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## **Attorney-General's Department**

### Report for Crown Land Management Plan for the Indian Ocean Territories

Cocos (Keeling) Islands

September 2009



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# 1. Introduction

## 1.1 Background

The Attorney-General's Department (AGD) has responsibility for the administration of Crown land on Christmas Island and the Cocos (Keeling) Islands. Parks Australia is responsible for the administration of the Pulu Keeling National Park. There is also Land Trust agreement between the Commonwealth and the Shire of Cocos (Keeling) Islands (the Shire), in which the Shire has been granted the subject land in fee simple upon trust for the benefit, advancement and well-being of the Cocos Malays.

AGD has a Service Delivery Arrangement with the Western Australian Department of Land Information (Landgate) and the Western Australian Department of Planning (DP). Services provided include registration of titles, valuation of land and the provision of planning, legal and administrative advice on land.

Although some land administration and planning assistance is provided through DP, AGD retains responsibility for strategic land planning of Crown land on the Cocos (Keeling) Islands. DP has suggested that a Crown Land Management Plan (CLMP) would assist with strategic land planning and development. The Shire of Cocos (Keeling) Islands administers the Local Planning Scheme; the statutory mechanism under WA planning legislation that controls all land use on the Islands. The LPS is the primary instrument through which land use and development is controlled on the Island. A LPS generally has an outlook of five years and zones land for certain purposes and contains development provisions for each particular zone, in accordance with the orderly and proper planning of a local government area.

This document should be read in conjunction with the report for the Crown Land Management Plan for the Indian Ocean Territories (IOT) – Christmas Island.

## 1.2 Purpose/Objectives

The main objective of the project is to assess Crown land on the IOT and enable informed decisions to be made on its most suitable future uses which will lead to the overall better management of Crown land. The CLMP covers both Christmas Island and the Cocos (Keeling) Islands. The CLMP assessed all Crown land: unallocated Crown land, leased Crown land including mining and commercial, vested land, reserved land and Crown land under a management order.

The project consisted of an initial assessment of Crown land in the IOT which has been undertaken by drawing on readily available information, mostly from resources provided by AGD and from DPI.

The identified Crown land was assessed for conservation, economic, cultural and social values. This assessment provided the basis for a plan of management, which includes recommendations on the appropriate future uses of land, land development priorities (i.e. short term, medium term, long term), and management options for those lands. The CLMP has also been produced in a format which can be incorporated into the existing GIS for Christmas Island and the Cocos (Keeling) Islands.

## 1.3 Commonwealth Property Disposal Policy

All Commonwealth land on the Island is subject to the Commonwealth Property Disposal Policy (CPDP). The general policy is for 'Commonwealth property, having no alternative efficient use, is to be sold on the open market at full market value.' There are three general exceptions to this general policy:



1. Disposal of property for housing and community outcomes: where surplus Commonwealth property is considered suitable for facilitating an increase in the supply of housing, improved community amenity or the creation of new jobs, the property shall be disposed of under an approved strategy. This decision is made jointly by the Minister for Home Affairs, Minister for Finance and Deregulation and Minister for Housing.
2. Priority sales: those made direct to a purchaser without having the property first been offered for sale on the open market, for example where it is considered that a sale to State or Local governments would optimise housing and/or community outcomes or where Commonwealth funded organisations seek special consideration in the disposal of surplus property to facilitate Commonwealth Policy objectives. This decision is made jointly by the Minister for Home Affairs and the Minister for Finance and Deregulation.
3. Concessional sales: those priority sales concluded at a purchase price below market value. This decision is made jointly by the Minister for Home Affairs and the Minister for Finance and Deregulation.

## 2. Literature Review

### 2.1 Shire of Cocos (Keeling) Islands Vision 2010

*Vision 2010*, a strategic direction philosophy, was developed by the Shire to ensure that all future development and services proposed for the Islands are sustainable and contribute positively to the standard of living and level of services for the local community. The document incorporates strategies and goals into separate precincts for the Islands:

- » Governance:
  - To upgrade Council's existing management facility and to incorporate a suitable venue for use as a Council Chamber; and
  - To provide an appropriate Council depot on both Home and West Islands that provides a suitable workplace for Council employees.
- » Community Services:
  - To provide a centrally located facility which will collocate all existing and future community services;
  - To provide a Cultural and Heritage Precinct that will preserve heritage and culture as well as provide a significant attraction to visiting tourists;
  - To maintain existing emergency service facilities on both Islands; and
  - To construct one indoor court size facility on both Islands to complement existing outdoor recreational facilities.
- » Sustainable Development:
  - To provide a centrally located and purpose built facility which will collocate existing and future commercial small businesses;
  - To provide suitable light industrial workshop/shed premises;
  - To designate a portion of Trust Land on West Island for sustainable economic development opportunities such as tourist resorts, horticultural and maricultural industries;
  - To provide a technology centre that will encourage outside investors to establish laboratory/research facilities on-island;
  - To compile and implement an Environmental Waste Management Strategy;
  - To provide a specific precinct that collocates all of the Islands utility services; and
  - To allocate a portion of land where residents may keep domestic animals and grow fruit and vegetables.

### 2.2 Former Quarantine Station Outline Development Plan

An *Outline Development Plan (ODP)* for the Quarantine Station (Q-station) on West Island was prepared by DPI in December 2001. The purpose of the ODP was to facilitate the future disposal, subdivision and development of the former animal quarantine station on Lot 327 Sydney Highway on West Island.



An enquiry-by-design (EBD) workshop was held on-island and three different options were produced for the future use of the Q-station. Option A consisted of a mixture of land uses including residential, local commerce, office spaces, public market, cultural centre, light industry, and tourist accommodation including a camping ground.

Option B was similar to Option A, however it provided an alternative arrangement for the residential portions of the site and a different mix of light industrial and commercial space.

Option C was focussed around an educational institution with a small complement of residential lots and some commercial/light industrial land. It also proposed tropical agricultural research lots, woodlots and native tree nursery.

The final preferred direction for the ODP from the report can be found at [Appendix A](#) to this report. It has a focus on residential development, with some short stay accommodation and commercial/light industrial uses along Sydney Highway.

The long term conversion of the Q-station land to solely residential uses is not likely to represent the most suitable use for the land. On such a small island where the provision of infrastructure is difficult and land development costs are increased, residential uses should first be consolidated around the existing infrastructure rich settlement. Potential land contamination of unknown intensity and location and the nature of existing buildings suggest that the land is not best suited to residential or commercial development. A mixture of land uses is best suited to the site and the options discussed in the ODP for residential, industrial, education and tropical plant research utilising the existing buildings and open space are considered the most suitable use of the Q-station land. This is investigated further in this report.

### **2.3 Climate Change Risk Assessment for the Australian Indian Ocean Territories**

Maunsell completed the *Climate Change Risk Assessment for the Australian Indian Ocean Territories* in January 2009, the purpose of which was to research, identify, evaluate, prioritise, synthesise and report on the future impacts of climate change on the Indian Ocean Territories. In relation to the Cocos (Keeling) Islands, the report concluded that the Islands are extremely vulnerable to the potential impacts of climate change and sea level rise. This is due to the low-lying nature of the Islands and any change in the mean sea level, combined with effects of storm surge, are likely to have large consequences, especially on settlements on Home and West Islands.

The Report identified that among the most substantial impacts of climate change would be losses of coastal infrastructure and land resulting from inundation, storm surge and shoreline erosion. Climate change could also cause more intense cyclones and losses in coral reefs.

Figure 1 provides a summary of the key risk to natural systems on the Islands. The majority of the risks are classed as low or medium, however by 2070, there is an extreme risk projected for coral reef bleaching and a high risk of reduction of narrow beaches, decreases in the abundance and diversity of coral and enhanced sedimentation in the lagoon.



Classification	Risk	2030	2070
Exposed lagoon coast (West)	Increase movement of sediment	Medium	High
	Loss of storm erosion buffer effect resulting in higher erosion of the coastline	Medium	Medium
Sheltered lagoon coast (East)	Reduction of narrow beaches	Medium	High
Lagoon	Sedimentation is likely to be enhanced, especially in the South and Eastern parts	Medium	High
Coral reefs	Proneness to bleaching events because of increased temperature and sedimentation and constrained growth because of more acid ocean	High	Extreme
Coral reefs associated fauna	Decrease in the abundance and diversity of coral associated fauna and flora (reef acting as a nursery and a feeding area)	Medium	High
Seagrass beds	Increased physical disruption and increased deposition of sediment constraining growth	Medium	Medium
Introduced species	Greater pressures because better climatic tolerance range and opportunistic species	Medium	Medium
Endangered and endemic species	Highly vulnerable species; any threats would put greater pressures on them (important non climatic component)	Medium	Medium
Seabirds	Loss of nesting habitat and potential decrease of food availability	Medium	Medium
Fish population	Mass fish kill events, change in the food availability, reproduction cycles, migration patterns	Low	Low
Turtles	Skewed gender ratio and loss of breeding area	Medium	Medium

Source: Maunsell 2009

**Figure 1: Cocos (Keeling) Islands Natural System Risks**

A similar table was produced to summarise the risk to human settlements on the Islands (see Figure 2). Once again the majority of the projected risks are classed low or medium; however there is an extreme risk of direct impacts of sea level rise and extreme events on human settlements and buildings as well as water shortages. There is also a high risk of indirect effects of environmental degradation, storm damage to port facilities and roads.

Classification	Risk	2030	2070
Human Settlements	Direct impacts of sea level rise & extreme events	High	Extreme
Society & Culture	Indirect effects of sea level rise & extreme events	Low	Medium
Economy & Tourism	Indirect effects of environmental degradation	Medium	High
Water Resources	Water shortage	High	Extreme
	Loss of access to water	Medium	Medium
Power Resources	Loss of electricity supply	Low	Medium
	Increased corrosion of power assets	Low	Medium
	Storm and fire damage to fuel storage and power facility	Medium	Medium
Ports	Storm damage to port facilities	High	Medium
	Corrosion of port facilities	Low	Medium
Roads	Storm and sea level rise damage to roads	High	Medium
Airport	Storm damage to airport	Medium	Low
Buildings	Storm and sea level rise damage to buildings	High	Extreme
	Heatwave impacts	Medium	Medium
	Corrosion of buildings and facilities	Low	Medium
Communications	Storm damage to communications equipment	Low	Medium
	Corrosion of communications equipment	Low	Low
Human Health	Direct effects of temperature rise and indirect effects of extreme events	Low	Medium

Source: Maunsell 2009

**Figure 2: Cocos (Keeling) Islands Human Risk Settlement Summary**

The Report concludes by providing adaptation options for the Islands to assist in preparing for and mitigating against the effects of climate change. The following is a summary of the recommended intervention actions:

- » Undertake detailed coastal hazard mapping for the Home Island and West Island settlement areas, including detailed assessment of threat to buildings and infrastructure;
- » Develop a strategy for sea wall protection of key assets and settlement to secure medium and long term utilisation of the Cocos (Keeling) Islands;
- » Develop a comprehensive erosion control and re-vegetation plan for Home and West Islands, and seek funding for a Coastcare program;

- » Develop a community-based monitoring program in collaboration with Parks Australia and the Local Council, with the aim of increasing community awareness and involvement in the management of coastal reefs and marine areas;
- » Develop a range of specific climate change design and maintenance criteria for insertion in tender documents for infrastructure assets;
- » Develop a relocation and resettlement strategy for the people and assets of the Cocos (Keeling) Islands (over 20-30 years);
- » Develop a strategy for short term and long term water security for the Cocos (Keeling) Islands;
- » Review and update the Disaster Management Plan, incorporating climate change impacts and the need for increased cyclone response capacity throughout the community;
- » Develop an integrated nature-based tourism development strategy for the Cocos (Keeling) Islands;
- » Develop and deliver a capacity building program for the Cocos (Keeling) Islands' community; and
- » Develop and deliver a community education and awareness program for the Cocos (Keeling) Islands to build community resilience.

## 2.4 Shire of Cocos (Keeling) Islands Strategic Waste Plan

The Shire of Cocos (Keeling) Islands produced the *Strategic Waste Management Plan* in 2008 to provide strategies and actions to improve waste management practices consistent with the vision of 'towards zero waste.' The three main goals of the Plan are:

- » The minimisation of direct and indirect environmental impacts of waste and its management over the next five years;
- » Waste managed in a sustainable manner; and
- » Increased community awareness of the impact of waste issues on the environment.

The analysis of the current operations concluded that there is insufficient land buffered from the ocean and groundwater drinking supply to allow continued landfill. Waste is currently burnt in trenches and the ash put into landfill. There is a kerbside collection of recyclables which are sorted for return to the mainland.

The key actions recommended in the Plan to improve waste management for the Cocos (Keeling) Islands are:

- » The construction of a high temperature incinerator on each Island to burn putrescibles wastes. This will reduce air emissions, provide safer working conditions and reduce volumes to landfill;
- » The construction of undercover storage and processing areas for recyclables to increase their value; and
- » The development of a cohesive purchasing policy for the Islands to reduce the volumes of non-recyclable material brought to the Islands and to ensure return to the mainland of vehicles, major steel parts, tyres, office equipment at the owners cost.



## 2.5 Winston Churchill Memorial Trust of Australia Report

The *Winston Churchill Memorial Trust of Australia Report 2005* was concerned with gathering and sharing information that will contribute to the development of sustainable horticultural systems for the Cocos (Keeling) Islands. Various locations around Australia were visited to gather information on sustainable horticultural practices, as well as operations on the Cocos Farm. According to the report, the Cocos Malay people have a history of subsistence gardening producing bananas, papaya, limes, cassava and chillies.

The report identifies that the local production of fresh produce will enable the community to achieve a certain level of self reliance and contribute positively to the economic, social and environmental requirements of the Islands. Also discussed is the development of an industry based on horticulture that will provide the community with access to less expensive produce, provide employment opportunities and retain money in the local economy.

Whilst acknowledging the factors affecting horticultural activity on the Islands (soil, water, pest and disease management), the report identifies that with the right plant selection and management control measures, these factors can be mitigated. Part of this will need to come from the development of information specific to the Cocos (Keeling) Islands.

The main conclusions of the report were:

- » Ground-based horticulture appears to be the best suited to the production of a range of fruit trees;
- » Recommended fruit trees listed include bananas, ambarella, bellfruit, breadfruit, carambola (star fruit), citrus, chocolate pudding fruit, custard apple, figs, guava, and papaw;
- » The use of hydroponics is the most effective technique to produce vegetables;
- » A sustained program of applied research may make it possible to develop field-based systems that could bring areas rendered unproductive back into a state of productivity for selected crops; and
- » Opportunities exists on the mainland for people from the Islands to be seasonally employed and trained in horticulture.



### 3. Cocos (Keeling) Islands Crown Land Audit

The Crown land on the Cocos (Keeling) Islands was split into two categories for the purpose of the audit, 'Committed' land and 'Uncommitted' land. The Committed land refers to land uses that are not likely to change, or be able to change, in the near future due to a variety of reasons, such as commercial lease commitments, land utilised by public utilities and residential land. The Uncommitted land refers to the remaining Crown land on the Islands which is less constrained in terms of future potential.

There is a Land Trust agreement between the Commonwealth and Shire of Cocos (Keeling) Islands, in which the Shire has been granted the subject land in fee simple upon trust for the benefit, advancement and well-being of the Cocos Malays. This land is under the direct management of the Shire and so has not been included in the audit process (or as Crown land in the GIS information).

#### 3.1 GIS Analysis

GIS analysis was undertaken using the 2006 release of the Cocos (Keeling) Islands Geographic Information System, prepared by Geoscience Australia. Some additional spatial analysis was undertaken utilising the GIS data provided to illustrate access to water, proximity to services and communications, roads access, buffers, other heritage interests and lease terms.

