habitat areas. [see Report L Plans and Maps No.8.](#)

The entrances were located to:

- Provide flow within the canals
- Enter Lake Wellington where the lake floor was sand to minimize disturbance of benthic flora
- Enter Lake Wellington where the deeper water was closer to shore to minimize dredging

A unique feature of the development is the proposal to only have housing development on one side of the canal and for this housing to be only one row deep. Canal developments invariably have housing on both sides of the canal to gain maximum return from the high cost of canal construction. Reasons for the decision to take a contrary, albeit less profitable approach are:

- The desire to maximize land available as wildlife refuges
- The use of the canal to create a natural barrier to prevent access by rabbits, foxes and feral cats through the creation of “islands”
- To provide a unique outlook across the wetland for the houses as well as a rural outlook to the rear.
- To have minimal impact on the flood plain
- To save the need for bridges which would restrict the access for tall masted yachts.



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- To limit access to only one side of the canal allowing the other side to be naturally fading into the wetland and to be developed as fish breeding habitat

Initially the canal was designed to be 3m deep and 46m wide. All excavated material is to be utilized to create the higher ground necessary for the housing.

The floor level of the houses is to be 3.00 AHD. This is the level advised by the West Gippsland Water Management Authority to cover flooding (one in a hundred year flood event) and possible future subsidence caused by global warming. Access roadways can be designed at 800mm below this level, ie. 2.20 AHD.

The obvious potential was to create housing along the foreshore looking out across Lake Wellington and there is no doubt that such sites would become the prime sites in the development. This option was rejected for the following reasons:

- The foreshore forms the character of Lake Wellington, particularly when viewed from the water
- Being slightly higher than the wetland area behind it, the foreshore strip contains a more diverse flora that should be preserved
- Any potential Aboriginal heritage sites will be located along the foreshore
- The foreshore is constantly changing through erosion, sand drift and wave action which is best managed by being left alone
- Housing would need to be elevated creating greater disruption to the natural aesthetics

Not only was the development of this strip rejected but a 100m setback is to be created as a no-development zone. The only activity in this zone will be the construction of the canal entrances.

### **5.3 Design Development**

In December 2002 a new low level aerial photo run was carried out and detailed contour maps prepared at an interval of 250 mm. Early in 2003 a depth survey was undertaken in the areas adjacent to the entrances and this data was added to the contour map. All further refinement of the layout design was done using this base survey data.

A number of factors have influenced the further design of the layout.



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### 5.3.1 Hydraulics

Following the work done by Coastal Engineering see [Report E Hydraulics](#) on water circulation within the canal system the design was altered to create longer sections running SW to NE to encourage water interchange. This revised layout (**Option 2**) increases those runs and decreases the length of uninterrupted canal that runs transverse to the prevailing winds. see [Report L Plans No. 2 & 10](#)

### 5.3.2 Critical Mass

Option 1 had a capacity of 500 houses. Option 2 doubles the size of the development to 1000 houses and associated commercial facilities. This additional size creates a more viable critical mass for the Activity Node for the funding and provision of:

- Council services
- garbage collection
- mail distribution
- commercial infrastructure
- recreational facilities such as a golf course
- ongoing resourcing of management of the canals and wildlife refuges
- infrastructure distribution eg. Power, communications, etc

### 5.3.3 Fire Access and Precincts

Gaps have been placed in the housing at regular intervals to provide fire truck access to the canal and also help create precincts as a way of developing a sense of community. Each precinct will have its own Body Corporate and be responsible for its sewerage plant and public spaces.

The gaps in the housing will also improve the “canalscape” by providing viewlines through to the farm behind the houses for people traveling through the canal by boat.

### 5.3.4 Staging – Stage 1

The western entrance has been redesigned to create an effective Stage 1 area for the development. There is no development on the western end of the two loops to allow free flow of water during a flood. The housing is more tightly configured to give a sense of community which will be necessary for the initial residents. see [Report L Plans No. 12 & 13](#)

As the houses on the central tongue do not back onto the farm they will have a large landscaped public open space of approximately 100m in width.



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By commencing at the western end all future development will be moving away from the occupied areas so that the residents do not feel they are constantly living in a construction zone and the construction noise will diminish with time.

