Ella Bay Integrated Resort Proposal

Supplementary Environmental Impact Statement

Volume Two— Key Issues: Refined and Improved

ELLA BAY

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2.0 Introduction to Volume Two

Introduction

Volume One of the Supplementary EIS Report sets out the Proponent's response to questions and issues raised in response to the original Ella Bay EIS Submission. Such a response is required under the Queensland Government statutory EIS process. The response also helps to `set the scene' with regard to general progress achieved on the Ella Bay Project including a series of refinements and improvements to the original submission. Volume 2 provides more detailed information on that progress.

Extensive consultations has been carried with government departments, community representatives and other stakeholders in the preparation of this Supplementary Report which have resulted in the production of a refined Master Plan for the Development and publication of additional detail to the Environmental Sustainable Development (ESD) Strategy.

Volume 2 of the Supplementary EIS Report contains strategies and detailed action plans for Environmental Improvements to the Ella Bay Integrated Resort Proposal. These strategies have been prepared as improvements and refinements to proposals set out in the original EIS Submission dated February 2007.

Volume 2 contains images and detailed plans/drawings. Please note that all these images and plans/drawings are re-produced at a larger scale in Volume 3 for ease of reference. Volume 3 contains A3 size drawings in folders for architectural and engineering drawings.

2.0.1 Purpose and Scope

The purpose of this Supplementary EIS Report is to:

- support the original EIS Submission;
- reinforce, and further explain the principles upon which the Ella Bay Integrated Resort is based;
- provide a road map on how, in practical terms, strategies will be developed that satisfy legislative requirements for offsets, vegetation management, road access to the site; and
- further comment on matters of national, state and environmental significance with regard to Ella Bay.

The scope of this Volume (Volume 2) covers the Master Plan Improvements and Refinement including:

- Getting to Ella Bay;
- Improved Ella Bay Master Community;
- Living at Ella Bay;

- Town Planning;
- Benchmarks;
- Ecological Sustainable Development (ESD); and
- The Ella Bay Trust and Strategic Environmental Initiatives.

2.0.2 Objectives

The objectives of this Supplementary EIS Report are to:

- detail further mitigation strategies following government and public feedback on the original EIS submission;
- provide a strategy for environmental improvements over and above those already set out in the original EIS submission;
- elaborate on the proposed Ecologically Sustainable Development (ESD) strategy;
- set out a coherent package of regulated offsets and additional environmental investments;
- draw a strategic linkage between planned activities associated with development at Ella Bay, and the offsets being proposed, which in turn reflect World Heritage Values;
- provide offsets that are 'additional' in the context of the Kyoto Protocol, namely offsets that would not have occurred without the project being in place;
- propose innovative solutions to the management of people and communities within a natural environment (that includes the Southern Cassowary) within its rich bio-diversity; and
- propose a road access solution that will achieve a net positive gain to the environment after regulated offsets and additional environmental investments are taken into account.

2.0.3 Master Planning

Introduction

The integrated Master Plan for the Ella Bay Development has been prepared based on core values that underpin the Proponent's vision to `Building Integrated Townships for the 21st Century'. The diagram below sets out these values that which will guide and support the attainment of the Proponent's core mission as the Project develops.

Figure 2.0.1 Core Values

These core values shape the way the Proponent does business and can be summarised into a holistic, integrated approach to:

- managing, improving and protecting the community, the environment and workplace;
- valuing and appreciating the interplay between the built environment and the natural one;
- encouraging education and learning activities;
- using proven technologies in innovative, creative and feasible ways;
- finding ways of aligning community values into a balance between work, family and lifestyle;
- being willing to commission, explore, think beyond the conventional to solve issues and create, re-usable solutions;
- having a goal of achieving climate positive outcomes at all levels of the Proponent's master planned communities, resorts and townships; and
- relying on science to guide and inform the Proponent's approach at all times.

Ella Bay Integrated Resort Proposal

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Key Issues: Refined and Improved

2.1 Getting to Ella Bay

2.1 Getting To Ella Bay

2.1.1 The Access Road to Ella Bay

Purpose

To set out an access improvement solution for people living, working and visiting Ella Bay is to:

- establishing an optimum access solution for Ella Bay;
- setting out a coherent set of recommendations for impact mitigation and management that support the preferred solution; and
- ensuring that the recommended route will comply with environmental legislation.

Key Features of the Proposed Solution

Further investigation was carried out into the Flying Fish Point by-pass option, and a detailed access road strategy was prepared. Arising from this work, a refined road access option is recommended that provides a balance between a number of social and environmental issues. The details of this option are discussed below.

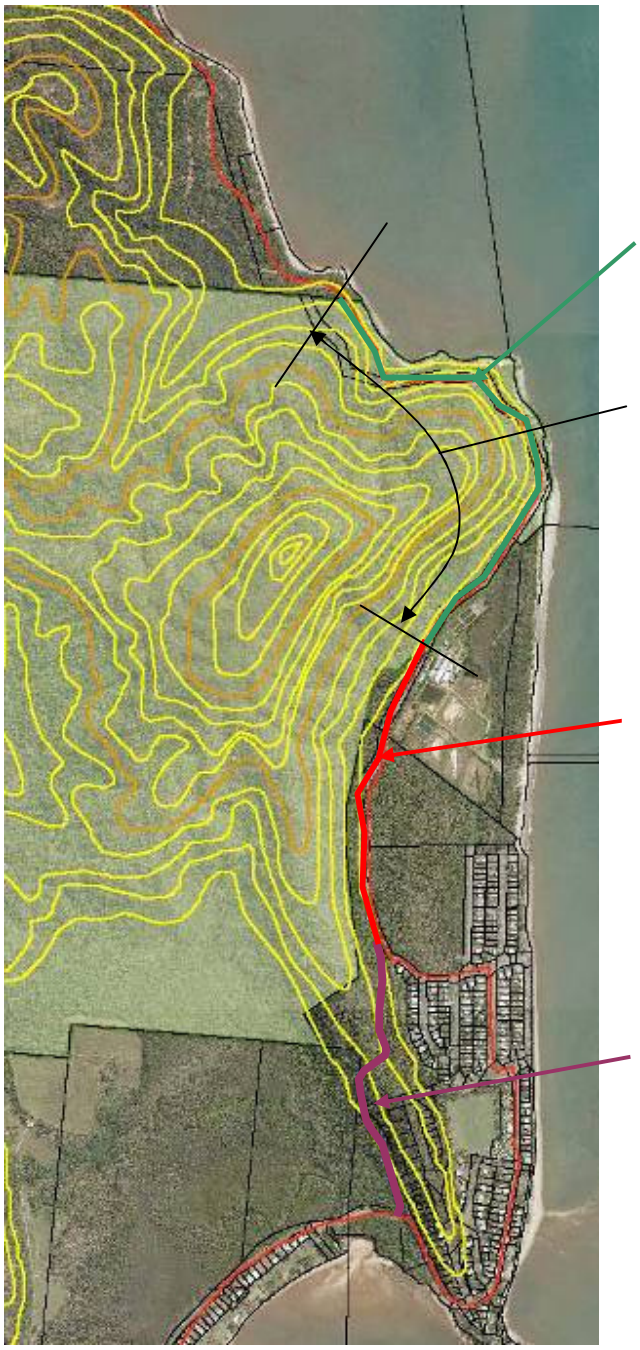

Figure 1. Proposed access road

Segment 3: Heath Point to Little Cove
(upgrade existing road)

Road within WHA

Segment 2: South of Fish Farm to Heath Point
(upgrade existing road)

Segment 1: Flying Fish Point to South of Fish Farm
(Bypass)

Figure 2.1.1 Recommended Access Road Solution

Below is a summary of why Option 2 is recommended. Option 2:

- is an alternative to having a road through important wetland ecologies;
- has better connectivity maintained through incorporation of a tunnel;
- closes off Ella Bay road at the point where it meets Flying Fish Point (bicycles, pedestrians, emergency vehicles excepted).
  This will mean that there will be no through vehicle access from Flying Fish Point to Ella Bay;
- offers improved safety (especially for Flying Fish residents);
- provides reduced travel times;
- incorporates lower road gradients due to the tunnel which also improves safety;
- reduces embankments due to incorporation of the tunnel resulting in less clearing and improved visual impact;
- establishes green verge treatment and retaining walls that reduce vegetation clearing; and
- minimal vegetation loss is offset.

How this was achieved

High level screening of options was carried out as part of a post-EIS assessment process to identify opportunities for various road access improvement and development. In particular, the development and evaluation of road options, and the need for additional studies was identified. As a result, the following additional studies were undertaken by consultants to inform the assessment of possible, road access options. These studies included a review of:

- engineering issues;
- biodiversity (flora, fauna other than Cassowaries);
- biodiversity (Cassowaries);
- land surveys;
- geotechnical issues;
- social and amenity issues;
- scenic amenity; and
- offsets arising from the recommended road option.

A rigorous process of evaluation of the issues (using a process termed multi-criteria analysis) was used to assist in reaching a recommended option. This process also resulted in some obvious mitigation strategies. These were to modify the bypass options by:

- replacing large cuttings and embankments with retaining walls; and
- thereby reduce clearing and earthworks.

The Proponent realises that any recommended solution put forward will have to:

- perform well in terms of biodiversity. This is achieved as the tunnel provides connectivity at the existing saddle and this is consistent with the associated fence and funnel strategy;
- provide a high level of transport efficiency. This is achieved as travel times are relatively low and the road is on a good horizontal and vertical alignment; and
- avoid all social impacts. This is achieved as it bypasses the town and avoids conflicts with local traffic and residences and does not involve community severance.

The focus of the access road strategy is to incorporate mitigation options (see below) and to remedy residual impacts via an offsets strategy. Importantly too, the recommended option was determined taking into account social and environmental considerations.

Mitigation Options

The analysis of strategic mitigation options revealed that there are many opportunities to mitigate impacts by changes to the design of the access road and by associated management. To do so, several issues were investigated including the:

- use of retaining wall options;
- use of constrained sections;
- building of storm water drainage; and
- incorporation of fauna-sensitive design.

Compliance with environmental legislation

The Access Road Strategy report provides information relevant to the approval to construct the access road under the:

- Environment Protection and Biodiversity Conservation Act 1999 (Cwlth);
- Wet Tropics Management Plan 1998 (Qld);

- Vegetation Management Act 1999 (Qld); and
- Nature Conservation Act 1992 (Qld).

In terms of the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act) the key issue is the conservation of the Southern Cassowary which is to be addressed via:

- selection of a route option between Flying Fish Point and the fish farm that provides for Cassowary movement and protects Cassowary habitat;
- development of a Cassowary management strategy for the access road that includes a fence and funnel strategy and specific initiatives to reduce vehicle/Cassowary collisions; and
- a comprehensive regulated offsets strategy to investigate suitable on-site and off-site works or actions that could mitigate or offset project impacts on all matters of national environmental significance.

Visual impacts will be managed by the revegetation of cuttings, embankments, and retaining walls in accordance with the revegetation strategy.

In terms of the Wet Tropics Management Plan, the key issues relate to:

- the fact that, at the time of the preparation of the Interim Release version of the report, a detailed assessment of the extent to which the proposed upgrade addresses the WTMP was not complete;
- under the WTMP, the Authority may issue a permit to build a road only if building the road under the permit would not have a net adverse impact on the integrity of the World Heritage Area; or
- that there is no prudent and feasible alternative to the recommended option.

These requirements are alternatives (not additive) such that only one needs to be met. It is the Proponent's submission that there are no prudent and feasible alternatives to the recommended solution that has been developed in this Report's access road strategy.

In terms of The Vegetation Management Act, the key issues are to:

- select a preferred solution has been selected to minimise the need to clear regional ecosystems with a high conservation value;
- propose a mitigation strategy (retaining walls, constrained sections etc) that further reduces the need to clear vegetation communities of conservation significance; and
- set out a comprehensive regulated offset strategy that includes suitable on-site and off-site works or other actions to mitigate or offset impacts on regional ecosystems of significance.

The key mitigation works include the development of:

- a Cassowary management strategy (i.e. to reduce conflict with traffic and thereby promote the conservation of this species);
- a fence and funnel strategy (comprising fauna corridors, fencing, and associated road ecology initiatives);
- a road runoff strategy (to document the approach to road drainage and pollution control);
- a revegetation Strategy;
- an offsets policy of suitable on-site and off-site works or actions to mitigate or offset impacts on listed species; and
- a comprehensive environmental management plan for the road (an overview of the recommended approach to minimise road impacts through the design, construction and operational phases).

Finally, the draft regulated offset strategy includes suitable on-site and off-site works or actions to mitigate or offset residual impacts on listed species, vegetation communities, and ecological processes.

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Key Issues: Refined and Improved

2.2 The Improved Ella Bay Master Planned Community

2.2 The Improved Ella Bay Master Planned Community

This section provides a summary of how the Ella Bay Master Plan has been refined and improved across a range of issues. The improved Ella Bay Master Plan is shown on the page that follows. The key improvements and refinements relate to:

- a road access solution that will achieve a net positive gain to the environment after regulated offsets and additional environmental investments;
- further mitigation strategies following government and public feedback on the EIS submission;
- the strategy for environmental improvements over and above those already set out in the original EIS submission;
- the Ecologically Sustainable Development (ESD) strategy;
- an integrated and coherent package of regulated offsets and additional environmental investments;
- a strategic linkage between development activities associated with Ella Bay, and the offsets being proposed, which in turn reflect the World Heritage Values;
- offsets that are 'additional' in the context of the Kyoto Protocol, namely offsets that would not have occurred without the project being in place; and
- innovative solutions to the management of people and communities within a natural environment that includes the Cassowary within its rich biodiversity.

Figure 2.2.1 Improved Ella Bay Master Plan

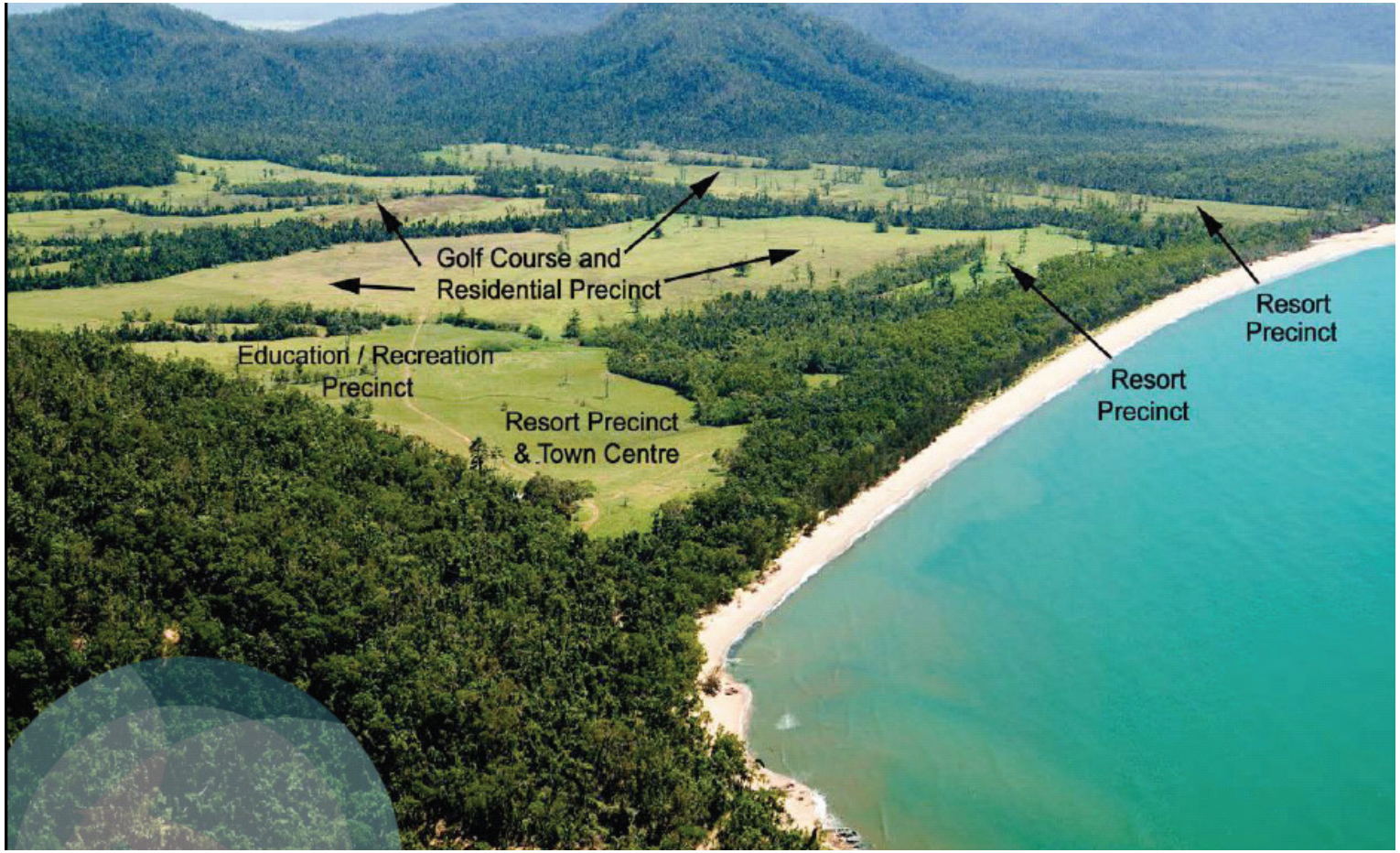

Figure 2.2.2 Aerial Shot indicating Conceptual Layout for Improved Ella Bay Master Plan

Figure 2.2.3 Original Ella Bay Master Plan

2.2.1 Revegetation, Rehabilitation and Enhanced Environmental Corridors

A more detailed strategic approach to the development of the environmental greenways and conservation corridor planning has been undertaken and is set out in this Supplementary EIS Report.

This approach has subsequently resulted in several improvements and further refinements to the initial EIS as shown on the figures and supporting explanations that follow this page.

In total, more than 84 hectares of the existing cattle property site will be revegetated or rehabilitated.