#### 3.2 PIN

The Polygon Identification Number (PIN) is used as an identifier for every cadastral lot in Western Australia. Every land parcel in the state has a unique PIN, ensuring there is an accurate land parcel identifier that can not be used multiple times for different land parcels. PINs are supplied from the Landgate database.

#### 3.3 Audit Criteria

The following list is the criteria used for the land audit, providing an explanation of what the criteria is referring to, how it was determined and how it was applied to each Crown land parcel.

The results of the audit of Crown land on the Cocos (Keeling) Islands can be seen in [Appendix B](#) to this report.

##### 3.3.1 Area

The area listed in the audit refers to each land parcel's area in square metres. Areas were determined using GIS calculations.

##### 3.3.2 Lot Number

Lot numbers listed in the audit are derived from available GIS cadastral information.

##### 3.3.3 Current Land Use Zoning

The current land use zoning refers to each land parcel's zoning as per the Shire of Cocos (Keeling) Islands Local Planning Scheme No. 1 (LPS). The LPS is a statutory planning document that indicates the



land use zoning for the entire Shire and dictates which land uses are permitted within each land use zone in a 'zoning table'.

#### **3.3.4 Land Use Description**

The land use description is a description of the current land use activities on each land parcel on the Islands. A combination of aerial photography, existing documentation and site visits contributed to the determination of the current land uses.

#### **3.3.5 Ground Water Lenses**

The ground water lenses refer to the fresh water lenses under the Islands that are the primary source of potable water for the Cocos (Keeling) Islands. Water is accessed through a series of galleries that tap into these lenses. GIS data was used to determine which lots are located on top of known ground water lenses. It is imperative that these ground water lenses are not compromised by land development.

#### **3.3.6 Migratory Birds Habitat**

The GIS data identifies specific Migratory Birds Habitat on the Islands. Development on affected land parcels would need to take these habitats into account. The habitats that fall on Crown land are for swallows and other un-specified bird species.

#### **3.3.7 Commonwealth Heritage List**

The Commonwealth Heritage List comprises natural, Indigenous and historic heritage places on Commonwealth land. Entries on the Commonwealth Heritage List are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. Existing GIS data and literature were consulted to establish the presence of heritage places on Crown land parcels.

#### **3.3.8 Rubbish Problem Area**

Rubbish Problem Areas are also identified in the GIS data. These areas appear to be locations in which rubbish has been dumped recently or in the past, either legally or illegally. These areas provide contamination risks to the ground water lens and also safety risks to further development and human interaction. These areas will require assessment and remediation works before any future development.

#### **3.3.9 Buildings**

The presence of existing buildings or structures was determined by a combination of aerial photography analysis, photos and site visits.

#### **3.3.10 Access to Water Supply**

Using GIS water infrastructure data, each Crown land parcel was examined to establish if it had immediate access to a water supply (e.g. a water pipe in an adjacent road reserve or in the immediate surrounding area of an adjacent lot). Ease of access to a potable water supply is critical in determining the suitability of the land for alternative land uses.





### **3.3.11 Access to Sewerage**

Using GIS sewerage infrastructure data, each Crown land parcel was examined to establish if it had immediate access to sewerage (e.g. a sewerage pipe in an adjacent road reserve or in the immediate surrounding area of an adjacent lot). Ease of access to reticulated sewerage is critical in determining the suitability of the land for alternative land uses.

### **3.3.12 Access to Power**

Using GIS power infrastructure data, each Crown land parcel was examined to establish if it had immediate access to power (e.g. power infrastructure in an adjacent road reserve or in the immediate surrounding area of an adjacent lot). Ease of access to a power supply is critical in determining the suitability of the land for alternative land uses.

### **3.3.13 Access to Communications**

Using GIS communications infrastructure data, each Crown land parcel was examined to establish if it had access to communications (e.g. communications infrastructure in an adjacent road reserve or in the immediate surrounding area of an adjacent lot). Ease of access to communications infrastructure, whilst not critical, is highly desirable for any new development.

### **3.3.14 Access to Roads**

Road (both sealed and unsealed) access was determined by examination of GIS data, aerial photography and site visits. The GIS data was analysed to determine if there was a road reserve adjacent to Crown land parcels. Analysis of the aerial photography and site visits determined if roads or tracks were constructed and the nature of the roads for ease of access.

### **3.3.15 Buffers**

The presence of buffers over Crown land was determined using GIS analysis. Buffers generally illustrate a certain area of land surrounding a certain land use or infrastructure asset in which incompatible land uses should not be allowed to avoid potential conflicts (e.g. visual, safety, noise, odours). Buffers have the potential to sterilise land areas from specific types of land uses. Two buffer areas have been identified on West Island, one surrounding the fuel storage tanks and one surrounding the waste transfer station.

The buffer surrounding the fuel tanks at the northern tip of West Island was determined using the Western Australian Environmental Protection Agency's (EPA) *Guidance for the Assessment of Environmental Factors – Separation Distances between Industrial and Sensitive Land Uses*. That document indicates a buffer of 300-500m to sensitive land uses. An indicative 300m buffer was used in the audit, indicated by an 'F'.

The second buffer constraint identified is surrounding the waste transfer station. Again using the EPA's *Guidance for the Assessment of Environmental Factors – Separation Distances between Industrial and Sensitive Land Uses*, a 200m buffer was used for the transfer station. Lot affected by this buffer are indicated with a 'W'.



### 3.3.16 Lease Expiry Date

The lease expiry dates refer commercial properties that are currently leased from the Commonwealth. These commercial leases have different durations, expiry dates and options which will affect the development potential of these properties.

## 3.4 Audit Results

The audit revealed 100 Crown land parcels on the Islands, broken down as follows:

**Table 1: Cocos (Keeling) Islands Crown Land Breakdown**

Land Status	Category	No. of Land Parcels	Area (ha)
Committed	Residential	35	3.7
	Commercial	11	5.5
	Land Vested to Shire	11	9.2
	Land Vested to Australian Telecommunications Commission	1	0.1
	Land Utilised for Public Purposes	24	128.8
	<b>Sub-Total</b>	<b>82</b>	<b>147.3</b>
Uncommitted	West Island	18	50.0
	<b>Sub-Total</b>	<b>18</b>	<b>50.0</b>
	<b>Total</b>	<b>100</b>	<b>197.3</b>





## 4. Land Capability

A map series illustrating the following land capability aspects listed below can be found at [Appendices C and D](#). More detailed information on specific land parcels can be found in the Audit results.

### 4.1 'Committed' Land

#### 4.1.1 Inappropriate Zoning

The current land use zoning under the Shire of Cocos (Keeling) Islands Local Planning Scheme No. 1 (LPS) will determine the capability of each parcel of Crown land in terms of future land use. Within the LPS is a Land Use Zoning Table which sets out the permitted land uses for each land use zone (see [Appendix E](#)). Where no symbol appears in the table, that land use is not permitted in that particular land use zone.

Currently there are examples of land uses being situated in land use zones that are not suitable. This severely limits the capability of these land parcels in terms of land reuse or land use expansion until the zoning issues are rectified (see Map 1 of [Appendix C](#)).

#### 4.1.2 Environmental Considerations

The audit of the Crown land on the Cocos (Keeling) Islands included three key environmental considerations that need to be taken into account for any future development. There are the ground water lenses, migratory bird habitats and rubbish problem areas. These considerations will affect the capability of the land that they interact with, as any future development will be constrained by these issues and additional conditions will be required to ensure their protection or avoidance.

The largest ground water lens area occurs under the current settlement area on West Island, specifically the airport land. There is also small areas of Crown land on the northern tip of West Island as well as the public garden on Home Island that are above a groundwater lens. The migratory birds' habitat is mainly concentrated along the eastern edge of the airport and there are rubbish problem areas at either end of the runway and the northern tip of West Island (see Map 2 of [Appendix C](#)).

#### 4.1.3 Cadastral Considerations

The Cocos (Keeling) Islands' coastline has been subject to constant natural coastal erosion and addition processes. As a result, the coastline is not fixed and changes with time, sometimes significantly. This has resulted in certain cadastral boundaries not reflecting the current coastline in certain areas, most notably the northern tip of West Island. There are also some cases of cadastral lots not having a legal road access.

Cadastral discrepancies represent a significant handicap and can erode land capability through the reduction in land use opportunities, legal rights and/or the adequate protection of infrastructure assets.

Future land uses that may be introduced as a result of the CLMP will require the preparation of approval for new cadastral boundaries.



#### **4.1.4 Services**

Services include access to power, water, sewerage, communications and roads and are considered essential in the assessment of the capability of land parcels. The capability of land without access to one or more of these services is severely reduced as they are essential to the viability of any development.

Almost all Committed land parcels have access to all of these services and roads. There are only a small amount of land parcels without either water or wastewater services (see Map 3 of [Appendix C](#)).

#### **4.1.5 Buffers**

The buffers considered in the land audit involved the fuel storage area at the northern tip of West Island and the West Island waste transfer station. Certain land use restrictions are associated with these buffers, reducing the capability of the land through reducing the development possibilities.

The only Committed land affected by these buffers is located on the northern tip of West Island and involves the fuel storage buffer (see Map 4 of [Appendix C](#)).

#### **4.1.6 Lease Expiry Dates**

The Commercial leases on the Islands have different expiry dates and options associated with them. The length and options of the Commercial leases effects the capability of the land, as properties with long leases associated with them are less capable than those that have short leases for future development.

#### **4.1.7 Heritage Considerations**

The presence of a land parcel on the Commonwealth Heritage List will reduce the capability of the land as it represents a constraint to development. Whilst a listing won't completely rule out any development, it will inhibit how much of the land can be developed and how the land may be developed.

Most of the heritage listings for Committed land occur in the existing urban areas on West Island, and apply to areas of land with existing buildings or structures on them (see Map 5 of [Appendix C](#)).

### **4.2 'Uncommitted' Land**

#### **4.2.1 Environmental Considerations**

The audit of the Crown land on the Cocos (Keeling) Islands included three key environmental considerations that need to be taken into account for any future development. There are the ground water lenses, migratory bird habitats and rubbish problem areas. These considerations will affect the capability of the land that they interact with, as any future development will be constrained by these issues and additional conditions will be required to ensure their protection or avoidance.

The main area of Uncommitted land above the groundwater lens is near the new Beacon Heights subdivision. There are also rubbish problem areas further north along the coast from here and also a migratory birds habitat on the Q-station land (see Map 1 of [Appendix D](#)).

#### **4.2.2 Cadastral Considerations**

The Cocos (Keeling) Islands' coastline has been subject to constant natural coastal erosion and addition processes. As a result, the coastline is not fixed and changes with time, sometimes significantly. This has



resulted in certain cadastral boundaries not reflecting the current coastline in certain areas, most notably the coastline adjacent to the Q-station. There are also some cases of cadastral lots not having a legal road access.

Cadastral discrepancies represent a significant handicap and can erode land capability through the reduction in land use opportunities, legal rights and/or the adequate protection of infrastructure assets.

Future land uses that may be introduced as a result of the CLMP will require the preparation of approval for new cadastral boundaries.

#### **4.2.3 Services**

Services include access to power, water, sewerage, communications and roads and are considered essential in the assessment of the capability of land parcels. The capability of land without access to one or more of these services is severely reduced as they are essential to the viability of any development.

Almost all the Uncommitted land parcels have access to all of these services and roads. There are only a small amount of land parcels without either water or wastewater services (see Map 2 of [Appendix D](#)).

#### **4.2.4 Buffers**

The buffers considered in the land audit involved the fuel storage area at the northern tip of West Island and the West Island waste transfer station. Certain land use restrictions are associated with these buffers, reducing the capability of the land through reducing the development possibilities.

The only Uncommitted land affected by these buffers is located to the south of the waste transfer station on the western side of Sydney Highway and involves the waste transfer station buffer (see Map 3 of [Appendix D](#)).



## 5. Strategic Priorities for Cocos (Keeling) Islands

### 5.1 Introduction

The development of land suitability is reliant on the establishment of the land capability, as identified in Section 4. However land suitability can only be defined through the establishment of strategic priorities for the Islands. Strategic priorities for the Cocos (Keeling) Islands have been identified through on-island observations, discussions with stakeholders and the incorporation of relevant strategic documents.

A workshop was held in Perth, Western Australia on 26 February 2009 and was attended by representatives from GHD and AGD (from Canberra, Perth and the Indian Ocean Territories). The outcomes of this workshop informed the formulation of the following strategic priorities.

Further consultation was undertaken with the Shire on subsequent visits to the Islands between 17 April – 20 April 2009 and 18 July – 22 July 2009.

The views expressed in Section 5.3 are only those of the persons interviewed and to whom the comments and statements are attributed. The Attorney-General's Department gives no warranties as to any of the content or accuracy of these views. No reliance should be placed on any of the comments or statements made without obtaining your own advice.

### 5.2 Attorney-General's Department

#### 5.2.1 Potable Water

- » The main priority is to protect and diversify the current potable water supply on the Islands, however this should not come at the expense of environmental and cultural values.
- » Water infrastructure also needs to be protected, both legally and physically, and the efficiency of water infrastructure may provide an avenue towards improving and protecting the water efficiency of the Islands.
- » Future potable water sources, such as desalinization is already being utilised on Home Island, with considerations for expansion onto West Island, to reduce the pressure on the groundwater lenses.

#### 5.2.2 Waste Water

- » Consideration should be given to the preparation of a business case for the reuse of waste water on the Islands for uses such as agriculture or ecological support.

#### 5.2.3 Waste

- » The implementation of Strategic Waste Plan for the Cocos (Keeling) Islands is a priority to continue to facilitate active community interaction with the waste process and the reduction of environmental impacts of waste on the Islands.
- » The investigation of options for the use of waste or waste byproducts (e.g. methane) for energy production or other uses.
- » Investigation into waste transfer quarantine requirements for the mainland that may include changes in procedures and land uses on-island, including hard stand areas, under cover areas, cleaning and



fumigation facilities). This will only be required when current capacity at the waste transfer stations on each island is reached.

#### **5.2.4 Energy**

- » The assessment of the carbon footprint of the current energy supply is required as new emission reporting legislation comes into effect.
- » The repair, improvement and re-commissioning of the Home Island wind turbines to re-instate the contribution of renewable energy on the Islands.
- » Investigation into the current fuel storage area and its viability in the current location once the new port facilities are constructed at Rumah Baru. Their current location could preclude any tourist development in the vicinity of 'Trannies Beach' due to buffer requirements.

#### **5.2.5 Economic Development**

- » The promotion and development of the connectivity between Christmas Island and the Cocos (Keeling) Islands is desirable.
- » The promotion and development of tourism for both Territories should be based around the concept of an 'experience seeker'.
- » Investigations into the development of a tourism resort on West Island should continue however there are several obstacles to overcome to prove its viability.
- » The Q-station land should be used to contribute to the economic development of the Islands. Alternative uses that assist in diversifying the economic base of the Islands should be given priority.
- » Investigation into the local communities using pondoks located on Trust land for niche tourism opportunities.

#### **5.2.6 Transport**

- » Continuity of regular, reliable and competitively priced flights to and from the mainland. This has been enhanced recently by the addition of a third regular weekly flight.
- » Improvement of container handling areas on the Islands, which will be achieved through the completion of the new facilities at Rumah Baru on West Island.
- » Control of the number of cars on the Islands and enforcement of current policies that limit the transport of cars to the Islands without either taking the same car, or possibly one of worse condition, off-island again.
- » The introduction of electric cars onto West Island.

### **5.3 Shire of Cocos (Keeling) Islands**

#### **5.3.1 West Island Jetty**

- » There is possibly a need for a reuse strategy once Rumah Baru is operational. This strategy could include a Management and Maintenance Plan.
- » Decommissioning of the barge unloading area to the south would be expected.