A further addition is the inclusion of a pub/store in stage 1 which will create a community focus for the early development. This facility will be designed to be able to be expanded as demand increases. Adjacent will be a marina with fuel and sewerage pump-out to accommodate the boating visitors that are anticipated from both Sale and the eastern end of the lakes.

### **5.3.5 Staging – Later Stages**

Once sufficient funds have been raised through the sale of Stage 1 lots the canal construction will be continued through to the western entrance to enhance water circulation in the early stages. This will also create the first of the Wildlife Refuges allowing vermin eradication, removal of stock, controlled planting and restocking with native animals.

Following sufficient lot sales on stage 2 the remainder of the canal, roadworks and infrastructure construction will be completed. The rate at which areas are opened up for sale and occupation will be solely dependent on take up, however, it is anticipated the whole project may take 10 years to reach full development.

### **5.3.6 Fish Habitat**

As mentioned above the project has been designed to ensure that only a bare minimum of mature trees will need to be destroyed. Certainly less than 100 for the whole project. Any trees removed will be placed along the reserve edge of the canal to create protection and breeding habitat for fish. This will effectively replace the habitat that has been removed from our rivers and streams over the years in the interests of stream control and flood mitigation. The intention is that this side of the canal will be out of bounds for boating and the tree trunks should help discourage recalcitrants. Some of the trees will also be dispersed across the Wildlife Refuges as nesting sites and habitat.



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### **5.3.7 Building Design**

Peddle Thorp have been retained as the architects for the whole project. Building design guidelines have been prepared that cover both aesthetics and ESD principles. The standard set for the whole project will be quality contemporary design that fits into the overall setting. This will be achieved through the selection of base materials and an acceptable colour palette. Enough variety will be possible to cater for the range of tastes from conservative rural character through to modern design. [see Report J, Design Guidelines & Report K, ESD](#)

As all blocks will tend to be narrow to maximize the access to the canals considerable care will need to be taken to ensure compatibility of neighbouring houses. Again the project architects will manage these issues to guarantee satisfactory outcomes.

### **5.3.8 Public Facilities**

#### **a. Boating**

Public facilities associated with boating, namely, sewerage pump-out and fuel supply will be located within the marina near the western entrance as noted above.

#### **b. General**

As the project reaches maturity with an anticipated 2,500 people it is anticipated the Shire may include some public facilities such as a public library or community health centre. The proposed site for these facilities would be adjacent to the Sperm Whale Head Road close to the main entrance to Wellington Waters. The proponent will provide an appropriate site to the Shire on a no-charge basis for the land content only. The advantage of a site close to the main road is that it could also service surrounding areas such as Loch Sport and Golden Beach if desired.

This same area could also become the site for commercial retail such as a small supermarket, etc.



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#### **5.4 The Federal Government and the EPBC Act**

Following a submission to Environment Australia (EA) in June 2001 the project was listed as a Controlled Action within the EPBC Act. Further to this registration it was agreed that the EES process being managed by the Victorian Government would also suffice to cover the reporting requirements of the EPBC Act.

#### **5.5 The EES process**

Following a submission to the Department of Infrastructure (DOI) in 2001 for a rezoning of the site within the existing Planning Scheme the Minister of Planning requested an Environmental Effects Statement (EES) be prepared for the project. An Agency Control Group was formed under the auspices of DOI (now DSE) and following a series of meetings and site visits a Draft Assessment Guidelines for the EES was drawn up. These Guidelines were advertised publicly for a month and then adopted as the formal Guidelines for the EES. (They are available on the [Wellington Waters](#) website and are included in the body of this report).

This report is the culmination of eighteen months work by the consultant team in developing the design and responding to the issues raised in the Assessment Guidelines.

Both the development and its ongoing management will be controlled by an Environmental Management Plan (EMP) which will be formally certified under ISO 14001.

Further information on the project, plans and photographs are all available on the project website [www.wellingtonwaters.com.au](http://www.wellingtonwaters.com.au)



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## 6. ALTERNATIVE PROPOSALS

As part of the EES process we have been asked to consider alternative proposals to the one being put forward. The following analysis considers these alternatives and lists their pros and cons, particularly with respect to their ecological impact.