Overall Clearing, Rehabilitation and Revegetation Summary				
	Not of Concern	Of Concern	Endangered	TOTAL
Total Revegetated	20.535	20.535	0	41.07
Total Rehabilitated	21.575	22.065	0	43.64
Less Total Cleared	2.72	0.83	0	3.55
NET GAIN	39.39 ha	41.77 ha	0	81.16 ha

Table 2.1: Onsite and offsite clearing, rehabilitation and revegetation summary for the proposal

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Figure 2.2.4 Showing Existing Vegetation

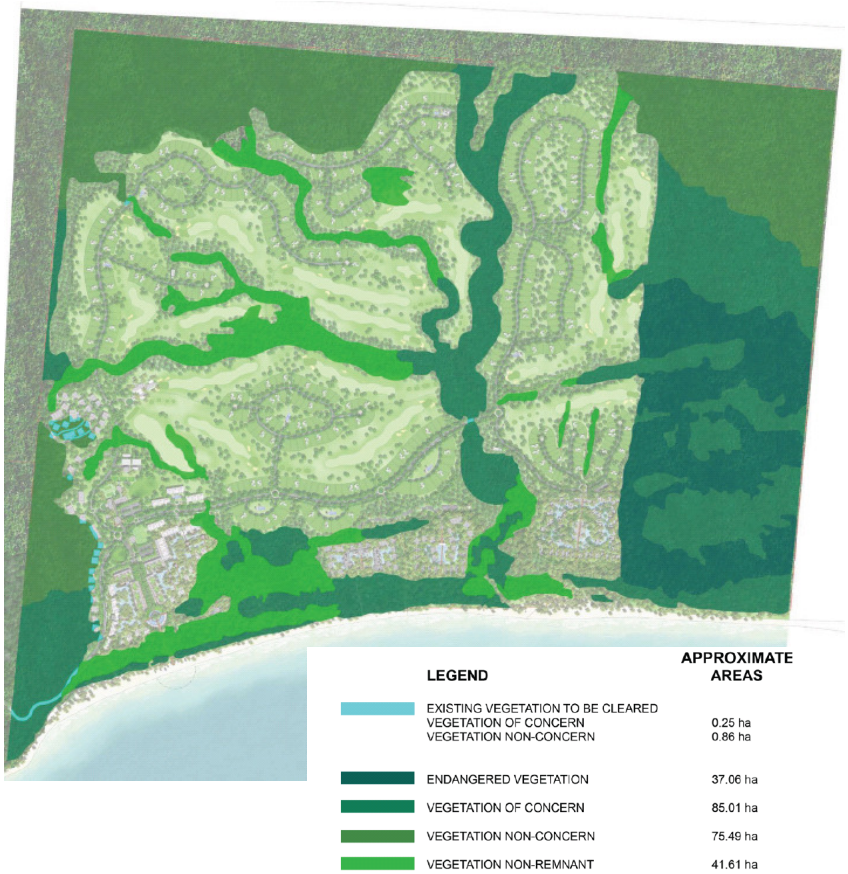

Figure 2.2.5 Showing Vegetation To Be Cleared (shown in blue)

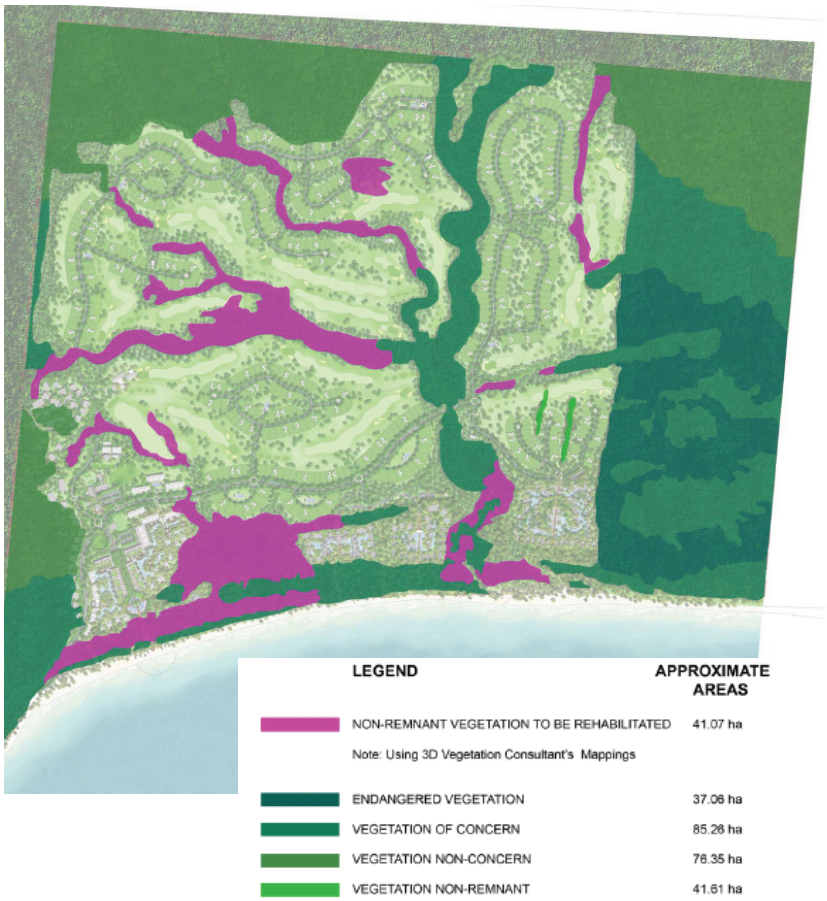

Figure 2.2.6 Showing Extent of Rehabilitation of Non Remnant Vegetation (shown in purple)

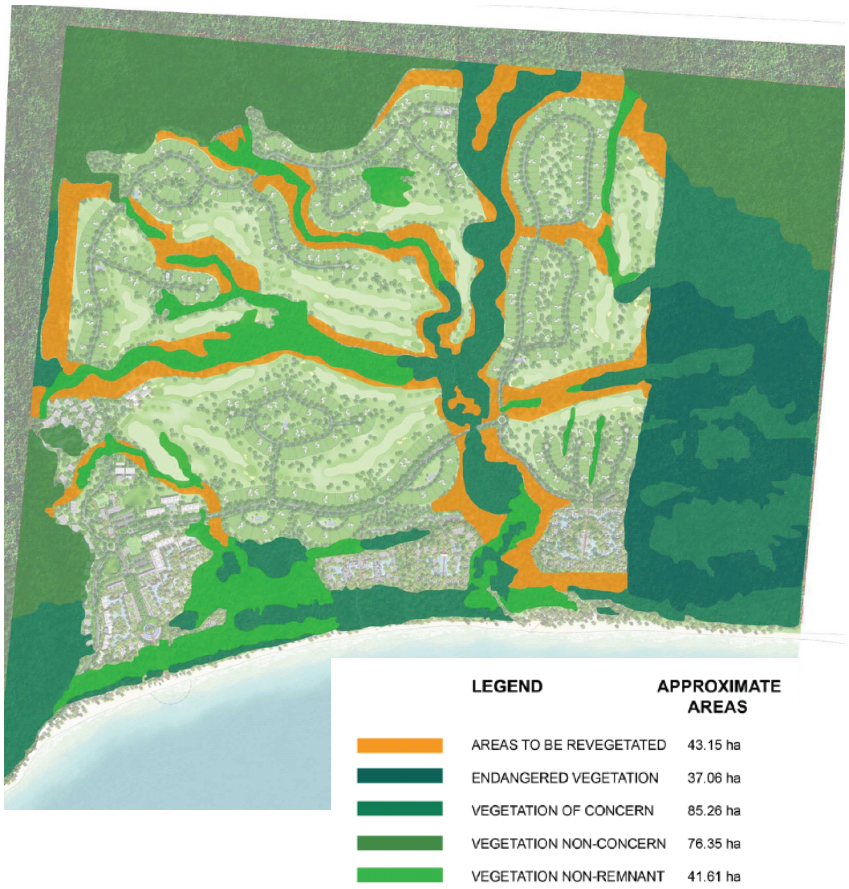

Figure 2.2.7 Showing Extent of Revegetation Areas (in orange)

The Ella Bay Development now includes more environmental corridors. They have been further refined in terms of their effectiveness in helping fauna to share as well as move through Ella Bay. They have been modified and integrated into the overall environmental plan. In particular, vegetation will be located where it is both more useful and effective with the prime emphasis to support, protect and encourage remnant vegetation already *in situ*.

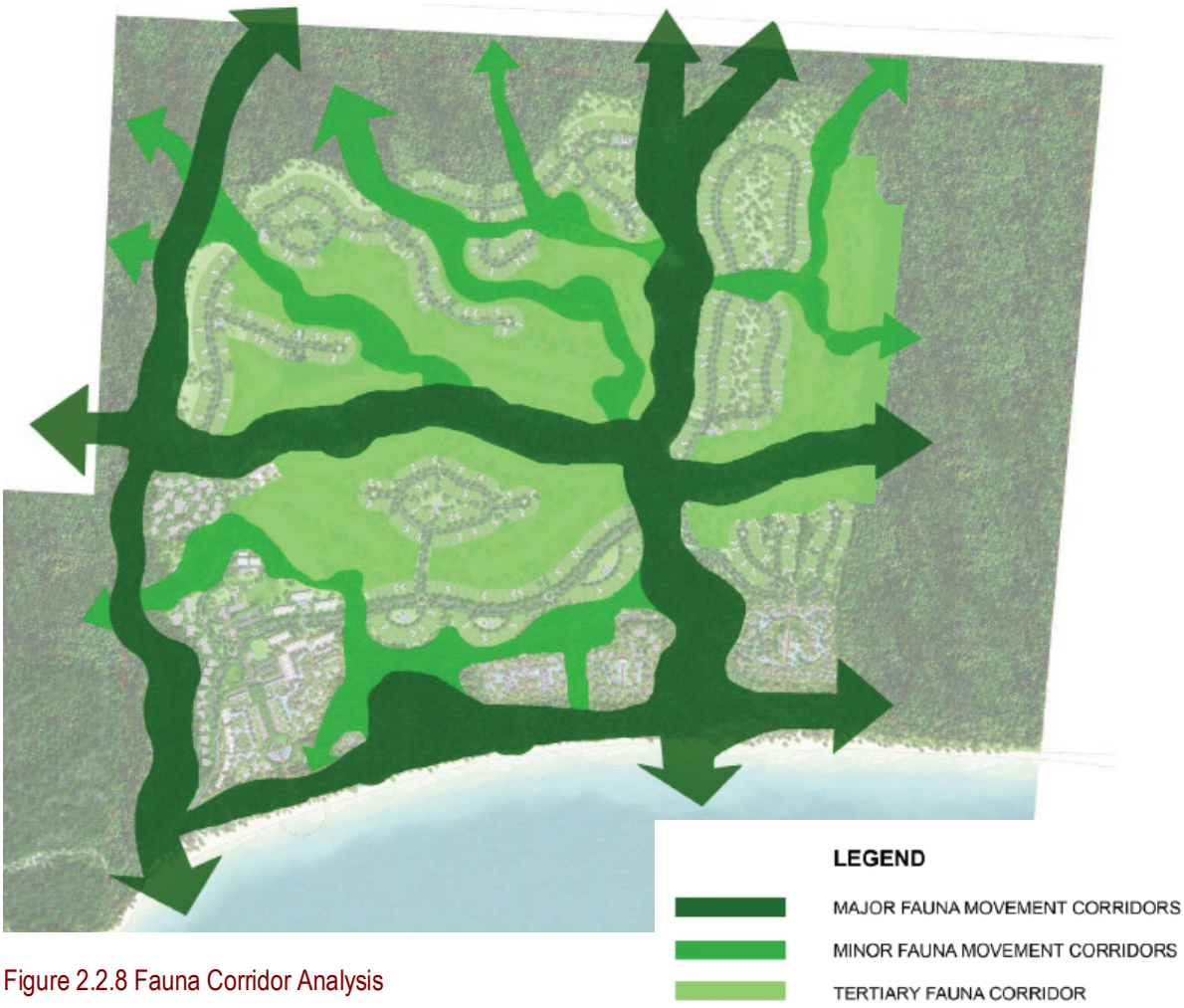

Figure 2.2.8 Fauna Corridor Analysis

A significant proportion of non-remnant, degraded vegetation will be rehabilitated with appropriate vegetation, and existing pastoral land will be revegetated to re-establish eco-systems. Further inland, two substantial, new northern corridors have been designed and incorporated into the refined Ella Bay Master Plan. A revised Constraints Plan has also been developed, with refinements improvements shown in the following diagram.

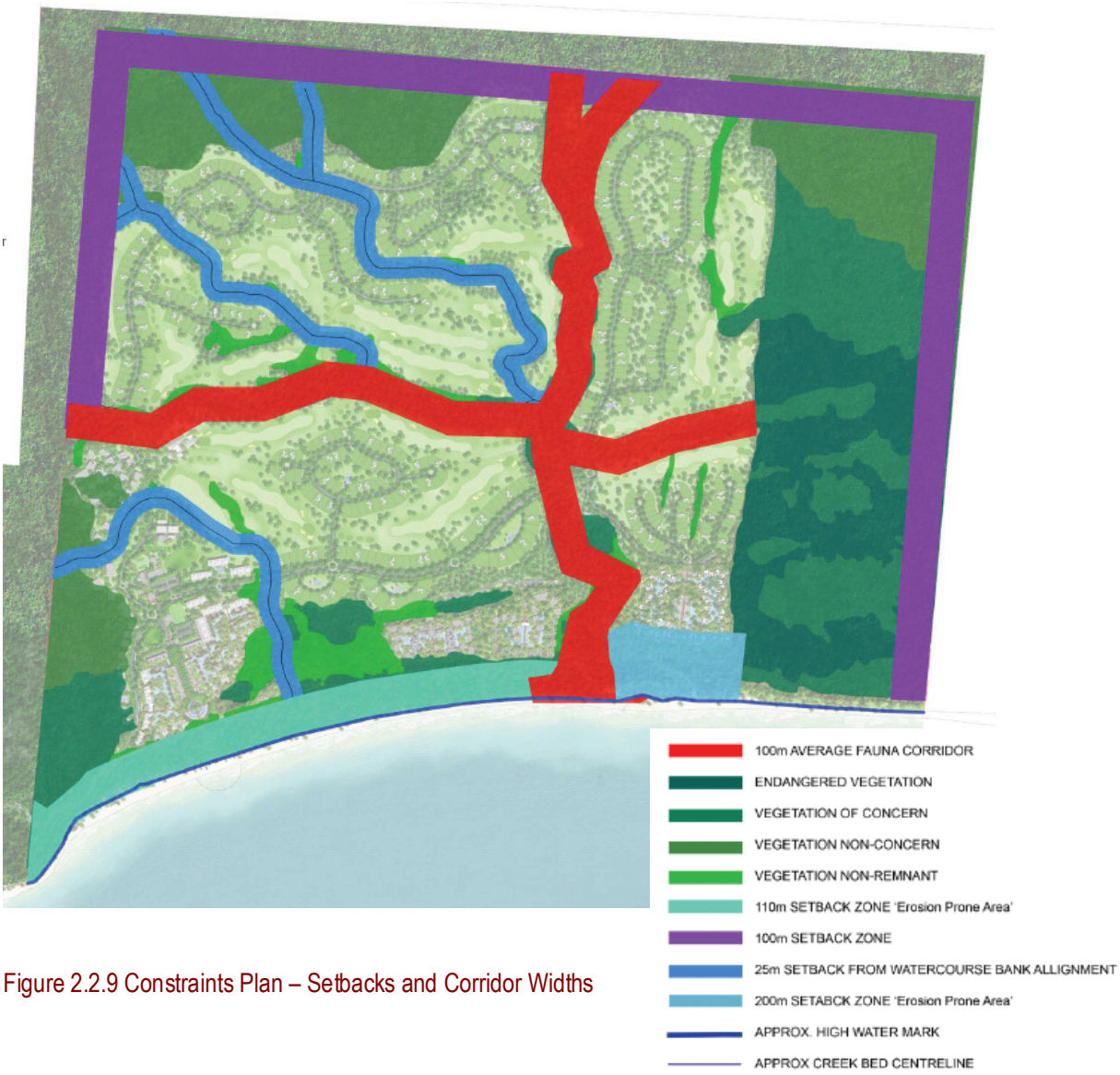

Figure 2.2.9 Constraints Plan – Setbacks and Corridor Widths

Under the new Constraints Plan, the entire built environment has been re-positioned from the nominated greenways. Watercourses will be protected by a 100-metre corridor (in the case of the principal North/South and East/West corridors). For the approximately 50 metre wide smaller corridors, set backs of 25 metres along the gullies in the South West and South East corners have been established.

These arrangements will protect erosion prone zones and encourage remnant vegetation re-growth.

2.2.2 South East Corner

Two sets of the South East corner villas have been relocated away from an area recognised as containing vegetation `of concern' to an area `not of concern'. The changes are shown in figures 2.2.10 and 2.2.11 below.

As an additional benefit, this refinement has created a further east – west corridor leading to the beach area. In addition, the Ella Bay Master Plan has been modified with several dwellings relocated to other areas that are less sensitive. As a result, there is no requirement for the original access road up the hill in this area (shown below) therefore resulting in no segmentation of habitat and clearing `of concern' vegetation.

Figure 2.2.10 SE Corner in the Old Master Plan

Figure 2.2.11 SE Corner in the New Master Plan

The clearing of vegetation in this area in the `of concern' category has also been reduced as a consequence of these refinements, and the extent of proposed clearing is on the perimeter of the `not of concern' vegetation.

2.2.3 Welcome Centre

Purpose

The Ella Bay Welcome Centre will be the place people visit when they first arrive at Ella Bay. Its main purpose will be to:

- induct visitors to the Ella Bay Development as part of a formal process of registration and education about the Development and its ecologically sustainable practices, procedures and rules;
- provide a memorable `first impressions' experience of the Ella Bay Development by designing the Welcome Centre as a significant tourist attraction in its own right;
- centralise important management and administration functions in the one location; and
- provide a location from which commercial, retail and other services can transition from on a staged basis to the Ella Bay Village Precinct (as it develops).

A. Location of the Welcome Centre

The diagram below shows the approach road to Ella Bay, the Ella Bay Village Precinct area and the roundabout. The Welcome Centre will be located in the buildings situated at the edge of the roundabout (to the west of the village precinct).

Figure 2.2.12 Location of the Welcome Centre (shown in red)

All visitors to the Ella Bay will be inducted. This includes day visitors, people staying at the resorts, and guests of residents, as well as residents on their initial arrival to the site. The Welcome Centre will be a important component of arrival arrangements, and visitors will be discouraged from being able to access the Development until they have completed the Ella Bay Welcome Centre's induction process.

In addition to carrying out necessary administrative tasks, the Welcome Centre will also become a tourist attraction in its own right. Entertaining, informing and educating visitors will be a key objective for the Centre. Achievement of this objective will be monitored and assessed using periodic surveys and interviews of residents and visitors alike.

More detail is provided below on each of the Welcome Centre roles:

B. Formal Registration and Processing

All visitors will require on-site administration at the point of entry where registration of visitors will take place. At that point, the visitor will be supplied with an appropriate pass. Smart identification tags will be provided for residents and resort guests. Day trip electronic visitor passes will be offered to other visitors.

There will also be an opportunity to purchase `stored value' credit cards for residents and resort guests to purchase products and services around the resorts in the restaurants, bars and shops, and for payment of parking bays, etc.

Golf buggy and/or bicycle hire via electronic smart identification tags will be administered at the Welcome Centre and convenient hire and drop off points will be located around the resorts and town centre precinct areas, in addition to the Welcome Centre.

C. Education

A vital role of the Ella Bay Welcome Centre will be to educate visitors about their visit to Ella Bay and key issues such as:

- the sensitive nature of the site and its special features/issues;
- the natural environment and how to respect and enjoy it;
- how residents and visitors live in the community;
- the importance of living in a sustainable way within the resorts;
- the community `rules';
- how to co-exist safely and responsibly with the Cassowary and other people on site;
- the importance of protecting indigenous cultural heritage; and
- emergency procedures and where to go or call for help.

A key objective of the induction and education process will be to provide comprehensive information on how to live safely with the Cassowary and to communicate the important differences about being in a unique eco-environment development. This is applicable whether people are just visiting for the day, staying on holiday, or living as a permanent resident within Ella Bay.

The Ella Bay Township `Rules and Regulations' will detail requirements such as `not feeding Cassowaries' or `leaving food sources where they could attract Cassowaries', `not disturbing them', and `how to re-act if a person comes in contact with a Cassowary'.

All visitors will be made aware of the special arrangements for monitoring and managing the Cassowary

using the non-intrusive management system (NIMS). It is intended that this system will provide monitoring and alerts to visitors warning them of an approaching Cassowary. The system will be designed to alert the Welcome Centre when and where a Cassowary has moved through a virtual access point along the Ella Bay Development boundary. The system will also be able to monitor and predict when and where the Cassowary is most likely to be within the Development itself. All visitors will be informed of these monitoring and alert systems, and the use of audible alarms to inform people when a Cassowary is moving through for example, a part of the golf course or one of the greenways. To help develop an optimum solution, Cassowaries may be tagged and tracked as part of research initiatives that will be undertaken to establish an effective, alternative means of a non-intrusive management system for the Cassowary.

D. Tourist Attraction

There is an important opportunity to make the Ella Bay induction process as enjoyable and interesting as possible. This can be achieved at the Welcome Centre in a number of ways, such as:

- promoting cultural heritage and environmental values (ie provision of an interpretive centre to explain Aboriginal history and lifestyle for the area);
- including a re-creation of the Mamu traditional style of living in unique rain forest huts;
- developing a high quality visual showcase presentation area to highlight the rain forest and to emphasise its unique location at Ella Bay where `Rain Forest Meets The Reef';
- creating a full interactive multimedia presentation on the Cassowary and other fauna and flora in the Ella Bay region; and
- explaining in an interesting and informative manner what sustainability means and how it is put into practice at Ella Bay.