### **5.3.2 Trannies Beach/Tourist Resort**

- » Investigation into the viability of a tourist resort to the north of 'Trannies Beach'. A public tender process closed in February 2009, with no suitable proponents identified.
- » The formalisation of a public access road to 'Trannies Beach' from Sydney Highway.

### **5.3.3 Sydney Highway/Rumah Baru**

- » The realignment of Sydney Highway is desirable in the vicinity of the Rumah Baru access road on West Island. Coastal erosion processes are threatening the integrity of the road in this area and the entire road reserve needs to be widened to a consistent width.
- » The creation of a road reserve for the new access road to the Rumah Baru jetty to protect current and future infrastructure.

### **5.3.4 Other**

- » The completion of the 'Bi-centennial Trail' and the development of a dual user path along the western coastline of West Island.
- » Some road reserve widths are inadequate at present and some roads do not have dedicated road reserves. The Shire would expect gazetted road reserves to be incorporated into the new TPS maps.
- » The Shire expects that the outcome of the CLMP will inform a review of the Local Planning Scheme (LPS) and is committed to ensuring public support and ownership of the new LPS.
- » The sourcing of fill materials for road and other earth works due to limited amounts of suitable material on the Islands.

## 6. Land Suitability - Desirable Future Uses

The suitability of Crown land on the Cocos (Keeling) Islands will be dictated by not only the capability of the land but also the strategic directions for the Islands as a whole, as well as for key individual precincts. These key precinct areas are outlined below and represent the most desirable future land uses that are suitable for these areas.

A map of the Islands indicating the most suitable future land uses in line with these strategic directions can be found at [Appendix F](#). It is noted that the Land Suitability Map addresses land that is not under the direct management of the Crown, however it is considered essential that a strategy for both West Island and Home Island is developed that shares a common goal and is supported by both AGD and the Shire of Cocos (Keeling) Islands.

### 6.1 Home Island

There are only two Crown lots on Home Island, Lot 338 (PIN 1365196) and Lot 339 (PIN 1365195). Lot 338 is currently a foreshore reserve area and should remain as such. Lot 339 is a public garden area adjacent to Oceania House. This area currently has a wide range of tropical fruit, medicinal and timber trees. The garden has a Conservation Management Plan that has been developed through consultation between the Shire and the local community. This public garden should remain and be encouraged as the basis for local food production for both Islands.



Lot Number	Description
338	Foreshore reserve
339	Oceania House gardens

**Figure 3: Home Island Subject Lots**

To the east of the gardens, the Shire has provided community land (not Crown land) for the local community to grow vegetables and poultry for individual consumption. This practice should be encouraged and become more formalised to prevent the ad hoc use of the land as appears to be happening at present.





## **6.2 West Island Jetty**

In the short term, the fuel storage area remains the most suitable use for Lot 351 (PIN 1129922) whilst the existing jetty remains in operation. Similarly, the current uses of Lots 334 (PIN 11256184) and 335 (PIN 1129225) as parking areas and ablution facilities also remain suitable in the short term.

Once the new jetty and off-loading facilities at Rumah Baru are completed, the relocation of the fuel storage area to the new facilities is desirable although it is understood that this would require a considerable expense. This will remove any buffer requirements that cover the northern tip of West Island and expand the area Lot 100 (not Crown land) that is considered suitable for tourism uses.

The Shire is currently investigating the re-use opportunities for the existing jetty once Rumah Baru becomes operational. Shortening and removing damaged sections at the end of the jetty are options being considered by the Shire if management of the jetty was transferred from AGD to the Shire. The resulting re-use may include a viewing platform, tourism uses and fishing.

The continued use of the existing jetty as a purely recreational jetty would be suitable to avoid any user conflicts at Rumah Baru, and would also be in close proximity to any potential tourism development on Lot 100.

## **6.3 North Point Transmitter Site**

It is anticipated that the North Point transmitter site land uses will not change for at least 20 years, due to recent equipment upgrades. The site encompasses three lots (all Lot 0 – PINs 1115061, 1115062 and 1115063). Due to the committed and strategic nature of the land, the land use is not likely to change.

Currently the public road access to 'Trannies' Beach runs through the corner of the transmitter site. This is considered an unsuitable situation and a legal public access road to the beach should be created to ensure appropriate public access rights to the beach. It would also prevent public access into the transmitter site.

The site should also be rezoned to a more suitable land use zone or reservation, such as a Public Purpose reserve.

The southern portion of Lot 100 (PIN 1115221) is considered suitable for a tourism development. This is due to the proximity of 'Trannies Beach' and surrounds as well as the existing jetty. It is also reasonably isolated and secluded from traffic movements. Once Ruamh Baru becomes operational, the need for vehicular traffic to travel to the northern point of West Island will be greatly reduced.





PIN	Description
11256184	Jetty, cargo offloading area
11299225	Passenger shelter, public toilets
11299224	Shell fuel tanks
1115221	Trust land, coconut trees
1115063	Transmitter site
1115062	Transmitter site
1115061	Transmitter site

**Figure 4: West Island Jetty and Transmitter Site Subject PINs**

There is currently a proposal for a tourism development on the southern side of the Rumah Baru access road, near the intersection with Sydney Highway. This site is not considered suitable for tourism uses as traffic (in some cases heavy vehicles) will only increase along the southern half of Sydney Highway and the access road to the new port facilities, which is undesirable immediately adjacent to a tourism development. There is also no immediate access to any suitable swimming beach or will there be any ocean views from that site.

A coastal foreshore reserve should be created to accommodate the Bi-centennial Trail proposed that runs from south of the fuel storage depot and terminates approximately 300m north of the intersection with the Rumah Baru access road.



## 6.4 Old Quarantine Station

The Q-station represents a significant piece of infrastructure on Crown land (Lot 327 – PIN 1215187) on West Island. The existing building stock is structurally in good condition, requiring only general internal maintenance. The majority of the land is exempt from storm surge effects, except for a small portion of the south western corner and land in proximity to the station's electrical switch board. Apart from a small proportion of buildings, immediate re-use opportunities are limited for the site and significant adaptive work would be required for any uses other than storage.

It is understood that the current accommodation quarters are being utilised by the construction workforce associated with the Rumah Baru development. There is a potential opportunity for the continued use as temporary accommodation for future works associated with the expansion of the runway in the medium term.

As outlined in Section 2.2, the long term full conversion of the Q-station land to residential uses is not likely to represent the most suitable use for the land. On such a small island where the provision of infrastructure is difficult and land development costs are increased, residential uses should be consolidated around the existing infrastructure rich settlement in the first instance. Potential land contamination of un-known intensity and the location and the nature of existing buildings suggest that the entire site is not best suited to residential or commercial development.

Without the demolition of the existing infrastructure and investigation into possible ground contamination, the land is not suitable for a large range of intensive uses. Demolition and removal of existing infrastructure in addition to extensive environmental investigations would be required before any large scale re-use of the land.

If this was to occur, the site could be used for budget tourist accommodation or residential uses in part. The southern portion of the site may be best suited to these types of development as it is closer to the existing settlement and associated services and potential urban expansion and recreation areas. A high-end tourist resort type development would not be suited to this location as the site is not very secluded in comparison to the main settlement, does not have convenient access to a swimming beach, is situated on the main road on West Island and is not environmentally pristine.

The site could be utilised as a light industrial area in the short term. The Q-station could provide land for businesses with a need for large areas of storage space (e.g. container storage, boat building). The Shire has already licensed two sheds on the site for its works depot operations. Some of the existing buildings could be adapted with minimal effort to house storage and workshop spaces. Section 6.6 explores a long term location for light industries and container storage requiring large, open areas.

Another suitable use for this land and its current infrastructure is considered to be education and tropical plant research, as outlined in the ODP. These uses can utilise the existing building stock effectively without requiring extensive modifications. The accommodation quarters could be used to house staff, or visiting research students/academics. The establishment of a research centre on the site could facilitate Government funding, academic interest and international exposure.

The large area of open, cleared space would be suitable for research into tropical plants, and with close proximity to the existing horticultural area, could provide the impetus needed to re-invigorate and re-establish the production of local produce for the Islands. The past and current success of the Oceania House gardens on Home Island provides the precedent for the growing of local produce to reduce the Islands' dependency on fresh food from the mainland.



The establishment of a legal public access to the 'surf shack' on the foreshore adjacent to Lot 327 is also desirable. This is a heavily visited beach and surf area that requires a formalised access that is appropriately managed.

## **6.5 Urban Expansion Area**

Crown lots 3003 (PIN 11444290) and 328 (PIN 1215182) are considered the most suitable for the orderly expansion of the urban settlement on West Island. It is desirable to maintain a close, compact settlement on an island that has limited opportunities for urban settlement and relatively high costs of development.

Lot 328 has unconfirmed past land uses that include material extraction and rubbish disposal (with potential for contamination). The site was also the location of an antenna farm at one stage. The site is vulnerable to storm surges and subject to rainfall inundation. As a result, the most suitable use for the land is for full size recreation playing grounds (i.e. AFL and/or cricket). This would require approximately one to two metres of fill. The current playing grounds on West Island (Lot 179, PIN 1115089) are not adequate and are undersized, and Lot 328 provides an opportunity for full sized grounds. The current rectangular playing field should still be retained however as a general central recreation area and also utilisation by sports requiring a rectangular field (i.e. soccer).

Lot 3003 is considered the most desirable and suitable location for the expansion of residential land uses on West Island. The southern portion of Lot 328 to the north represents the northern boundary for suitable land for residential uses. The site allows for the expansion of the current road network parallel to the coast and also a second connection back onto Sydney Highway. The Buffet Close subdivision would need to be modified to facilitate the proposed road network and allow adequate permeability between the existing new subdivision and the proposed expansion area.

The modification of undeveloped Crown lots 9, 10 and 11 (including the Public Access Way) would be required to facilitate this permeability. The Buffet Close subdivision lots sizes are considered too small and not in keeping with the nature and character of the existing residential areas. Larger lots reflecting the existing lot sizes are encouraged.

The new residential area may require vegetation thinning along Sydney Highway to facilitate natural ventilation by the trade winds and would also require the relocation of the waste transfer station to eliminate buffer restrictions. A location south of the proposed Rumah Baru port facilities is considered suitable as this area has been used for waste in the past and is in close proximity to container loading facilities.



Lot Number	Description
327	Old quarantine station
328	Old antenna site, inundation area
3003	Coconut trees, old sand mine area
9	Trust land, cleared for housing
10	Cleared for housing
11	Cleared for housing
3006	Public access way
3005	Grassed area
3004	Grassed Area
316	Grassed Area

**Figure 5: Q-station and Urban Expansion Subject Lots**

Crown lots 316 (PIN 1115155), 3005 (PIN 11444289) and 3004 (PIN 11444293) at the southern end of the Buffet Close subdivision are currently open grassed areas with scattered coconut trees. Their continued use as public open space is desirable along with the introduction of public facilities (e.g. benches, bins, playground area) on the site encouraged.

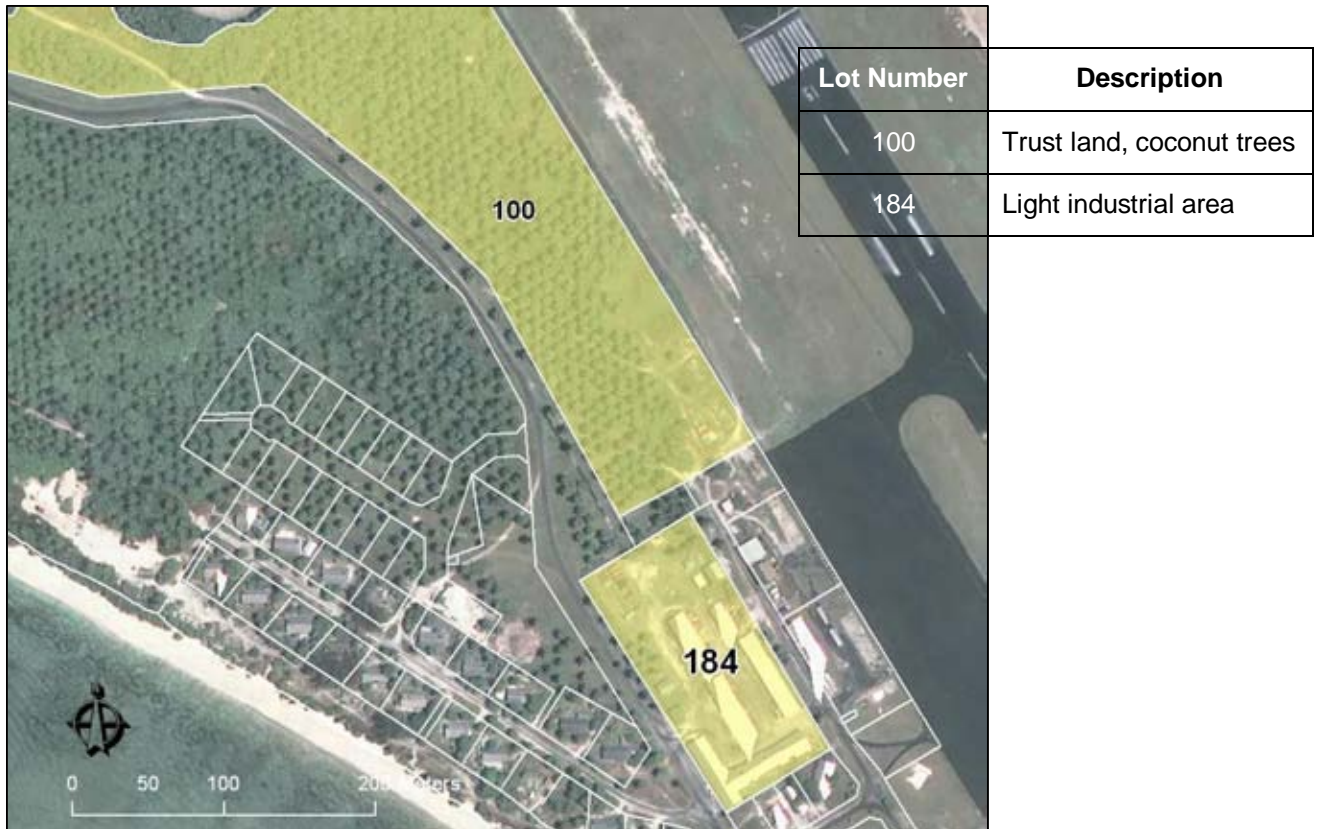
## 6.6 Light Industrial Area (LIA)

The current LIA is situated on Lot 184 (PIN 1115082) on West Island, adjacent to the runway and consists of large buildings divided into separate bays for individual businesses. Only part of the road system within the lot is sealed and the outside storage of loose items is an impediment to movement and safety. The area is unsuitable for certain types of light industries requiring external storage, such as smash repairs and boat construction.

The current location of the LIA close to the main Townsite area of West Island has many benefits and should remain in this location, however light industrial activities requiring large open storage areas or



generating excessive noise should be relocated. The most suitable location is considered to be along the southern side of the access road to the new Rumah Baru facilities (Lot 100 – this is not a Crown lot). This location would provide direct access to the new port facilities, is close to Sydney Highway, is still relatively close to the existing LIA area and the water lens in this area is less than 400m wide.



**Figure 6: LIA Subject Lots**

If more covered bays were required in the future, then expansion of the current LIA area to the north would be suitable, onto the same current Lot 100 (PIN 1115219). This would take advantage of the existing LIA location and also existing service provision infrastructure.

## 6.7 Sydney Highway

A large segment of the current Sydney Highway road reserve is too narrow, as the reserve at the northern end of West Island and also within the settlement area is approximately 20m in width. The middle segment narrows and is barely wide enough to contain the current road width. The reserve width should be consistent at 20m for the length of the Island. This would also allow the accommodation of services within the road reserve, consistent with mainland Western Australian standards. There is currently an 11,000V underground power line adjacent to Sydney Highway and its relocation to within a widened road reserve is desirable. This would provide legal protection in order to remove encumbrances on current land holdings.

