

Palm Island Aboriginal Shire
Council and the Remote Indigenous
Land and Infrastructure Program
Office

**Palm Island Aboriginal Shire
Planning Scheme**

Palm Island Planning Scheme - The
Way Forward

222099

Final Report | 19 December 2011

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Job number 222099

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Document Verification

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Job title		Palm Island Aboriginal Shire Planning Scheme		Job number	
				222099	
Document title		Palm Island Planning Scheme - The Way Forward		File reference	
Document ref		222099			
Revision	Date	Filename	The Way Forward Report_Revision 1.docx		
Revision 1	2 Nov 2011	Description	Draft 1.		
			Prepared by	Checked by	Approved by
		Name	Sara Golingi and Wendy Downes	Andrew Batts	Warren Batts
		Signature			
Draft 1	2 Nov 2011	Filename	The Way Forward Report_Draft_1.docx		
		Description	Draft 1		
			Prepared by	Checked by	Approved by
		Name	Sara Golingi and Wendy Downes	Andrew Batts	Warren Batts
	Signature				
Draft 2	7 Nov 2011	Filename	The Way Forward Report_Draft_2.docx		
		Description	In place of this text, record a summary of revisions since the last version (these will be transferred into the DV sheet for you).		
			Prepared by	Checked by	Approved by
		Name	Sara Golingi and Wendy Downes	Andrew Batts	Warren Batts
	Signature				
Final Report	19 Dec 2011	Filename	The Way Forward Report Final_Revision.docx		
		Description	Final Report amended to reflect comments from Council		
			Prepared by	Checked by	Approved by
		Name	Sara Golingi and Wendy Downes	Warren Batts	Warren Batts
	Signature				

Issue Document Verification with Document



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1 Background

A draft planning scheme was prepared and provided to Palm Island Aboriginal Shire Council (Palm Island ASC) for discussion and comment in April 2010. This planning scheme was prepared by Arup in consultation with Palm Island Aboriginal Shire Council, the Department of Environment and Natural Resources (DERM) and the then Department of Infrastructure and Planning.

The April 2010 draft planning scheme reflected the known current State interests and was based on the outcomes of workshops with Council and the Manbarra People. The workshops held are documented in Table 1.

Table 1: Workshops

Activity	Tasks
Inception	<p>Met with PIASC and the Manbarra People in Townsville to:</p> <ul style="list-style-type: none"> introduce the project introduce the project team begin to discuss the benefits of a planning scheme begin to discuss the responsibilities of implementing a planning scheme. <p>This meeting was shared with the ILUA discussions</p>
Policy Workshop	<p>Workshop with PIASC on Palm Island to:</p> <ul style="list-style-type: none"> identify the future vision reconfirm existing work identify any changes and gaps discuss policy direction for the planning scheme
Policy workshop	<p>Workshop with PIASC on Palm Island to:</p> <ul style="list-style-type: none"> confirm the draft strategic outcomes for the planning scheme responses to environmental legislation and constraints confirm developable land confirmation of appropriate land uses for developable sites identification of preferred zones/precincts confirm approach to cultural heritage DLGP provided an introduction to SPA
Policy Workshop	<p>Workshop with PIASC and the Manbarra People in Townsville to discuss:</p> <ul style="list-style-type: none"> the emerging draft planning scheme detailed policy of the planning scheme the land use implications of the policy direction <p>This workshop was shared with the ILUA discussions.</p>
Workshop	<p>Workshop with PIASC, relevant State agencies, FaHCSIA to:</p> <ul style="list-style-type: none"> restart the planning scheme project provide an update on the work that had been done since April 2010 update State planning policy that has come into effect since April 2010 discuss the way forward discuss the current development applications

2 New requirements

2.1 Planning framework

Since April 2010, the policy framework for planning schemes has changed with a number of new planning instruments and State interests that need to be considered and reflected in a planning scheme. In addition there are some planning instruments and State interests that no longer apply.

2.1.1 The Queensland Planning Provisions (QPP)

The template that all planning schemes in Queensland must use is called the Queensland Planning Provisions (QPP). The template sets out how the planning scheme must be formatted and mandates a suite of zones and definitions. Any emerging planning scheme must be prepared using the current version of the QPP. The April 2010 planning scheme was prepared using QPP version 1.0. The current version is 2.0, but there is an emerging draft QPP, version 3.0, that has recently been released for public notification. Considering that emerging draft QPP, version 3.0 is significantly different from the version that is currently in effect, the Palm Island planning scheme will be prepared using the emerging QPP, version 3.0. This approach has inherent risks because the final QPP, version 3.0 may be significantly different to the draft version that is currently being used. The implication of this approach is that the planning scheme may need redrafting to meet the new State requirements.

2.1.2 Population projections

Since the preparation of the April 2010 Palm Island planning scheme, Palm Island ASC undertook a population survey that provided a more robust and considered estimate of the number of people living on Palm Island. In addition, in May 2011, the Office of Economic and Statistical Research (OSER) released *Queensland Government population projection to 2031: Local government areas 2011 edition*, that included all Aboriginal and Torres Strait Island council areas. The OSER population projections acknowledged that the census data for aboriginal council areas provided an undercount of the actual population. Due to this and the small size of aboriginal communities, OSER used a different methodology than the methodology used in larger non aboriginal communities for the population projections. The implications for the Palm Island planning scheme is that the population estimate endorsed by Council will be used as the basis for the planning scheme projections. However, as the Palm Island Population Survey did not undertake any projections, the projected growth rates of OSER will be applied to the Palm Island Population Survey findings.

2.1.3 State coastal management plan

The Queensland Coastal Plan and the State Planning Policy on Coastal Protection was released in March 2011, but is currently not in effect. When it is in effect, the policy outcomes of these planning instruments will need to be reflected in the Palm Island Planning Scheme. The new aspects of the Queensland Coastal Plan are a stronger recognition of the impacts of climate change and the effects of storm surge and sea level rise. It also includes stronger mechanisms to protect the

coast from inappropriate development. The main implication for the Palm Island planning scheme is that the area identified as being vulnerable to sea level rise and coastal hazards may change, reducing the area of land that is available for development.

2.1.4 Temporary SPP 1/11 Protecting Wetlands of High Ecological Significance in Great Barrier Reef Catchments

This temporary State Planning Policy (SPP) originally came into effect in May 2010 and seeks to ensure that new development does not degrade wetlands identified as having high ecological significance. The Temporary SPP has identified a number of wetlands of high ecological significance on Great Palm Island. The SPP, though the planning scheme will be seeking a buffer area around these wetlands that cannot be developed for housing or industry.

2.1.5 Development applications for Upper Lama Lama and Kitchener Bligh Subdivision

Under the Palm Island Agreements Palm Island ASC and FaHCSIA have been working with Thinc consultants to identify land that can be developed for housing. The process of detailed site investigations has developed a clearer understanding of the infrastructure capacity and identified a number of constraints to development on Great Palm Island. The development process also considered current State government policy and identified two sites that are appropriate for the development of housing. The site planning for these areas has advanced sufficiently to enable four development applications for the development of 70 residential lots to be lodged with Council. In the absence of a planning scheme the Department of Local Government and Planning (DLGP) developed an Interim Assessment Guideline to assess the development applications. The outcomes of the detailed planning and the policy development of the Interim Assessment Guideline will have an influence on the Palm Island planning scheme.

2.2 Native title

In July 2011 the Manbarra People and Palm Island ASC signed the Palm Island Improved Land Management Practices ILUA. The ILUA includes defining a town area, joint management areas and some land that is under trustee aboriginal lease to the Manbarra people. The planning scheme will seek to ensure that the decision making agreements included in the ILUA can be implemented in the planning process.

The Council and the Manbarra People are committed to the protection and preservation of traditions, history and cultural heritage. A Palm Island Heritage Register of places for initial heritage listing is included in the ILUA and will be reflected in the planning scheme.

The ILUA allows continuation of community access to the ILUA Area for the purposes of recreation including hunting, fishing, and camping. To this end, the ILUA parties agree to negotiate the regularising identified family camps outside the town area.

The planning scheme will also seek to provide a mechanism for the ongoing implementation of the Palm Island agreement between the Australian Government and Palm Island ASC.

2.3 Implications for the planning scheme

As a result of the changed policy environment for Palm Island, the emerging Palm Island planning scheme will need to:

- reflect the latest version of the QPP, most likely emerging version 3.0;
- plan for population growth and based on the population estimate of the Palm Island Survey undertaken in 2010;
- reflect the policy directions of the State coastal management plan and coastal protection SPP, particularly in ensuring that development does not occur in areas that are vulnerable to sea level rise and coastal hazards;
- identify wetlands of high ecological significant and ensure that development does not degrade the wetlands, this can be achieved by identifying buffers from which will set development back from the wetlands;
- build on the site planning and the understanding of infrastructure capacity that has been undertaken to prepare the development applications for Upper Lama Lama and Kitchener Bligh Subdivision;
- consider the policy direction set out in the Interim Assessment Guidelines; and
- implement land use planning agreements of the Palm Island Improved Land Management Practices ILUA

3 Planning scheme assumptions

In 2006 the census estimated the population of Palm Island to be 1,984 and the Office of Economic and Statistical Research (OESR), using the updated methodology estimated the 2006 population to be 2,145. However, it is widely believed that the population of Palm Island is significantly higher than both these estimates. To get a better understanding of the number of people living on Palm Island, the Council commissioned a population survey in 2010.

The Palm Island Survey, endorsed by Council in July 2010, estimated that at least 3,042 people lived on Palm Island. The survey, done in May/June 2010, used a survey developed by Council using similar questions as the 2006 census. There were some challenges encountered by the survey team which were considered in the survey methodology and analysis. A summary of the challenges experienced and the response of the survey team is documented in Table 2.

Table 2: Challenges and responses to challenges

Survey Challenge	Response
Concern about disclosing information	Survey team confirmed the confidentiality of the information provided
Many people who live on Palm Island also spend time in other places, including children at boarding school	Informational about all residents was collected
Some people declined to disclose information about them or their family	Not all residents were surveyed, but the information collected was discussed with various community members and an estimate was made that 10% of residents were not surveyed

The estimated population determined by the Palm Island Survey is the most accurate and should be used as the base line data for the population projections for the planning scheme. The OESR has determined growth rates for Aboriginal and Torres Strait Islander communities. The OESR projections use a different methodology than non indigenous communities in Queensland because:

- the population of aboriginal and Torres Strait Island communities are small, making the data volatile, reducing the statistical reliability;
- the reliability of the census data is questioned because the collection methodology often records a significant undercount.

Although the methodology used by OESR for the population projections attempts to resolve these issues, it is still experimental and should not be accorded the same degree of reliability as those for larger non indigenous areas.

Adding to the ambiguity of the population projections is the methodology used for the planning scheme that applies the OESR growth rates to the estimate population determined by the 2010 Palm Island Population Survey. This uses two

different data sets, but in the absence of any other data it provides the best currently available population projections for the planning scheme.

3.1 Population assumptions

The population estimate used for the planning scheme is 3,402 in 2010 as determined by the Palm Island survey. The population projections were determined using the OESR growth rates to determine planning scheme population assumptions (refer to Table 3).

The planning scheme will need to ensure that there is sufficient land to accommodate housing, jobs, recreation and community services for approximately 500 additional people. The strategic framework needs to accommodate growth for 800 additional people.

Table 3: Population projections

Year	2010	2012	2022	2027	2037
Population Projection	3,042	3,128	3,591	3,830	4,358

The population on Palm Island, unlike the mainland communities in the region, is young with close to 50% of the population being under 25 years old. The young population increases the household size and will contribute to a large household size in the future.

3.2 Housing assumptions

It is estimated by the OSER, in the Queensland Regional Profile: Palm Island Shire, that there are 358 houses, providing a household size of about 8.5. It should be noted that an additional 70 dwellings are proposed. The new houses will seek to reduce the current overcrowding rather than accommodate the expected population growth. With the development of these proposed houses, the household size may decrease to about 7.1 people.

At a meeting on the 14th of December 2011, Council advised a target occupancy rate of 4 people per dwelling. In order to house the existing and projected population at a household size of 4 people, the planning scheme will need to cater for approximately 470 additional dwellings and the strategic framework will need to provide land for approximately 191 additional houses. To cater for this housing growth, there needs to be sufficient land for a total of 660 additional houses over the next 25 years. The housing requirements are outlined in Table 4. A range of housing types and sizes should be provided in the delivery of new housing. Housing diversity is discussed in section 6.1.1 of this report.