E. Commercial Centre and Resort Accommodation Reservations Centre

There will be scope to include commercial functions at the Ella Bay Welcome Centre. A sales and marketing centre will provide information about residential lots and units available and explain the benefits and special features of building and living at Ella Bay. A possible multimedia presentation room could support this function.

It is proposed that a centralised resort booking and reservations centre be developed to allow visitors to review holiday accommodation options and holiday packages before making a booking.

In addition, there will be a range of specialist tourist shops and a refreshment zone.

An interactive multimedia kiosk will also be located at Ella Bay Welcome Centre. The kiosk will provide a comprehensive interactive multimedia tour of Ella Bay, its fauna and flora, the Ella Bay resorts and the

range of attractions on offer. The kiosk could also act as an online resort booking service to be available to visitors who arrive at the Ella Bay out of the normal Welcome Centre' operating hours.

F. Management and Administration

The Ella Bay Welcome Centre will play a vital role as the central hub for a range of management and administrative services. These will include a communication centre linking the residential lots, the resorts and other town services, as well as `Help Line' points located at various points throughout the Ella Bay. Administrative services for Ella Bay will also be located here. Services that enable security surveillance and monitoring will also be located here.

There is scope to plan for parts of the Welcome Centre to act as an operational centre during the initial construction stages. It is envisaged that the National Park's Authority would be involved with the Ella Bay Welcome Centre operations and, ideally, an Ella Bay National Park Ranger could be located at the Centre.

The Ella Bay Welcome Centre also provides a focal point for all issues to do with security, surveillance and emergency situations.

Staff employed at the Ella Bay Welcome Centre would be expected to comprise:

- developer's staff (during the construction stages);
- sales and marketing staff;
- commercial and retail staff; and
- administration and support staff employed by the Body Corporate and service providers

G. Design of the Welcome Centre

The Ella Bay Welcome Centre will be designed to showcase `green' design principles and meet five star building design and efficiency standards. Built to a very high standard, the Welcome Centre will be the first built environment that visitors experience as they arrive at Ella Bay.

Examples of sustainable building materials, services and designs will be available for prospective lot buyers. The Welcome Centre will also form a focal point for professional services to showcase their products and services (i.e. architects, builders, designers, plumbers, electricians, painters and decorators with experience of the proposed Ella Bay building design principles will be able to present their portfolios).

In the first instance, the Proponent will fund the operation of the Ella Bay Welcome Centre.

A phased transition will be arranged to transfer the ownership and operation of the Welcome Centre to the Body Corporate who will be then become responsible for the funding of the Welcome Centre. As the Welcome Centre develops, increasing revenue will be generated from its commercial operations that can be

used to contribute to the on-going funding costs. These revenues will include, for example, rents for services and revenues from bookings.

Short term parking at the Ella Bay Welcome Centre has been provided, recognising that it will be busy at peak periods.

2.2.4 Village Precinct

It is proposed that the Ella Bay Village Precinct will become the hub for community and visitor activities and interactions.

Figure 2.2.13 Refined and Improved Ella Bay Village Precinct

The Ella Bay Village Precinct is strategically located in the South East corner of the Ella Bay Development in order to reduce any potential impacts on the rest of the environment and the community at Ella Bay. The Village Precinct area has been refined and improved in the following ways:

- a village square has been added;
- a village green has been defined alongside the Village Precinct;

- a community centre has been incorporated;
- feature gardens as well as communal food gardens have been included;
- an intended trial development of green roofs to assess performance and amenity value;
- the possible location on site of a village centre precinct manager; and
- short term parking facilities will be provided for buggies and cars, with special bays for low carbon footprint cars.

A number of covered solar powered re-charging parking bays will be provided. This will enable residents and visitors to leave their buggy on charge while they are shopping or visiting the town centre.

Figure 2.2.14 Example of Solar Powered Car Port

The Village Precinct is strategically placed at the southern edge of the Ella Bay Development and is designed to give immediate cues to the community nature and spirit of the Ella Bay Development. A sense of place is shaped throughout this precinct through a series of communal and commercial facilities, green spaces and an obvious plaza spine linking the educational and welcoming centre, and core community, retail and commercial zones through to the safe swim area on the eastern beach. These spaces and facilities are carefully linked through a network of pedestrian friendly connections and human scale streetscapes and plaza spaces.

A village green has been strategically located in the heart of this precinct to form a focal point for community events and gatherings. The spaces at the centre of the village will be functionally versatile to cater for a wide range of user needs; from large social gatherings to smaller, more intimate spaces for peace and quiet.

Community facilities will include a centralised recycling centre, a community hall and garden plots for productive food growing. A public swimming facility will form the eastern focal point of the plaza space and will cater for visitor and residents' needs alike.

Commercial facilities will include a business centre for residents' use, offices, retail outlets, a convenience store, cafes and restaurants to further activate this publicly accessible precinct. Community services may include a doctor's surgery and accommodation for professional services, such as accountants and lawyers. A boutique supermarket will be located in the Ella Bay Village Precinct. The original EIS Village Precinct plan is shown below:

Figure 2.2.15 Original Ella Bay Village Precinct

The Ella Bay Village Precinct provides a cosmopolitan community centre that will service the needs of both the visiting and resident population. The function and purpose of the retail and commercial precinct at Ella Bay will be to service the proposed resort and residential areas. In order to reduce the need for extensive private automobile use, the Ella Bay Community is designed to be largely self-sufficient, minimising the number of trips to be taken outside the Ella Bay area. Therefore, basic retail and commercial lifestyle provisions will be required to service both the residential and resort precincts.

Rather than compete with existing businesses in the local and regional area, the village precinct at Ella Bay is designed to serve the immediate needs of the resident and tourist populations. As such, it is envisaged that the commercial areas at Ella Bay will feature specialised businesses that are generated by the resident's particular skills and interests.

In order to provide for a completely self-sufficient community, it may also be helpful for office space and accommodation to be supplied for the use of residents of Ella Bay. This facilitation of residents' business activities stems from the Proponent's vision to provide a complete community township, giving residents and visitors the potential to work, live and relax within the Ella Bay.

It is intended that serviced offices may be provided for use by residents at commercial rates. These offices will be designed to incorporate video conferencing services and up-to-date, fast network based computer and communication systems (please refer to Appendix A.3.5 Video Conferencing and Telepresence for further information on the range of possible communication services and IT applications at Ella Bay).

Figure 2.2.16 Telepresence in use

It is part of the Ella Bay Community Development Plan to encourage the development of video conferencing and interactive, collaborative online working environments. These services will have the potential to connect people at Ella Bay via video conferencing suites to anywhere in the world. Importantly, videoconferencing and real-time online collaboration avoids the need to travel to and from Ella Bay. Carbon emission levels will be therefore be reduced by avoiding unnecessary travel.

Staging and Transition

A staging and transition plan will be adopted that takes into account the critical need to phase in, over time, the development and establishment of the Ella Bay Village Precinct. This plan will match local demands for shopping, commercial and retail services as the residential precincts develop.

Similarly, a staging and transition plan will take account of the gradual increase in tourism numbers. This growth of demand and increase in arrivals to the resorts provides an opportunity to utililse the Ella Bay Welcome Centre's availability. The Ella Bay Welcome Centre will be constructed first, prior to the completion of the Ella Bay Village Precinct. Initially, commercial and retail space will be provided in the Ella Bay Welcome Centre and will subsequently transition to the Ella Bay Village Precinct once complete. This will ensure an appropriate balance is achieved between the supply of commercial and retail space, and local, as well as tourist, resort demands.

2.2.5 Scenarios for People Arriving at Ella Bay

Several scenarios are set out below to describe how **all** people arriving at Ella Bay will be welcomed and inducted.

A. The day visitor will:

- arrive by car, or bus or bicycle;
- be directed to the Welcome Centre through appropriate signage at the entrance and all associated access ways;
- park or be dropped off at the Welcome Centre;
- register at the Welcome Centre;
- be inducted at the Welcome Centre;
- receive rules and regulations for Ella Bay as well as an Ella Bay `help pack';
- be advised on how to move around Ella Bay;
- be provided with an access swipe card once registration is completed;
- proceed on into the Ella Bay itself once registration is completed;
- leave the Ella Bay Development in accordance with exit procedures and return smart identification tag access cards.

B. Day visitors, as guests to either residents or people staying at the resorts, will:

- arrive by car, or bus or bicycle;
- be directed to the Welcome Centre through appropriate signage at the entrance and all associated access ways;
- park or be dropped off at the Welcome Centre;
- register at the Welcome Centre;
- be inducted at the Welcome Centre;
- receive rules and regulations for Ella Bay as well as an Ella Bay `help pack';
- be advised on how to move around Ella Bay;
- be provided with an access swipe card once registration is completed;
- proceed on into the Ella Bay itself once registration is completed;
- leave the Ella Bay Development in accordance with exit procedures and return smart identification tag access cards.

Figure 2.2.17 An Electric Shuttle Bus

C. The family on holiday and staying at the resorts will:

- arrive by car, or bus or bicycle;
- be directed to the Welcome Centre through appropriate signage at the entrance and all associated access ways;
- park or be dropped off at the Welcome Centre;
- discuss with the Welcome Centre booking desk staff availability and pricing of accommodation (if no prior reservation for accommodation has been made);
- if prior reservation for accommodation has been made, confirm these arrangements with the booking desk for re-direction to a particular resort once the following steps have been carried out;
- register at the Welcome Centre;
- be inducted at the Welcome Centre;
- receive rules and regulations for Ella Bay as well as an Ella Bay `help pack';
- be advised on how to move around Ella Bay;
- be provided with an access swipe card once registration is completed;
- proceed on into the Ella Bay itself once registration is completed; and
- leave the Ella Bay Development in accordance with exit procedures and return smart identification tag access cards.

Figure 2.2.18 Bike Hire Racking Arrangement

D. General staff arriving on their first day of work at the town centre or at the resorts will:

- arrive by car, or bus or bicycle;
- be directed to the Welcome Centre through appropriate signage at the entrance to the Development and all associated access ways;
- park or be dropped off at the Welcome Centre;
- register at the Welcome Centre providing key contact information and address showing suitable identity verification by way of a driving license or Medicare card etc;
- be cross referenced to the employer to check that person is authorised to commence employment;
- be inducted at the Welcome Centre
- be advised of the Ella Bay's standing regulations regarding health and safety, individual behaviour, dress code and customer service standard and sign for a copy of such regulations;
- receive rules and regulations for Ella Bay as well as an Ella Bay `help pack';
- be advised on how to move around Ella Bay;
- be provided with access swipe card once employment registration is completed;
- proceed on into Ella Bay once the employer has confirmed acceptance of responsibility for the new staff member; and
- leave the Ella Bay Development in accordance with exit procedures for staff and return smart identification tag access cards.

E. Potential or New Residents – first time of arrival to take up residency will:

- arrive by car, or bus;
- be directed to the Welcome Centre through appropriate signage at the entrance to the Development and on the way in;
- park or be dropped off at the Welcome Centre;
- be inducted at the Welcome Centre;
- receive rules and regulations and a `help pack';
- be advised on how to move around the Development;
- be provided with access swipe card once registration is completed;
- allowed to proceed on into Ella Bay; and
- leave the Ella Bay Development in accordance with exit procedures and return smart identification tag access cards.

F. Residents *in situ* after initial induction

- residents already living in the Development will not be required to visit the Welcome Centre as they will have been issued with access cards and automatic gate entry pin numbers (where use and appropriate). Residents' access cards will be re-issued on an annual basis; and
- residents will be part of a community based education program that takes place regularly over the course of each year to ensure that information on developments, changes and issues with regard to the living at Ella Bay are properly and effectively communicated.

G. Staff employed as part of the Construction Program

This induction process will be comprehensive and focused particularly on issues related to the construction program and the work place. A central objective of this induction process will be to instill the importance of construction work being carried out when the work activities meet ecologically sustainable development (ESD) principles.

Construction staff will be advised of the Ella Bay Contractor's Environmental Policy. This policy commits the Development to applying high standards of environmental performance and to the implementation of an environmental policy which is in accordance with the international standard, Environmental Management System AS/NZS ISO 14001.

New staff will be advised of the need to prevent pollution from works and associated activities and to comply with environmental laws and regulations. They will also be subject to risk assessment policies and to audit/inspection of their work routines and practices as part of a process of continual improvement.

Construction staff will be advised of their duty to notify of all incidents that breach the Ella Bay's Contractor's Environmental Policy.

As part of the Ella Bay induction process, construction staff will be made aware of their obligations to work within the terms of:

- Ella Bay's Environmental Management Plan
- The Ella Bay Contractor's Environmental Code
- Environment Protection (Impact of Proposals) Act
- The Environmental Protection Act
- The Endangered Species Protection Act
- The Australian Heritage Commission
- The National Environmental Protection Council Act
- The EPBC Act
- Corporations Law

Construction staff will be expected to work within the best practice guidelines set out in industry codes of practice, as well as comply with legislative requirements for their work and site specific standards. The areas of work include:

- existing vegetation protection;
- Cassowary, and endangered/vulnerable species;
- site fauna;
- air pollution;
- noise and vibration;
- solid waste treatment and disposal;
- pollution control of water, sewerage and waste;
- management of fuels, oils and greenhouse gas as toxic and potentially hazardous substances;
- nature conservation of land and marine environments;
- cultural heritage; and
- bio-diversity conservation.

Construction staff will be made aware of the Ella Bay specific Construction, Design and Building Codes. These will set out construction and design standards and recommended approaches and requirements with regard to, for example, low impact construction philosophies, management of waste and pollutants on site, care for the environment and how to deal with the discovery and protection of indigenous cultural heritage. The Cultural Heritage Management Plan (now agreed with the Mamu) details the employee's and contractors' responsibilities with regard to cultural heritage.

All of the procedures mentioned will be assessed on how they work in practice through a process of continuous improvement under an Ella Bay Environmental Management System (EMS). Adequate staffing of the Ella Bay Welcome Centre will be necessary to ensure that it will be capable of efficiently inducting visitors, employees and construction staff as they arrive.

2.2.6 Getting Around Ella Bay: Transport Considerations

A key initiative of the Ella Bay Development is to encourage the reduction (as much as possible) of transport use and energy. One approach is to use transport that has little or no carbon emission or to choose to walk or cycle in order to get around. People will be encouraged to share transport where appropriate as well as give up, or reduce, their reliance on the use of private high emission vehicles to get around Ella Bay.

Encouragement comes from fostering a values set focused on achieving 'a climate positive and low carbon emission way of doing things'. To help Ella Bay achieve this approach, carbon emission reduction figures could be published on an Ella Bay Community online portal and at live LCD panel displays located at, for example the Ella Bay Welcome Centre.

Figure 2.2.19 Bicycle

To provide more detail on how this approach could work in practical terms this section sets out various scenarios on how people would get around Ella Bay. Travel modes available to visitors, residents, guests, staff and commercial traffic will include:

- bicycling and walking;
- electric buggy;
- public shuttle bus;
- limousines to and from the Ella Bay Welcome Centre;
- taxi services;
- privately owned residents' vehicles; and
- trade and commercial vehicles.

Figure 2.2.20 Ella Bay Circulation Plan

The figure on the previous page shows the Ella Bay Circulation Plan. Highlighted in brown are 50 km roads; in red 40 km roads; and, in orange 20 km roads. Pedestrian, bicycle and buggy routes are shown as dotted grey lines. A dedicated bicycle and electric buggy route will run parallel with the main road that runs from the Welcome Centre past the resort centres to the North East corner of Ella Bay. Fauna crossing points are marked in green traffic speed limits and at these points will not exceed 20 km.

A. The day visitor to the resort and town centre precinct will:

- be issued with a smart identification tag for day visitors at the Welcome Centre;
- be able to hire an electric buggy or bicycle at the Welcome Centre on arrival or use the public bus shuttle services to and from the resorts, the town centre precinct and the Welcome Centre;
- park their car at the town centre precinct car park;
- the smart identification tag for day visitors provides access through control gates to the routes to and from the resorts and to the town centre precinct;
- access to the golf course to play golf will be subject to paying golf fees in advance either at the Welcome Centre or at the Golf Club;
- be able to park their buggy or leave their bicycle at various drop off points in the resort and town centre areas; and
- return their buggy or bicycle to the Welcome Centre at the end of their visit.

B. Day visitors, as guests of a residents, will:

- be issued with a smart identification tag that extends access to the resident's particular precinct; and
- follow all of the procedures for the day visitor to the resort and town centre precinct.

C. The family or person on holiday staying at the resorts will:

- be issued with passes for the family that last the duration of their stay at the resort centre
- drive their car to the resort and park
- be entitled to travel in the same manner as the day visitor to the resort and town centre precinct
- be given the option to be collected by resort operated limousines or taxi services

Figure 2.2.21 Example of Electric Buggies at Welcome Centre

D. General staff arriving on their first day of work at the town centre or at the resorts will:

- be verified that they are bona fide new staff under the induction for staff procedures outlined in Section 2.2.5(G);
- be issued with a staff pass lasts for a duration set and paid for by the employer. This could be for one day, one week, monthly or yearly; and
- be restricted to limited access covering the resorts, the town centre precinct and, where appropriate the golf club house.

E. Residents in situ after their initial induction will:

- be able to re-new smart identification tags as and when they require for themselves and/ or their family members. The renewal process will be able to be carried out accessing the Ella Bay online community portal;
- be authorised to travel without restriction throughout the resorts, the town centre and use all roads leading to residential precincts and other facilities including the golf club house;
- be able only to drive to and from their part of the Ella Bay Community to leave the Development but they will not be able to drive their car down to the resorts; they will need to take a buggy or bus or cycle or walk.

F. Staff employed as part of the Construction Program will:

- be verified that they are bona fide construction staff under the induction for staff procedures outlined in Section 2.2.5(G);

- be issued with a construction staff pass that lasts for a duration set and paid for by the construction employer. This could be for one day, one week, monthly or yearly; and
- be restricted to limited access covering only the relevant development construction site.

When bad weather affects Ella Bay to the extent that the use of an electric buggy or a bicycle would be uncomfortable or hazardous, then those people staying at the resorts or visiting either the town centre precinct or the golf course would be expected to use the public shuttle bus service.

A pricing policy will be developed to provide a tariff for the hire of buggies and bicycles and the use of the public shuttle bus services. It is envisaged that the fleet of buggies, bicycles and public buses will be hired through a service provider company.

Drop off and storage of buggies and bicycles will be available at locations throughout the resort areas, the town centre precinct and the Welcome Centre.

Solar powered re-charging facilities for electric buggies will be provided in the car parks throughout the resorts and the town centre precinct.

A number of bays in each car park will be given over to the exclusive use of low emission cars.

An Ella Bay car pool club will be encouraged to help residents get around the Ella Bay Development and to commute to for example, Innisfail or Cairns. The objective is to help residents reduce carbon emissions.

Limousines and taxis will be authorised on a controlled basis in terms of numbers and low emission engines will be encouraged.

2.2.7 Northern Resort Setback

The Northern Resort has been set back 210 metres from the high water astronomical tide mark (HAT), and 200 metres from the creek flowing west to east. For further detailed information on the Coastal Management Strategy, please refer to the WBM Coastal Management Report contained in Volume 4, Appendix A.2.8.

Figure 2.2.23 Original EIS Showing Location of the Northern Resort

Figure 2.2.24 Improved Master Plan Showing the Northern Resort with Setback

2.2.8 Ella Bay Golf Course Improvements

Purpose

The purpose of the Ella Bay Golf Course is to:

- provide an extensive bio-diverse, open space that can be enjoyed by all members of the community, as well as visitors to Ella Bay;
- enhance the range of activities for guests staying at the resorts;
- provide a championship standard facility that will generate revenues for the community, as well as for the resorts by way of additional visitors and publicity;
- establish a bio-diverse space that enables fauna and flora to co-exist successfully with the local population in a controlled and safe manner; and
- enhance the appeal of the Ella Bay resorts as major tourist attraction destinations

Figure 2.2.25 Electric Buggies For Use on Golf Course

The Ella Bay Master Plan (see page that follows) shows the fully integrated Ella Bay Golf Course with environmental corridors, paths and tracks, roads and the general layout of the resorts and residential lots.