A realignment of part of Sydney Highway is also considered suitable, extending approximately 200m north and approximately 1,000m south from the Rumah Baru access road. The benefits of the realignment are:

- » The removal of the existing coastal erosion threat;
- » The provision of approximately 800m of leasable land with coastal frontage for the benefit of the Shire;
- » It will provide an opportunity for the inclusion of a dual use path to the new jetty for electric cars from the settlement area;
- » It will maintain the power cable within a public road reserve and remove encumbrances on Shire land; and
- » It may be initiated as part of the current planned road upgrade works for the Sydney Highway between the town site area and Rumah Baru.

**Figure 7: Proposed Sydney Highway Realignment**



The most suitable uses for the leasable land created from such realignment may include supporting uses to either the proposed LIA on the Rumah Baru access road or the proposed research centre on the Q-station land.

## 6.8 Land Vested to the Australian Telecommunications Commission

Lot 912 (PIN 115157) is located within the residential area on Beacon Heights Road and is no longer used for its original purpose as a telecommunications site. It is situated on the coastal site with ocean views and is currently zoned as Residential in the LPS. As Telstra is no longer a government body, the Commonwealth should consider regaining ownership of the site and utilising it for residential purposes. This site is well served by open space, as it is in close proximity to the current playing fields on Lot 179 and the open space of Lot 316 near Buffet Close, as well as being on the coast.

## 7. Crown Land Management Plan

The effective and proactive management of Crown land on the Cocos (Keeling) Islands will involve the cooperation and coordination of the two major land owners/managers, these being the Commonwealth (through AGD), the Shire of Cocos (Keeling) Islands (the Shire). Between these two organisations, they are responsible for the management of almost all of the land on Cocos (Keeling) Islands and need to agree on the overall strategic direction for the Islands to ensure effective land management.

Statutorily however, the most effective and recognised land management plan is, and will continue to be, the Local Planning Scheme (LPS). Under the applied Western Australian planning framework and legislation, all current and future land use must comply with the LPS, making it the single most effective driver of what happens to land and land management on the Cocos (Keeling) Islands.

### 7.1 Local Planning Context

#### 7.1.1 Local Planning Scheme

A review of the Cocos (Keeling) Islands Local Planning Scheme will be required and the Shire is keen to see the process moving forward. From a Crown land perspective, AGD will participate in any review undertaken by the Shire.

The LPS offers the most effective way of directing the future land uses on the Islands to align with the strategic directions outlined in this report. A review of the current LPS is recommended to update certain land uses on Home and West Islands.

Before a review of the LPS can take place, a Local Planning Strategy will need to be prepared and endorsed. A Local Planning Strategy is a strategic document with a greater time frame than the LPS, generally between 10-20 years, and possibly 30 years. It should contain an analysis of the current land use and environmental constraints, investigate future growth and needs and finally outline broad future land use areas and development provisions and priorities.

#### **Recommendation 1:**

*The Shire initiates a Local Planning Strategy and liaises with AGD to ensure that the findings of the CLMP are incorporated into the Strategy.*

#### **Recommendation 2:**

*AGD encourages the Shire to initiate a review of the Local Planning Scheme as soon as the Local Planning Strategy is endorsed by the Western Australian Planning Commission under regulation 12B of the Town Planning Regulations 1967 (WA) (CKI) and the Federal Minister for Home Affairs.*

A key objective of the new LPS should be to reduce the Islands' dependency on imported food and imported energy (fuel) in order to better support the orderly development of economic sectors such as recreation and tourism. This can be achieved through allocating areas for rural development including agriculture, horticulture, aquaculture and tropical plant research. There are areas of Crown and Shire land that could be utilised for this purpose.



**Recommendation 3:**

*AGD should ensure that the Local Planning Strategy acknowledges the need to reduce the Island's dependency on imported food and building materials by encouraging rural development, including agriculture, horticulture and aquaculture.*

**Recommendation 4:**

*AGD should ensure that the Local Planning Strategy acknowledges the need to reduce the Island's dependency on imported fuel by encouraging the development of low carbon emission energy sources including bio-fuel, wind and solar power.*

### **7.1.2 Local Food Production**

Locals on West Island have indicated that they would grow vegetables and fruit in their backyards immediately if they were allowed to bring in plants and soil material. So far they have had very little success as they are bound by quarantine requirements and long application processing times. A designated community garden area for growing food is not necessarily required.

The Oceania House gardens represent the most tangible expression of successful historical food production on the Islands. Its current management plan is seen as a very useful tool to further progress and inform on-going food production on the Cocos (Keeling) Islands. The future of the management plan and the associated local knowledge is unclear and may be redefined with a renewed focus on promoting local food production. The tourism potential of Oceania House and the surrounding gardens would also benefit from a renewed focus, in consultation with the owner of the house, showcasing the history of the Islands as well as promotion of the gardens as an interactive and relaxing space.

Specific provisions should be made in the new LPS for the allowance and encouragement of community gardens. Community gardens are very effective mechanism to engage community members and to facilitate community relationships. They are also an effective way of producing food at the local level for the community and perhaps more importantly increases the community's awareness and connection with the land and natural processes. This is especially relevant on the Islands where fresh food is not always guaranteed and land for cultivation is almost non existent or underutilised.

**Recommendation 5:**

*AGD and the Shire, in conjunction with relevant community members and AQIS, should continue to provide on-going support to the Oceania House Gardens Management Plan and develop appropriate protocols for the potential introduction of discrete and more comprehensive garden production elsewhere.*

**Recommendation 6:**

*AGD, in conjunction with WA Department of Agriculture and Food, AQIS and the WA Department of Fisheries, to devise a commonly shared list of permissible animal and plant species suitable to the Cocos (Keeling) Islands and consider a review of the current plant assessment process.*

### **7.1.3 Urban Expansion**

A new LPS should also identify urban expansion areas such as those proposed in [Appendix F](#) to provide certainty over the future direction of urban growth and to allow the relevant preparations to be made for this land to be released when it is required. The LPS should also stipulate appropriate minimum





lot sizes for areas of future development to ensure that new lots are in keeping with the existing size and character of other residential areas.

Grouped and single residential dwellings are already established and utilised on the Q-station site. Whilst the future of the Q-station is subject to further discussions, it is conceivable that some expansion of residential uses may be appropriate in the context of a broader future mixed use environment.

**Recommendation 7:**

*AGD and the Shire agree that the majority of urban expansion on West Island will occur to the north of Buffet Close and that an appropriate Urban Development zone in this location is introduced in the new LPS.*

**Recommendation 8:**

*AGD consider residential land use on the Q-station site as part of, and to support, a broader mixed use framework taking into account the re-use of key existing building assets.*

#### **7.1.4 Sydney Highway**

The proposed realignment of Sydney Highway should be recognised in any future Local Planning Strategy. This re-alignment could occur simultaneously with the Rumah Baru works and/or the proposed upgrade of the runway. The Local Planning Strategy should also consider appropriate uses and land tenure arrangements for the land on the western side of the realigned road as well as the relocation of the power cable to the new road reserve. Consideration should also be given to encouraging the use of electric cars to and from the new jetty through dedicated paths as part of any works on Sydney Highway.

A realignment would require a subdivision application to the Western Australian Planning Commission.

**Recommendation 9:**

*The Shire, in conjunction with AGD, initiate a subdivision application to the WAPC that encompasses the realignment of Sydney Highway as outlined in the CLMP, to mitigate against erosion threats, to provide a consistent road reserve width and create useable land on the western side of the highway.*

## **7.2 Tropical Plant and Food Research**

The establishment of some form of tropical plant, food and marine research is considered a suitable use of the Q-station facilities and land. The reduction of the Islands' dependency on imported fresh food should be a key objective for the Islands. The success of the Oceania House gardens and the historical operations on the horticultural land on West Island suggest that it is possible to grow fresh produce on the Islands.

There are many benefits to the local production of fresh produce and development of an industry based on horticulture, including enabling the community to achieve a certain level of self reliance and contribute positively to the economic, social and environmental requirements of the Islands. Other benefits include providing the community with access to less expensive produce, providing local employment opportunities and retain money in the local economy. With a base on West Island, it may also encourage increased interaction between the communities on Home and West Islands.

Evidence suggests that there are challenges associated with the large scale cultivation of fresh food produce on the Islands. As concluded in the *Winston Churchill Memorial Trust of Australia Report*, a



sustained program of applied research may make it possible to develop field-based systems that could bring areas rendered horticulturally unproductive back into a state of productivity for selected crops. Part of this will need to come from the development of information specific to the Cocos (Keeling) Islands.

It is envisaged that one of the prime objectives of the on-island research function would be to conduct research into providing a solution to enable the effective cultivation of fresh produce on the Islands. Other research could include marine research into the establishment of aquaculture on the Islands and the utilisation and expansion of local knowledge.

It is understood that funding for research projects is a considerable challenge Australia wide. The re-use of existing infrastructure on the Q-station may provide a cost effective start-up opportunity for potential parties. These may include Federal Government agencies (e.g. CSIRO), WA State Government agencies (such as the Department of Agriculture and Food) or private education institutions (such as universities).

**Recommendation 10:**

*AGD consider approaching relevant public and private national and international institutions with an interest in tropical food production to consider the establishment of on-island research with a focus on the Q-station opportunity.*

### **7.3 Links with Christmas Island**

Considering the relative proximity to each other and established logistics connections, a stronger economic partnership between Christmas Island and the Cocos (Keeling) Islands is a logical step forward in the strategic management of the future of both Territories.

Christmas Island shares similar dependencies on the importation of fresh food as the Cocos (Keeling) Islands and also should consider the large scale cultivation of land for fresh food production. In this sense, a partnership between the two Territories could be created in relation to tropical plant and agriculture research. If a research centre was established on West Island, a branch could be established on Christmas Island in order to facilitate research there whilst also sharing resources and expertise with the main centre on West Island. Christmas Island also has the facilities to accommodate visiting students and researchers and the research could be run in conjunction with Parks Australia and their nursery.

Another synergy worth exploring could be centred on the importation of phosphate material from Christmas Island to the Cocos (Keeling) Islands. Phosphate material from Christmas Island could assist in the research and agricultural activities envisaged for the Cocos (Keeling) Islands and would require negotiation between AGD, both local governments and Christmas Island Phosphates. There would also be quarantine requirements to fulfil.

**Recommendation 11:**

*AGD, in conjunction with CIP and AQIS, explore opportunities and related approvals to transfer phosphate and local construction materials from Christmas Island to Cocos (Keeling) Islands to strengthen the Territories' local economies and capture foreseeable socio-economic synergies.*

## 7.4 Outline Development Plans

### 7.4.1 Buffet Close Urban Expansion Area

The formulation of an ODP should be devised to allow for the orderly management of future urban expansion areas on West Island. The ODP may be created under a partnership agreement between AGD and the Shire.

The ODP should identify opportunities for:

- » The continuation of the road network parallel to the coast;
- » A second connection back onto Sydney Highway;
- » The establishment and release of new residential lots;
- » Guidance on appropriate lot sizes;
- » The relocation of the waste transfer station closer to Rumah Baru;
- » Indications on appropriate natural ventilation techniques to take advantage of the trade winds; and
- » Appropriate pedestrian connections to existing residential areas, coastal areas and proposed recreation facilities to the north.

#### **Recommendation 12:**

*AGD to formulate an ODP that would lead in time to the creation of a new residential subdivision linked to the existing Buffet Close and Beacon Heights residential areas and recognising the long term recreation potential for land immediately to the north.*

### 7.4.2 Q-Station

An ODP should also be devised to allow for the orderly redevelopment of the Q-station. The ODP should support the establishment of a mixed use precinct and identify opportunities including (but not limited to):

- » Public road access to the 'Surf Shack';
- » Short term light industrial use until long term industrial area near Rumah Baru is created;
- » Residential use in part to support other on-site uses;
- » Safe pedestrian connection to the town site;
- » Re-use of existing structures;
- » Marine and agricultural research;
- » Waste water re-use from nearby waste water treatment plant; and
- » Alternative energy production.

#### **Recommendation 13:**

*AGD should formulate an ODP for the Q-station that supports temporary light industrial use and the long term establishment of a mixed use precinct.*



## 7.5 Water Management

### 7.5.1 Potable Water

There is currently some concern over the pressure on ground water lenses and their ability to provide suitable quality potable water to the Islands. The ODP report for the Q-station identified that the minimum width of a coral island to sustain a fresh water supply is 400m. The coastlines of Home Island and West Island are forever changing and are subject to the effects of storm surges and climate change. The Climate Change Assessment for the IOT indicated that the Cocos (Keeling) Islands are at a medium to high risk of increased sediment movement and reduction of narrow beaches. In addition to this, the capacity of the lenses varies from place to place and also fluctuates daily according to rainfall, tides and the extent of extraction (DPI, 2001).

The continued extraction of fresh water from these lenses is not a sustainable option looking into the future, especially with any population growth.

There is currently a plan being finalised that will ultimately establish a desalinisation plant on Home Island to provide potable water to that Island, reducing the need to extract water from the groundwater lens. If this plant proves successful, then the establishment of a similar plant on West Island would require further consideration. This would reduce the pressure on the ground water lenses and provide a more reliable and permanent potable water supply for the Islands. It will also make available a larger amount of fresh ground water to facilitate horticultural production on the Islands.

#### **Recommendation 14:**

*AGD, in conjunction with the Water Corporation, investigate the desirability and suitable location for a water desalinisation plant on West Island in order to inform the recommended future Local Planning Strategy.*

### 7.5.2 Waste Water

Section 5.2 identified as a strategic priority of AGD the investigation of waste water re-use options for the Cocos (Keeling) Islands. The re-use of waste water has the potential to positively impact on the fresh water supply by reducing demand. Waste water re-use could target horticulture and agriculture activities and contribute to the need to diversify the Island's economic base.

#### **Recommendation 15:**

*AGD and the Water Corporation, with advice from the Western Australian Department of Health, investigate collaboratively waste water infrastructure and waste water re-use opportunities on the Islands.*

## 7.6 Waste Management

Both Home Island and West Island have waste transfer stations that allow for the separation of household rubbish and recyclable materials. On the surface these operate reasonably effectively, however on-site observations revealed that the stations may require more diligent observations of waste separation. There was also evidence of waste spilling into surrounding low lying inundated areas.

Upon the development of the proposed urban expansion area north of Buffet Close, the West Island waste transfer station would require relocation in close proximity to the Rumah Baru jetty. This would



provide an opportunity to clean up the current site, but also to possibly revisit the operation and management of the new site.

The Islands should continue to implement their *Strategic Waste Plan* to reduce the amount of waste going to landfill and to further maximise recycling possibilities through a zero waste policy. Transferring waste off the Islands will become a focus for waste management once the waste transfer facilities reach capacity, however there will be quarantine barriers to be overcome to allow this. Investigation into the processing of higher value recyclable waste in Indonesia should be investigated as an alternative. This may also provide an additional source of income for the Islands.

**Recommendation 16:**

*AGD and the Shire explore the long term relocation of the West Island transfer station closer to the Rumah Baru jetty and simultaneously commit to a whole of Islands zero waste strategy.*

## **7.7 Infrastructure Protection**

Another aspect of effective land management is adequate protection for major infrastructure assets on the Islands. Currently there are instances of infrastructure assets without easements to provide legal rights of access. A systematic plan should be developed and implemented to ensure service infrastructure protection.

Examples of unprotected service infrastructure include:

- » Sections of an 11,000V underground power cable on West Island not within a road reserve or easement;
- » Wastewater outfall on the west coast of West Island;
- » All service provision to Rumah Baru; and
- » All service provision to residential areas on Home Island.