Table 4: Housing requirements

Year	Housing requirements
2022 (planning scheme horizon)	470
2037 (strategic framework horizon)	190
Total	660

3.3 Employment and economic development

Currently employment on Palm Island is limited to government funded opportunities and programs. This is reflected in the outcomes of the 2010 Palm Island survey that determined that 33% of the potential labour force was employed. Most of the workforce was employed in the government sector providing social assistance, local government services or education work. This highlights the need for a more diverse range of jobs. The planning scheme needs to ensure that land for development of activities that may provide for:

- commercial
- retail
- service industry
- agricultural
- tourism
- environmental management
- the arts industry.

Section 5.3 explores economic development opportunities in further detail and section 6.2 identifies potential areas to accommodate the activities listed above.

4 Understanding the constraints to development

The land and sea, local culture, topography and vegetation and the natural environment all contribute to the character of the Palm Island Group. Protecting the natural environment of the Shire is important to the people of Palm Island, including the traditional and historical owners and the current community.

While the natural environment is an asset, the Island location, need to protect culture, and the natural features of Palm Island provide a number of constraints to development. Developing to consider the constraints of the land is practical and best practice. However, to ensure that constraints are considered by development they are regulated by legislation and State policy.

The impacts of some development constraints can be mitigated through design and siting of the development, enabling the land to be developed. However, it should be noted that the additional design and development criteria can have significant cost implications for development.

The following paragraphs documents the known constraints to development in Palm Island group.

4.1 Environmental

4.1.1 Conservation estate

The Palm Island group is located in the World Heritage Great Barrier Reef Marine Park and the waters are regulated by the Commonwealth's *Barrier Reef Marine Park Act 1975* that seeks to protect and conserve the environment, biodiversity and heritage values of the Great Barrier Reef Region. The unique natural environment provides an economic opportunity, but development will need to be managed to ensure that it does not have negative impacts. The implications for the Great Barrier Marine Park are that development should:

- not impacting on the environmental quality of the sea;
- protect the coast; and
- protect the scenic quality of the islands, including views from the sea.

The Great Barrier Reef Marine Park Authority is an advice agency for development applications for subdivision that create more than 10 lots that are less than 5ha and development applications for a material change of use for urban uses.

4.1.2 Coastal protection

Coastal protection is regulated by the Queensland Coastal Management Plan. However it will soon be replaced by the Queensland Coastal Plan and Coastal Protection State Planning Policy (Coastal Protection SPP). Together they provide direction and guidance about the management of the Queensland coast land. To achieve the coastal protection outcomes, planning schemes should:

- allocate land for urban development outside the areas of high ecological significance;
- identify any erosion prone areas and protect them from development;
- protect the dominance of the natural character of the coast;
- maintain and enhance public access to the foreshore.

Palm Island is located in a Coastal Management District which means that DERM is a concurrence agency for all development applications in the Shire, including building work, reconfiguring of a lot, a material change of use, if the change of use will involve operational or building work with gross floor area (GFA) of 1000m² and operational works not associated with reconfiguring of a lot.

An erosion prone area in a coastal management district has been identified for Great Palm Island. The erosion prone area regulates building works to try and achieve a development free buffer zone where coastal process can occur naturally without the need for property protection works that can be costly and detrimental to the foreshore. Building work in the erosion prone area will be referred to DERM for assessment.

The coastal Queensland Coastal Plan also seeks to protect views from the sea to the vegetated hill slopes of the Palm Island Group.

4.1.3 Wetlands

Wetlands deliver many ecosystem services that contribute the well being of our environment. Development around wetlands is regulated by Temporary SPP 1/11 Protecting Wetlands of High Ecological Significance in Great Barrier Reef Catchments. Temporary SPP 1/11 identifies wetlands of high ecological significance and seeks to protect these wetlands, and their surroundings from development that would result in the loss or degradation of wetlands and their values. To protect the wetlands, temporary SPP 1/11 requires development to be set back 50m in an urban area, and 200m in a non-urban area. Temporary SPP 1/11 also identifies wetland protection areas and a material change of use development application in this area is required to be referred to DERM for assessment as a concurrence agency

A number of wetlands of high ecological significance have been identified on Palm Island. The planning scheme should provide a 'wetland protection area' or buffer of 50m in an urban area and 200m in a non urban area. These wetlands and their buffer areas are shown on Figure 1. It is noted that one of the wetlands shown is a man-made dam. Discussion with DERM regarding the ecological significance of this dam may be beneficial as a review of the required development set back from this dam could provide more developable land.

4.1.4 Watercourses

Watercourse and overland flow paths should be protected from development. Watercourses on Palm Island are shown on Figure 1. To avoid negative impacts on the functioning or water quality of the watercourse, development should be sufficiently set back from the watercourse. The extent of the setback would

depend on the type and location of the waterway, and the type of development proposed. The April 2010 planning scheme provided a 10m buffer from watercourses.

4.1.5 Vegetation management

The Shire is largely undeveloped and contains mature indigenous vegetation. The vegetated hills are an important part of the character of the Palm Island group. Vegetation clearing in Queensland is regulated by the *Vegetation Management Act 1999* (VMA), however it does not apply on indigenous land. The important vegetation identified by the VMA is mapped in Figure 2. The planning scheme should seek to protect areas of important vegetation, including those identified by the VMA and those that are important to the community. Of most significance, the map indicates that there is a pocket of endangered dominant vegetation in on the southern coast, east of the air strip.

The planning scheme can also identify other vegetation that is important to the community.

4.1.6 Heritage

The planning scheme should identify and protect places or buildings that are important for historic and cultural reasons. It is understood that it is not appropriate to identify all cultural heritage sites; however, some areas may need cultural clearance before development can occur. Development must meet all obligations of the *Aboriginal Cultural Heritage Act 2003*.

The National heritage register identifies places that have national significance and the State heritage register identifies area of State significance. There are no heritage places identified in Palm Island Shire by the National or State heritage register. If there were, these places would be regulated by the relevant legislation. The planning scheme can identify areas that are of historic or cultural importance for the community.

A Palm Island Heritage Register has been identified as part of the Palm Island Improved Future Land Practices Indigenous Land Use Agreement. The heritage register will be included in the planning scheme with scope for additional places to be added.