Figure 2.2.26 Master Plan showing the Ella Bay Golf Course

Improvements and refinements to the golf course include re-siting three holes along the northern boundary of Ella Bay to provide an improved environmental buffer. The original layout of the course at the northern end of Ella Bay is shown below:

Figure 2.2.27 Original EIS Ella Bay Golf Course Northern Boundary Layout

Figure 2.2.28 Improved Ella Bay Golf Course Northern Boundary Layout

To help establish a bio-diverse space that enables fauna and flora to co-exist successfully with the local population it is envisaged that up to three holes will also be selected for experimental use of organic management techniques for the course.

The Ella Bay Golf Course will be designed to have 18 holes and will be of a championship standard. Golfers will be encouraged to use an electric buggy and children will not be allowed on the course unless accompanied by an adult. Part of the course will be entirely organically managed and three holes at the Northern end of the course that forms a buffer with the wetlands area, have been selected.

This development will emulate the success of similar approaches achieved by other organically managed courses (i.e. Kabi Golf Course, Noosa, Queensland). As the management of the golf course is under one responsible on-site authority it will be easier to ensure that the above benefits are achieved. More information is provided about organic golf course management practice in the Appendices.

Cassowary management on the golf course will be based on a strategy that avoids contact between Cassowaries and users of the golf course as much as possible. This will be achieved by restricting play to buggy only rounds of golf. All buggies will be fitted with Cassowary proximity alert alarms, and when triggered will broadcast information by a Non Intrusive Management System (NIMS). Each buggy will also have an audible alarm system that will effectively ward off a Cassowary should contact be made. Golf players will be able to participate in a trial of portable alarm systems that will be extended to include all pedestrians in the Development.

Research will be conducted into the effectiveness of NIMS (non-intrusive proximity alert and audible warning systems which, if successful could be used for other communities). The output of this and other types of research programs conducted at Ella Bay will have a positive ripple effect out to a wider community in Northern Queensland and beyond.

A strategy for the safe management of pesticides and fertilisers during the operational works phase of constructing the golf course will be developed. Slow release organic fertilisers will be used on greens to minimise and slow down the release of these organic compounds in heavy rainfall conditions. Impacts on waterways will be constantly monitored.

As part of the integrated community development approach, membership of the Ella Bay Golf Club will be extended to all owners in Ella Bay. A community sharing strategy for making wider use of the golf course area for non-players is important and will be actively encouraged and developed i.e. to allow access before and after normal playing hours. The Golf Club amenity will be part of the community title and protected by town planning regulations.

2.2.9 Improved Natural Environment

2.2.9.1 Protecting Endangered Species: Cassowary Management Strategy

Purpose

The purpose of the Cassowary Management Strategy is to:

- be a catalyst in saving the endangered Southern Cassowary from possible extinction;
- make Ella Bay a safe environment for the Cassowary and for people at all times; and
- help slow the rate of decline of the Cassowary and ultimately reverse it.

Figure 2.2.29 The Southern Cassowary

Identified Risk Issues

A risk assessment approach has been carried out to identify potential risk areas to the Cassowary within Ella Bay. For more information, please refer to the reports prepared by Les Moore in EIS Volume 8, Appendix A6.4, and in the EIS Supplementary Volume 2, Appendix A.2.4 Cassowary Population Viability Analysis.

The key risk areas identified include the impact of feral animals and pets (particularly dogs and feral pigs), road design, traffic movements, hand feeding, disease, the impact of storm disturbances and the movement and presence of people.

Management Solutions

A range of solutions is proposed as part of the Cassowary Management Strategy. All of these solutions are part of an integrated, holistic approach to the design of Ella Bay as a sustainable community. Individually, these solutions will not be sufficient and they should be seen as a package of measures. The proposed solutions include:

A. Fencing

- Removing existing cattle fences and other barriers to unimpeded movement of the Cassowary;
- establishing fauna friendly bridge crossings in several locations;
- building effective fences including appropriate `fence and funnel' approaches to guide and direct Cassowaries away from possible harm and from people;
- commissioning active research programs into the development of alarm systems and non-intrusive monitoring and surveillance techniques;
- trialing these systems to evaluate their effectiveness;
- locating food trees and other food plants for the Cassowary to draw them away from people;
- adopting a staging plan that takes full account of the Cassowary and its needs; and
- constructing fencing prior to construction during staging

B. Management

- Establishing a focal point for the management of all issues to do with the Cassowary at the Welcome Centre;
- using solutions to reduce negative anthropogenic impacts influencing the rate of Cassowary decline;

- reducing traffic movements within Ella Bay through the use of alternative means of transport;
- controlling speed at critical points within Ella Bay and adopting safe speed limits;
- avoiding actions that foster a reliance by the Cassowary for food or water from the Ella Bay community;
- developing strategies and plans that manage and mitigate impacts affecting the Cassowary on site;
  [This includes protocols that set out how to deal with localised storm disturbance that can have a profound and damaging impact on the Cassowary's habitat. Attention in those circumstances will be paid to monitoring feedstock and habitat cover for the Cassowary. It also includes protocols that establish clearly the manner in which any incidents to a Cassowary will be handled including on-site care and support for a sick or injured Cassowary]; and
- working at a regional level with other organisations and individuals focused on protecting the endangered Cassowary.

C. Education

- Raise the whole national and international awareness profile of the Cassowary as an endangered species;
- induct people at the Welcome Centre to explain rules, regulations and the importance of the Cassowary;
- excite visitors, tourists and residents into wanting to save the Cassowary from extinction and becoming involved and committed to this charter;
- adopt educational strategies to help people understand and appreciate the unique nature of the Cassowary as an endangered species;
- educate people to understand the habits of the Cassowary for example that they are active in the daytime and passive at night;
- make sure that people in the Ella Bay community do not feed, leave food or provide artificial water sources that attract Cassowaries;

D. Improving habitat

- Increasing the extent and quality of the Cassowary habitat at Ella Bay;
- enhancing connectivity between the Cassowary's natural eco-systems within Ella Bay; and

- achieving a high level of `fit' with local and regional conservation plans to restore the Cassowary's environment by planning more effective corridors to link habitat.

The following is a diagram that sets out the Ella Bay vegetation plan and fauna corridor analysis.

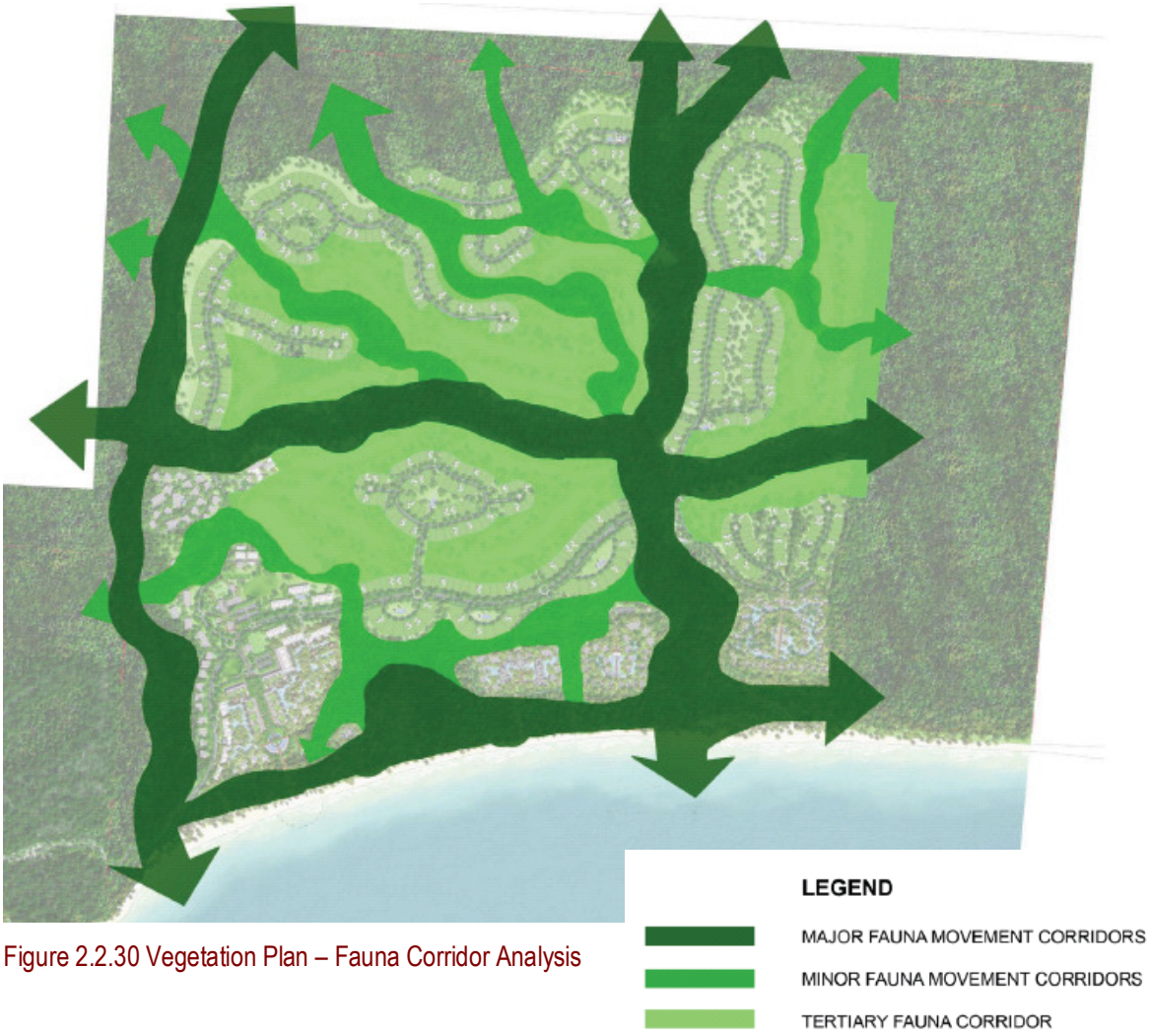

Figure 2.2.30 Vegetation Plan – Fauna Corridor Analysis

A strategic objective for Ella Bay Development will be to open up as much habitat as possible to fauna including the Cassowary. From the vegetation plan fauna corridor analysis diagram, it can be seen that a network of wildlife corridors will be created on a staged basis to improve the environment for fauna, including Cassowaries. Directional fencing will be installed to guide Cassowaries away from roads and people towards the wildlife corridor network. As a result, Cassowaries will be able to move through the majority of Ella Bay, with the exception of the residential precincts, the resorts and the town centre precinct.

An area of land between the town centre precinct and the beach zone will also be fenced off preventing Cassowaries from moving into that area. The habitat is of low value to the Cassowary (as it is mostly now grass).

A careful evaluation of where to place Cassowary food trees will be carried out. The objective will be to plant food trees away from areas where there is a higher risk of interaction between people and Cassowaries. Strategic planting plans of Cassowary food trees will be developed. The planting of Cassowary food trees within environmental corridors will be positioned to attract Cassowaries away from the possible presence of people on paths or walkways nearby.

Mitigation strategies have also been developed including the:

- management of dogs by their owners at Ella Bay;
- management of traffic throughout Ella Bay (including traffic calming measures and education of drivers);
- reduction on the reliance on conventional vehicles;
- provision of education programs on Cassowaries in and around Ella Bay; and
- removal of existing cattle fences that impede access to vegetated corridors.

2.2.9.2 Road Design, Traffic Management and The Cassowary

Purpose

The purpose of the Ella Bay road design and traffic management approach is to:

- slow vehicles down:
- dissuade or stop Cassowaries from crossing roads in general;
- provide fauna friendly bridge crossing points to separate people, cars and Cassowaries; and
- provide ways of fencing and funneling Cassowaries to identified road crossing points where the risk is low or eliminated.

Risk Issues

The principal road risk concerns the Cassowary being hit by moving traffic within the Ella Bay Development.

Solutions

There are a range of solutions proposed including:

- a better understanding of Cassowaries through surveys carried out to identify where, and when Cassowaries cross roads;
- the development of crossing areas assessed as being of either lower risk or higher risk;
- implementing appropriate strategies for each situation;
- at lower risk crossings using speed control measures to slow traffic; and
- at higher risk crossings provide additional measures to slow traffic.

An assessment of the Cassowary habitat at Ella Bay is shown on the figure that follows on the page below.

Figure 2.2.31 Cassowary Fencing Plan

A. Internal Road Design Solutions

The road design, in conjunction with the fencing and transport strategies for Ella Bay, will reduce or eliminate the risk of road injury to Cassowaries. The traffic strategy outlined in Section 2.2.6, *Getting Around Ella Bay: Transport Considerations* demonstrates the extent to which vehicle movement in the Development will be reduced.

Within Ella Bay people will be encouraged to use alternative low impact forms of transport. There will be widespread use of electric buggies, bicycles and public shuttle buses. Conventional vehicle movements will be reduced and, as a result, further lower the possibility of a Cassowary being injured or otherwise affected by moving traffic.

A possible option will be to build fauna friendly bridge crossings at strategic locations around Ella Bay. The diagram that follows shows the concept.

Figure 2.2.32 Concept Fauna Friendly Bridge Crossing

B. Outside Ella Bay Solutions

The road to Flying Fish Point from Little Cove has been assessed in terms of the type of risks it poses to the Cassowary. The principle objective is to slow traffic on the access road at Cassowary crossing points, and establish fences along the side of the road elsewhere. The fencing will protect Cassowaries in adjacent or nearby habitat from traffic flows. At the crossing points, traffic calming measures will be put in place.

Traffic calming measures will include:

- designing bends in the road at appropriate places to help slow traffic flows;
- using humps and artificially rutted sections of road to make it uncomfortable for a car to exceed 20 kilometres per hour as it approaches a crossing section; and
- educating drivers of the need to slow down and drive responsibly.

There are four access sections to consider:

- Flying Fish Point Bypass
- Flying Fish Point to Heath Point
- Heath Point to Little Cove

- Little Cove and the entrance of Ella Bay

These are discussed in detail as follows.

- *Flying Fish Point Bypass*

  This area of road is considered to be a lower risk or no risk area. At the tunnel, a fence and funnel strategy will direct Cassowaries away from the road and tunnel entrance. The Cassowaries will be able to move through this area unhindered, and as a result, there is no segregation of habitat proposed.

- *Flying Fish Point to Heath Point*

  This area of road is considered to be higher risk. Two crossing points will be prepared for Cassowaries. Flashing warning lights and speeding alert signals, as well as traffic slowing measures will be implemented. Traffic slowing measures will include speed restriction road humps and rutted road approaches to either side of the hump.
  Loss of protected habitat arising from the road construction will be offset

- *Heath Point to Little Cove*

  This area of road is considered to be lower risk. The road has very steep sides to it and has, in places, lots of bends and turns, which forces vehicles to slow down naturally, thereby lowering the possibility of collision. It is difficult for Cassowaries to access the road here due to the steepness of the sides. No fencing will be constructed as a result.

- *Little Cove and the entrance to Ella Bay*

  This area of road is considered to be higher risk. One crossing point will be constructed in this area to manage Cassowary movement.

C. Cassowaries and the Golf Course

Cassowary management on the golf course will be based on a strategy that avoids (as much as possible) contact between Cassowaries and golf course users. This will be achieved by restricting play to buggy only rounds of golf. All buggies will be fitted with Cassowary proximity alert alarms, and these will be triggered from information broadcast by the Non Intrusive Management System (NIMS). Each buggy will also have an audible alarm system that will effectively ward off a Cassowary should contact be made. Golf players will be able to participate in a trial of portable alarm systems that will be extended to include all pedestrians in the Development.

D. Research Projects for Non-Intrusive Tracking and Monitoring

Research will be conducted into the effectiveness of the proposed proximity alert and audible warning systems which, if successful could be used for other communities throughout Queensland. The output of this and other types of research programs conducted at Ella Bay will have a positive ripple effect to a wider community in Northern Queensland and beyond.

E. Experimental Trial and Research Project

Experimental trials will be held to evaluate 24 hour monitoring and management of the Cassowary. This will be done using a specially developed non-intrusive management scheme (NIMS). This system alerts the Welcome Centre Operations Management when and where a Cassowary has entered a controlled access point, which will act as a `virtual gateway' for the Cassowary. These access points will be along the environmental corridors running north to south and east to west across the Ella Bay Development.

These controlled access points are sited at strategic locations along the Development boundary fence. It is envisaged that the NIMS system will also predict where a Cassowary is most likely to travel to within the Development itself.

This trial will be conducted as part of a research program. Its successful adoption will enable such a system to be introduced to other parts of Queensland to help manage and protect the Cassowary population.

F. Positive Ripple Effect

The work to be carried out at Ella Bay has the potential to have a positive ripple effect throughout the region. Ella Bay could become a live test case to increase the depth of research and understanding into the Cassowary. Research and associated trial programs carried out at Ella Bay on how to design, build and manage an effective shared environment for the Cassowary and for people will be carried out. The outcomes of this research and trials will be shared. Potentially, the outcomes could be applicable to other similar size existing developments and townships, as well as to new developments in Northern Queensland that could well be sited in Cassowary habitats.

The emphasis on connecting Cassowary corridors from one habitat to the other forms part of the Ella Bay Masterplan. It is also intended that these corridors could be integrated into a wider local as well as regional Cassowary management plan. Such plans could be developed by regional conservation organizations (such as environmental consultant's Terrain) to help create extensive linked habitat corridors for the Cassowary.

G. Management Reviews and Assessments

The Cassowary Management Strategy will be reviewed regularly to determine its effectiveness and improvements will be made on a continual assessment basis. The Cassowary Management Strategy will be appraised by the Proponent during staging, the Body Corporate and the various stakeholders in the community including:

- The National Park Rangers;
- community groups at Ella Bay; and
- specialist advisors.

2.2.9.3 Fencing Strategy

Purpose

The Ella Bay Fencing Strategy aims to:

- establish an effective solution to ensure the safe co-existence of the Ella Bay community with the local fauna and, in particular the Cassowary;
- provide reasonable levels of personal security and privacy for all Ella Bay' residences;
- use fencing effectively to separate people from fauna (the term gateway is used to describe a controlled access point); and
- direct fauna away from residential and other centres of human activity using fencing and funneling strategies

Identified Risk Issues

As part of the Supplementary EIS process, a number of risk issues have been identified, as well as management solutions. A strategic objective of the Ella Bay Development is to open up as much habitat as possible to fauna, including the Cassowary. This strategy creates potential risk issues that need to be effectively assessed, managed and monitored. These include:

- the consequences of people's activities on the local fauna; and
- areas of interaction between people and traffic.

The proposed Fencing Strategy accepts that the consequences of people's activities also need to be managed to balance the interests of fauna as well as people sharing the environment at Ella Bay. Such risk activities include:

- motor vehicle movements;
- pedestrian, electric buggy and bicycle traffic;
- noise; and
- fauna movement.

The following is a diagram that shows the proposed fencing plan for the Ella Bay Development. An A3 copy of this has been provided in Volume 3 as part of the Drawing Folder.

Figure 2.2.33 Fencing Plan Showing Extent of Cassowary Range

Management Solutions

A. Clear Separation

A strategy of clear separation of people and fauna will be arranged in areas assessed as containing higher risk activity.

B. Fencing of Areas of Frequent Interactions

A network of wildlife corridors will be created at the outset of the Development to begin the process of improving the environment for fauna. Directional fencing will be installed to guide fauna away from roads and people and towards the wildlife corridor network.

The Fencing Strategy also accepts the need to fence areas where frequent interactions between fauna (including the Cassowary) and people would otherwise occur. The higher risk areas have been identified the Ella Bay Village Precinct, the Ella Bay Welcome Centre area, resort areas, road crossings, and roads or paths in general.