### 6.1 The No-Development Option

Often when developing a piece of open, undeveloped land it is presumed that any works will have an adverse effect as the construction of new works will destroy some habitat. **In this case this can be shown to be a false premise and the project will provide a better outcome than the do-nothing case.** The reasons for this are as follows:

- As has been shown in more detail in [Report D Biodiversity](#) the land in question is continuing to degrade and if allowed to continue the increasing salinity will mean that 67% of the site will become arid saltpan. This will put further pressure on the lake foreshore which will also experience die back due to salt.
- The land is currently zoned “Rural” which permits grazing of stock. This means that any future owner would be within their rights to graze the whole of the land in question.
- It has been suggested that “.....*relevant management measures could be pursued independently from the canal estate project. In other words, the ‘no project’ option might entail changed/improved land management to address ecological objectives. The removal of grazing and salinity control are therefore not straightforward benefits of the project. ...*” quote from *Dept of Infrastructure*.

There are a number of points that are relevant to this statement.

- a. Control of water intrusion and accumulation has been tried over 20 years in an attempt to prevent the continuing degradation to no avail. This is because the problem is too large to be able to be dealt with by an individual.
- b. Major earthworks in line with what is proposed by the canal construction is the only known solution to the problem. The canals will prevent the inundation and salt concentration that is currently occurring. It should be noted that this inundation comes through the State Park to our north east and there is no attempt to prevent the problem in that area. The canals will effectively drain the area during wet periods thus assisting in flushing the salt already accumulated. The raised area for housing and revetment walls on the landward side of the canal will prevent any further encroachment of the salinisation problem onto Wellington Park. Although the canals will not be fresh as they will match the water quality of Lake Wellington, they will create a stable estuarine environment that will encourage the development of relevant species. It is the



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hypersaline conditions that are currently occurring that cause the degradation.

- c. It is the canals that will effectively create the wildlife refuges as feral free environments and allow them to be maintained as safe havens. Fencing to a standard to keep out rabbits and foxes is not an option in this highly corrosive environment. The creation of these refuges will cost many millions of dollars as well as the dedication of 500 hectares to wildlife preservation. As quoted elsewhere in this report it is the foxes and feral cats that are decimating our native ground feeding and breeding birds and have already decimated our small marsupials.

The creation of refuges such as those proposed is the only hope to save many of these species from extinction. No such works are being carried out on any of our state or national parks and the only other group to attempt such an ambitious program (Earth Sanctuaries Australia) are now in financial difficulties. The developer has chosen to divert a very large percentage of the land and many millions of dollars both in construction activity and in foregone development opportunity to creating these refuges. The developer must make some money first to be able to spend it on the sanctuaries. If the project does not go ahead they will not happen and it is essential that this link is understood and appreciated.

## 6.2 The Fully Developed Option

A normal development proposal for a canal estate would concentrate on maximizing the return for the developer. On this site it would include housing development along the lake foreshore with houses looking out across the lake as the most prestigious and highly valued blocks. All the low lying land would then be cut up to provide as many canal frontage blocks as possible with housing on both sides of every canal. As an afterthought and to satisfy regulatory requirements 5% of the land would be allocated to public open space. This space would then be “tastefully” fitted out with a public barbeque and some swings.

Such a development is typical of all the canal developments done elsewhere in Australia and would deliver the maximum profit to the developer. Even though a number of potential developer partners have suggested such a development it does not fit with the ideals of the proponent as enunciated in our **Mission Statement**.

**To create a high quality, well designed, development that enhances the natural environment, provides a habitat for our indigenous fauna and increases the local biodiversity.**

**To provide a unique lifestyle of waterfront housing within an Australian rural setting utilising Ecologically Sustainable Design concepts so that the development leaves the lightest possible footprint on the total environment.**



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**To contribute to the economic development of the Gippsland Lakes and the region.**

Rather than create a development with the **minimum** environmental land allocation we have adopted the opposite premise of creating a development with the **maximum** environmental land allocation. Consequently the Fully Developed Option has been rejected.