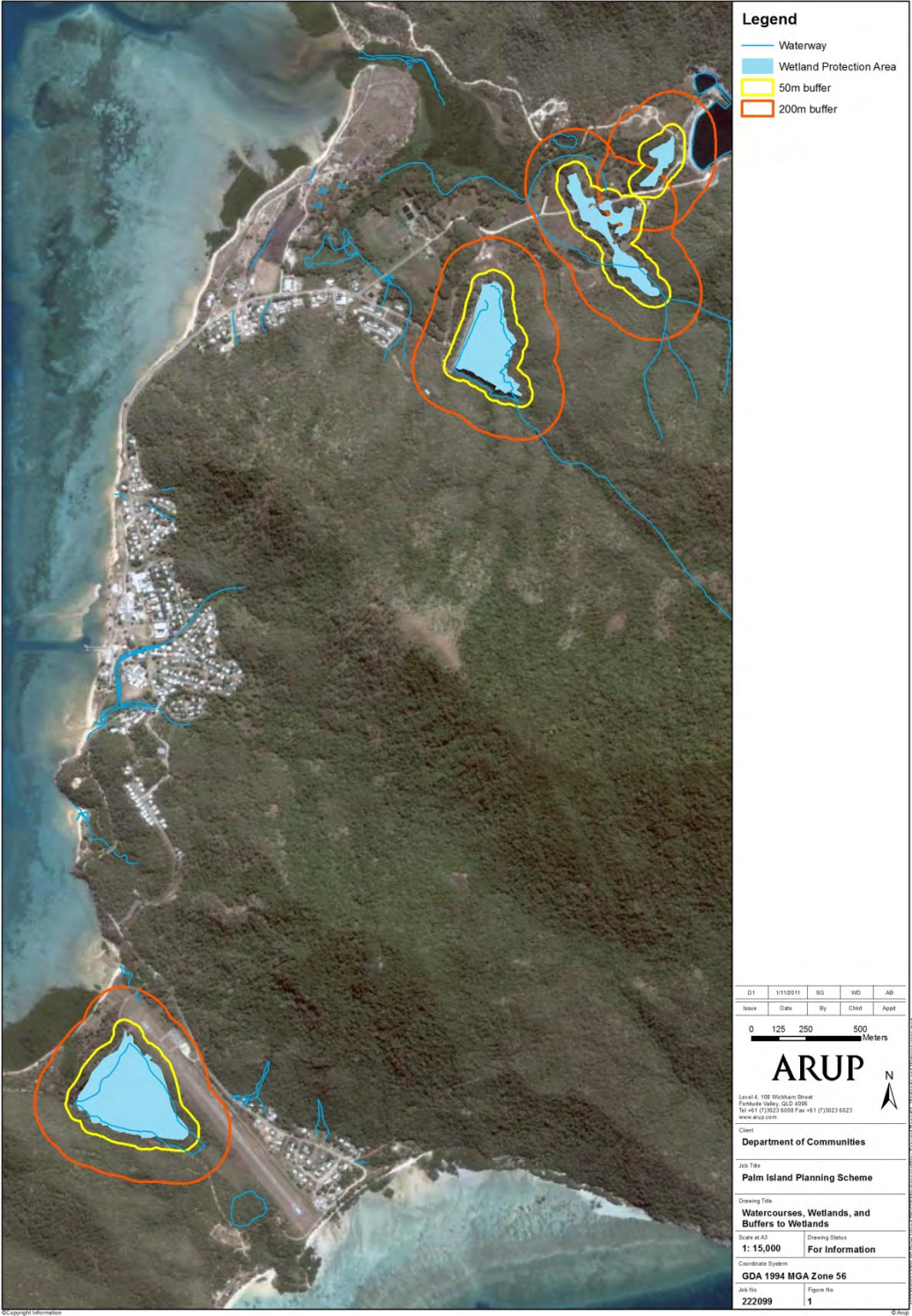


Figure 1: Wetlands and Watercourses

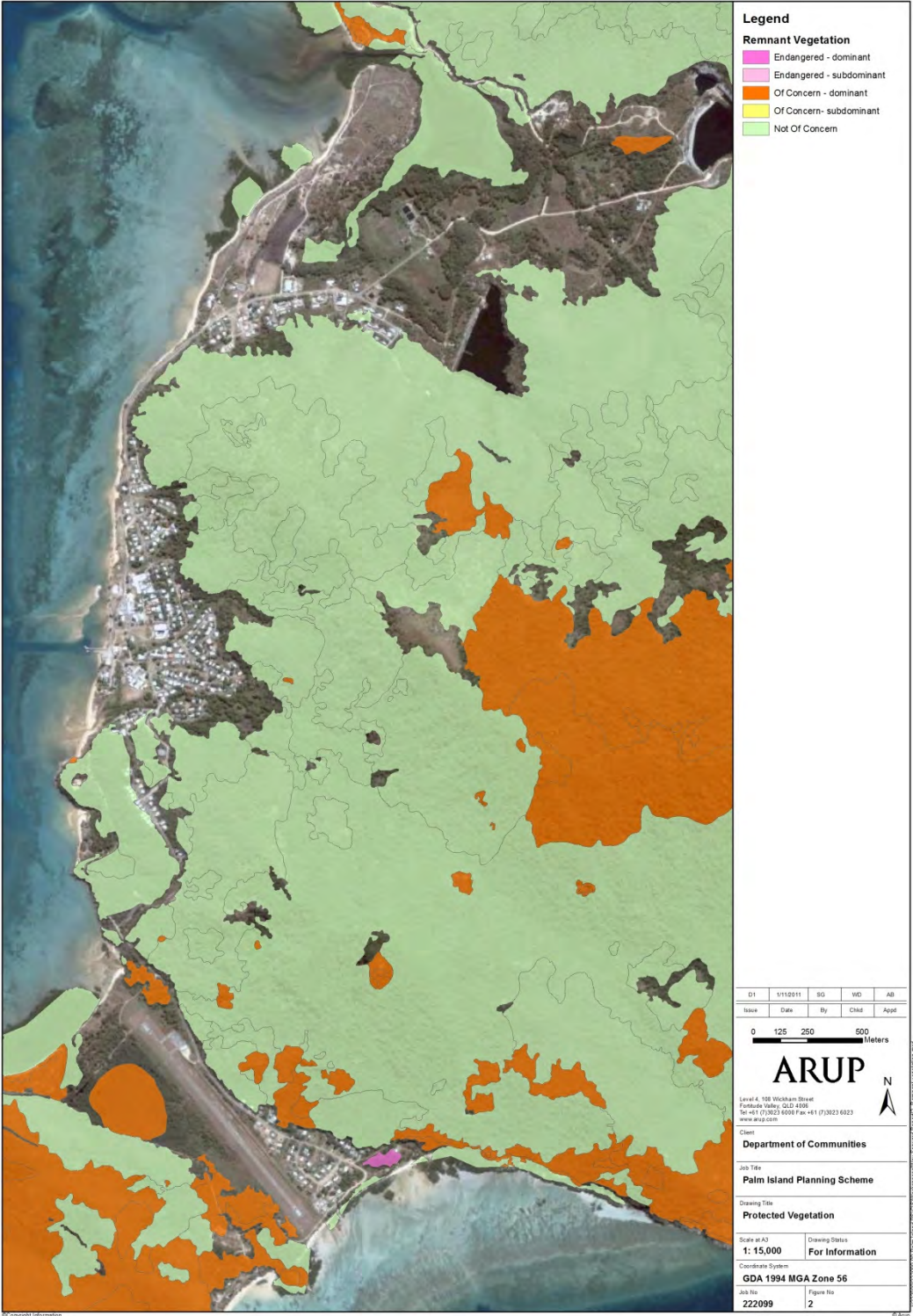


Figure 2: Remnant vegetation

4.2 Natural hazards

4.2.1 Sea level rise and coastal hazards

Being a group of islands the Shire will need to consider the impacts of climate change including sea level rise and the increased vulnerability to coastal hazards. The Queensland Coastal Plan and the Coastal Protection SPP provides guidance to planning schemes about planning for the impacts of climate change. In particular planning schemes should:

- identify areas that have high and low coastal hazard vulnerability and avoid identifying land for development in the coastal hazard area;
- include a coastal hazard adaptation strategy.

Coastal hazard areas are areas prone to coastal erosion and storm tide inundation. The Queensland Coastal Plan defines areas of high and low coastal hazard as:

- high coastal hazard - areas where storm tide inundation would cause a threat to public safety or potential loss or damage to property and the inundation depth is greater than 1m and wave heights greater than 0.9m; and
- low coastal hazard - areas where storm tide inundation is expected to be less than 1m and wave heights are less than 0.9m.

As DERM's coastal hazard mapping does not include the Palm Island group. As part of this report, a storm tide hazard map identifying areas of low and high storm tide hazard areas has been developed (refer to Figure 3). The mapping is based on elevation and analysis of cyclone Yasi inundation levels. Cyclone Yasi inundation mapping shows areas of up to 5m AHD as being affected by storm surge, which is consistent with the storm surge level shown in 2010 Palm Island planning scheme. The revised mapping categorises areas below 4m AHD as high storm tide hazard areas, and areas between 4 and 5m AHD as low storm tide hazard areas.

Areas identified as having low storm tide inundation may be able to accommodate development if their design and siting does not put people or property at an unacceptable risk or increases the severity of the impacts of storm tide.

4.2.2 Flooding

Flooding on Great Palm Island is generally a result of overland flow of water running off from the hills to the sea. The overland flow paths in the town area should be kept free of development.

4.2.3 Bushfire

Due to the vegetation and the steep slopes, much of the Shire, including the built up area of Palm Island is identified as having a medium or high bushfire risk (refer to Figure 4). Development in areas of medium risk will need to be designed and constructed to reduce the risk of the potential impacts of bushfires to people and property. Development should avoid areas of high bushfire risk.

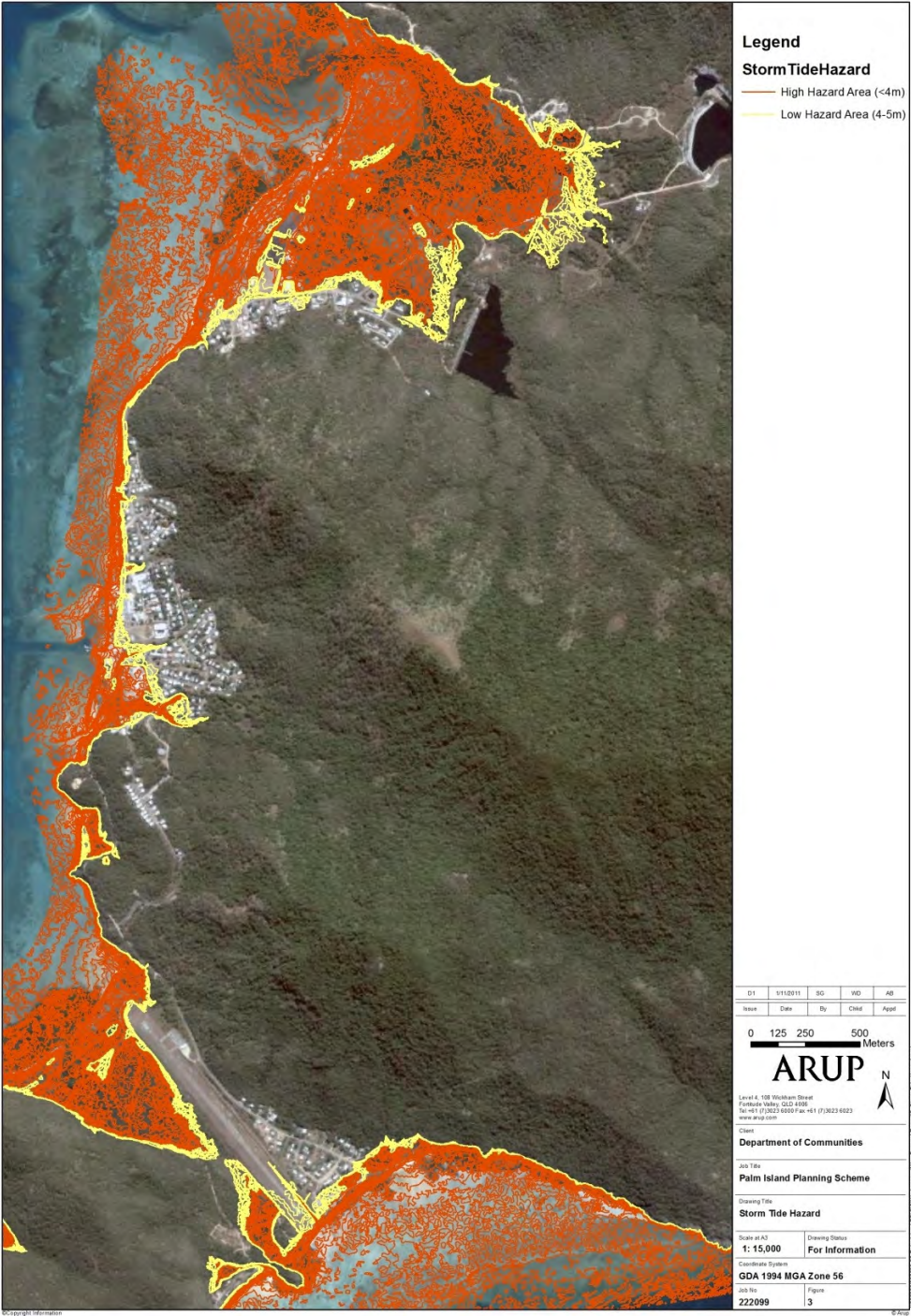


Figure 3: Storm tide hazard

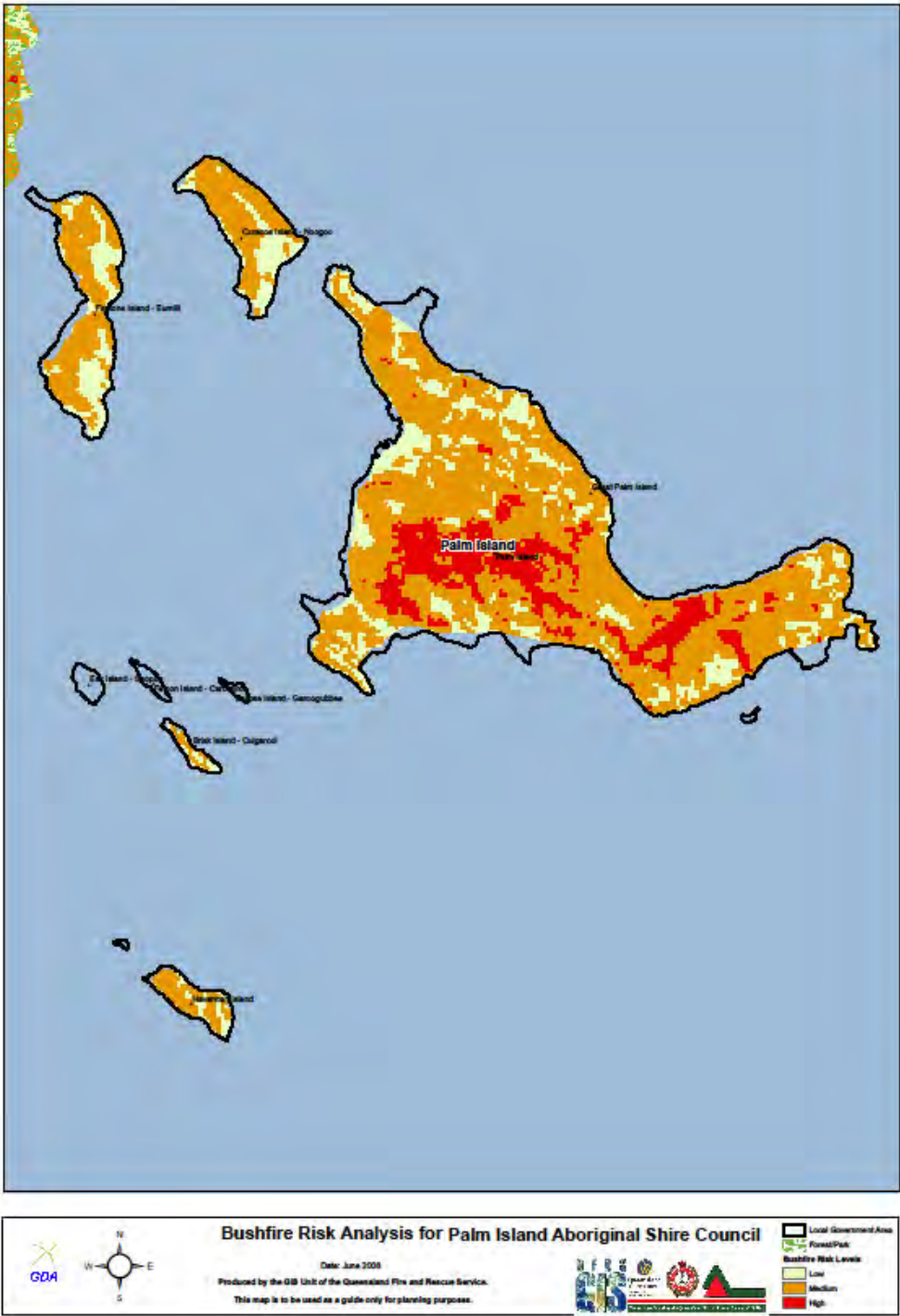


Figure 4 : Bushfire Hazard

4.2.4 Landslide

A study that identifies areas vulnerable to landslide will not be undertaken by the planning scheme. Consequently, all land with a slope of 15% or greater has been identified as vulnerable to land slide (refer to Figure 5).

Whilst development on land with slopes of 15% or greater is less favourable for development due to the risks associated with landslide, undeveloped land on Palm Island with slopes less than 15% is very limited. Consequently, land that has a slope of 15% or greater may be required for development. Development on steep slopes, up to 25%, will need to demonstrate through a geotechnical report that it will not cause land slide or risk to property and people. Figure 5 shows areas vulnerable to landslide and identifies areas with slopes greater than 25%, as these areas should not be developed.