In circumstances where public utilities are not protected by cadastre or easements, where existing land uses would be best defined by discrete adjustment of lot boundaries and where road reserves would need to be created, a Land Rationalisation Plan (LRP) could be devised. Any LRP would need to satisfy the standards required under the statutory subdivision process.

**Recommendation 17:**

*AGD initiates, in conjunction with the WA Department of Regional Development and Lands, relevant cadastral surveys and rationalisations in order to create the appropriate protection of public utilities, define existing land uses and formalise road reserves where required, in line with the current Service Delivery Agreement.*

## **7.8 Cadastral Rationalisation**

### **7.8.1 Land Rationalisation**

There is no need for a large scale cadastral rationalisation of the Islands; however there are still some instances of cadastral boundary inconsistencies where cadastral boundaries do not match legal land use areas, or lots without legal access that should be rectified. Effective land management requires that all



properties have suitable cadastral boundaries to ensure effective legal property rights and control, and land use designation.

Some of these cadastral inconsistencies include:

- » The transmitter site at the north point area of West Island (all Lot 0 – PINs 1115061, 1115062 and 1115063) is spread over three lots, one with no legal access;
- » Several coastal areas have changed significantly since the last cadastral survey was carried out; and
- » Lack of official cadastre on Home Island for the residential areas despite it being apparent in land use zoning maps.

There are also various roads used by the public that are not protected by public road reserves (i.e. Rumah Baru access, and access to various public beach areas on the west coast of West Island). The absence of road reserves (or inadequate road reserve widths in some cases) for public roads jeopardises the efficient protection of services, can provide confusion over responsibilities for upkeep between organisations and can prevent the effective provision of basic services such as footpaths and bin collections. There is an expectation that any review of the TPS would include provisions for adequate public road reserves.

The LPS should also recognise and align with the current cadastral information for the Islands. From a land management perspective, this is essential in providing certainty over land use zonings and land use rights for individual lots, and will also allow the recognition of public road reserves where required. This process will eliminate the current situation of single lots have multiple land use zonings.

**Recommendation 18:**

*AGD initiates, in conjunction with the WA Department of Regional Development and Lands, relevant cadastral surveys and rationalisations to address existing cadastral inconsistencies and anomalies, in line with the current Service Delivery Agreement.*

## **7.8.2 Private Structures**

Another aspect of cadastral irregularities on West Island involves private structures outside cadastral lot boundaries. Several instances of equipment or structures erected on private lots encroaching outside of legal lot boundaries were observed in the residential areas of West Island (not necessarily all on Crown lots).

These include:

- » Properties on the ocean side of Beacon Heights Road have installed infrastructure outside of lot boundaries;
- » Rear fencing of properties on the ocean side of William Keeling Crescent has extended beyond lot boundaries thus prohibiting the potential continuity of public coastal walking and cycling path;
- » Lot 130 Airforce Road has landscape features blocking the legal access of a rear block as well as Water Corporation infrastructure;
- » Access to Lot 138 Nelson Mandela Walk is outside the legal battleaxe access, through private Lot 122; and
- » Crown Lot 138 and private Lot 137 could share physical access to minimise potential conflicts with a building on Lot 123 that has zero setback from the current battleaxe access to the rear blocks.



These instances of private structures encroaching outside legal lot boundaries should be rectified to ensure that further encroachment is prevented. In addition, the rights of the public to have access to public land need to be protected along with ensuring legal accesses to rear battleaxe blocks remain free of obstructions. Rectification of this situation remains essential to ensure that the Bi-centennial Trail along the west coast of West Island is implemented to its stated and full potential.

**Recommendation 19:**

*The Shire, with the support of AGD, notify relevant land owners of their obligation to remove private structures established outside of legal lot boundaries in order to protect the integrity of Crown land assets and the potential implementation of the Bi-centennial Trail.*

## **7.9 Disposal of Commonwealth Land**

Any disposal of specific Commonwealth land parcels should be facilitated in line with the current Commonwealth Property Disposals Policy. The policy essentially indicates that Commonwealth property, having no alternative efficient use, is to be sold on the open market at full market value. Local Governments have the opportunity to put forward requests for a direct or 'priority' sale of Commonwealth land, provided it can be demonstrated that such a sale offers the best outcome for delivery of the Government's objectives.

### **7.9.1 Subdivision of Crown Land**

AGD should maintain control of the subdivision process of new developments (e.g. the expansion of the Buffet Close residential area) to ensure specific objectives are met at the development stage. This may include provisions for pedestrian linkages, landscape requirements and lot sizes. This will ensure a high level of certainty and readiness for development.

**Recommendation 20:**

*AGD should maintain ownership of the subdivision design process to ensure that appropriate social and urban design objectives are defined prior to the formalisation of land development contractual agreements.*

**Recommendation 21:**

*AGD explore the introduction of administrative processes that facilitate and expedite minor cadastral boundary adjustments.*

### **7.9.2 Unsolicited Proposals**

There is a demand by some individuals to develop Crown land on the Islands. This demand is usually unsolicited and AGD can only release land in accordance with current Commonwealth policies and legislation. This has generated significant frustration and in many cases the inability to capture development opportunities.

An additional aspect to land release involving the creation of freehold titles is the potential acquisition of freehold land by off-island speculators and lack of subsequent development.





**Recommendation 22:**

*AGD explore the advantages and disadvantages of considering an unsolicited proposal procedure to capture potential building investment.*

**Recommendation 23:**

*AGD consider long term lease arrangements with obligations for lessees to build in a timely manner, in preference to freehold land release.*

### **7.9.3 Transfer of Management**

In order to provide clarity between management responsibilities, in instances where local parks and recreation assets are located on Crown land this land should be under the control of the Local Government for maintenance and upkeep. This is typical of mainland Western Australian local government operations. Other local community facilities, such as religious venues, should also follow this model of local government control.

**Recommendation 24:**

*AGD and the Shire agree on the management and maintenance responsibilities for public facilities irrespective of funding sources.*

### **7.10 Implementation**

The legal, technical and socio-economic aspects associated with land management are often occurring concurrently rendering decision processes cumbersome, complex and often delayed.

The CLMP has revealed that management of land on the Islands is characterised, in part, by the following:

- » Cadastral discrepancies;
- » Land uses outside of permissible zones under the TPS;
- » Infrastructure in inappropriate locations; and
- » Infrastructure without protective easements;

This raises questions in terms of public liability, apportionment of maintenance responsibilities and the enforcement of land management procedures.

To be effective the CLMP will require two fundamental ingredients; a land specific working relationship between AGD and the Shire and a reliable and on-going budget to deal with unresolved land management legacies as well as future planning needs.

**Recommendation 25:**

*To reinforce a specific land management focus between AGD and the Shire to progress the implementation of the CLMP and the Local Planning Scheme review process.*

**Recommendation 26:**

*AGD to consider appropriate funding arrangements in order to have the appropriate financial means of supporting and implementing the CLMP.*



## 8. Land Development Priorities

The following outlines the suggested priorities of the land management recommendations that have been outlined in this report. The successful implementation of the land management plan will be reliant on the success of the individual actions that will allow the Island to move in a consistent and agreed upon strategic direction.

The following actions are considered the key priorities focussed on tangible outcomes on the Island:

1. AGD should formulate an ODP for the Q-station that supports temporary light industrial use and the long term establishment of a mixed use precinct.
2. The Shire initiates a Local Planning Strategy and liaises with AGD to ensure that the findings of the CLMP are incorporated into the Strategy.
3. AGD to formulate an ODP that would lead in time to the creation of a new residential subdivision linked to the existing Buffet Close and Beacon Heights residential areas and recognising the long term recreation potential for land immediately to the north.
4. The Shire, with the support of AGD, notify relevant land owners of their obligation to remove private structures established outside of legal lot boundaries in order to protect the integrity of Crown land assets and the potential implementation of the Bi-centennial Trail.

One further key enabling priority is:

1. To reinforce a specific land management focus between AGD and the Shire to progress the implementation of the CLMP and the Local Planning Scheme review process.

The recommendations below are listed in order of priority and those followed by a '♦' symbol are likely to require the establishment of a project plan and the provision of a corresponding budget for their orderly implementation.

### 8.1 Immediate (0 - 12 Months)

#### **Recommendation 25:**

*To reinforce a specific land management focus between AGD and the Shire to progress the implementation of the CLMP and the Local Planning Scheme review process.*

#### **Recommendation 26:**

*AGD to consider appropriate funding arrangements in order to have the appropriate financial means of supporting and implementing the CLMP.*

#### **Recommendation 20:**

*AGD should maintain ownership of the subdivision design process to ensure that appropriate social and urban design objectives are defined prior to the formalisation of land development contractual agreements.*



**Recommendation 19:**

*The Shire, with the support of AGD, notify relevant land owners of their obligation to remove private structures established outside of legal lot boundaries in order to protect the integrity of Crown land assets and the potential implementation of the Bi-centennial Trail.*

**Recommendation 7:**

*AGD and the Shire agree that the majority of urban expansion on West Island will occur to the north of Buffet Close and that an appropriate Urban Development zone in this location is introduced in the new LPS.*

**Recommendation 8:**

*AGD consider residential land use on the Q-station site as part of, and to support, a broader mixed use framework taking into account the re-use of key existing building assets.*

**Recommendation 13 ♦:**

*AGD should formulate an ODP for the Q-station that supports temporary light industrial use and the long term establishment of a mixed use precinct.*

**Recommendation 1 ♦:**

*The Shire initiates a Local Planning Strategy and liaises with AGD to ensure that the findings of the CLMP are incorporated into the Strategy.*

**Recommendation 3:**

*AGD should ensure that the Local Planning Strategy acknowledges the need to reduce the Island's dependency on imported food and building materials by encouraging rural development, including agriculture, horticulture and aquaculture.*

**Recommendation 4:**

*AGD should ensure that the Local Planning Strategy acknowledges the need to reduce the Island's dependency on imported fuel by encouraging the development of low carbon emission energy sources including bio-fuel, wind and solar power.*

**Recommendation 9 ♦:**

*The Shire, in conjunction with AGD, initiate a subdivision application to the WAPC that encompasses the realignment of Sydney Highway as outlined in the CLMP, to mitigate against erosion threats, to provide a consistent road reserve width and create useable land on the western side of the highway.*

**Recommendation 23:**

*AGD consider long term lease arrangements with obligations for lessees to build in a timely manner, in preference to freehold land release.*



## **8.2 Short Term (12 Months – 36 Months)**

### **Recommendation 14 ♦:**

*AGD, in conjunction with the Water Corporation, investigate the desirability and suitable location for a water desalinisation plant on West Island in order to inform the recommended future Local Planning Strategy.*

### **Recommendation 11:**

*AGD, in conjunction with CIP and AQIS, explore opportunities and related approvals to transfer phosphate and local construction materials from Christmas Island to Cocos (Keeling) Islands to strengthen the Territories' local economies and capture foreseeable socio-economic synergies.*

### **Recommendation 12 ♦:**

*AGD to formulate an ODP that would lead in time to the creation of a new residential subdivision linked to the existing Buffet Close and Beacon Heights residential areas and recognising the long term recreation potential for land immediately to the north.*

### **Recommendation 5 ♦:**

*AGD and the Shire, in conjunction with relevant community members and AQIS, should continue to provide on-going support to the Oceania House Gardens Management Plan and develop appropriate protocols for the potential introduction of discrete and more comprehensive garden production elsewhere.*

### **Recommendation 24:**

*AGD and the Shire agree on the management and maintenance responsibilities for public facilities irrespective of funding sources.*

### **Recommendation 17 ♦:**

*AGD initiates, in conjunction with the WA Department of Regional Development and Lands, relevant cadastral surveys and rationalisations in order to create the appropriate protection of public utilities, define existing land uses and formalise road reserves where required, in line with the current Service Delivery Agreement.*

### **Recommendation 22:**

*AGD explore the advantages and disadvantages of considering an unsolicited proposal procedure to capture potential building investment.*

### **Recommendation 2 ♦:**

*AGD encourages the Shire to initiate a review of the Local Planning Scheme as soon as the Local Planning Strategy is endorsed by the Western Australian Planning Commission under regulation 12B of the Town Planning Regulations 1967 (WA) (CKI) and the Federal Minister for Home Affairs.*



### **8.3 Medium Term (3-7 Years)**

#### **Recommendation 10:**

*AGD approach relevant public and private national and international institutions with an interest in tropical food production to consider the establishment of on-island research with a focus on the Q-station opportunity.*

#### **Recommendation 6:**

*AGD, in conjunction with WA Department of Agriculture and Food, AQIS and the WA Department of Fisheries, to devise a commonly shared list of permissible animal and plant species suitable to the Cocos (Keeling) Islands and consider a review of the current plant assessment process.*

#### **Recommendation 15:**

*AGD and the Water Corporation, with advice from the Western Australian Department of Health, investigate collaboratively waste water infrastructure and waste water re-use opportunities on the Islands.*

#### **Recommendation 21:**

*AGD explore the introduction of administrative processes that facilitate and expedite minor cadastral boundary adjustments.*

#### **Recommendation 16 ♦:**

*AGD and the Shire explore the long term relocation of the West Island transfer station closer to the Rumah Baru jetty and simultaneously commit to introduce a whole of Islands zero waste strategy.*

### **8.4 Long Term (7+ Years)**

#### **Recommendation 18 ♦:**

*AGD initiates, in conjunction with the WA Department of Regional Development and Lands, relevant cadastral surveys and rationalisations to address existing cadastral inconsistencies and anomalies, in line with the current Service Delivery Agreement.*



## 9. References

Brain, S. 2005, *Winston Churchill Memorial Trust of Australia Report 2005*, 'To gather and share information that will contribute to the development of sustainable horticulture systems for the Cocos (Keeling) Islands.'

Department for Planning and Infrastructure. 2001, *Draft Outline Development Plan – Quarantine Station, West Island, Cocos (Keeling) Islands*, prepared December 2001.

Maunsell Australia Pty Ltd. 2009. *Climate Change Risk Assessment for the Australian Indian Ocean Territories*, prepared by A. Fearnley, 29 January 2009

Shire of Cocos (Keeling) Islands. *Shire of Cocos (Keeling) Islands Vision 2010*.

Unknown. 2008, *Towards Zero Waste – Strategic Waste Plan Shire of Cocos (Keeling) Islands*, prepared September 2008.