Improving the currently degraded land and using fence and funnel strategies to direct fauna away from the majority of people will ultimately enhance the extent to which this objective will be achieved.

C. Fencing to Facilitate Movement

Seven crossing points for fauna have been added as part of the improved Ella Bay Fencing Strategy. At these crossing points, traffic calming measures will apply with traffic speed limits set at 20 kilometres per hour in these areas.

D. Fencing to Restrict Movement

In certain areas, the Cassowary must not be allowed through a fenced area but other fauna should be able to move freely through, under or over it. Here, specially designed fence features will be created that enable fauna, other than Cassowaries, into and through these designated areas. These areas are principally around the town centre precinct area and along the beachfront and have been identified on the Fencing Plan.

An example of fencing that will help separate fauna from people without unduly restricting movements is shown on the following page. This is a ‘fauna friendly’ bridge crossing.

Figure 2.2.34(a) Fauna Friendly Bridge Crossing with Fencing

Figure 2.2.34(b) Fauna Friendly Bridge Crossing Viewed From Above

E. Fencing for Residential Precincts and Access

All the residential precincts will be fenced, as well as the resort areas, Ella Bay Village Precinct and Ella Bay Welcome Centre areas. This will provide security, as well as a degree of privacy in those areas. Automatic gateways to fenced areas containing residential dwellings will have access controls fitted. The design of access controls for residents and their visitors will be assessed from an ease of use and reliability perspective. Electronic toll way type passes may be a solution. Intercom communication linking the gateways and the Welcome Centre may be installed in certain locations, where appropriate.

F. Fencing Outside of Ella Bay

On the road from Flying Fish Point to Ella Bay entrance, similar fence and funnel strategies will be constructed. Details of fencing are provided in the Access Road Strategy in the appendices. Please refer to appendix A.2.6 Access Road Strategy (Environment North). At the designated crossing points for Cassowaries along this road, flashing illuminated alert signs will show a driver how fast he or she is going. These arrangements will have an impact on slowing traffic to the point that the Cassowary will be able to cross the road at minimum risk levels.

G. Experimental Trial and Research Project

Experimental trials will be held to evaluate 24 hour monitoring and management of the Cassowary. This will be done using a specially developed non-intrusive management scheme (NIMS). This system alerts the Welcome Centre Operations Management when and where a Cassowary has entered a controlled access point will act as a `virtual gateway' for the Cassowary. These access points will be along the environmental corridors running north to south and east to west across the Ella Bay Development.

These controlled access points will be sited at strategic locations along the Development boundary fence. It is envisaged that the NIMS system will also predict where a Cassowary is most likely to travel to within the Development itself. Barriers to residential precincts will be left open by default.

This trial will be conducted as part of a research program. Its successful adoption will enable such a system to be introduced to other parts of Queensland to help manage and protect the Cassowary population.

A proposed research project is detailed in the draft *Regulated Offset and Additional Environmental Investments Report* (currently under negotiation with government agencies). Funds for research will be available from the proposed Ella Bay Trust Fund. The research would be expected to consider:

- the type of fence;
- the height of fence;
- the optimum location of fencing;

- the use of logs to provide climb over fences;
- artificial ramps;
- the creation of smaller gaps between fence palings allowing certain fauna through but not Cassowaries;
- the use of climbing frames and or protected tunnels or overhead walkways;
- strategic planting of trees to form umbrella linkages over fences;
- the integration of fence design with non-intrusive management systems and alert systems; and
- assessments of the effectiveness of fence and funnel strategies over time.

H. Education and Information

All visitors will be informed about arrangements in place with regard to alert signs and audible alarms if a Cassowary is moving through, for example, a part of the golf course or one of the greenways. Golf buggies will be equipped with audible alarm systems to be used to warn off Cassowaries once they have been sighted.

I. Continual Assessment and Improvement

The Fencing Strategy provides for regular appraisal and review of its success by specialist fauna and flora Cassowary consultants. On-going responsibility for fencing maintenance and repairs will ultimately be the responsibility of the Ella Bay Body Corporate.

2.2.9.4 Pet Management Strategy

The vision of Ella Bay Developments is to create a vibrant, sustainable and harmonious township, in which biodiversity and the natural environment is a significant priority. In order to achieve this, a rigorous pet control program is to be implemented and monitored.

Objectives

EBD has provided a Dog and Cat Management Strategy with the following objectives to:

- effectively manage domestic pet ownership and regulations so that the presence of domestic animals will result in minimal to no environmental impact;
- ensure that the keeping of domestic animals does not have a negative impact on native fauna species populations, particularly the southern Cassowary population; and
- ensure accepted standards of animal welfare are maintained.

A. Cat ownership

Due to the difficulties in controlling cats, and the threat that they pose to the natural environment and native animal species, residents of the Ella Bay Township will not be entitled to own cats.

B. Dog ownership

The following dog ownership policies will apply:

- a permit must be obtained to own a dog in the Ella Bay Township;
- dogs will not be allowed in units within the proposed development;
- dogs will not be allowed in the proposed Ella Bay resort areas; and
- it is proposed that the Ella Bay Development will feature 200 dog sites within the community incorporated into a number of dog precincts, each with extra security fencing. There is to be a maximum of one dog registered to each site.

C. Dogs on residential premises

The following policies regarding dogs within their owners' properties will apply:

- Dogs must be confined to the premises of the residential property of their owner by an electronic fence or a monitoring collar. An electronic fence or monitoring collar is defined as a fence or a collar that monitors the movement of a dog by notifying the owner, and site security and/or the Welcome Centre staff when the animal wearing the collar is beyond the boundary of the owner's

property. The collar may be controlled manually by a person or automatically in a predetermined manner. This technology is available (for further information see appendices in Volume 2).

D. Dogs outside residential premises

Dog owners need to exercise their dogs, but this needs to be balanced against environmental considerations and the rights and safety of others. Different dog access designations are a reality of the modern open space-planning environment, given the range of needs and priorities that need to be accommodated. The challenge is to provide adequate free running opportunities for owners and dogs, while ensuring that native species and the environment are suitable protected.

There are four options to consider in relation to dogs in public places.

1 Dog off lead in all public places.

2 Dog off lead in all public places with designated areas where dogs are excluded and/or required to be on a lead.

3 Dog on lead in all public places.

4 Dog on lead in all public places with designated areas where dogs are excluded and/or allowed off lead.

The RSPCA and the Lost Dogs Home both support Option 4, which has been adopted by Ella Bay Developments.

The following policies regarding dogs outside their owners' properties will apply:

- Dogs must be under the effective control of a person by means of a chain, cord or leash no longer than 3 metres:
  - in public open space except designated off leash area;
  - within five metres of a shared use path;
  - in all boardwalks, footpaths, streets, roads and public car parks;
  - at the beach, during the designated hours.
- Dogs are not permitted whether restrained or otherwise:
  - within five metres of any children's playground or public barbecue;
  - in environmentally sensitive areas as designated by signs; and
  - at the beach, during designated hours.

- Dogs are permitted in designated off-leash areas provided they are under effective control of their owner. A dog is deemed to be under effective control of its owner if it will return to its owner upon command and if the owner retains a clear and unobstructed view of the dog.
- Designated dog-off-leash areas will be provided in the form of an off-leash park. These off-leash areas will be fenced in order to avoid any interaction with native wildlife, including the southern Cassowary. It is possible that electronic fencing may also be provided around the off-leash precincts.
- Dog access to the beach areas will be tightly restricted, to between 6-8am and 8-10pm, with total exclusion from the beach during peak periods or during periods of animal nesting activity (yet to be determined).
- The removal of dog faeces is to be the responsibility of dog owner. Disposal units providing environmentally friendly biodegradable bags will be provided in strategic locations throughout the proposed development including in the off-leash areas.

E. Dog permit requirements

Residents of the Ella Bay Township will require a permit to own a dog within the proposed Ella Bay Township. In order to obtain a permit, a number of conditions must be met:

- all dogs must be registered and permanently identified with a microchip;
- all dogs must be de-sexed;
- all dogs must have an obedience certificate
- the certificate must be issued by a Government approved organization;
- there will be a restricted dog species list which will prohibit the ownership of known aggressive, anti social or noisy breeds of dog;
- evidence must be provided to ensure that all dogs have been vaccinated and are in good health; and
- all dogs must have accepted standard tick collars.

F. Infringements

Any failure to comply with the dog management policies outlined above, detected by employees, contractors, guests or residents of the Ella Bay community, will be reported immediately to site security and/or the Welcome Centre staff. Discretions will also be reported via the incident reporting system, which will investigate the incident and suggest infringement penalties where appropriate.

The following enforcement measures will be undertaken:

- heavy consequences, including fines and impoundment, will be incurred for dogs off-leash in non-designated off-leash areas. The detail of these penalties are to be arranged with the Johnstone Shire Council;
- fines, to be arranged with the Johnstone Shire Council, will be incurred for failing to correctly dispose of dog faeces; and
- penalties will also be incurred for failing to comply with each of the policies listed above. These are to be determined in cooperation with the Johnstone Shire Council.

This strategy will form part of the Ella Bay Body Corporate rules and regulations.

Ella Bay Integrated Resort Proposal

Supplementary Environmental Impact Statement

Key Issues: Refined and Improved

2.3 Living at Ella Bay

2.3 Living at Ella Bay

2.3.1 Community Development

Purpose

The purpose of the Ella Bay Community Development Strategy is to:

- develop successful and sustainable communities that are vibrant, cohesive, healthy, and happy places to be;
- promote active participation and engagement of all residents;
- share rather than replicate resources achieving savings and greater efficiencies; and
- design residential homes and encourage lifestyles that achieve significantly lower carbon emission impacts.

Figure 2.3.1 Community Development In Action

The Ella Bay Master Plan includes a community centre in each residential precinct.

The benefits of these measures include reductions in energy demands, supplies of water and materials, etc.

To foster community development at Ella Bay a number of key principles will be applied.

Key principles will include:

- consultation and engagement between individuals and communities across Ella Bay;
- use of integrated transport strategies that make extensive use of electric buggies and public shuttle buses;
- design and layout of communities that promote interaction and social activities for children, young adults and adults of all ages;
- the establishment of local and convenient communal facilities; and
- insistence on the building of safe, accessible housing with high levels of indoor environment quality.

A number of benefits will arise for residents including:

- more comfortable and accessible buildings and communal facilities;
- reduced costs of living in terms of energy, transport and water;
- a strong sense of community
- frequent opportunities for social interaction
- healthier and happier living; and
- enhanced property values and marketability.

Communal facilities will include swimming pools, barbecue facilities, playgrounds, tennis courts and club house/meeting points for each residential precinct. Communal vegetable gardens will also be provided for each precinct.

The promotion of active and supportive neighbourhood communities is an important objective for Ella Bay community development. Design and Living Principles will reflect good environmentally sustainable design principles to help foster a sense of community development by encouraging the minimal use of lot boundary fencing, arranging living areas to front onto communal walkways and gardens wherever possible.

Community design will also encourage a safe environment, help to reduce crime and encourage positive interactions between people, visitors and guests at Ella Bay. This will be achieved in the Ella Bay Master Plan and Ella Bay Community Structure arrangements by:

- designing house lot designs that ensure houses have views to open public spaces other than roads;

- providing centralised facilities at the village precinct which are accessible and convenient to each residential precinct;
- adopting a sophisticated broadband and wireless communications network for voice, data and video to all Ella Bay residences which are connected to each other, to the resorts, the facilities at the Village Precinct and the Ella Bay Welcome Centre, as well as, to the wider world;
- establishing and supporting community structures at the residential precinct level such as body corporate entities to manage meetings, keep records and enable community based decision-making;
- establishing effective neighbourhood watch schemes and community education schemes regarding health and safety, medical support arrangements and emergency procedures in the event of accidents, fire, storms or floods;
- fostering a sense of Ella Bay being a special place with unique environmental considerations which will be achieved by community based education schemes. This may be achieved through, for example, planned walks, bird and other fauna watching, involvement with local cultural initiatives;
- adopting building design principles that stop the erection of high fences at the front of properties;
- establishing Ella Bay bulk purchase discount schemes for building materials, hardware, software and other supplies used on a regular basis by the Community; and
- adopting building design principles that require the provision of easy access to homes and buildings for aged and disabled people.

2.3.2 Body Corporate

Purpose

The purpose of an Ella Bay Body Corporate will be to:

- administer common property and body corporate assets for the benefit of the owners;
- manage environmental compliance legislation;
- deal with ongoing development of conservation and protection policies;
- control, manage and administer the use and enjoyment of land and lots within the residential zones, the communal areas and the environmental zones; and
- achieve a permanent approach to managing often complex and inter-related problems.

Introduction

Body corporate entities are established, and proven forms of administration and governance. The Body corporate entities are regulated under Queensland State and Federal statutes. Adopting a body corporate solution for the management of Ella Bay will achieve a permanent approach to managing often complex and inter-related problems. Managing environmental compliance, the ongoing development of conservation and protection policies, and the range of issues facing such a township community and resort will be the prime responsibility of the Body Corporate at Ella Bay.

The alternative approach would be an elected town council solution that would raise several issues concerning its establishment and integration with existing councils in the area. Further, multiple ownership does not in and of itself prevent effective management of complex and inter-related problems, nor does it mean a reduction in accountability or responsibility, providing these are properly and comprehensively defined. These will be clearly defined within a body corporate entity. Large, master planned communities are now more common in Australia, and they generally adopt this strategy, for example, this is the approach used at the EcoVillage at Currumbin Valley, SE Queensland.

A transitional arrangement during staging and operational works will be put in place between the Developer and the Ella Bay Body Corporate. As residential precincts are created, one option will be to establish subsidiary body corporate entities for each precinct that would take direct responsibility for its own area of concern. Body corporate entities for the resort areas and the village precinct will also be created. Representative members will be elected to also sit on the Principle Body Corporate. Professionally accredited service companies are widely available to support the day-to-day management of body corporate entities.

Thereafter, it is likely that the principal Ella Bay Body Corporate will take overall responsibility for further development of conservation and protection policies. These policies will be based upon the various building and design principles established to regulate such matters. The range and scope of several of such policies are set out in this Report.

Establishing an appropriate Body Corporate structure for Ella Bay would be a complex undertaking and a detailed analysis of the best options will be carried out in the operational stage. The analysis that follows will form the basis for consultation with local stakeholders and interested parties.

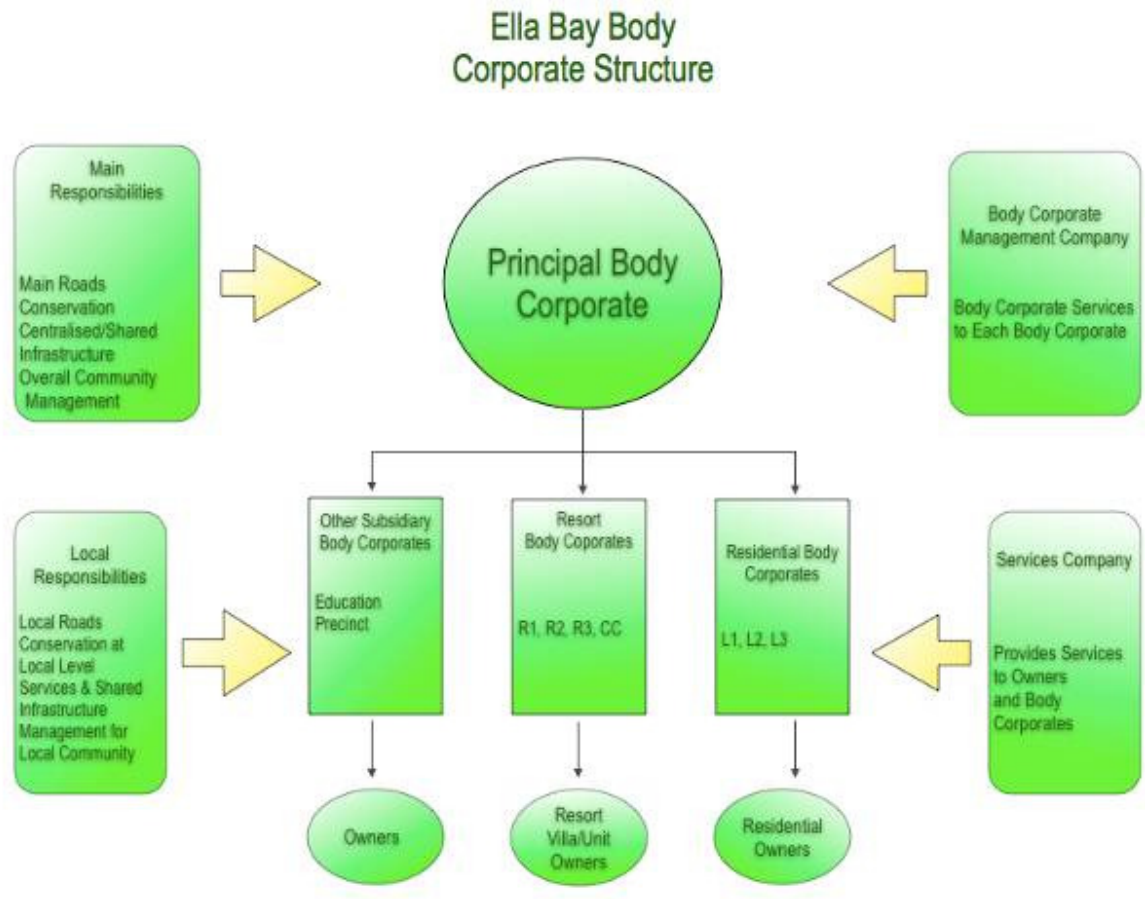

Figure 2.3.2 Possible Structure for Ella Bay Body Corporate

It is envisaged that the Ella Bay Body Corporate will have a wide range of possible powers including:

A. The power to make by-laws

A Body Corporate can from time to time make by-laws enforcing for example the quality of design and development within Ella Bay residential zones. Design and development will be based on the Design and Living Principles. (2) Development control by-laws will regulate the size, shape, height, colour, texture and overall placement of buildings or other structures within the residential zones.

From time to time, a Body Corporate would be able to make by-laws for the control, management, administration, use or enjoyment of land and lots within the residential zones, the communal areas and the environmental zones. These powers are exercised by special resolution.

Body Corporate Law is specifically governed by Queensland and Federal statutes:

- Body Corporate and Community Management Act 1997
- Associations Incorporation Act 1981
- Corporations Act 2001
- Body Corporate Legislation

A body corporate is a separate legal entity, comprised of all Ella Bay owners within the Ella Bay Development. A body corporate would be governed by specific legislation and by its own by-laws. The Corporations Law does not apply to a body corporate. A body corporate is not like a commercial company; it cannot conduct business, such as a letting agency, tour operation or retail outlet.

B. Common property

The common property for the Ella Bay Body Corporate will be owned by all the owners of lots included in the scheme as tenants in common. The share of ownership will be proportionate to the interest lot entitlements. Common property includes: land within the Ella Bay Development not forming part of a residential lot; utility infrastructure; and Ella Bay Body Corporate assets.

The body corporate will administer the common property and body corporate assets for the benefit of the owners of the lots included.

The maintenance and upkeep of common property will be contracted out to a property services provider to supply caretaking, building management and maintenance services.

C. Community Management Statement

Ella Bay Body Corporate will operate under a Community Management Statement. This will be specific to Ella Bay and will be recorded in the Titles Office to the Department of Natural Resources and Mines.

Each Community Management Statement (CMS) will comprise five schedules, each one holding relevant information about the body corporate. For example:

- **Schedule A**

  (a) A contribution schedule will determine the amount of levies, and the voting power of lot owners.

  (b) An interest schedule will determine the amount of rates/taxes, insurance premiums, and the share of ownership of common property by each lot owner at Ella Bay.

- **Schedule B**

  This schedule will detail arrangements to be set in place for the handover of Ella Bay to the Body Corporate as progressive development through the staging phases are completed.