4.2.5 Acid sulfate soils

Development on land below 20m AHD that disturbs soil at 5m AHD or below has the potential to disturb acid sulfate soils. Development that has this potential will need to identify if acid sulfate soils are present. If acid sulfate soils are present safe removal may be required. Figure 6 shows areas likely to contain acid sulphate soils. Areas below the 20m AHD have a low risk, depending on how deep the proposal digs. Areas below the 5m AHD may require testing.

4.2.6 Cyclones

Palm Island is located in an area that is vulnerable to cyclones. Buildings will need to be designed and constructed to withstand the impacts of cyclones.

4.3 Potential sites

The constraints to development have been mapped and used to identify land that may be suitable to accommodate development on Palm Island. A total of 23 sites over 53.5 ha were identified. These sites are shown and described in Appendix A. It is noted that the sites identified in Appendix A is the outcome of a preliminary site identification process based on the environmental constraints and natural hazards.

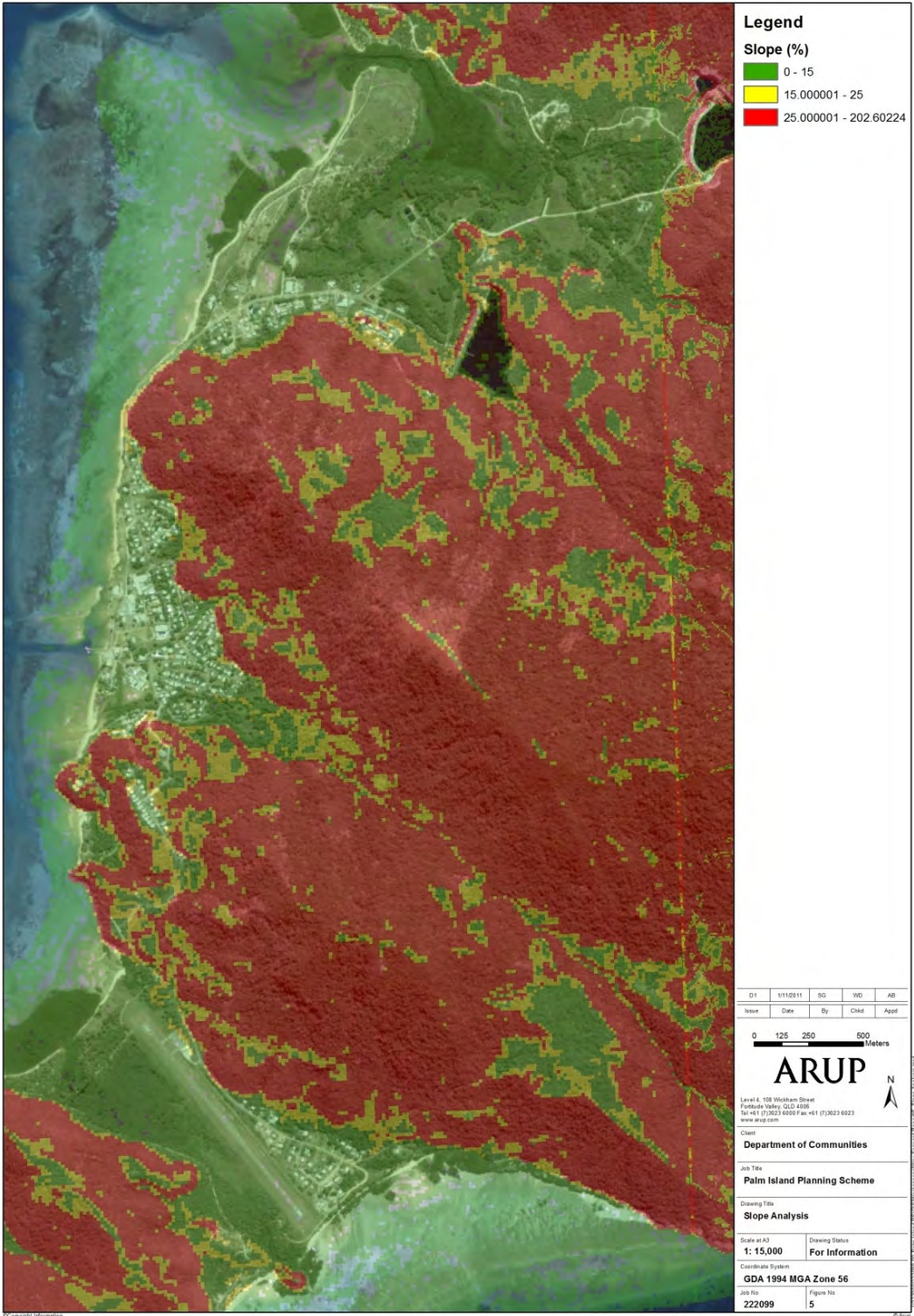


Figure 5: Slope Analysis

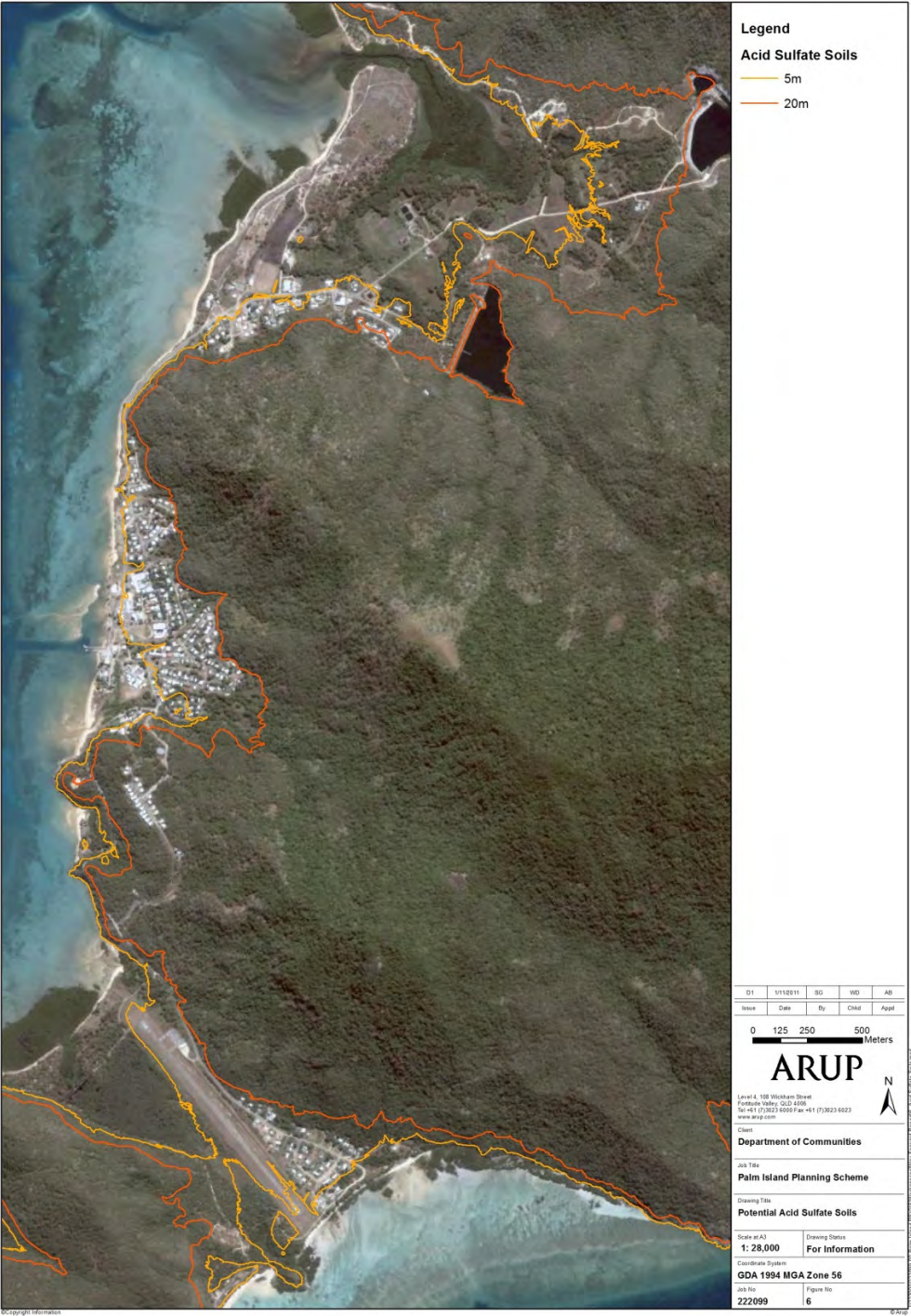


Figure 6: Potential Acid Sulfate Soils

5 Opportunities for Palm Island

5.1 Land use and development drivers

Having a clear vision, supported by strong leadership and implementable actions can help attract funding and investment. Although the planning scheme is not the only way to do this, it can help articulate Council's and community's vision. The planning scheme does not provide housing, employment or recreation opportunities or community services. It does however, identify land that can accommodate these uses and be provided with the required infrastructure. The planning scheme also provides a way of protecting places that are important either for cultural, historical or environmental reasons and ensures that development is not located in places that are known to be prone to natural disaster.

A planning scheme regulates development to ensure that it contributes to the community vision of Palm Island. It can also help by ensuring that new development contributes to the provision opportunities for economic development, culture and lifestyle choice on Palm Island.

This section of the report considers opportunities that the planning scheme will need to consider.

5.2 Population and housing on Palm Island

The population on Palm Island is projected to grow by 500 people within the life of the planning scheme (next 10 years). The population of Palm Island is young with 30% of people being 15 years of younger and 50% of people being under 25years. The prominence of young people means that there is a need for housing for families with children and that planning scheme needs to consider the needs of children including safe communities, usable play areas, walking and cycling trails and the appropriate services.

Population growth on Greater Palm Island is limited by the:

- amount of developable land due to development constraints such as:
 - steep slopes;
 - sea level rise and potential for storm tide inundation;
 - culturally important areas; and
 - the high quality natural environment including vegetation, watercourses and wetlands;
- number of houses; and
- capacity of the infrastructure, in particular the water supply and sewerage to accommodate growth.

Palm Island has a housing shortage causing overcrowding in the existing housing. It is also believed that more people would live on Palm Island if there were housing

Currently the most predominate housing form is detached housing with 3-4 bedrooms. However, there are some 2 bedroom townhouses. Consultation undertaken for the Sustainable Land Use Plan indentified a need for:

- 4 or more bedroom houses with a veranda
- family cluster housing that enables a small house to be extended with extensions or additional bungalows;
- 2 story, 2 bedroom units suitable for singles and couples; and
- 2 bedroom duplexes.

It is expected that due to the young population and the family nature of most households, most new houses will be large with 3 - 4 bedrooms, but opportunities for duplexes, smaller houses and units should also be explored to cater for the elderly, single people, couples without children and for people who want to live in smaller households.

There is a strong demand for housing on Palm Island and the supply of housing is a factor that contributes to the growth and development of Palm Island. The demand for housing is not only for public housing, but also for private housing. The planning scheme needs to identify land that can accommodate both housing tenures.

5.3 Economic growth and opportunity

Economic development and opportunities to reduce the community's reliance on welfare are important if Palm Island is to have a sustainable future.

The location of Palm Island in the Great Barrier Reef Marine Park creates opportunities to link economic development with the sustainable management of the surrounding marine and island habitats. The World Heritage class protection of the Great Barrier Reef also provides opportunities for the local people to be involved with land and sea management, bringing with them their knowledge of traditions and culture that can benefit the whole community and the regional economy.

The economic development of Palm Island cannot be considered without an understanding of its role within the region. Palm Island is part of the North Queensland region and has strong links to Townsville and other towns on the mainland.

Considering Palm Island within the regional context provides an opportunity to broaden and develop the role of the town of Palm Island. Considering its regional context and the expected population growth, Palm Island will have a population similar to that of Ingham and the potential to support a greater range of retail, employment and service opportunities. To support this potential, the town centre of Palm Island could be identified as a major centre in the regional network of centres. According the Queensland Planning Provisions (QPP) A major centre is a:

'concentration of higher order retail, commercial, offices, residential, administration and health services, community, cultural and entertainment facilities and other users capable of servicing a subregion in the planning scheme area.'