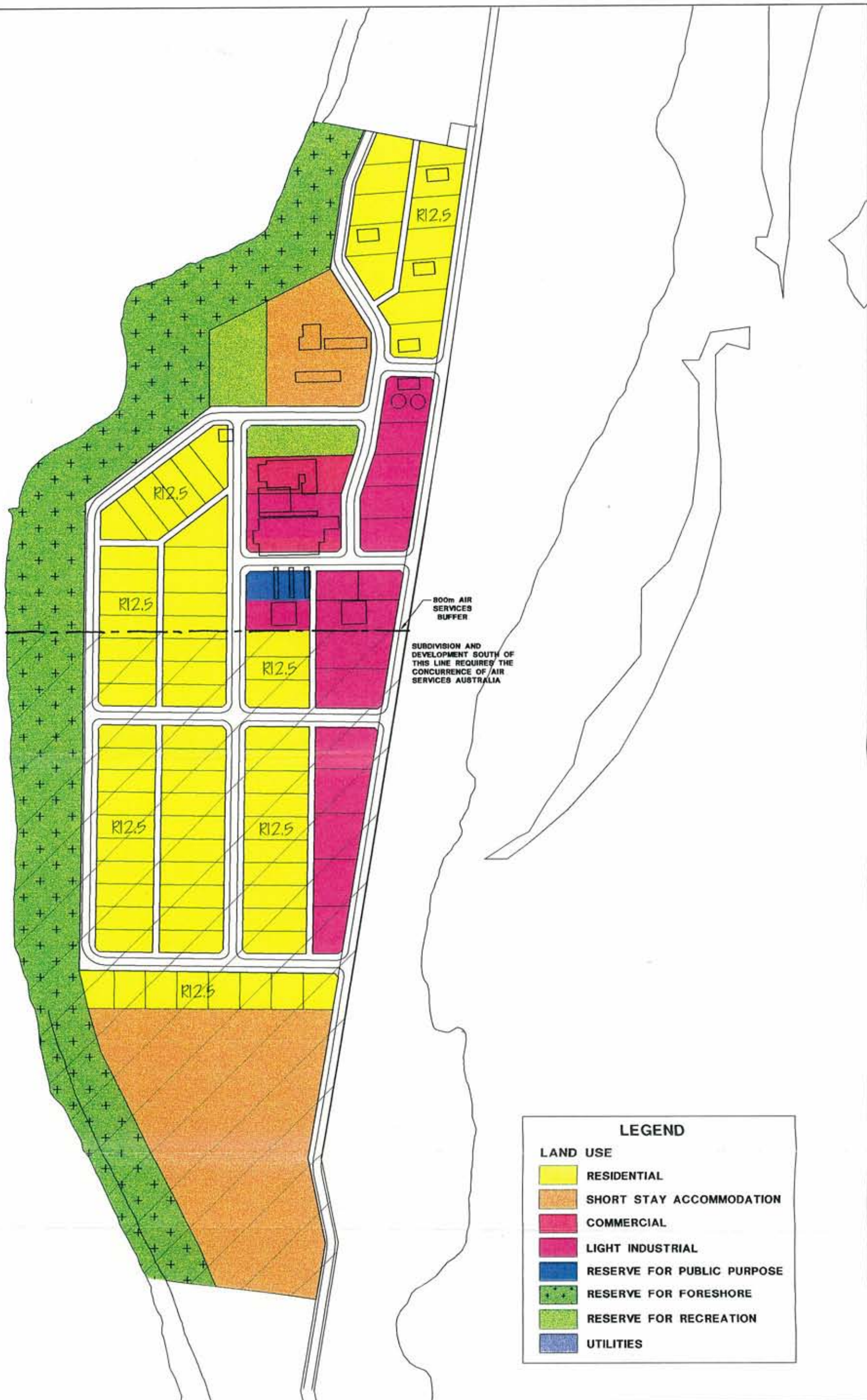
Western Australian Planning Commission. 2007, *Shire of Cocos (Keeling) Islands Local Planning Scheme No. 1*, gazetted 30 July 2007.



Appendix A

# Quarantine Station Preferred Outline Development Plan





PROJECT **COCOS ISLANDS, QUARANTINE STATION**

DRAWING TITLE **OUTLINE DEVELOPMENT PLAN**

PRINCIPAL **DEPARTMENT FOR PLANNING AND INFRASTRUCTURE**



CONSULTING ENGINEERS  
TOWN PLANNERS  
PROJECT MANAGERS  
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Date 11/09/01 Scale 1:10,000

Designed	Checked
Drawn RJP	Approved
Local Authority	Sheet 1 of 1

Project Number P01005 Drawing Number P630-SK2 Revision

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ORIGINAL A3



## Appendix B

# Crown Land Audit

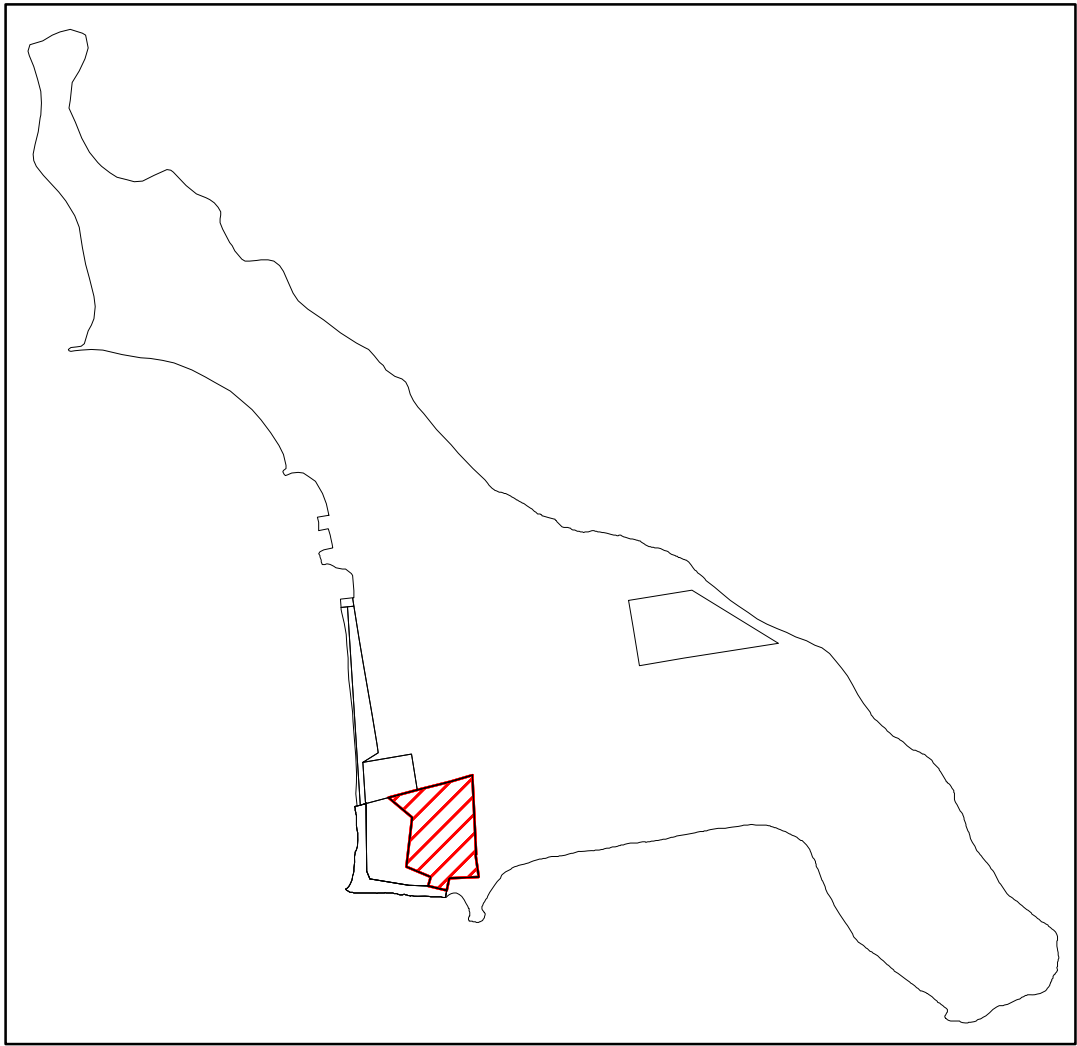
<div><div><div><div><div></div><div>GHD</div></div></div><div><div>Global Infrastructure Performance</div></div></div></div>		Crown Land Management Plan for the Indian Ocean Territories																	
61/23256		Crown Land Draft Inventory & Audit Content																	



## Appendix C

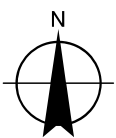
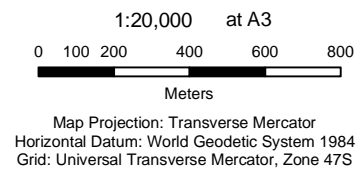
# Land Capability Map Series – Committed Land





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	Public Purposes		General Rural		

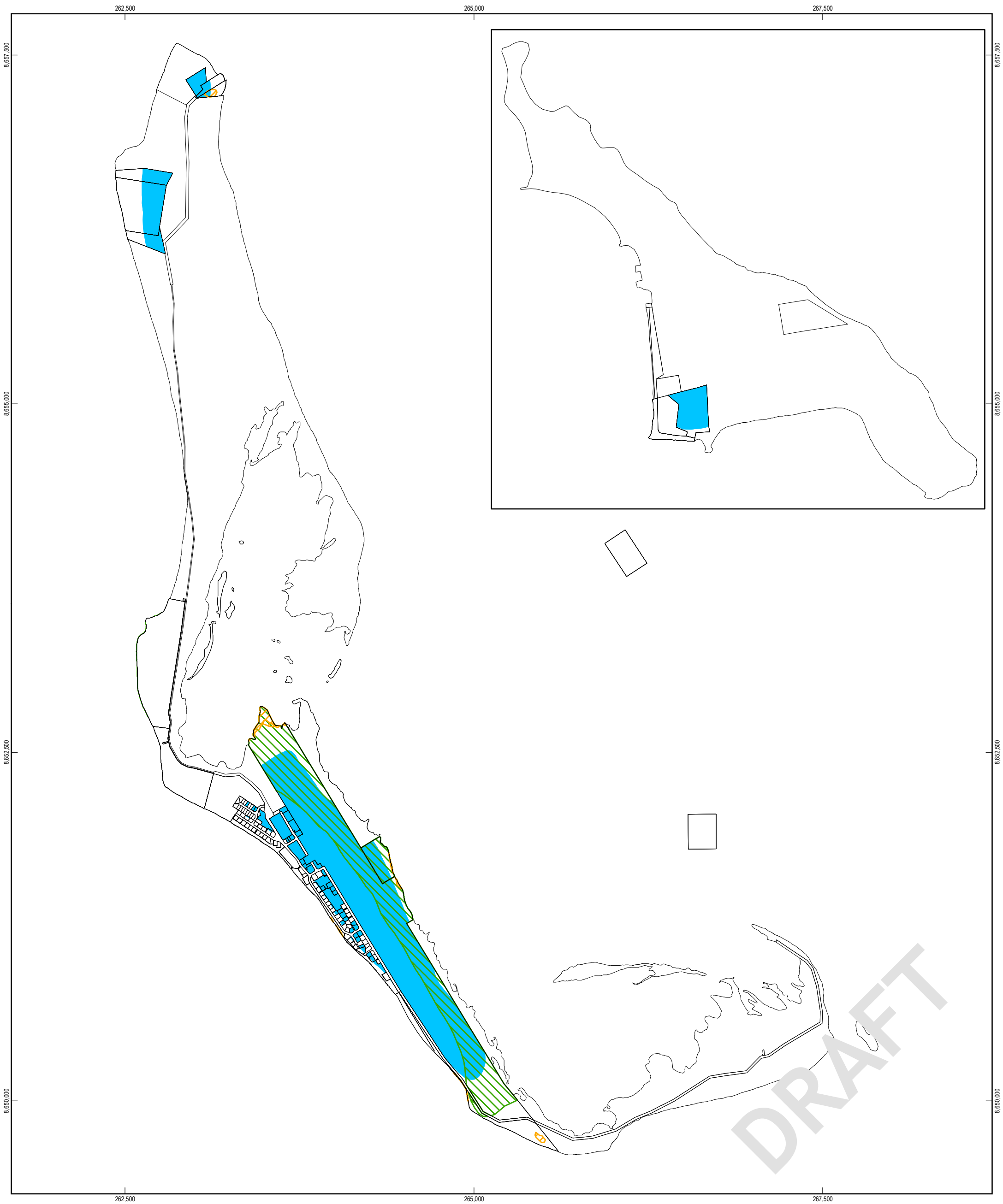


Attorney-General's Department  
Crown Land Management Plan for the IOT

Job Number 61/23256  
Revision A  
Date 23 June 2009

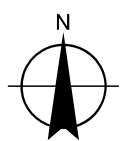
Committed Land  
Inappropriate Zoning

Figure 1



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|  | Rubbish Problem Areas - GA - 20060302 |  | Groundwater Lense - GA - 20060228       |

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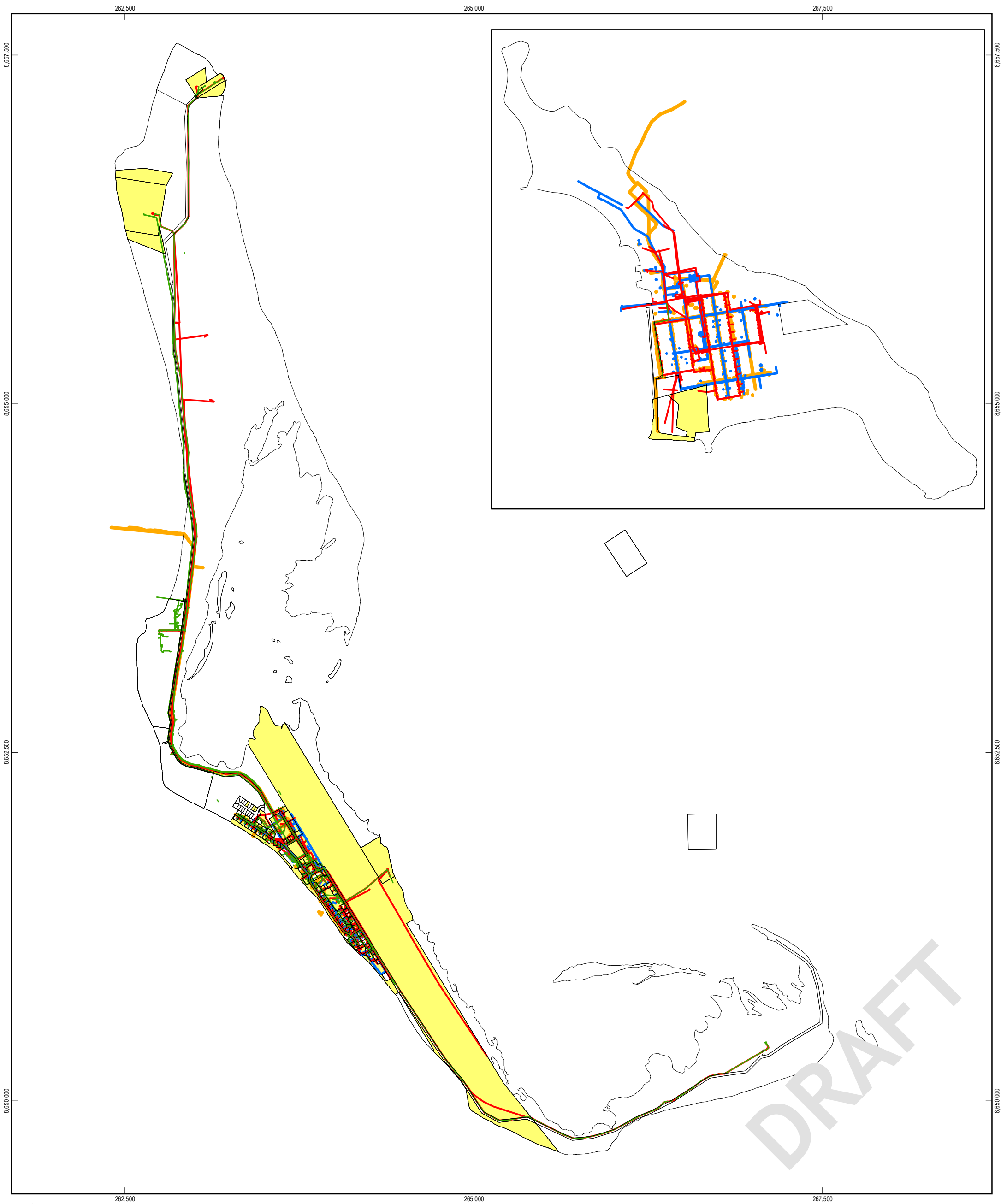
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Revision	A
Date	23 June 2009

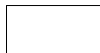
## Committed Land Environmental Considerations