- **Schedule C**

  This schedule will contain Ella Bay's Body Corporate By-laws. The by-laws will govern the Ella Bay Body Corporate and will be binding on all members and occupiers of the residential lots and other facilities. The By-laws will specify such things as:

  - permitted use of residential lots and facilities;
  - behaviour of owners and their visitors on common property;
  - keeping of animals including dogs and cats; the appearance of residential lots and other facilities; damage to common property;
  - repairs and alterations to a lot and to common property; and
  - the recovery of monies, amongst other things.

- **Schedule D**

  Schedule D will provide for the Ella Bay Design and Living Principles that will form a covenant on residential lots and facilities within the Ella Bay Body Corporate.

- **Schedule E**

  Schedule E will set out details of any exclusive use provisions granted to, for example residential lot owners.

D. Body Corporate Levies

Body corporate levies will be issued by the Ella Bay Body Corporate to pay for such items as:

- building manager's salary;
- service contracts to providers of, for example, maintenance, security and facilities;
- body corporate management and administration fees;

- payment of insurance and electricity;
- other service contractors; and
- the ongoing maintenance and upkeep of the common property.

The levies will be divided into two (2) separate funds:

(i) Administrative Fund

The administrative fund will be for regular recurring expenditure and includes payments to service contractors, ongoing maintenance and repairs and the upkeep of common property.

(ii) Sinking Fund

The sinking fund will be a separate fund where money will be put aside for future non-recurring maintenance (i.e. painting of exterior surfaces) and the purchase of new body corporate assets.

E. General Meetings

A general meeting would be of all members of the body corporate. At a general meeting, resolutions will be passed among other things:

- set budgets and levies;
- confirm the Ella Bay Body Corporate Annual Accounts;
- determine if an audit would be required; and
- resolve any other issue that requires a general meeting resolution.

The last item of the agenda at every annual general meeting will be the election of the committee.

Body Corporate legislation prescribes the format of general meetings; the types of resolutions required; and who will be eligible to vote.

F. Committee Meetings

Committee meetings are meetings of the committee members, and are held at regular intervals throughout the year. The committee will be comprised of the elected representatives of the owners and operates in a similar way to a board of directors to a company. The committee will be made up of the following members:

(i) chairperson;

(ii) secretary;

(iii) treasurer; and

(iv) ordinary members of the body corporate committee.

G. Body Corporate Manager and Support Functions

A body corporate manager will be appointed to support Ella Bay Body Corporate. A body corporate manager will be a person or corporation appointed under the relevant body corporate Act, with the power to perform certain duties and functions on behalf of the Ella Bay Body Corporate, and the committee. These duties and functions will be delegated to it in an agreement that will be available for inspection.

The primary responsibilities of a body corporate manager will be duties of the secretary and treasurer.

H. Access to Body Corporate Information

Residents and other members of the Ella Bay Body Corporate will be provided information on a wide range of issues dealt with by the Ella Bay Body Corporate including a contract register, body corporate register, and permanent file records including amongst other records the Ella Bay:

- community management statement;
- survey Plans;
- by-laws;
- exclusive use areas;
- leases; and
- minutes of general and committee meetings, policies and owner information reports.

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Supplementary Environmental Impact Statement

Key Issues: Refined and Improved

2.4 Town Planning

2.4 Town Planning

Purpose

The purpose of Town Planning is to:

- establish a Local Area Structure Plan (LASP) that is based upon the Ella Bay Master Plan and the Ella Bay Design and Living Principles;
- provide within this Plan a framework and mechanism to be put in place;
- use the LASP to obtain a Preliminary Approval for the Ella Bay Proposal;
- provide a high level of certainty for both the Proponent, and relevant Government Authorities
- provide a level of flexibility in the further development and refinement of the LASP; and
- allow for adaptability not only to address market forces but to embrace new technologies in relation to the provision of infrastructure.

The Local Area Structure Plan (LASP)

A possible outline for the LASP has been prepared by Consultant's Innovative Planning Solutions that is contained in the appendices (Appendix A.2.12 Local Area Plan (Innovative Planning Solutions).

The LASP will show, amongst other things, the:

- extent of land that will be dedicated to:
  - National Park and Coastal Reserve;
  - conservation covenants;
  - buffers set out between developable land; and
  - environmental conservation corridors;
- extent of developable land;
- layout for land use and its proposed distribution;
- layout and major elements of the road network;
- layout and major elements of the pedestrian/cycle networks;
- major elements of the open space network; and
- proposed location and extent of area set aside for:
  - on-site sewerage treatment; and

- storm water Quality Management measures.

The LASP is not cadastrally based. It is intended that development at Ella Bay will be in accordance with the LASP and the LASP will include the Design and Living Principles. In this regard, the LASP identifies key elements of the Ella Bay Development and determines its scope, size and impact.

The various elements of the LASP set out above will be incorporated and taken into account of for all Ella Bay development proposals.

The Precinct Plan

The Ella Bay Village, Residential and Resort Precinct Plans (which are shown in the Ella Bay Master Plan in Figure 2.2.1 – Improved Ella Bay Master Plan) divides the Ella Bay site into a number of precincts intended for urban development, and other precincts which include a golf course, conservation areas, and other elements of an open space network.

For each of the Precincts, the Preliminary Approval Document:

- categorises precincts in relation to their principle functional characteristics (precinct type);
- broadly defines their function and role in this context;
- provides individual statements of desired character for individual precincts.
- individual statements of desired character include specific statements of intent and nomination of development controls; and
- establishes a supplementary assessment framework of tables for different forms of development.

2.5 Benchmarks

Purpose

Benchmarks and environmental standards are used for a number of reasons. They include:

- setting, monitoring and measuring standards of performance. These measures can be broadly separated into benchmarks that assess individual buildings or community developments;
- guiding prospective owners, developer partners, professional advisors, builders and other trades; and
- providing indicators whereby progress can be measured, monitored and assessed over time.

Introduction

This section discusses the need for benchmarks and environmental standards for the built environment. It outlines selected examples from a wide range of benchmarks and environmental standards that will be considered for use at Ella Bay.

Use of benchmarks

Benchmarks and standards exist to help guide developers, designers and builders as well as inform current owners and prospective owners. There is an increasing acceptance of the use of sophisticated software applications for modelling and monitoring the built environment and the natural environment. Governments, professional organisations, trades and owners/investors make use of these applications to help judge efficiency in design and, more recently, the degree of sustainability in developments and individual projects. Benchmarking standards have become more important as governments mandate higher levels of efficiency and sustainability. Increasingly, there are a growing number of benchmarking standards that have been developed to facilitate international comparisons. For example, EarthCheck is an emerging international tool set that under pins the Green Globe benchmarking process discussed below.

Rating tools are used as part of the benchmarking process. Rating tools fall into two broad categories, although some combine both approaches:

- predictive rating tools to assess possible design outcomes for house energy, thermal comfort etc; and
- tools that measure actual performance achieved for buildings or appliances.

An example of the importance of the role benchmarking and standards at the global level is the International Standard's Organisation (ISO) policy known as `ISO 14001'. ISO 14001 is an internationally accepted specification for an environmental management system (EMS). It specifies requirements for establishing an

environmental policy, determining environmental aspects and impacts of products, activities and services, planning environmental objectives and measurable targets, implementation and operation of programs to meet objectives and targets, checking and corrective action, and management review.

Selection

Benchmarks will be chosen according to the following criteria. The standards must be:

- helpful in guiding the Proponent, prospective new owners, developer partners, professional advisors, builders and other trade specialists to achieve compliance with the Ella Bay Design and Living Principles;
- professionally endorsed as credible and relevant benchmarks and standards that add value and best practice procedures to Ella Bay projects; and
- are eco-friendly, cost effective and efficient to apply and use.

There are a number of recognised as well as emerging benchmarks and standards at state, federal and international levels. Examples of current benchmarks that will be considered for Ella Bay will are outlined below. This list is not exhaustive nor does it indicate which benchmarks and standards will be adopted.

- *NatHERS - Nationwide House Energy Rating Scheme*

  NatHERS is used in residential design and allows a design proposal to be assessed using computer modelling programmes to improve the quality of design and achieve building approvals. Dwellings are assessed as to the potential thermal comfort of Australian homes on a scale of zero to 10 stars. The Ella Bay Design and Living Principles will establish the rating required for approval at Ella Bay. Dwellings would be expected to achieve a minimum of a five star rating. When the NatHERS Scheme began, 99 per cent of Australian houses fell below the 5 star standard.

  All states in Australia require new homes to meet minimum thermal performance standards. Ella Bay's residential dwellings must be designed to remain at a comfortable temperature without the need for excessive heating or cooling. These requirements will be designed to reduce the amount of fossil fuels burned to produce energy for homes, thereby reducing Australia's greenhouse gas emissions.

  The overall regulation requiring Building Thermal Performance Ratings is the Building Code of Australia (BCA), applicable in all states except NSW. Under the BCA, all dwellings must achieve a 4-5 star thermal performance standard - this varies between states.

- *AccuRate*

NatHERS software has been upgraded to a new version called AccuRate in 2005. It provides a number of improvements and supports categorisation of up to 10 stars.

- *FirstRate House Energy Scheme*
  FirstRate was developed by the Sustainable Energy Authority in Victoria and is used widely by Western Australia, Victoria, the ACT and South Australia.
- *Windows Energy Rating Scheme WERS*
  This scheme rates the heating and cooling performance of windows in residential buildings anywhere in Australia.
- *Energy Smart Home Rating*
  Developed by the NSW Department of Energy for comparing the actual performance of an existing house to the average household of the same type in NSW.
- *NABERS*
  The National Australian Built Environment Rating System is a scheme to rate existing buildings on the basis of measured operational impacts.
- *ABGR*
  The Australian Building Greenhouse Rating Scheme rates commercial office buildings only which may well preclude its use at Ella Bay.
- *BASIX*
  This is a NSW Government supported approach and is a Building Sustainability Index that applies to all new dwellings in NSW from 1st July 2005. It is a planning regulation tool. It enables a comparative review of greenhouse gas emissions and water usage rates.
- *BERS*
  The BERS (Building Energy Rating Scheme) computer program is a diagnostic software tool used to simulate and analyse thermal performance of Australian dwellings in climates ranging from Alpine to tropical. BERS can be used to assign a star rating to a house within a particular climate type.
- *The Green Globe Standard*
  This approach provides a framework to benchmark their environmental and social performance in order to measure and monitor performance. The Standards are the basis for achieving Certification. The four Green Globe Standards are focused on four broad categories:
  - company standard;

- community/destination standard;
- international ecotourism standard; and
- Green Globe International Ecotourism Standard

With regard to Ella Bay the Green Globe International Ecotourism Standard and Precinct Planning and Design Standard is the most relevant to consider.

- *Green Globe International Ecotourism Standard*
  This standard assists operators of ecotourism products to:
  - protect and conserve natural and cultural heritage;
  - respect social and community values, contribute to an improved environment and improved ecotourism experiences; and
  - achieve better business through meeting responsible ecotourism performance standards.
- *Precinct Planning and Design Standard*
  The Green Globe Precinct Planning and Design Standard provides guidelines and tools to address the Key Performance Areas of water and energy conservation, waste reduction, social inclusion and economic sustainability. This standard incorporates benchmarking indicators developed by EarthCheck. These help measure development issues and reward developers (at the master planning and early development delivery phase) who wish to raise their ecological performance and profile.
- *Green Star*
  Green Star is an Australian Environmental Rating System for Buildings. It aims to "recognise and reward environmental leadership in the top 25% of the market, Green Star aims to assist the building industry in its transition to sustainable development."

  According to the Green Star organisation, its environmental rating system for buildings was created for the property industry in order to:
  - establish a common language;
  - set a standard of measurement for green buildings;
  - promote integrated, whole-building design;
  - recognise environmental leadership;
  - identify building life-cycle impacts; and
  - raise awareness of green building benefits.

Whilst the Green Star rating process is still under development for certain categories of building it AGBR and Greenstar may well not be applicable to the retail development at Ella Bay Village Precinct. Both AGBR and GreenStar only applies to 85% of an area for offices, education, shopping centre or health usages. However, its start rating system is as follows:

- 4 Star Green Star Certified Rating (score 45-59) signifies 'Best Practice';
- 5 Star Green Star Certified Rating (score 60-74) signifies 'Australian Excellence'; and
- 6 Star Green Star Certified Rating (score 75-100) signifies 'World Leadership'.

The World Green Building Council has endorsed the Green Building Council of Australia as the national green building council for Australia and member of the World Green Building Council. The World Green Building Council was launched in 1998 by David Gottfried, founder of the US Green Building Council, and its first President.

- *EnviroDevelopment*

The Urban Design Institute of Australia (Qld) created an incentives based certification and branding scheme called EnviroDevelopment. EnviroDevelopment has been developed in conjunction with the Queensland State Government, local governments and other stakeholders, to actively encourage enhanced sustainability outcomes in new developments.

Figure 2.5.1 The enviroDevelopment Logo

EnviroDevelopment is performance based and applicable to a diverse range of development types and situations. It covers the broad spectrum of environment and sustainability issues from the initial conceptual stages of development, with elements devoted to ecosystems, water, energy, waste, materials and community. EnviroDevelopment is designed to draw on the breadth of available scientific knowledge and to unite sectors towards the enhanced sustainability of our future urban areas.

The assessment process is focussed on residential developments and was launched in October 2006. EnviroDevelopment claims to be “scientifically-based as a branding system designed to make it easier for purchasers to recognise and, thereby, select more environmentally sustainable

developments and lifestyles." Certified developments will protect the environment and use resources responsibly and offer environmental benefits to homeowners, industry and government.

Ella Bay Design and Living Principles

Ella Bay Design and Living Principles will comply with legislated benchmarks with regard to building and design codes legislative requirements. In addition, there is also a range of additional guidelines to consider for example:

- Water Efficiency Labelling and Standards (WELS) Scheme; and
- Queensland Government Building Regulations for mandatory Sustainable Housing.

Appliances that will be acceptable for use at Ella Bay must be efficient. Benchmarks for assessing efficiency will be developed using the labelling benchmarks for appliances. These include:

- Energy Star - www.energystar.gov.au; and

- Energy Rating - www.energyrating.gov.au

Figure 2.5.2 Examples of Energy Rating Benchmarks

Benefits of benchmarking

The following benefits are envisaged:

- reduction of the Ellla Bay ecological footprint by choosing strategies that reduce greenhouse gas emissions wherever possible;
- identification of problem areas with regard to design, development and building practices;

- identification of other developments and projects that have similar issues (i.e. collaboration with similar eco-development initiatives in Australia such as Couran Cove, the Ecovilllage at Currumbin Valley);
- working with supplier organisations and professional consultants that are leaders in the area of sustainable development;
- establishing specific measures and practices with regard to sustainable development;
- maintaining contact with "best practice" companies and other institutions (public or private)to identify leading edge practices; and
- implementing new and improved business practices with regard to managing, monitoring and assessing the Ella Bay Project as it develops over time.

Ella Bay's Design and Living Principles are discussed in more detail in Section 2.6.2.

ELLA BAY

Ella Bay Integrated Resort Proposal

Supplementary Environmental Impact Statement

Key Issues: Refined and Improved

2.6 Ecologically Sustainable Development (ESD)

2.6 Ecologically Sustainable Development (ESD)

2.6.1 ESD Strategy

Purpose

The purpose of this section is to:

- provide information about the Proponent's strategy for achieving Ecologically Sustainable Development (ESD) at Ella Bay;
- set out the kind of policy framework that will be applied to the design, build and development process at Ella Bay; and
- provide examples of goals and objectives informing our approach to implementing an ESD Strategy in specific areas such as water, energy, transport, waste, the ecology, education, and the community.

Introduction

The Proponent expects that its ESD strategies will be based on policies that:

- set out clear principles for a detailed energy and water design
- establish a framework sufficient for decision making to proceed;
- take proper account of local ecological impacts;
- take proper account of regional and global impacts; and
- establish a framework for the management of local environmental and community impacts to improve substantially the ecology and bio-diversity at Ella Bay over the short, medium and long term.

The Proponent commissioned environment and energy consultants Ensight to prepare an overview report on Ecologically Sustainable Development (ESD) at Ella Bay. The report, *Ella Bay – An Overview of Ecologically Sustainable Development*, is attached in Volume 4, Appendix A. 2.9.

Principal Goals and Aims

The Ella Bay Master Planned Community is an integrated development and is a long term Project. It will be constructed over a period of years. The Proponent recognises how important it is to set attainable, but ambitious goals and objectives that will help achieve its strategic mission of `*Building Townships fit for the 21st Century*'.

The Proponent believes that such townships for the 21st Century can only be designed and built successfully by taking into account a number of important issues, with particular regard to sustainable, and ecologically acceptable practices *in every activity it undertakes*.

To do so, requires a conceptual model that will drive the Proponent's policy development forward with regard to design, development, building and managing the Ella Bay Integrated Development Project. This conceptual model is set out in more detail below. Nine key values surround the Proponent's core mission.

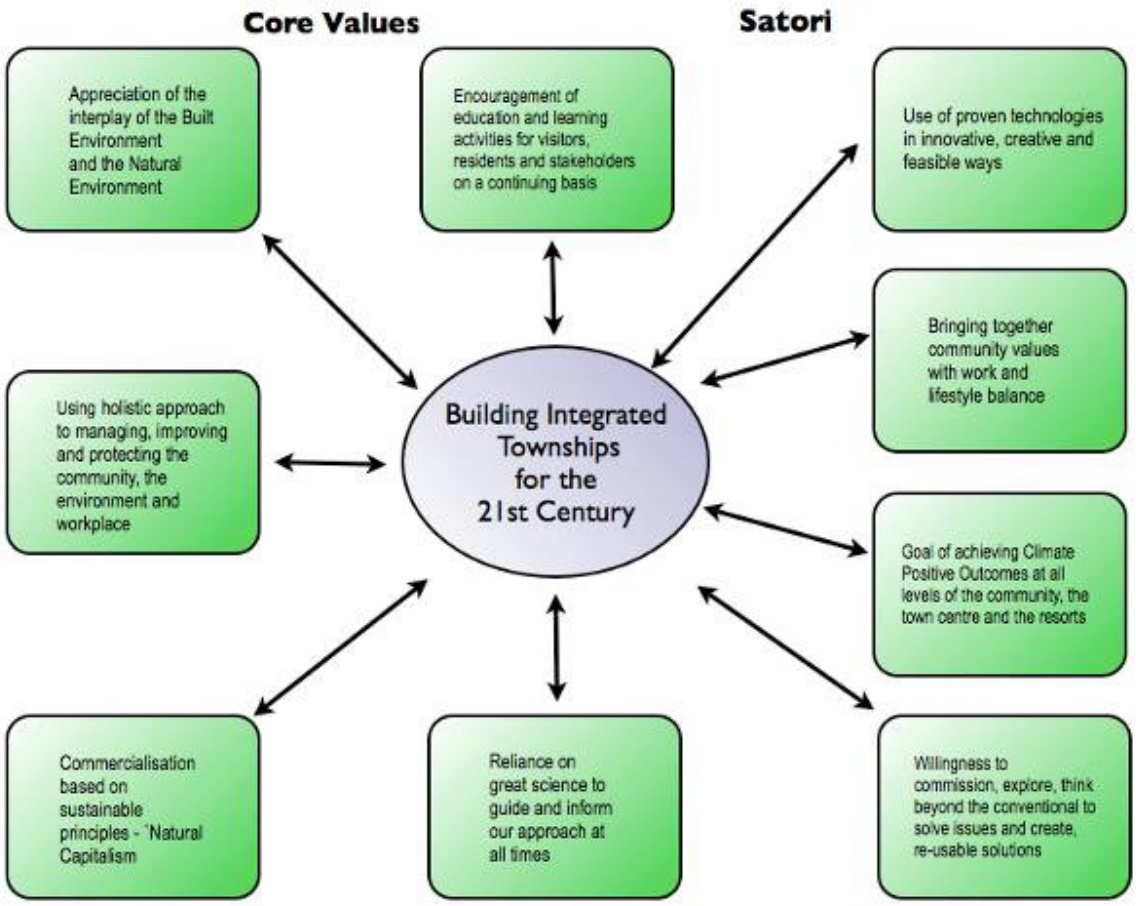

Figure 2.6.1 Core Values Supported by the Proponent

The conceptual model recognises that sustainable development is development that is able to meet current needs, whilst ensuring future generations will also be able to meet their needs as well. The nine key values that are shown in the diagram above have equal importance in achieving an integrated, holistic ESD Strategy.