The *Palm Island Enterprise Strategy, March 2011* identified that to secure Palm Island's role in the region, the town centre could be called Bwgcorman. This would help distinguish the town from the local government area. It was suggested that the character of Bwgcorman should reflect the natural environment, including the marine environment and the indigenous culture of the Island. It was suggested that a master plan for Bwgcorman be prepared. The master plan could build on the work that has already been done by the Department of Public Works in 2009 and documented in the *Palm Island CBD Master Plan*.

In addition to creating a strong town centre, the identification of appropriately located land for both public and private housing and economic activities is important to the economic development of Palm Island.

The strategy of economic development will rely on:

- home ownership
- effective service delivery; and
- the development of a sustainable settlement that provides opportunities for public and appropriate private sector investment in;
 - the town centre
 - the industrial area;
 - farming and fishing; and
 - sustainable tourism opportunities based on the culture and the natural environment of Palm Island.

Service and industry activities are important for the community. An area on Farm Beach Road has been identified for service, low and medium impact industry. Due to the sensitive environment and the limited developable land available on Palm Island, the establishment of high impact or noxious and hazardous industry is not appropriate.

Land is a limited resource on Great Palm Island and to ensure that the potential for future economic activities, land for industry, agriculture, retail and commercial development should be identified and protected from encroachment of incompatible uses.

Economic opportunities that can be reflected in the planning scheme include:

- identification of the town centre as a major centre;
- the identification and protection of land that can be appropriately serviced for:
 - industry, including service industry;
 - agriculture and fishing;
 - retail and commercial; and
 - public and privately owned housing;
- providing opportunities for tourism that relates to the culture and the natural environment of the Palm Island group; and

- provide opportunities for enterprise activities, including home based businesses.

5.4 Land availability

Section 4 discusses the constraints to development and identified that there is very little unconstrained land to accommodate growth on Palm Island.

The limited amount of developmental land encourages the wise use of land. It also provides opportunities to consider land within the developed area for future development. Land within the developed area that is vacant or not used to its best ability is call 'infill'. Infill development helps to create consolidated towns and is supported by State policy, including the Queensland Coastal Plan. There are a number of potential infill sites including:

- quarry site overlooking Regina Bay;
- land at the entrance to the jetty;
- land within the airport;
- power generation / electricity substation site, if power is to be cabled from mainland; and
- land fill site if waste is transferred to the mainland.

5.5 Settlement pattern – how will Palm Island grow?

The Palm Island group has 10 islands that are part of the World Heritage Great Barrier Reef Marine Park. Great Palm Island is the only island that is settled. Due to the environmental and cultural values, development on the other islands is limited to occasional use camps.

Greater Palm Island is largely undeveloped with steep mountains, except for settlement of Bwgcorman that is nestled along the western coast between the sea and the mountains. Growth will be concentrated in Bwgcorman where the services and infrastructure are located. The growth of Palm Island is limited by potential impacts of storm surge and sea level rise, sensitive land and sea environments, steep slopes and the availability of infrastructure. The natural environment and vulnerability to natural hazards of the Palm Island Group reduce the amount of land available for development. While some of the impacts of natural hazards can be mitigated, this will increase the cost of development and the provision of infrastructure.

It is for this reason that most of the housing and employment growth of the Shire will be either located within the current built up areas or be a logical extension of the current town. The land supply strategy will be a combination of new development areas and infill sites. Although, due to the constraints to development there is limited land available, there is sufficient to provide for the projected population growth for the next 10 and 25 years.

An important part of the settlement pattern will be the development of the town centre as a major centre. This will mean that the town centre will be the focus of development for shops, offices, community services and entertainment.

Development in the town centre must reinforce its role as a central meeting place and reflect the culture and lifestyle of the community.

The undeveloped areas of the Shire are important environmental, economic and cultural resources and should be protected. Consequently it is expected that these areas will have limited development. Exceptions may be development of houses in existing and identified family camp areas and tourism activities that reflect the environmental and cultural values of the site.

5.6 Native title and land agreements

The Improved Land Management Practices ILUA sets out decision making process for land management with the Palm Island Shire. It also sets out the roles and responsibilities for the Council and the Manbarra people. The aspects of the ILUA that are relevant to the planning scheme are set out in the paragraphs below.

5.6.1 Roads and infrastructure

The roads of the Shire will be dedicated as roads and continue to be maintained by Council for public access with the exception of some roads that are located outside of the town area and documented in the ILUA.

Existing infrastructure, including the land on and adjacent that is necessary for the operation of that infrastructure will continue to be owned and maintained by Council. The use of land within the town area for new Council infrastructure is agreed to by the Manbarra People as part of the ILUA. However, if Council wishes to develop land for infrastructure outside of the town area, approval from the Native Title Parties will be required.

5.6.2 Community access for recreation

The Manbarra People consent to continued access by the community to the ILUA Area by the community for the purposes of recreation, including hunting, fishing, and camping activities. Access is to be in accordance with Murri Lore. Under this Lore, the visitor is to inform the Native Title Parties of their intent to access the land for recreational purposes, and the Native Title Parties acknowledge the visitor's request and allow safe entry.

5.6.3 Trustee Aboriginal Lease over North East Bay

A 99 year Trustee Aboriginal Lease under the Aboriginal Land Act 1991 by the Council to the Manbarra entity over the North East Bay Area for cultural, residential, and commercial purposes has been agreed.

5.6.4 Council works and activities

The Parties acknowledge Council's roles and responsibilities to undertake works or activities within the ILUA Area for the benefit of the Palm Island Community. Should Council wish to construct or carry out works or activities in the ILUA Area that has not already been given consent under the ILUA, Council may seek consent by having the works or activities become an Approved Future Act. To do this, Council must give a Proposed Activity Notice to the Native Title Parties

prior to carrying out any works or activities. Schedule 3 of the ILUA outlines the content required in a proposed activity notice, and the details of the process.

5.6.5 Town Area

The ILUA Area is currently Transferrable Land and the Manbarra People will negotiate the transfer of the ILUA Area as Aboriginal Land. However, the town area will not be included in the negotiation of the transfer.

The Native Title Parties consent to the Agreed Leasing Acts within the town area to the extent they are Future Acts. However, Council must not grant a Trustee Aboriginal Lease for:

- a commercial purpose within the Town Area that exceeds 30 years; or
- scientific, research, or similar purposes unless Council has followed procedures set out in Schedule 3 of the ILUA so far as it relates to an Occupancy Interest.

The Manbarra People agree to validate the grant of any lease granted by Council within the town area. However, prior to granting such a lease, Council must give notice of the proposed grant of lease to the Native Title Parties and take into account any comments received by the native Title Parties. Native Title Parties are to provide comments within 14 days of receiving the notice.

6 Policy direction for the planning scheme

This section outlines the policy position of the April 2010 Planning Scheme and any updates made to reflect changes in Council and/or State policy including new planning instruments and revisions to the Queensland Planning Provisions (QPP).

The QPP requires all planning schemes to organise its policy directions using themes. The April 2010 planning scheme used the following four themes:

- Environmental features;
- Cultural heritage and social development;
- Economic development; and
- Landscape and natural resources.

To reflect the suggested approach of the QPP, it is suggested that the emerging planning scheme uses the following themes:

- Settlement pattern;
- Economic development;
- Community identity and diversity;
- Natural environment;
- Natural resources and landscape; and
- Infrastructure.

The policy discussion has been organised using the suggested themes.

6.1 Settlement pattern

6.1.1 Discussion

Palm Island Shire is made up of a group of 10 Islands. The Palm Island group is located about 60km north east of Townsville in the Great Barrier Reef Marine Park and has a World Heritage land and sea environment. The islands are mostly undeveloped, with the exception of Great Palm Island that contains the settlement of Bwgcolman.

It is estimated that Bwgcolman has a population of about 3,130, but over the next 10 years (planning scheme time frame) it is projected to grow by about 500 people to be a community of about 3,600. The population projections estimate that about 4,400 people will be living in Bwgcolman in 25 years (strategic framework time frame).

The role of Palm Island Shire in the North Queensland region

The projected population growth and the isolation of the Shire from the mainland provides an opportunity for Bwgcolman to grow to be a larger centre that provides a greater range of retail, commercial, service, employment and housing opportunities. Within the context of the North Queensland Region, Bwgcolman will grow to be a similar size to Ingham. In addition it has a similar relationship to Townsville that Ingham, Charters Towers and Ayr currently have. Ingham, Charters Towers and Ayr are all major centres for their communities within the North Queensland region. This provides an opportunity for Bwgcolman to be a major centre for Palm Island.

For Bwgcolman to be major centre in the North Queensland region it will need to:

- expand the range of retail, commercial, service, employment and housing opportunities;
- reinforce its role in the region by providing a centre that responds to the culture and history of Palm Island and its strong links to the sea and the Great Barrier Reef;
- maintain its connections to Townsville and other mainland settlements; and
- protect and enhance the natural land and sea environment.

Outcomes of the Palm Island Improved Land Management Practices ILUA

The Improved Land Management Practices ILUA identifies a town area. The town area will be excluded from negotiations of a transfer of the ILUA Area as Aboriginal Land. The Manbarra People agree to validate the grant of any lease granted by Council within the town area. However, prior to granting such a lease, Council must give notice of the proposed grant of lease to the Native Title Parties and take into account any comments received.

The Manbarra People have given consent to:

- the development of community infrastructure in the town area;
- continued community access to the Shire for the purpose of recreation including hunting, fishing, and camping activities;
- the use of roads by the public, the dedication of the roads by the Minister, and the operation and maintenance of the roads by Council;
- continued operation, use, and maintenance of infrastructure, the land on which it is located, and any land or waters adjacent to the infrastructure necessary for the operation of the infrastructure;
- construction or carrying out of Minor Works or Activities described in schedule 4 of the ILUA, including repairing, inspecting and maintain the infrastructure.

Should Council wish to carry out works or activities not already consented to in the ILUA, Council may seek consent by having the works or activities become an Approved Future Act. To do this, Council must give a Proposed Activity Notice to

the Native Title Parties prior to carrying out any works or activities. The detail of the process is outlined in Schedule 3 of the ILUA.

Family camps are enabled to continue as long as they do not expand from the area that is identified by the ILUA.

The ILUA also identifies a 99 year Trustee Aboriginal Lease under the Aboriginal Land Act 1991 by the Council to the Manbarra entity over the North East Bay Area for cultural, residential, and commercial purposes.

Planning for expected growth

Palm Island's rich environmental values are an important part of the community's identity and lifestyle. However, the value of the natural environment also presents various constraints to development that applies to a large part of the Shire.

The undeveloped islands of the Shire have largely remained in their natural state and are not serviced by infrastructure. While, the Islands may have some potential to host environmentally and culturally sensitive development, they are not able to accommodate any of the projected growth and are expected to remain undeveloped.

Bwngcolman will be the main focus of growth, this not only reflects the scarcity of developable land that can be readily serviced with infrastructure, but also reinforces its role as a major centre. For these reasons the growth of Bwngcolman should be focused in the already developed area and provide a logical extension to the existing town considering the vulnerability of the land to natural hazards, including sea level rise and the need to protect areas of environmental or cultural importance.

The constraints analysis identified land vulnerable natural disasters, including sea level rise and land that should be protected for environmental or cultural reasons. Understanding the constraints to development and the desired settlement pattern that considers, infill and growth that can be serviced by infrastructure in a logical way enabled land that may be available for development to be identified. However, most of the land identified as having the potential to accommodate development is constrained by steep slopes, bushfire risk and impacts of potential sea level rise. The constraints of the land will affect the design, location, yield and cost of development. The developable land identified can be seen in Figure 7. A summary of characteristics of each site are provided in Appendix B.

The scarcity of developable land is a reminder that land is a limited resource and should be used wisely. It also reinforces the need for infill to be part of the growth strategy. Infill not only includes using land within the existing town more wisely, but also identifying sites that could be redeveloped. Known opportunity sites include:

- quarry site overlooking Regina Bay;
- land at the entrance to the jetty;
- land within the airport;
- power generation / electricity substation site, if power is to be cabled from mainland; and

- land fill site if waste is transferred to the mainland.