Figure 2

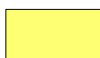




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Cadastre - GA - 200708



Committed Crown Land - GHD - 20090622



Wastewater - GA - 20060301



Communications - GA - 20060301



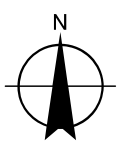
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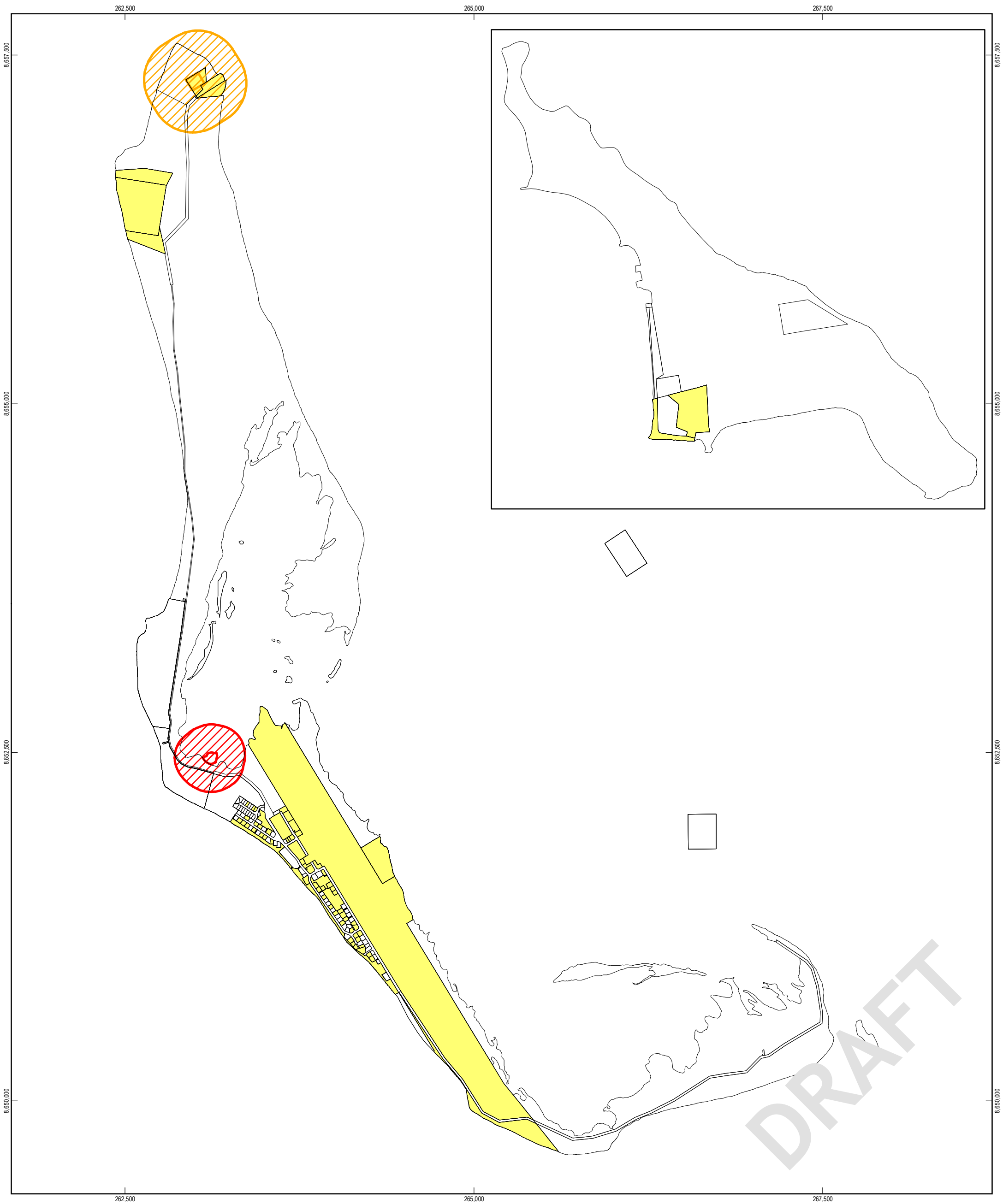
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Crown Land Management Plan for the IOT

Committed Land  
Services

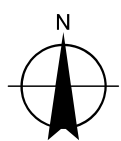
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Revision A  
Date 23 June 2009



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|  | Committed Crown Land - GHD - 20090622 |  | Fuel Storage Tank Buffer - GHD - 20090622      |

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Attorney-General's Department  
Crown Land Management Plan for the IOT

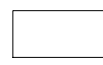
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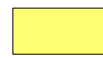
## Committed Land Buffer Considerations


Figure 4



LEGEND

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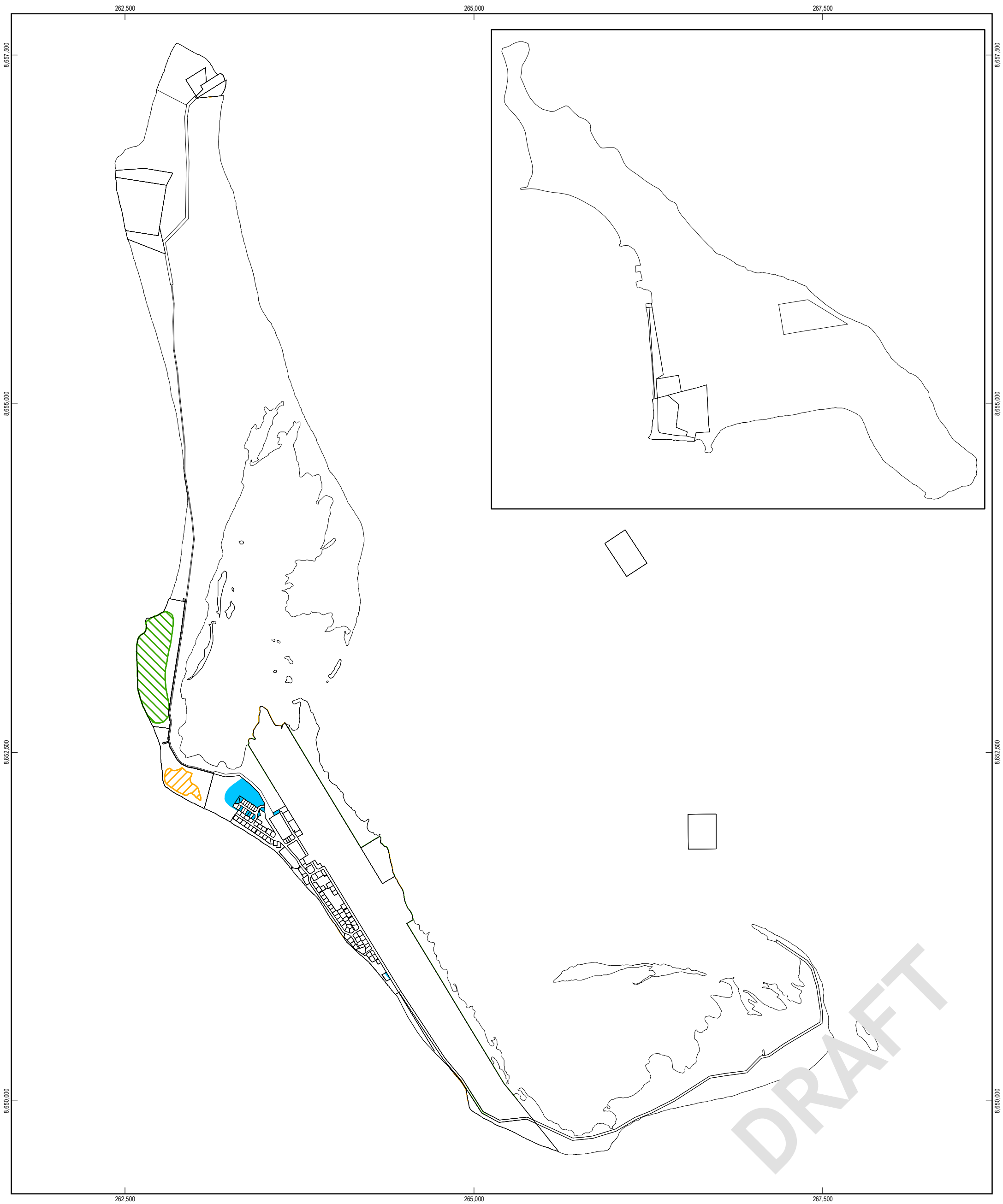
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 Commonwealth Heritage Register - GA - 20060223



## Appendix D

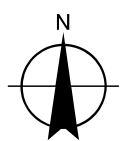
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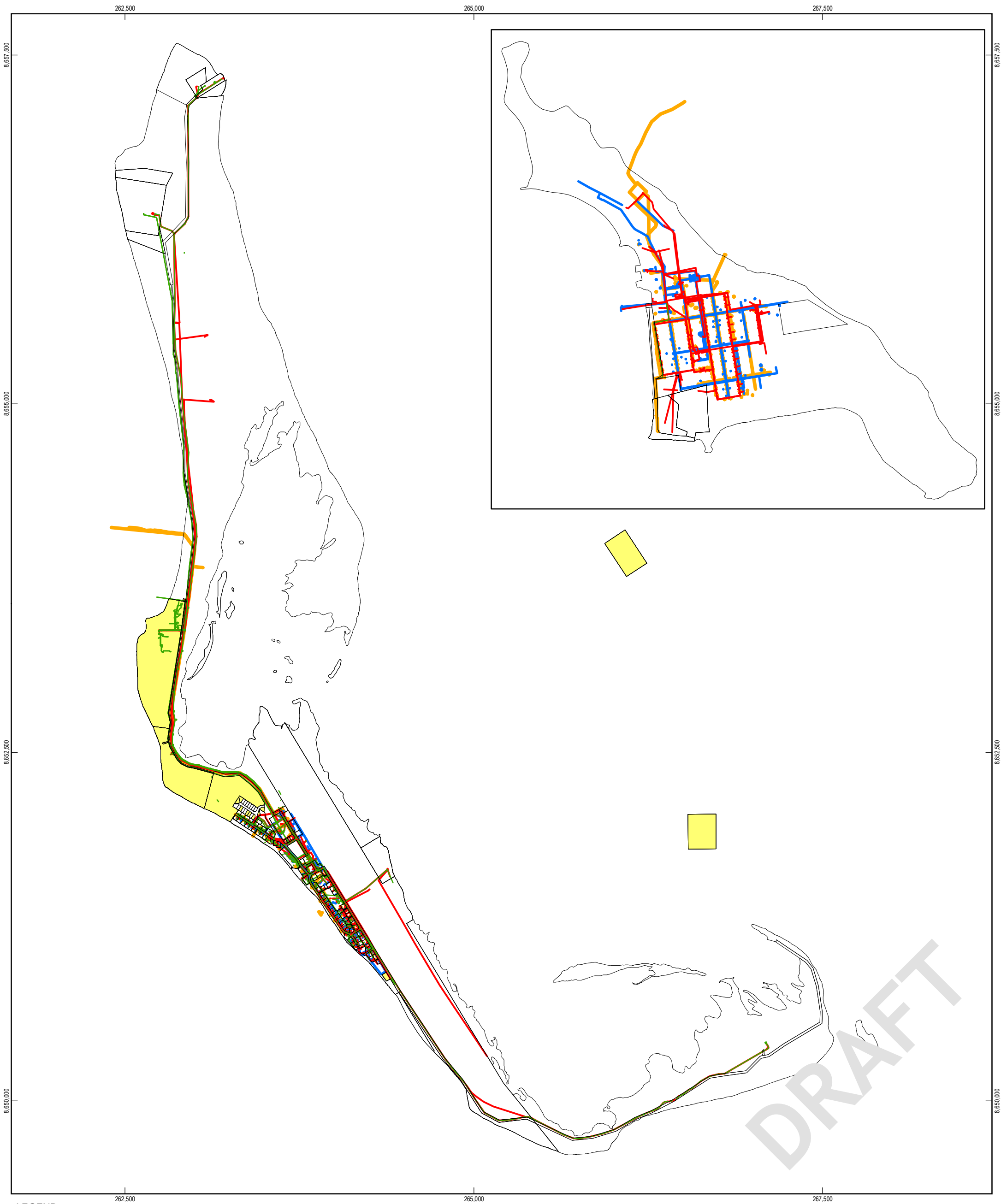


Attorney-General's Department  
Crown Land Management Plan for the IOT

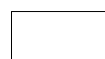
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Revision	A
Date	23 June 2009

## Un-Committed Land Environmental Considerations

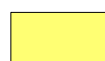
Figure 1



LEGEND



Cadastre - GA - 200708



Un-Committed Crown Land - GHD - 20090622



Wastewater - GA - 20060301



Communications - GA - 20060301

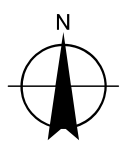


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Power - GA - 20060301

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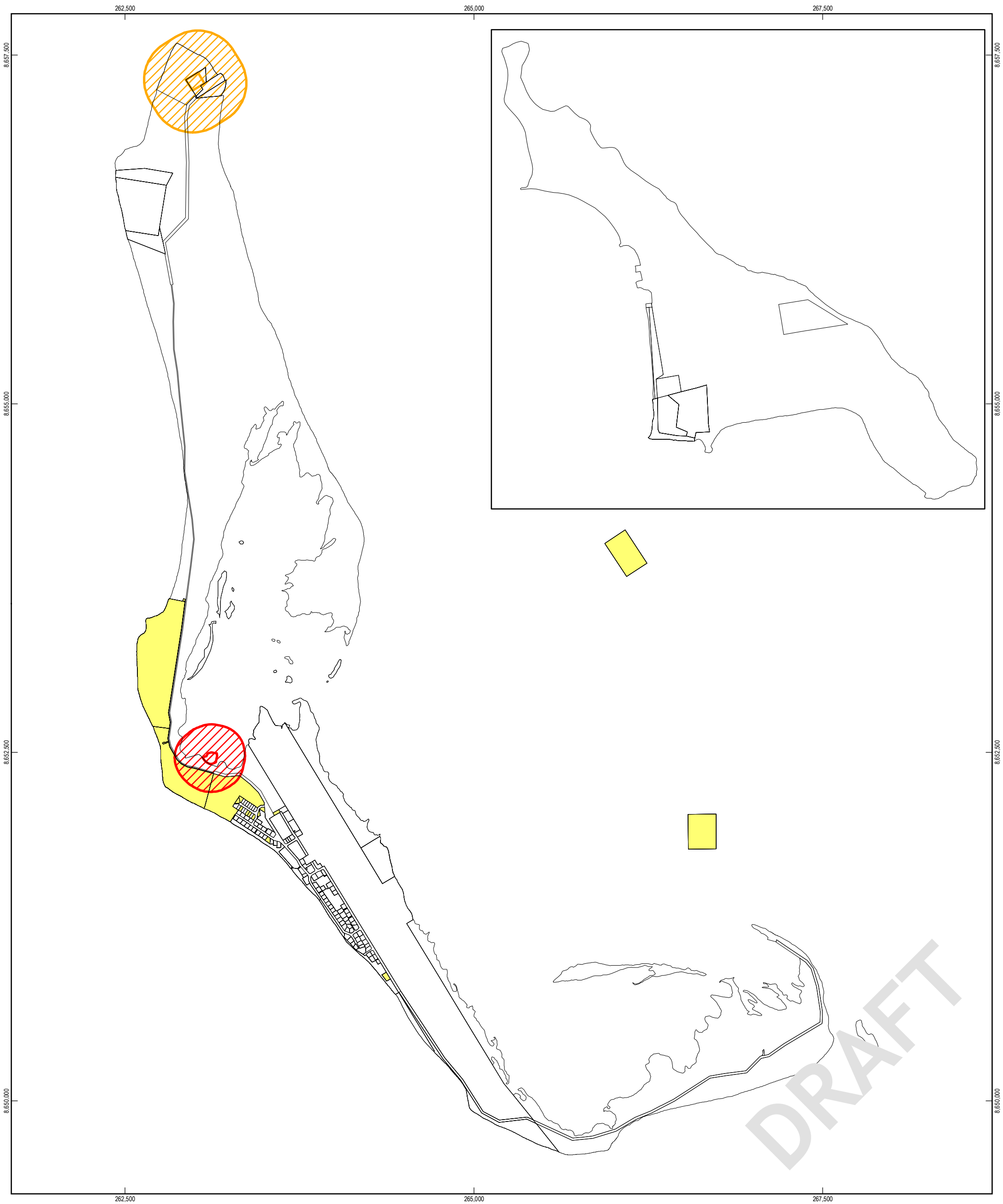
Attorney-General's Department  
Crown Land Management Plan for the IOT