As much as possible, the development of Ella Bay as a township fit for the 21st Century will minimise consumption of resources such as energy, and minimise impacts on the natural environment.

The Proponent believes that the achievement of its ESD strategy requires the involvement of the community, and key stakeholders in such a project throughout its life. It believes in the need to create a sense of commitment and ownership of the key values underpinning the Ella Bay Project.

2.6.1.1 Example ESD Principles of ESD at Ella Bay

ESD principle can be summarised in the following way:

- recognising a need to achieve climate positive outcomes wherever possible;
- embracing the need to reduce greenhouse gas emissions wherever possible;
- establishing an on-site LP Gas power station facility with a low carbon dioxide footprint;
- seeking ways to drive down energy demand arising from for example air conditioning through sustainable building design and systems development thereby achieving optimum energy balance for Ella Bay;
- designing the built environment to achieve ambitious targets for reductions in overall energy demand against similar developments through efficiency and best practice design;
- efficiency and best practice design will be summarised into enforceable Design and Living Principles;
- creating innovative but workable plans to deliver safe, reliable and cost-effective energy; and
- setting and using appropriate benchmarks together with appropriate profit and loss financial measures and other performance indicators.

Figure 2.6.2 Storage of Rain Water Using Water Tanks

2.6.1.2 Some Practical Examples of ESD at Ella Bay

This section provides practical examples of the type of ESD initiatives that the Proponent would expect to develop at Ella Bay through its integrated approach to sustainable development. They include:

- designing suitable back up arrangements for electric power and water supply based on comprehensive risk analysis and scenario modeling;
- making extensive use of solar power photovoltaic panels on dwellings and on other facilities such as garage parking bays to reduce reliance on coal powered generation of electricity thereby reducing greenhouse gas emissions;
- achieving self sufficiency in water management through extensive recycling processes, and, where appropriate naturalising the water supply;
- discouraging use of private cars using high carbon emission engines, and exploring the use, alternatively of electric buggies that may in the future be rechargeable from `solar power based charging stations';
- achieving water consumption level efficiency targets significantly better than average household dwelling consumption rates through the effective use of the Design and Living Principles together with on-going monitoring and education processes;
- re-using treated sewerage through re-cycling to Class A+ standards;
- setting achievable water saving targets for potable water through re-cycling to every household dwelling;
- preserving and protecting aquifer ground water supplies at Ella Bay;
- using traditional gravity sewer and a rising main in the case of water management systems as well as low impact construction techniques where appropriate and avoiding wherever feasible, deep trenches for pipework;

- establishing critical benchmarks and performance indicators for management purposes as well as community education and awareness;
- using established proven, ESD approaches to achieve cost effective solutions; and
- actively modeling, monitoring and controlling through sophisticated information management networks all usage of energy, water and waste.

To achieve an integrated and holistic approach up to date, accurate and meaningful information is critical. A schematic model for actively modeling, monitoring and controlling the usage of energy, water and waste is shown on the page that follows. The model is known as CAMMIS and provides the basis for an integrated and holistic view of managing townships fit for the 21st Century.

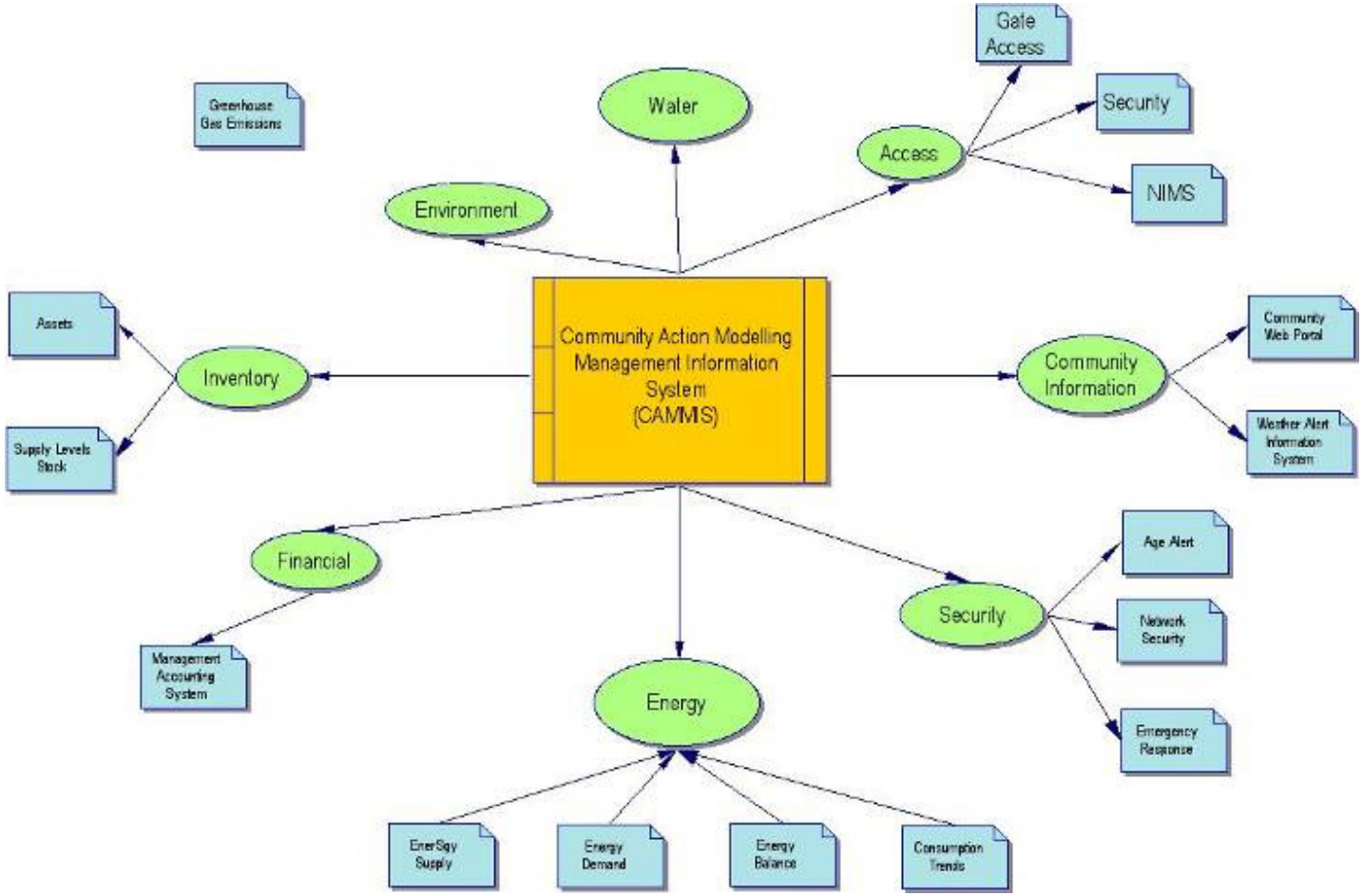

Figure 2.6.3 Ella Bay Management Information System Schematic Overview

Energy (Electricity and Gas)

The Proponent's ESD approach in this area will be based upon:

- providing comprehensive management information systems to measure and monitor energy demand patterns for residences, commercial facilities and resorts at Ella Bay;
- calculating energy demand patterns for each precinct;
- designing a low carbon emitting, stand by power generation system that provides energy for a calculated consumption in the order of 4 GWH per annum;
- providing energy from a range of renewable sources to meet annual energy balance requirements;
- designing energy production systems that will have the potential to reduce green house gase emissions by 50% compared to conventional grid connected coal based power;
- using extensive solar PV installations and other renewable sources of energy wherever possible; and
- setting and using appropriate benchmarks together with financial measures and indicators.

Figure 2.6.4 Example of Solar Panels

Transport

The Proponent's ESD approach in this area would be based upon:

- reducing carbon emissions associated with carbon based transport by supporting the adoption of alternative using low emission transport options wherever possible;

- encouraging cycling and walking activities through good design of paths, bicycle routes and shelters; and
- setting and using appropriate benchmarks together with financial measures and indicators.

Energy (Efficiency)

The Proponent's ESD approach in this area would be based upon achieving energy efficiency in key areas include:

- efficient building design based on comprehensive Design and Living Principles;
- efficient lighting;
- possible use of geo-exchange air conditioning, and other alternative approaches to help avoid the use of conventional air conditioning systems;
- mandating the use of high efficiency four or five star rated appliances in the Design and Living Principles;
- adopting three phase power supply where appropriate;
- supplying reticulated LP gas for solar hot water boosting, cooking and drying to all residential buildings; and
- setting and using appropriate benchmarks together with financial measures and indicators to monitor energy consumption.

Water and Wastewater

The Proponent's ESD approach in this area will be based upon:

- providing cost effective ways to monitor water consumption and waste water consumption patterns for every household and resort dwelling;
- setting safe standards for water treatment to Class A for irrigation purposes and to Class A+ for recycling purposes to domestic households that will enable re-use of water including for domestic laundry purposes;
- managing sewerage treatment and flows to environment from each precinct using best practice and adhering to government standards;
- adopting appropriate sewage treatment systems that ensure safety to people and the environment that are cost effective, reliable, easily monitored and maintained;

- considering the use of modern approaches to treating waste water such as Membrane Bio Reactor (MBR) systems;
- making possible use of for example filter reed beds to act as self contained, constructed wetlands to help naturalise water; and
- setting and using appropriate benchmarks together with financial measures and indicators.

2.6.1.8 Storm Water

The Proponent's ESD approach in this area will be based on implementing storm water solutions that will take appropriate account of effective Water Sensitive Urban Design (WSUD) principles. The guiding principles of WSUD are centered on achieving integrated water cycle management solutions.
The type of integrated storm water solutions will be aimed at:

a) reducing potable water demand by using water efficient appliances, and ensuring that rainwater and treated wastewater is safe for re-use and re-cycling;

b) minimizing wastewater generation and treating wastewater to a tertiary standard, suitable for effluent re-use;

c) treating urban storm water to meet water quality objectives for re-use and/or discharge to receiving waters;

d) using storm water in the urban landscape to maximize visual and recreational amenity, following the development principles of sustainable quality of life, resource conservation, pollution minimisation, and protection and conservation of biodiversity.

In terms of storm water there will be a need to:

a) manage storm water flows at all times;

b) establish appropriate systems and procedures to monitor storm water flows;

c) design sufficient wet weather storage capacity to meet most climate conditions including periods of heavy rain;

d) build appropriate features to help guide the flow of storm water.

The following figure shows the range of storm water solutions that can be implemented.

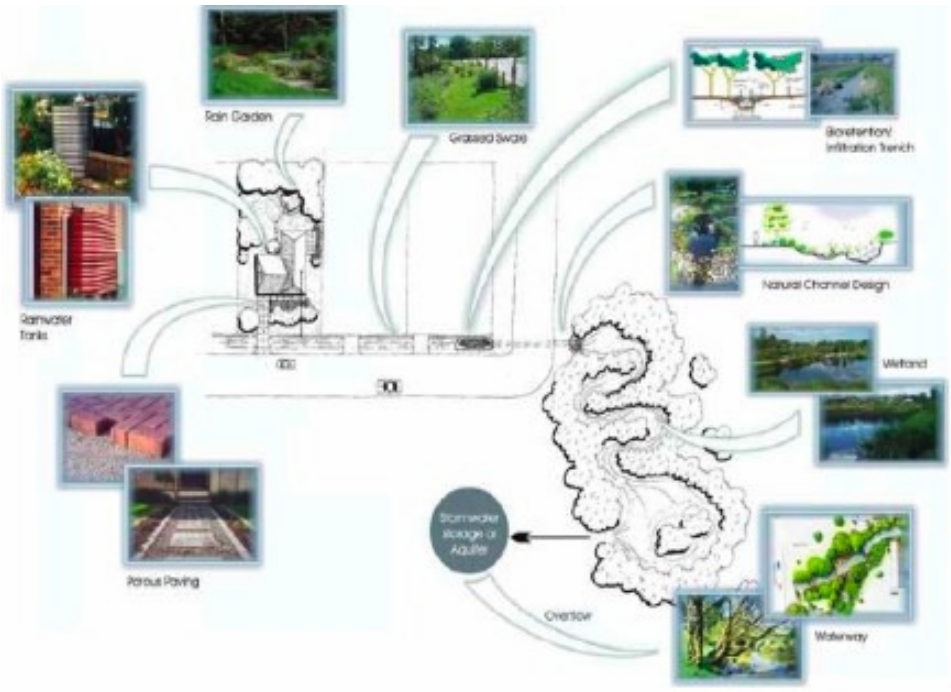

Figure 2.6.5 Diagram Showing Techniques for Achieving Water Sensitive Urban Design

Ecology

The Proponent's ESD approach with regard to ecological issues at Ella Bay will be based upon several criteria. These criteria include the need to:

- appreciate that Ella Bay is a unique ecology situated within an area distinguished as a World Heritage Area with special fauna and flora;
- implement effective processes and procedures that will achieve continual improvement in environmental performance;
- carry out regular reviews using appropriate measures and indicators;
- report on and review environmental impacts concerning the wide range activities associated with Ella Bay Development; and
- set objectives and timescales for identified areas requiring improvements and remedial action.

Ecological improvements at Ella Bay could include, for example:

- sequestration strategies using local native flora, enhancing riparian health, supporting native wildlife and maintaining biodiversity;
- improving site ecology and biodiversity after 100 years of cattle farming through the extensive rehabilitation and revegetation program;
- rehabilitating creeks and streams to improve water quality and aid natural flows at times of heavy rainfall to the Great Barrier Reef;
- designing climate positive sequestration strategies to help offset greenhouse gas emissions; and
- improve site ecology and biodiversity after 100 years of cattle farming through active management and intervention.

Community Development and Lifestyle

The Proponent's ESD approach in this area would be based upon a strategy to:

- design Ella Bay as a place where people want to visit, live and work, now and in the future;
- meet the diverse and developing needs of residents and visitors;
- be sensitive to and good custodians of their special environment
- contribute to a high quality of life for all ages including young and old people alike;
- develop communities that are safe, supportive and inclusive, and
- design well planned, built and run residential areas and supporting services at the Ella Bay Village Precinct.

Examples of elements that will contribute towards building a sustainable community at Ella Bay will include the:

- creation of walk-able neighborhoods that reduce dependence on cars;
- establishment of strong community identity;
- designing SAFE (Safe, Attractive, Friendly, Efficient) street networks where communal rooms (such as kitchens and living rooms) in residences face walkways and/or the local streetscape, increasing the level of connection from home to community and personal security;
- establishment of neighborhoods that are supportive of diverse transport systems; and
- creation of diverse opportunities within the community, supporting mixed-use developments to occur in line with community expectations.

Community development is a central part of an ESD strategy. Without the support and involvement of the people that live, work and visit Ella Bay such strategies are likely to lose momentum. Detailed improvements and refinements on how this issue is addressed are set out elsewhere in Volume 2. Please also refer to Section 2.6.2 *Principles for Design and Living at Ella Bay* that follows.

2.6.2 Principles for Design and Living at Ella Bay

Purpose

The purpose of this section is to:

- provide information about the Proponent's strategy for developing specific Design and Living Principles for Ella Bay;
- explain the scope and purpose of these Design and Living Principles as they relate to the built environment and the natural environment;
- show how the Design and Living Principles are linked to the Ella Bay ESD Strategy;
- reduce or mitigate impacts on the environment and, especially World Heritage Values; and
- cite examples of similar Design Codes, Guidelines, Principles and Frameworks that represent emerging best practice in this area.

Introduction

Design and Living Principles will be used at Ella Bay as a valuable tool to deliver a range of more sustainable processes and outcomes arising from the development of the Ella Bay Master Plan. The Ella Bay Master Plan sets the overall vision.

This Master Plan will be accompanied by an ESD strategy and design rationale that explains why development will be carried out in a sustainable way, followed by the Ella Bay Design and Living Principles that set out instructions to an appropriate degree and level of precision.

The Design and Living Principles will clearly set the operational benchmarks by which all developers, architects, builders, trades specialists, owners and investors will be bound by when assessing how to build and live within Ella Bay. The Design and Living Principles are to support the principal ESD strategy of zero carbon emission developments.

In this way the Ella Bay Design and Living Principles will be a critical tool to help ensure that the aspirations for both the quality and quantity of development at Ella Bay, which is a large-scale, complex project, sought by State and Federal Government and other agencies and other stakeholders can be realised over time.

The benefit of having strong Design and Living Principles is that they offer the potential to deliver consistency in quality and to raise standards. It is a legal document that ensures a buyer of land takes on very specific, binding responsibilities. This will include a commitment to reducing their ecological footprint and reduce impacts on the environment at Ella Bay.

2.6.2.1 Critical Considerations for Principles for Design and Living at Ella Bay

The Ella Bay Master Planned Community is set in a World Heritage Area with environmental characteristics and particular features unique to its location. The Design and Living Principles will be specifically tailored to meet these features and accommodate them successfully. These will include for example the:

- unique natural habitat;
- a range of endangered and protected species on site and close to the site at Ella Bay;
- fauna and flora that will be protected in revegetated and rehabilitated areas;
- covenants protecting environmental corridors;
- special road designs and fauna cross over points to help protect fauna movements;
- control of transport with the objective of reducing reliance on high emission cars;
- central aim to reduce waste, reduce energy consumption and increase recycling wherever possible including for water, waste and building processes;
- need to respect the local environment and plan to reduce the ecological footprint of each residence in Ella Bay;
- design of buildings to make them climate positive;
- design of buildings to achieve the highest standards of comfort, protection and enjoyment; and
- attainment of the highest level of energy and consumption standards possible using established benchmarks to monitor and manage these issues.

By adopting the highest standard for Ella Bay's Design and Living Principles, environmental stewardship and amenity planning will significantly improve and protect property values as well as overall quality of life for residents and visitors at Ella Bay.

2.6.2.2 Publishing Program for the Principles for Design and Living at Ella Bay

Ella Bay's Design and Living Principles will represent both a process and a mechanism and will be made available as a `live' published resource comprising a wide range of documents, plans, specifications, rules and version control features.

The Design and Living Principles will be capable of being updated and amended but they will be anchored in critical areas to ensure that the overall objectives for sustainable development are met over time. The critical areas include:

- approaches to living in the environment at Ella Bay and within the World Heritage Area;

- fundamental design philosophies with regard to ecology, sustainability, the tropical climate and development practices; and
- a respect for existing fauna, flora and cultural traditions of the area.

As a published 'live' document, the Ella Bay Design and Living Principles will be available in hard copy and as electronic documents. Emphasis will be placed on disseminating the Design and Living Principles via the Ella Bay Web Portal as well as on CD ROM to all stakeholders and interested parties. Intelligent tracking of documents and proper archiving of the Design and Living Principles will be required to ensure that effective version control procedures are rigorously applied.

The Design and Living Principles will form a significant body of information and will be a core foundation of intellectual property owned by the Ella Bay Body Corporate and originators of the Design and Living Principles.

The Ella Bay Design and Living Principles will describe:

- how a sustainable environment at Ella Bay will be created based on the Master Plan;
- the review process and development principles in detail and the way they work within an overall ESD strategy;
- acceptable land use (including convenants and restricted use areas);
- building types and specifications;
- minimum acceptable standards for the built environment;
- design and layout of streets and residential blocks;
- building design principles;
- implementation of sustainability and efficiency in building design with significant emphasis on climate responsive measures; and
- how the principles will harmonise the work of different developers on site at Ella Bay.

2.6.2.3 Principles for Design and Living at Ella Bay

These Design and Living Principles will cover a wide range of policies, procedures, rules, minimum standards and guidelines including three critical areas; the built environment; the natural environment; and, issues concerning ESD.