Considering developable land is a limited resource, growth should be concentrated in the existing settlement. Any new growth areas should:

- be a logical extension of the town;
- not be located in areas that are vulnerable to natural disasters and or in areas that have environmental or cultural importance; and
- be able to be serviced by infrastructure in a sequential manner;

The growth pattern shown in Figure 8 accommodates the expected growth in:

- a town centre for offices, shops community services and entertainment;
- an industrial area for service industry and low and medium impact industry; and
- residential areas for housing.

It is expected that the remainder of the Shire will remain undeveloped due to the steepness slopes, the difficulty in providing infrastructure, the environmental and cultural importance of the land and the outcomes of the ILUA.

The exception will be family camps. As identified by the ILUA, family camps provide an opportunity for the people of Palm Island to live, visit, and practice cultural activities in a bushland setting. Occupation and development of family camps are expected to continue but will be limited to the existing family camp areas, must be appropriate to the bush setting, and provide appropriate infrastructure on site.

Housing diversity

The planning scheme needs ensure that there is sufficient land to accommodate housing needed by the existing and future population. Currently there is a housing shortage on Palm Island causing overcrowding. Council is considering development applications at Upper Lama Lama and Kitchener Bligh Subdivision. Together they seek to provide 70 new lots.

The new lots and housing that these developments are expected to provide will help alleviate overcrowding, but will not provide housing for the expected population growth. The delivery of the new housing will achieve a household size of about 7.1, but falls short of achieving Council's target occupancy rate of 4 persons per household. Table 5 sets out the housing and land requirements to accommodate the expected growth using a target household size of 4, an average lot size of 600m² and a assumption that 15% of a subdivision site will be used for roads, open space and services.

Table 5: Housing and land requirements

Year	Additional Population	Housing requirements	Land Requirement
2022	500 people	470 houses	32.4 ha
2037	1,270 people	660 houses	45.5 ha

Palm Island has large households and consequently most of the housing stock is detached housing with 3-4 bedrooms. However, there are some two bedroom townhouses. It is expected that large detached houses will be the main type of housing provided. However, different housing forms can cater for different household needs. The Sustainable Land Use Plan identified the need for the following types of housing:

- 4 or more bedrooms;
- Family cluster housing enabling a small house to be extended with extensions or additional small houses;
- 2 bedroom townhouses/units for singles and couples; and
- 2 bedroom duplexes.

New housing should meet the needs of the community, including large and small families and single people who want to live alone and provide a range of housing types and lot sizes.

The planning scheme needs to ensure that there is sufficient land to accommodate the need for both publicly and privately owned housing.

Development contributes to the character of Palm Island

The character of Bwgcolman is a reflection of its island location, the strong links to the sea, the natural environment and the history and culture. These aspects are also important to the Palm Island lifestyle. Development needs to ensure that the character of Bwgcolman is maintained. This is done by:

- meeting the needs of the community;
- being appropriate for the Palm Island climate;
- blend with the natural environment and provide linkages to the bush, beach and sea;
- being culturally appropriate and recognise both the traditional and historical owners and their relationships to the place the development is located;
- being adaptable to accommodate the changing needs of the community; and

- public buildings and spaces incorporate public art by local artists and cultural references.

Ecologically sustainable design

Palm Island has a tropical climate that includes a wet and a dry season and risk of cyclones. To ensure buildings maximise comfort of its occupants while promoting energy efficiency, development should incorporate ecologically sustainable design principles, including:

- eaves;
- verandas;
- colour of roof;
- orientation of house; and
- natural ventilation.

6.1.2 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State's new policy direction.

Should Council wish to carry out works or activities not already consented to in the ILUA, Council may seek consent by having the works or activities become an Approved Future Act. To do this, Council must give a notice to the Native Title parties and consider their response using the process set out in the ILUA.

Policy Position	State Requirements	Change from April 2010
Bwgcolman is a major centre in the North Queensland Region and has strong links to Townsville		This is a new policy direction reflecting the outcomes of the Palm Island Enterprise Strategy, March 2011
<p>Prior to granting a lease in the town area, Council must provide Native Title Parties with details of the proposed grant and take into account any comments by the Native Title Parties which may be given up to 14 days of receiving the notice.</p> <p>Development, if not already consented to in the ILUA, must become an Approved Future Act by submitting a Proposed Activity Notice.</p>		Reflects Palm Island Improved Land Management Practices ILUA

Policy Position	State Requirements	Change from April 2010
<p>Development is concentrated in Bwgcolman or provides a logical serviced extension of the settlement.</p> <p>Development outside of Bwgcolman may be appropriate if it provides the relevant infrastructure and:</p> <ul style="list-style-type: none"> • is for a family camp in an areas identified as a family camp by the ILUA; or • is designed to minimise the impact on the natural environment and provides ongoing benefits to the community 	<p>Queensland Coastal Plan and State Planning Policy for Coastal Protection – Department of Environment and Natural Resource Management</p>	<p>The policy position is the same, but the emphasis on containing development within Bwgcolman is reinforced to reflect the Queensland Coastal Plan</p>
<p>There is sufficient land to accommodate the projected population growth and the demand for both public and private housing.</p> <p>New housing provides a diverse and adequate housing stock that meets the needs of the community, including large and small families and single people who want to live alone.</p>	<ul style="list-style-type: none"> • Public housing facilitation the planning scheme and SPA – Department of Communities • Property interests of – Department of Communities • Housing diversity – Department of Communities • Public housing design guidelines – Department of Communities • SPP 1/07: Housing and Residential Development (does not apply to local governments with a population below 10,000) 	<p>No change</p>

Policy Position	State Requirements	Change from April 2010
<p>Development maintains and enhances the character of Bwgcolman by:</p> <ul style="list-style-type: none"> • meeting the needs of the community; • being appropriate for the Palm Island climate; • blending with the natural environment and provide linkages to the bush, beach and sea; • being culturally appropriate and recognise both the traditional and historical owners and their relationships to the place the development is located; • being adaptable to accommodate the changing needs of the community; and • public buildings and spaces incorporate public art and cultural references. 		No change
<p>New buildings maximise comfort of its occupants while promoting energy efficiency, and incorporate ecologically sustainable design principles,</p>		No change

6.1.3 Questions for discussion

- 1.) Should the planning scheme call the town of Palm Island Bwngcolman?
- 2.) Should the planning scheme promote Bwngcolman as an important regional centre within the North Queensland Region and encourage its development as one?
- 3.) Are the population projections an accurate guess of the expected growth? The methodology has used the population determined by the 2010 Palm Island population survey and applied the growth rates recommended by the Office of Economic and Statistical Research (OSER).
- 4.) Can all the sites identified in Figure 7 accommodate development?
- 5.) Are there any additional potential development sites that Figure 7 has not identified?
- 6.) Considering the development constraints is the growth pattern set out in Figure 8 appropriate?
- 7.) Are there any sites within the town that may be redeveloped?
- 8.) Are there sites that have a use that might not be there in the future?
- 9.) What is the future for the Ergon site?
- 10.) What is the future of the landfill site?
- 11.) Is the area identified for the town centre correct?
- 12.) Is the area identified for industry correct?
- 13.) Are there any other areas that might be appropriate for industry?
- 14.) Is the area identified for agriculture correct?
- 15.) Is the area identified for residential development correct?
- 16.) Should family camps be able to develop if they provide their own infrastructure?
- 17.) What household size would council like to aim for?
- 18.) What type of houses does the community need?
- 19.) What is the built character of Palm Island?
- 20.) Are there any design features such as public art that should be incorporated into new buildings?