Job Number 61/23256  
Revision A  
Date 23 June 2009

Un-Committed Land  
Services

Figure 2

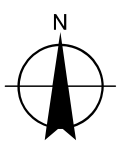




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Attorney-General's Department  
Crown Land Management Plan for the IOT

Job Number	61/23256
Revision	A
Date	23 June 2009

## Un-Committed Land Buffer Considerations

Figure 3



Appendix E

# Shire of Cocos (Keeling) Islands LPS1 Zoning Table

**TABLE 1 – ZONING TABLE**

<b>USE CLASSES</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>General Rural</b>
Ancillary Accommodation	D	X	X	X
Animal Husbandry	X	X	X	D
Animal Care Facility	X	X	D	D
Aquaculture	X	X	D	D
Bank	X	P	D	X
Bar	X	D	X	X
Camping Grounds	X	D	X	D
Car Park	X	D	D	D
Caretaker's Dwelling	D	D	D	D
Civic Use	A	P	A	D
Club Premises	A	D	X	D
Communications Antennae – Commercial	A	D	D	D
Cultural Facility	A	P	A	D
Educational Establishment	A	D	X	X
Fuel Depot	X	X	D	X
Grouped Dwelling	D	X	X	X
Guest House	D	D	X	X
Health Centre	A	P	X	X
Home Occupation	P	X	X	X
Hospital	A	D	X	X
Hotel	X	D	X	X
Industry – Extractive	X	X	X	A
Industry – General	X	X	D	X
Industry – Hazardous	X	X	X	X
Industry – Light	X	X	P	X
Industry – Noxious	X	X	X	X
Industry – Service	X	D	P	X
Lodging House	D	D	X	X
Motor Vehicle Repair	X	X	P	X
Motor Vehicle Wrecking	X	X	P	X
Office	X	P	P	A
Pondok	X	X	X	D
Public Utility	D	D	D	D
Public Worship – Mosque/Church	A	D	D	D

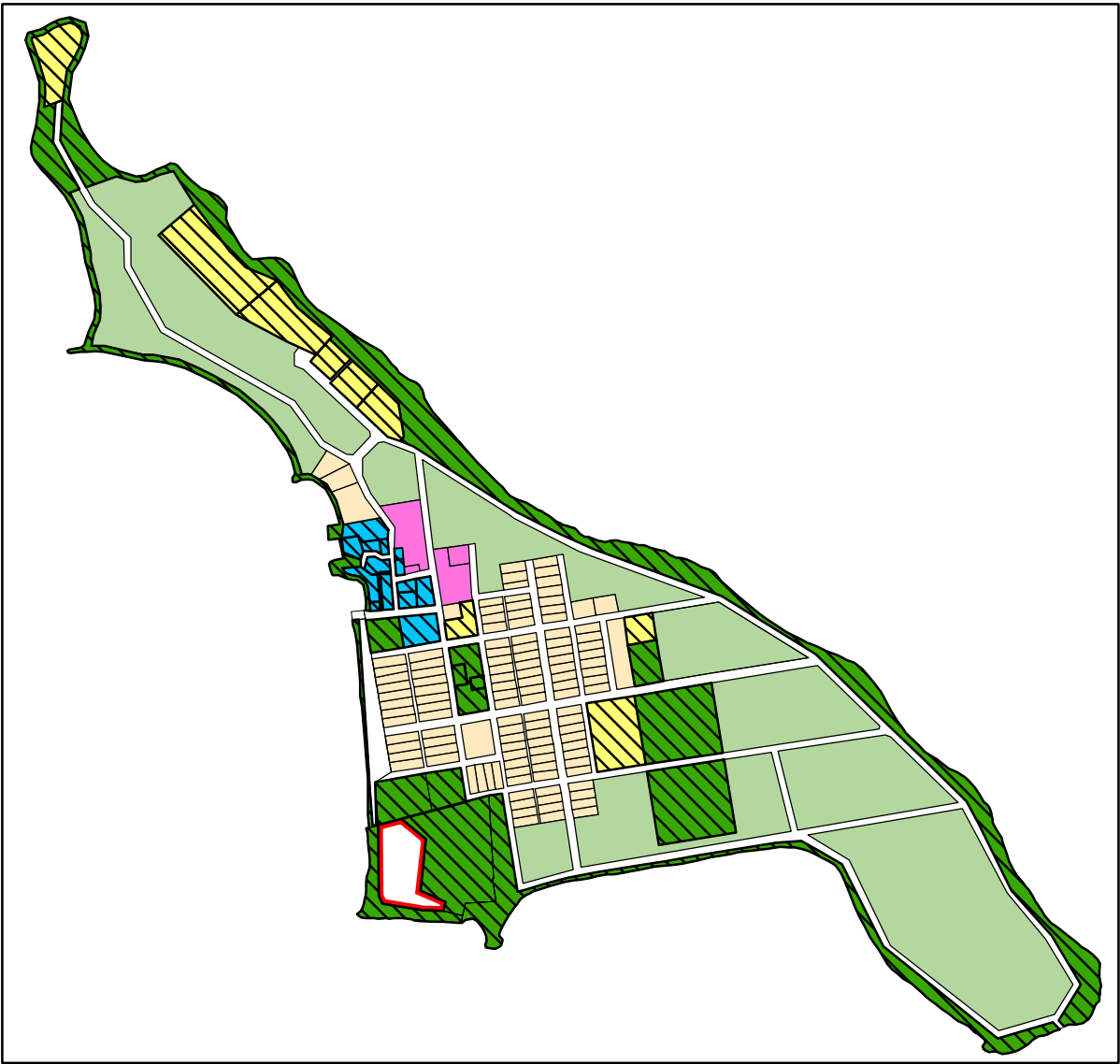
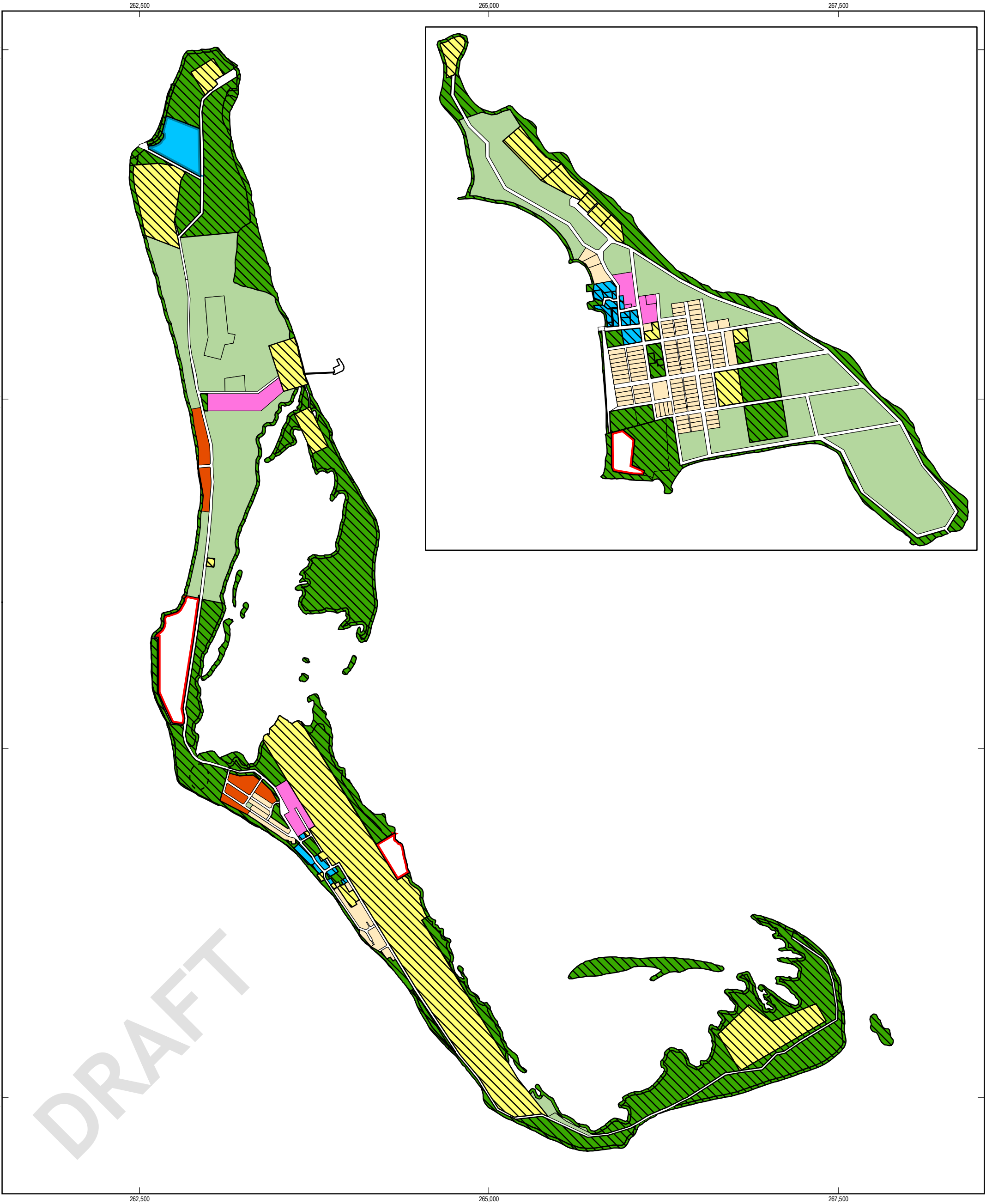
Table 1 – Zoning Table Continued

USE CLASSES	Residential	Commercial	Industrial	General Rural
Recreation and Leisure	D	D	X	D
Restaurant / Café	X	P	X	A
Rural Production	X	X	X	D
Salvage Yard	X	X	D	X
Service Station	X	D	P	X
Serviced Apartment	D	D	X	X
Shop	X	P	D	X
Single House	P	D	X	X
Social/Community Facility	D	D	X	D
Studio	A	D	P	X
Take-away Food Outlet	X	P	D	X
Tourist Facility	A	P	X	D
Warehouse	X	D	P	A








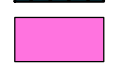




## Appendix F

# Land Suitability Map



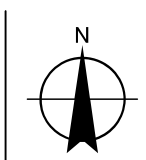
LEGEND

Suitable Land Uses - GHD - 20090630

- |   |   |   |  |   |
|---|---|---|--|---|
|  Commercial |  Public Purposes |  Parks & Recreation |  Rural |  Urban Development |
|  Industrial |  Residential     |  Special Use        |  Oval |   |
|   |   |  Tourism            |  |   |

1:25,000 at A3  
 0 100 200 400 600 800  
 Meters

Map Projection: Transverse Mercator  
 Horizontal Datum: World Geodetic System 1984  
 Grid: Universal Transverse Mercator, Zone 47S

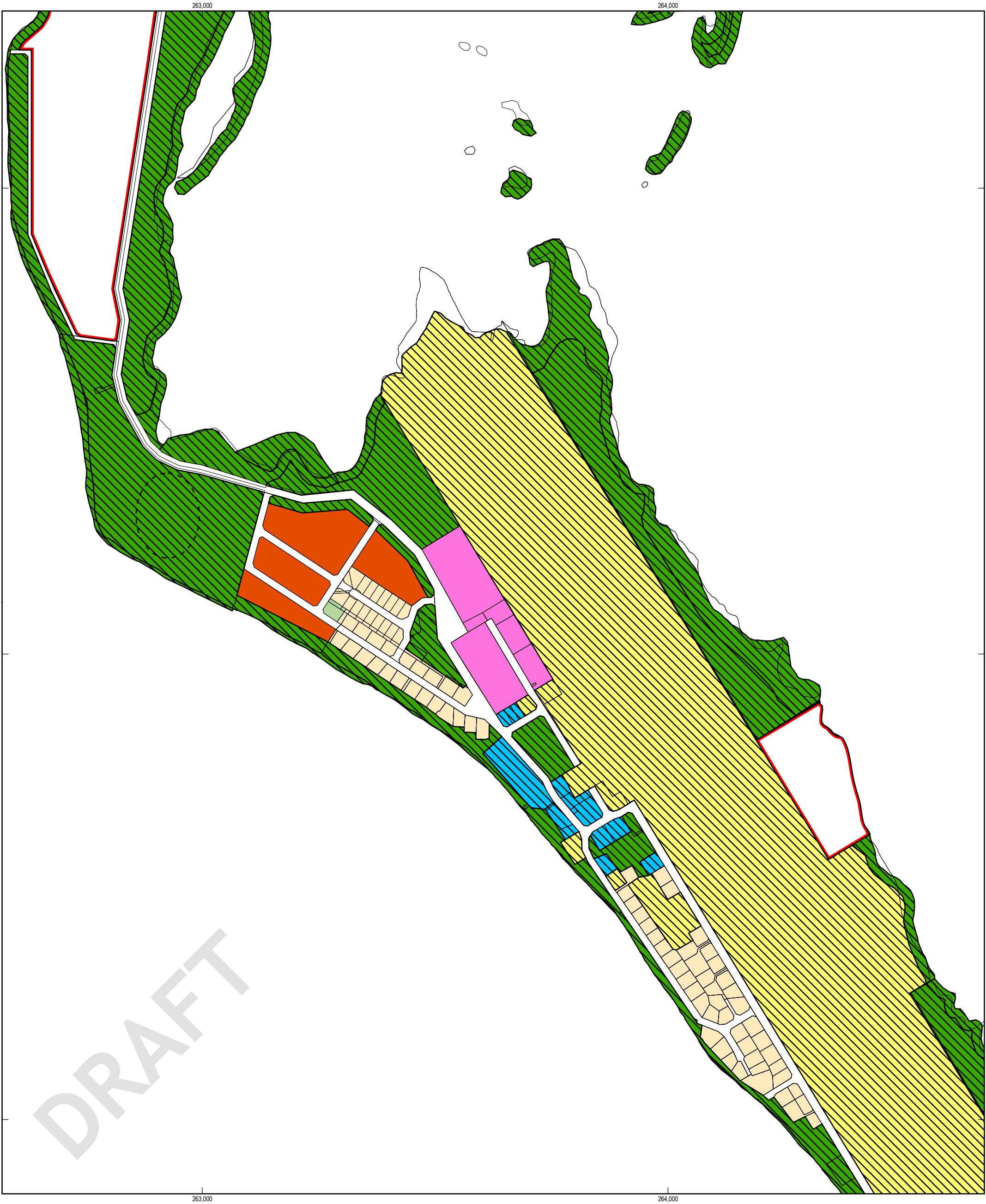


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## Cocos (Keeling) Islands Land Suitability Map

Figure 1



LEGEND

**Suitable Land Uses - GHD - 20090630**

Commercial	Public Purposes	Rural	Urban Development
Industrial	Residential	Special Use	Oval
		Tourism	





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## Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	Scott Jeffrey	Scott Jeffrey		Jim Singleton		08/07/2009
1	Scott Jeffrey	Scott Jeffrey		Jim Singleton		14/08/2009
2	Scott Jeffrey	Scott Jeffrey		Jim Singleton		29/09/2009