1. The Built Environment

- planning and lot evaluation;

- site orientation;
- building envelope and setbacks;
- slope analysis and building height considerations;
- building appearance considerations;
- roof form guidelines;
- materials guidelines;
- colour palettes for walls, roofs and external features such as water tanks, car ports and walls;
- use of non toxic paints and materials;
- selection and installation of efficient appliances for the kitchen and in the home;
- car parking and drive way arrangements;
- minimum impact considerations;
- selection of, re-cycling and on-site storage of building materials;
- waste collection and re-cycling arrangements; and
- storage arrangements.

2. *The Natural Environment*

- landscape considerations;
- native flora and fauna habitat considerations;
- acceptable species of trees, shrubs and plantings for lots;
- use of fencing for privacy, security and development of community amenity values;
- use of screening in the built design for privacy;
- lot delineation arrangements;
- use of lighting and forms of lighting deemed acceptable;
- design and size of pools or plunge pools;
- keeping of pets including cats and dogs at Ella Bay; and
- servicing arrangements to individual lots such as post, letter boxes, garbage and recycling bin locations and screening.

3. *ESD Issues (Energy, Waste and Water)*

- supply and use of water for potable and recycled purposes;

- generation, use and alternative supply of electricity and gas;
- use of solar powered panels for electricity generation and hot water supply;
- arrangements for fire hazard minimisation and protection and the use of warning facilities;
- arrangements for the handling of waste water arising from storms;
- arrangements to ensure acceptable levels of stored water safety are achieved;
- requirements to install data monitoring and measurement capabilities for all consumption of energy, water and production of heat and cooling and waste water; and
- standards for the inclusion of data networks to provide for high speed data, voice and video capabilities including connectivity to Ella Bay control systems (under the Ella Bay CAMMIS IT architecture).

2.6.2.4 The Ella Bay Design Process Overview

The Design and Living Principles will be part of a binding process that is set out and explained in the purchase agreements for the freehold land lots. The Design and Living Principles are integral part of the purchase agreement and will be binding on all developers, owners or investors. As a result, the Design and Living Principles Approval Process is a crucial part of achieving the Master Plan vision and must be fully understood by all stakeholders.

Purchase agreements will stipulate how much time an owner has to complete the Design Process to approval stage so that building can commence. The Design and Living Principles will set out the implications of failing to meet such a timetable.

The diagram on the following page sets out in schematic form the kind of Design Process and Approval arrangements that will be developed in more detail at the operational stage. Design and Living Principles are detailed and complex processes that take time to develop and apply successfully.

How the Ella Bay Design and Living Principles (or Codes) Develop

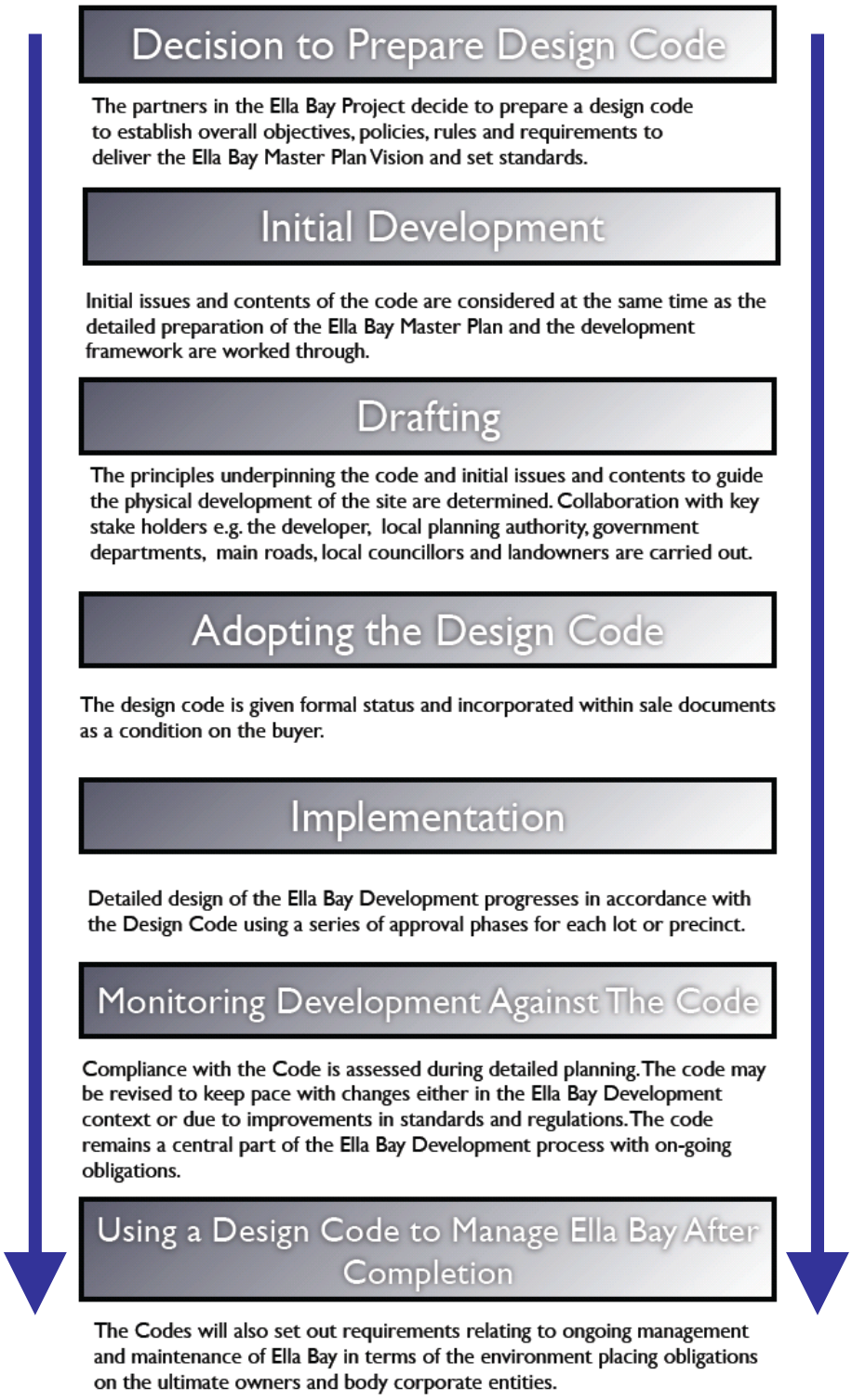

Figure 2.6.6 How the Ella Bay Design and Living Principles (sometimes referred to as codes) Develop

2.6.2.5 Other Design and Environmental Codes, Guidelines, Principles and Frameworks

To develop Ella Bay's own set of specific Design and Living Principles consideration will be given to a wide range of existing codes and suggested best practice both at state and national levels, as well as internationally.

Ella Bay Integrated Resort Proposal

Supplementary Environmental Impact Statement

Key Issues: Refined and Improved

2.7 Ella Bay Environmental Trust - Strategic Environmental Initiatives

2.7 Ella Bay Environmental Trust - Strategic Environmental Initiatives

2.7.1 The Trust

The Proponent envisages that a not for profit environmental trust will be established. The precise structure and membership of such a trust will be finalised once the stakeholders are in place. It is proposed that regional conservation body Terrain and the Proponent will jointly convene and manage the trust (to be known as the Ella Bay Environmental Trust).

The prime purpose of this Trust is to help the Ella Bay Community achieve a net positive impact on the environment. The trust will be responsible for directing funding provided by the Proponent and other bodies to research projects, revegetation and rehabilitation, and other conservation programs in an efficient and effective way. The work of the Trust will be open, transparent and subject to audit. Possible returns arising from intellectual property originating from the research work will be re-invested in the Trust to help preserve its on-going status.

The Trust will be run by an independent, skills-based board consisting of seven nominations. Representation will comprise a Proponent Chair, two Proponent appointees, two Terrain appointees, one appointee from James Cook University, and one from the University of Queensland. This board will be tasked with ensuring that the negotiated offset program for Ella Bay will be effectively managed, and that successful outcomes are achieved.

The Ella Bay Trust can also be used as a management and administration vehicle for other development offsets arising for the region. The prospective board members, Terrain and the Proponent will work together to identify and secure additional corporate and philanthropic investments into such a Trust. An Ella Bay Advisory Committee will be also established to work in partnership with the trust's board to ensure there is community and stakeholder satisfaction and monitoring of the program. The diagram below shows how such a trust might be organised in structural terms..

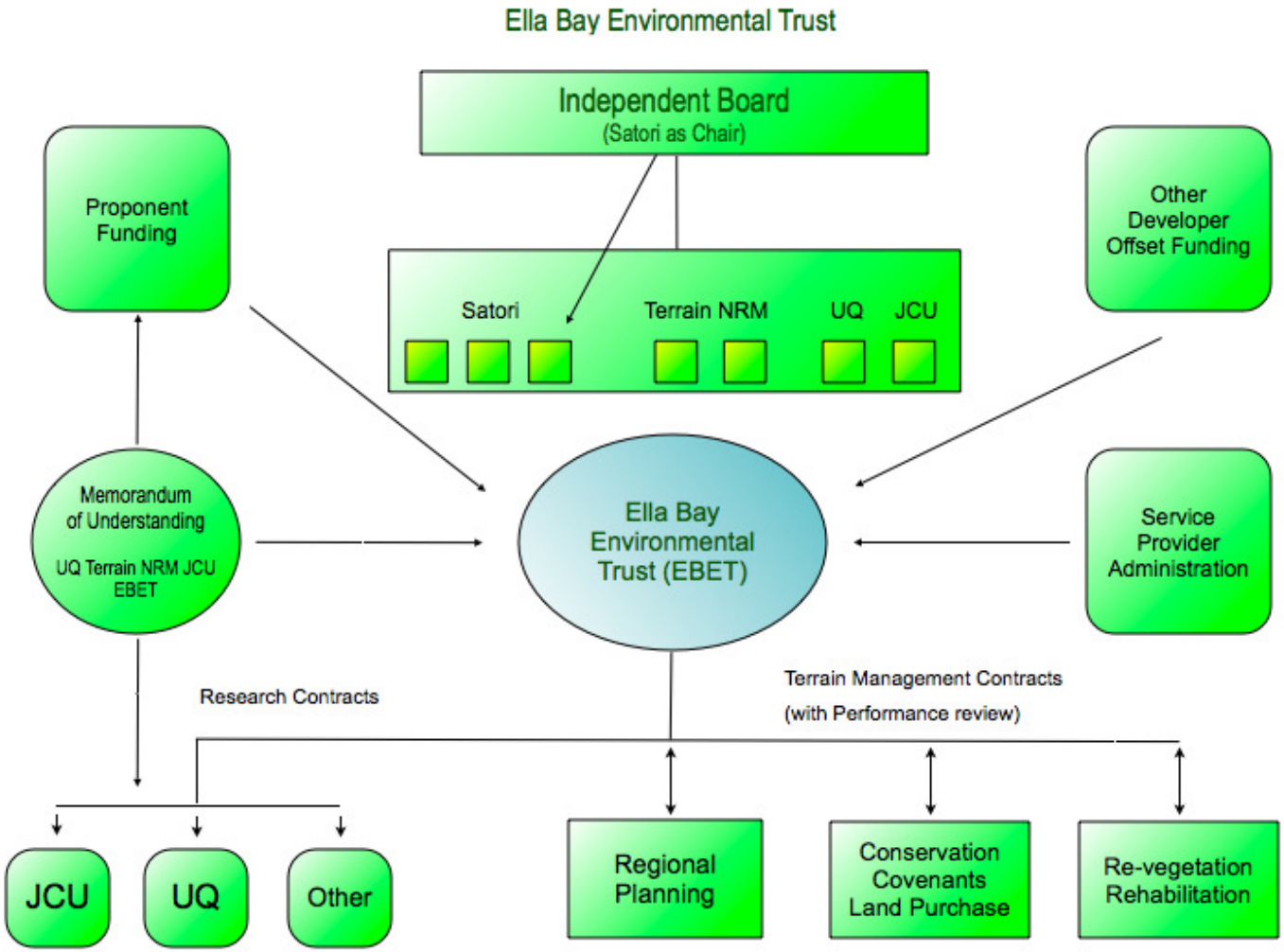

Figure 2.7.1 Proposed Structure of the Ella Bay Environmental Trust

2.7.2 Institute of Sustainability

It is intended that the proposed Institute of Sustainability will be located at Ella Bay and will operate under the aegis of the Ella Bay Environmental Trust fund (see figure 2.7.1 on the previous page).

The rationale for such an Institute is that the integrated resort model in an environment surrounded by a World Heritage Area rainforest and the Great Barrier Reef will be heavily reliant upon utilising existing 'great science' and available 'proven technologies' (see figure 2.6.1 *Core Values Supported by the Proponent setting out nine key values*). However, it will also in the mid- to long-term require innovative research by leading tertiary institutions to be conducted.

The University of Queensland and James Cook University have expressed interest in the opportunity to be involved in the Institute of Sustainability and have signed a Memorandum of Understanding regarding the project. The Proponent would be also be seeking other Government and private funding for the Institute, however intends to act as a catalyst for the Institute of Sustainability, by providing in kind funding through land allocation and research funding.

The mission and focus of interest for the Institute will be on supporting inter-disciplinary projects with regard to developing and improving sustainable energy, water, waste and ecological concepts. Expressions of interest for potential research projects in these areas have already been received. Details of these research proposals are provided in Volume 4, Appendix A.3.9 and potential study areas include:

- social and community studies;
- flora and fauna studies;
- disaster management planning and response; and
- innovative sustainable planning and building design.

The provision of ongoing on-site research and monitoring by leading tertiary institutions will benefit the development of Ella Bay, the wider community and the surrounding natural environment into the future. The emerging Ella Bay Community provides practical application of sustainable technologies and research. The community becomes a working, living prototype for developing sustainable township of the 21st Century.

Researchers that may otherwise work in isolation or within their own field are given the opportunity to collaborate with academics from other disciplines and to benefit from the intellectual spillover resulting from interdisciplinary research. This holistic style of research is likely to produce better outcomes for individual academics, as well as more sustainable outcomes for the community and future developments.

The Institute of Sustainable Development is to be located in the onsite education precinct, for easy and efficient access to environmentally significant study areas. The Institute will feature state-of-the-art digital and telecommunication technologies, as well as conference and collaborative learning facilities, providing a high quality resource for academic research. These research facilities, together with accommodation located near the facility (there are seven resorts) and the close proximity to World Heritage areas, the Institute of Sustainability has the potential to be a facility that attracts sustainability academics from throughout Australia and around the world.

2.7.3 Regulated Offsets and Additional Environmental Investment

Purpose

The purpose of the *Regulated Offsets and Additional Environmental Investments Report* (currently under negotiation with government agencies) is to:

- identify potential impacts of the Ella Bay proposal;
- identify mitigation strategies to minimise or eliminate the potential impacts or to make the potential impacts positive;
- identify any residual impact after mitigation measures have been incorporated;
- identify any negative impacts which cannot be effectively mitigated, and establish means of offsetting these negative impacts;
- provide information about the legislative requirements and the Proponent's proposed offsets;
- identify additional environmental investments that are proposed by the Proponent;
- provide information regarding the structure for the delivery and funding of the regulated offsets and additional measures; and
- act as an integrated package that ensures a net positive impact on the environment.

Introduction

This section outlines the concepts within the proposed Regulated Offsets and Additional Environmental Investment Package.

The concept of offsets has been developed by regulatory authorities to assist in dealing with impacts that cannot be effectively mitigated. Specific to the Ella Bay Community, these impacts include matters of World Heritage values, clearance of land, fauna habitat (particularly that of the Southern Cassowary) and

threatened species. Where impacts cannot be mitigated, they may be offset – effectively compensated for – by saving or creating equivalent vegetation or habitat.

The Proponent proposes to go beyond this regulatory offset requirement and has prepared a draft integrated package *Regulated Offsets and Additional Environmental Investments* that provides a net total gain to the natural environment. It takes the idea of offsets a step further than compensatory regulatory mechanisms to embrace the concept of 'additionality'; a program or positive outcome that would not have come about without the project. In effect this would be a 'net gain' development.

The Proponent considers that developing a net gain package that is more substantive than their regulatory obligations befits the importance of the site in respect to its location adjacent to two world heritage areas. The Proponent wants to position itself in the marketplace to be environmentally responsible, aiming to ensure that there be net positive gains to the environment.

The following diagram represents the process by which (a) potential impacts are identified, (b) mitigation measure options are investigated, (c) impacts after mitigation are considered, (d) offsets are incorporated to effectively compensate for any negative impacts, and then (e) additional measures are proposed.

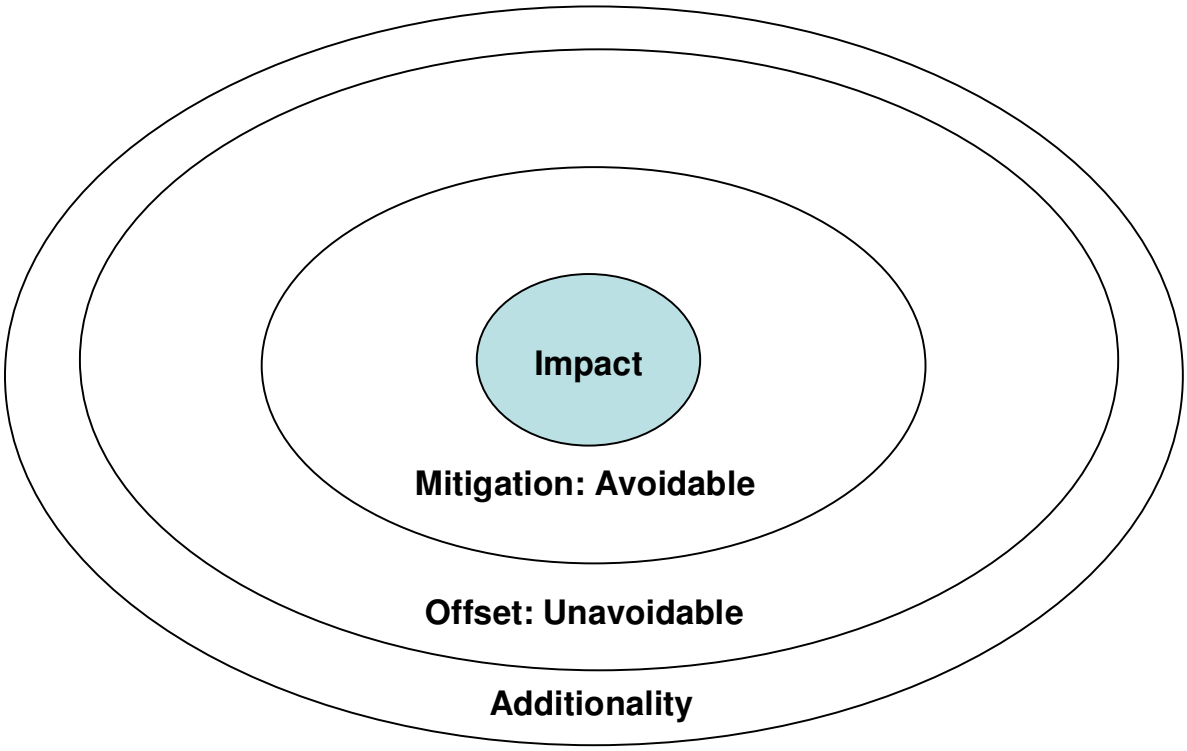

Figure 2.7.2 The process of 'identify impact – mitigate – evaluate – offset – additionality'

A workshop between the Proponent and Degree Celsius identified the critical regulatory offset obligations and those impacts that needed to be offset and those actions that would provide additional benefit over and above the regulatory offset obligations faced by the Proponent. These issues were further explored through targeted meetings with critical community interests and regulatory agencies.

As a result of this work, a draft Regulated Offsets and Additional Environmental Investments Package has been discussed and submitted to government environmental agencies to enhance the special values of the site.