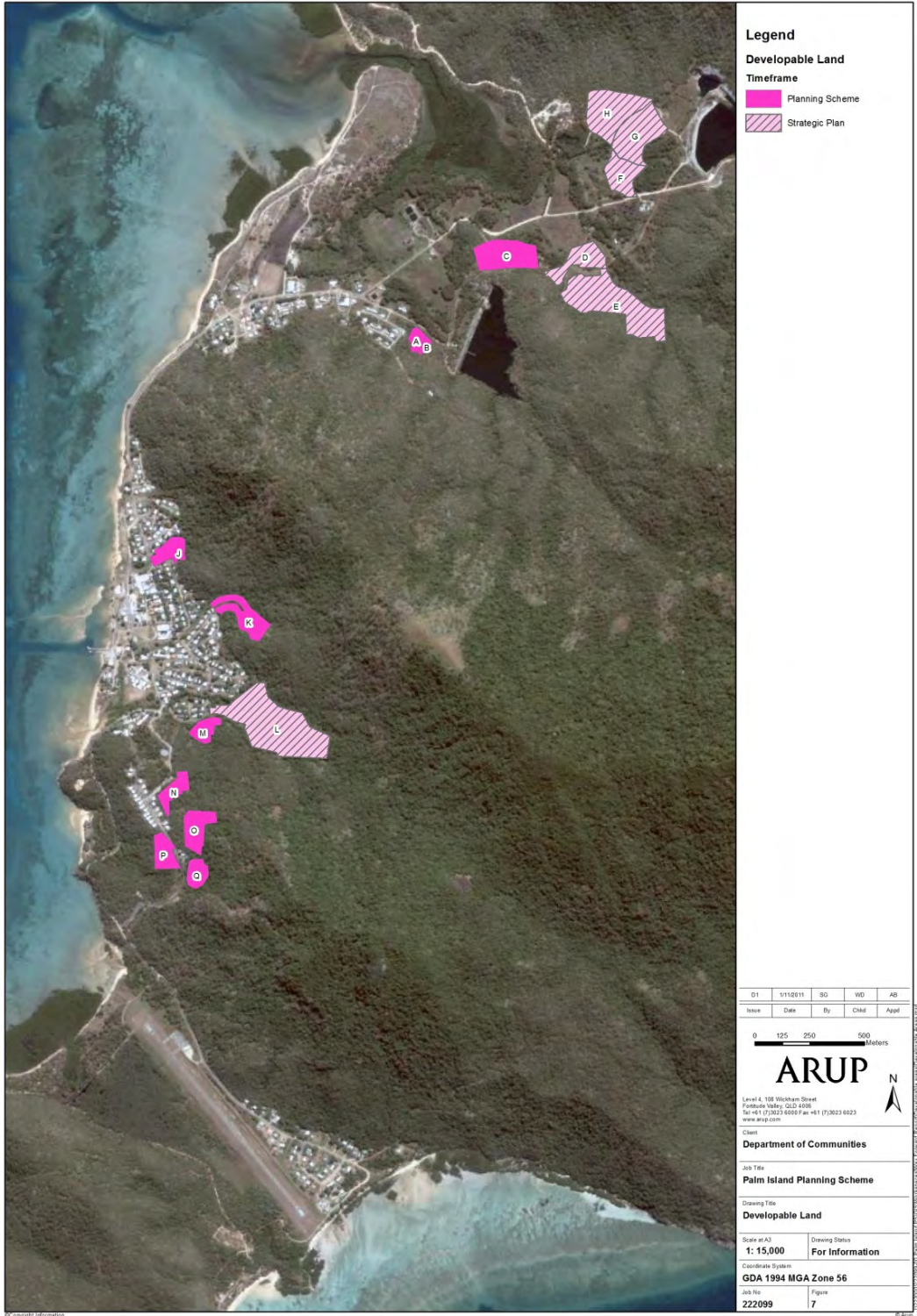


Figure 7: Potential Land supply

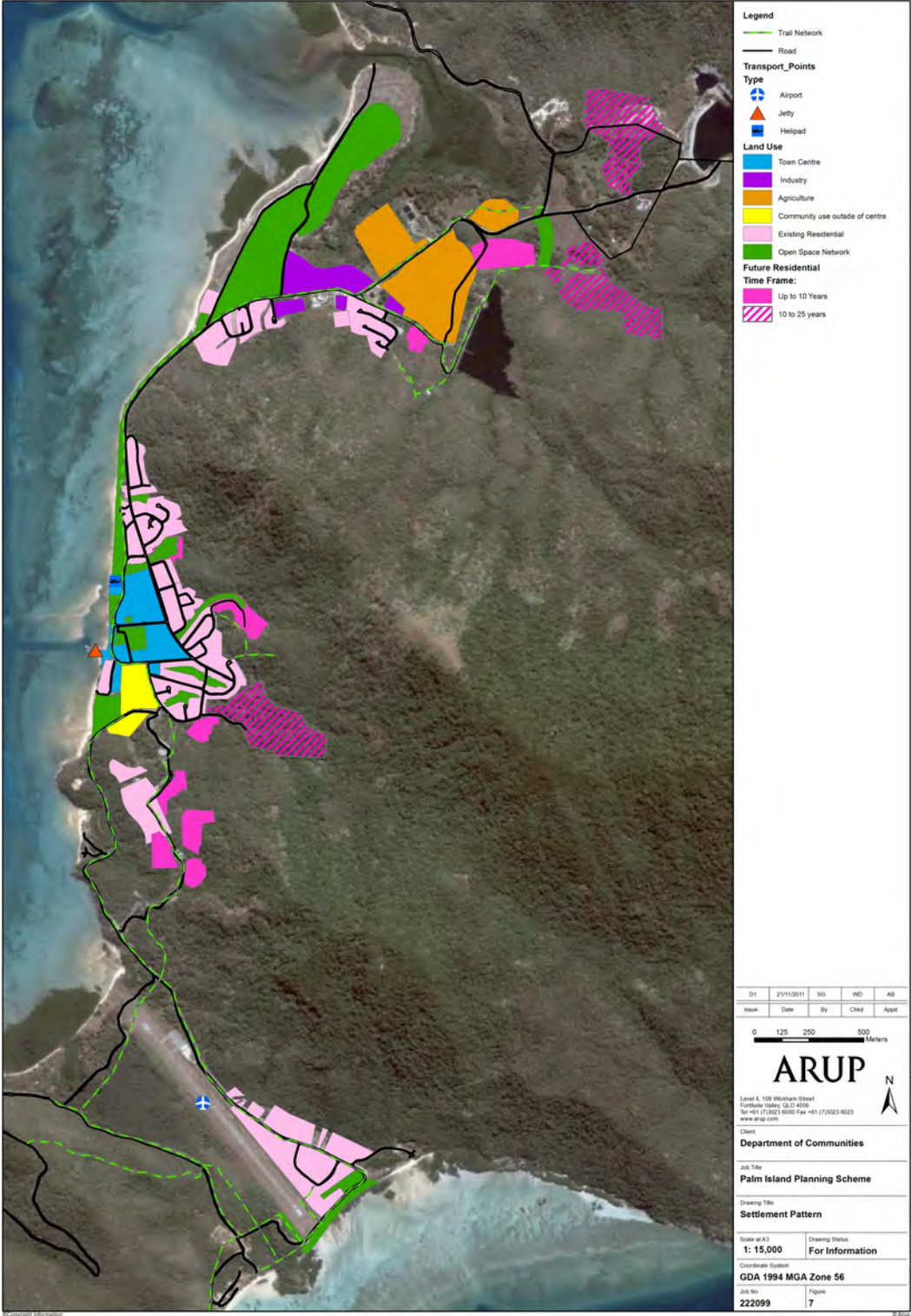


Figure 8: Settlement Pattern

6.2 Economic development

6.2.1 Discussion

Economic development is the cornerstone of sustainability for the Palm Island community. The planning scheme needs to support the economic development strategy if the community is to work towards being an economically viable and independent community not reliant on welfare. This includes ensuring that there is sufficient land for both publicly and privately owned housing and economic activities.

The planning scheme can ensure that land for economic development is appropriately located and protected. The key locations for economic activities include:

- the town centre
- the industrial area; and
- the agricultural area.

The culture, lifestyle and then natural environment of the Palm Island Shire provide economic opportunities in the fishing and aquaculture, environmental management, arts and tourism sectors.

The planning scheme can also provide opportunities for enterprise activities, including home base businesses if there are no adverse impacts on the amenity of the neighbours.

The airport and the jetty are important economic assets the community. The development of a small logistics or 'just in time delivery' operation of high value fresh products, such as fish or seafood is also an economic opportunity for Palm Island.

Town centre

The town centre is the focal point of the Shire, and is where shops, offices, and community services are located. The jetty provides an entry point to Bwgcolman for people arriving by boat. There is capacity for the town centre to provide a greater range of services, including arts culture and entertainment, and without losing its character, the central park, access to the beach and its role as a central meeting place.

A broad scale master plan, for the town centre has been prepared by the Department of Public Works and sets out the areas for different land uses. A more detailed master plan would assist in providing more direction to the built form, infrastructure and public works.

Whilst most shops will be located in the town centre, small shops that serve a local need outside of the centre, and home-based businesses in the residential areas may be appropriate if they do not impact on the residential amenity.

Accommodating options that enable people to work from home can encourage entrepreneurship.

Industrial area

Land for industrial development has been identified near The Farm and already accommodates some low impact industry and infrastructure utilities. This area is located in close proximity to an existing residential area and some areas may experience storm tide inundation. It is for these reasons the industrial land will best accommodate service, low impact and medium impact industry. No land in the shire is to be used for high impact and noxious industry due to the inability to achieve appropriate separation distances between industry and sensitive land uses and the sensitive environment of Palm Island and the Great Barrier Reef Marine Park. The industrial area is approximately 6.5ha and is already developed, but there are opportunities for infill and intensification. As land is a scarce resource on Palm Island, it is important to protect this land from encroachment from uses that would constrain its future development.

The State Planning Policy 5/10 Air Noise and Hazardous Material seeks to:

- protect the health wellbeing, amenity and safety of communities from the impacts of air, noise and odour emissions and hazardous materials; and
- plan and manage the interface between industrial areas and sensitive uses to support and protect appropriately located industrial areas.

Planning schemes need to reflect the policy outcomes of SPP 5/10 by providing separation distances between the industry and sensitive land uses such as residential areas and community services. The separation distances for the health and safety of the community are addressed in section 6.4 where community identity and diversity is discussed.

Due to the location of the industrial area, development may need to be designed to effectively mitigate risks associated with storm tide inundation. The design must also ensure that the water quality of the sea is not affected by industrial uses that are inundated by storm tide.

Agriculture and extractive resources

In the past agriculture was an important part of the Palm Island economy. The agricultural area provides an opportunity for agricultural activities to occur. This area could be used for a community farm or market garden.

Extractive resources, including gravel, are scarce on Palm Island and should be protected.

Art, cultural and environmental industries

Palm Island is known for its art, and there are many well known artists in the community. Local art is an important expression of cultural identity, and can provide jobs and be the foundation of local arts industry.

The development of an arts and cultural centre is an initiative which builds on the Island’s existing arts and cultural base and provides jobs for locals. The town centre is an ideal location for the development of the arts and cultural centre as it will be easily accessible for visitors and will assist in strengthening the town centre’s role as the Shire’s economic and cultural hub.

The natural environment and its management is an economic development opportunity for Palm Island. For these opportunities to be realised the high quality of the natural environment needs to be retained and remain largely undeveloped.

Tourism activities that are based on local art, culture and the natural environment may be appropriate if they provide direct benefit to local people and do not have adverse impacts on the community or the natural environment.

Fishing and aquaculture

The location of Palm Island in the Great Barrier Reef Marine Park provides regulation around the type of activities that can occur. A planning scheme does not regulate the waters of the Shire, but it can include an approach to aquaculture. The Department of Employment, Economic Development and Innovation are encouraging local governments to provide an easier development assessment process for the development of aquaculture. The existing sponge farm provides an example of an aquaculture success aquaculture in the Shire.

The protection of fish habits is also important for the ongoing sustainability of the fishing industry and is also a Department of Employment, Economic Development and Innovation State interest.

6.2.2 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State’s new policy direction.

Policy Position	State Requirements	Change from April 2010
<p>The town centre remains the heart of the community and is the main focus for shops, office, community services and entertainment.</p> <p>Development of the town centre:</p> <ul style="list-style-type: none"> • contributes to 	<ul style="list-style-type: none"> • Department of Public Works has undertaken a master planning exercise for the town centre to encourage the development of shops. 	<p>No change</p> <p>Requirements for a masterplan is new</p>

Policy Position	State Requirements	Change from April 2010
<p>creation of high quality public open space</p> <ul style="list-style-type: none"> • contributes to the character • enhances its role as a meeting place • maintains the links and access to the foreshore <p>Prepare a detailed masterplan for the town centre</p>		
<p>Shops, offices and community services outside of the town centre will be discouraged. The exception being small shops and home businesses that is consistent with a residential amenity</p>		No change
<p>Development does not compromise the operations of the airport and jetty.</p>		No change
<p>The industrial area is protected for service, light and medium industry.</p>		No change
<p>Agricultural land and areas that contain extractive resources are protected for its future use of agricultural production.</p>		No change

Policy Position	State Requirements	Change from April 2010
Infrastructure that support the development of the arts and cultural industry, including the development of an arts and cultural centre in the town centre.		New policy
Development does not damage the economic viability and future sustainable development of the fishing and aquaculture industry on Palm Island.	<ul style="list-style-type: none"> • Aquaculture – DEEDI • Fish habitats – DEEDI 	
Tourism activities that are based on local art, culture and the natural environment may be appropriate if they provide direct benefit to local people and do not have adverse impacts on the community or the natural environment.		New policy

6.2.3 Questions for discussion

- 1.) Should Council commit to preparing a detailed masterplan for the town centre to provide direction on the type of development that will help it become a major centre in the region?
- 2.) Does Council want to support the development of small shops and home businesses in the residential area?
- 3.) Is there any potential for the airport to accommodate warehouse, logistics or aviation support industry?
- 4.) Is there sufficient land for industry?
- 5.) Are there any other areas that may be appropriate for industrial development?
- 6.) What type of industry do you see locating on Palm Island?
- 7.) Is there sufficient land for agriculture?
- 8.) Are there any other areas that may be appropriate?
- 9.) Are agricultural processing activities appropriate in the agricultural area?

- 10.) What infrastructure is needed to support the development of the arts and culture industry?
- 11.) What type of tourism activities, if any should the planning scheme accommodate?
- 12.) Are there any areas that would be suitable for tourism development?

6.3 Community identity and diversity

6.3.1 Discussion

The majority of Palm Island's community is made up of Indigenous people from an estimated 43 different tribal groups with 57 different languages. Although the community has a diverse heritage, the lifestyle, culture and identity of the Palm Island reflects the Island's natural environment and the communities access to the sea and bush. To maintain and enhance Palm Island's community identity, planning must reflect the needs and culture of the community. Access to employment, community facilities and services, and recreational and culturally significant areas is essential to the community's wellbeing and cultural identity.

Community services and facilities

The community is provided with access to a range of services and facilities that meet the community's needs. These include commercial, social, recreational, employment, and health, and education services and facilities. These facilities are generally located in the town centre.

Heritage and history

Palm Island has a complex history. Its culture is built upon the heritage of its traditional land owners, the Manbarra people and its historic owners, the Bwngcolman people. The sea, reef and bush environment is also part of the culture of the local people. Native title rights and interests are protected and development on the Island is compliant with the Native Title Act.

The Manbarra People together with Council and the Cultural Heritage Body are committed to the protection and preservation of all Aboriginal and historical cultural heritage. The ILUA identifies places and objects to be included in the Palm Island Heritage Register, which can be included in the planning scheme.

Palm Island is known for its art, and there are many well-known artists in the community. Art can be an expression of cultural and community identity and should be incorporated in development where practicable.

Island culture and lifestyle

The natural environment and its beauty is a large part of the community's identity and lifestyle. Access to the bush and sea are important to the community, and development must maintain access to these areas. Development does not hinder access to areas of cultural significance, or the ability of the community to carry out cultural practices.

Palm Island character

The character of Palm Island reflects its tropical climate, wet and dry seasons, the island setting and the culture and lifestyle of the community. Development contributes to the Palm Island character through design and materials used.

Parks, open spaces, sport, and recreation

Palm Island has a healthy and active community. Parks and open spaces on Palm Island are safe and comfortable areas that provide areas for formal and informal exercise, leisure, and formal and informal interaction for all ages. These spaces also provide places for meeting, gathering and participating in cultural activities.

The provision of safe and adequate open spaces, swimming areas, recreation, and sporting areas which are accessible by the trail network, meet the needs of the community and provides opportunity for exercise, leisure, and formal and informal interaction for all ages is important, especially as 30% of the population are children under the age of 15. The open space and trail network is shown on Figure 9.

Trail network

The developed parts of the island are connected by the trail network. This trail network provides a safe, scenic, and alternative form of access to all developed parts of the island, and forms part of the open space network. The trail network is important to the whole community, but especially those who cannot drive including children. Development must protect and where possible provide connections to the trail network.

Health and Safety

Development on Palm Island should contribute to a healthy and safe environment.

State planning policies that are concerned with the health, safety, and wellbeing of communities include SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide and SPP 5/10 Air, Noise and hazardous Materials. Since SPP 1/03 is concerned with mitigating the impacts of natural hazards, it is addressed in section 6.5 about the natural environment. SPP 5/10 seeks to protect the wellbeing of communities from the impacts of air, noise, odour emissions, and hazardous materials. To protect the community's health and safety from impacts

of industrial emissions, the SPP prescribes appropriate distances between land used for industry and land used for residential or other sensitive uses.

Land allocated for industrial use is located near The Farm and is located an appropriate distance from existing residential areas. This industrial land is to accommodate service, low impact, and medium industry. New residential areas must not encroach on these industrial areas and development in the industrial area must not have a negative impact the health and safety of the community or put people or property at risk.

Designing development to ensure that public places are safe and can prevent crime is also a State interest articulated in a *Crime Prevention through Environmental Design Guidelines for Queensland* prepared by the Queensland Government.

For community health and safety, development should provide adequate shade, connect to the open space and trail network, encourage community interaction, and incorporate design principles which contribute to public safety and prevent crime.

6.3.2 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State’s new policy direction.

Policy Position	State Requirements	Change from April 2010
The Palm Island community is provided with access to community services, retail, education, employment opportunities, and government services that meet the needs of the community.		None
Large residential developments make provision for adequate, highly visible, and safe children’s parks.		None
The culture and heritage of Palm Island’s community is protected and respected. Development:		Heritage Register added to reflect the ILUA

Policy Position	State Requirements	Change from April 2010
<ul style="list-style-type: none"> • does not occur in areas of cultural and historical significance; and • does not restrict the community's access to culturally significant areas or the ability of the community to carry out cultural activities. <p>Places identified by the Palm Island Heritage Register and are protected and preserved.</p> <p>If, in the course of development, object or place that could be of Aboriginal cultural heritage are identified, the developer must:</p> <ul style="list-style-type: none"> • Immediately cease work; • Promptly inform the Native Title Parties about the identification of the object or area; • Discuss with the Native Title Parties whether the work can continue, and if so, on what conditions 		
<p>Development contributes to healthy and safe environments that encourage community activity, interaction, and healthy lifestyles and prevent crime and risk to the safety to people and property.</p>	<ul style="list-style-type: none"> • Crime prevention through environmental design: Guideline for Queensland 2007 	<p>None</p>

Policy Position	State Requirements	Change from April 2010
<p>Emissions from activities and works including pollutants released to air, water and soil are within acceptable limits.</p> <p>Development is managed to maintain an adequate separation distance and buffer between industrial or noise generating uses and sensitive uses such as residential and cultural uses.</p>	<ul style="list-style-type: none"> SPP 5/10: Air, Noise, and Hazardous Materials 	<p>None</p>

6.3.3 Questions for discussion

- 1.) Are there any other places that have historic significance that should be identified by the planning scheme? If so where are they?
- 2.) Is there an adequate range of community services and facilities? Is there enough space in the town centre for the provision of additional community services?
- 3.) What type of open space is needed? Is it in the right location?
- 4.) Should development contribute to the provision of open space?
- 5.) Is the trail network correct? Are the links or connections that should be added?

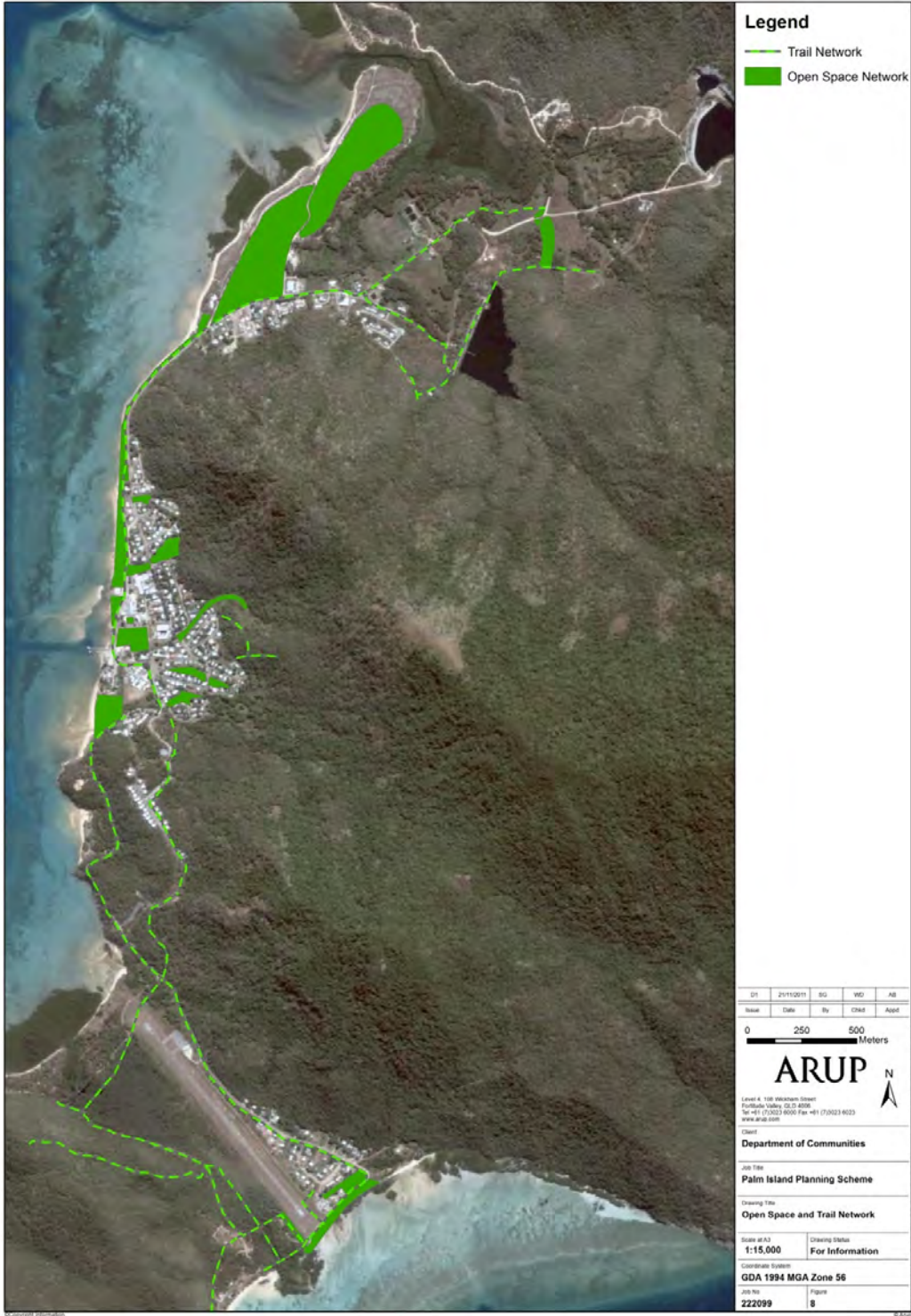


Figure 9: Open space and trail network

6.4 Natural environment

6.4.1 Discussion

The natural environment of the Palm Island group is a key element of the community's lifestyle and culture and can contribute to the Shire's economic development. It is therefore important that Shire's natural environment is protected from negative impacts that may result from development. The features of the natural environment include its areas of high ecological value, vegetated hill slopes, wetlands, creeks, and the coastline.

The natural environment of Palm Island also contributes to its vulnerability to the impacts of climate change and natural hazards such as sea level rise, storm tide inundation, landslide and bushfire. Just as development must not negatively impact the Island's natural environment, development must not put people or property at risk of the impacts of climate change or natural hazards.

Habitat and biodiversity

The Great Barrier Reef Marine Park, in which the Palm Island group is located, is protected by the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). Development or activities that is likely to have a significant impact on the Great Barrier Reef Marine Park requires approval from the Australian Government Minister for Sustainability, Environment, Water, Population and Communities, who will decide whether assessment and approval is required under the EPBC Act.

The natural features of Palm Island are highly valued by its community. This includes the biodiversity and ecological processes. To protect the Shire's ecological values, development should be located within the existing settlement, or be a logical extension of the existing settlement and protect the untouched parts of the island.

Landform and topology

The bush, hills, and coast are key features of the island that are important to its community. Development on Palm Island is to respect and retain the natural features and topography of the land including its hills, watercourses, and coastlines.

Natural hazards and climate change

A lot of land on Great Palm Island is vulnerable to natural hazards and the potential impacts of climate change including storm tide inundation, landslide and bushfire (refer to section 4.). However, as discussed in section 4, some areas are more vulnerable than others and the estimated severity of the hazards vary.

Outcome 2 of the SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide seeks to minimise the adverse impacts of natural hazards as far as

practicable and to ensure that development does not result in an unacceptable risk to people or property. It describes unacceptable risk as:

“a situation where people or property are exposed to a predictable hazard event that may result in serious injury, loss of life, failure of community infrastructure, or property damage that would make a dwelling unfit for habitation”.

SPP 1/03 also seeks to ensure that community infrastructure can function effectively during, and immediately after, a major natural hazard. As such, community infrastructure should be located and designed to be able to operate during and immediately after a natural hazard.

To enable development to occur on Palm Island, it is worthwhile to differentiate between high hazard areas that should not be developed, and low hazard areas which may be developed provided the hazards are managed or mitigated.

This is consistent with the approach taken by the Coastal Management Plan which identifies areas of high and low coastal hazard (refer to section 4). As discussed in section 4, because the coastal hazard mapping does not include Palm Island, Arup has developed a storm tide hazard map identifying areas of low and high storm tide hazard areas based on elevation levels and analysis of cyclone Yasi inundation levels and the suggested methodology of the Queensland Coastal Plan.

Most of the developed area of the town of Palm Island is located in areas that have a low bushfire risk level. However, there are some areas that have a medium risk level. Most of the high bushfire risk areas are located in the undeveloped parts of Greater Palm Island.

The analysis of the development constraints identified that land with a slope less than 15% has low landslide risk. However land with a slope between 15 and 25% has a risk for landslide, but may be appropriate for development if a geotechnical report determines the risk can be mitigated. Land with a slope of 25% or more is considered to have a high landslide risk and is considered to be a high hazard area.

There is a risk for acid sulfate soils on land, soil or sediment that is below the 5m AHD where the natural ground level is below 20m AHD. Some of the land in town area is below 5m AHD and these areas may have a risk of acid sulfate soils. Land below the 20m AHD will only be at risk if the proposal disturbs soil at or below 5m AHD. The risk of acid sulfate soil can be tested and mitigated through the development process.

Table 6 identifies the hazards that exist on Palm Island, and categorises them into ‘high hazard areas’ and ‘low hazard areas’, based on the potential level of risk.

Table 6: Identification of natural hazards and the potential severity of their impacts

Natural Hazard	Level of Hazard	Category
Sea level rise, coastal hazards, and flooding	High storm tide hazard areas (areas below 4m AHD)	High Hazard Area
	Low storm tide hazard areas (areas between 4-5m AHD)	Low Hazard Area
Bushfire	High bushfire hazard areas	High Hazard Area
	Medium bushfire hazard areas	Low Hazard Area
Landslide	High land slide vulnerability (slopes above 25%)	High Hazard Area
	Landslide vulnerability (slopes between 15-25%)	Low Hazard Area
Acid sulphate soils	Land, soil or sediment below 5m AHD where the natural ground level is less than 20 metres.	Low Hazard Area

Coastal management

Palm Island is located within the Great Barrier Reef Marine Park (GBRMP). The coast and the GBRMP are of high economic, social, and environmental value to the community. The Great Barrier Reef Marine Park is protected by the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). Under the EPBC Act, any action that has the potential to have a significant impact on the GBRMP must be approved by the Australian Government Minister for the Environment, Heritage and the Arts.

The Queensland Coastal Plan and the Coastal Protection SPP applies to the coastal zone, which includes Palm Island. The overall policy outcome is that development is planned, located, designed, and constructed to:

- avoid the social, environmental, and financial impacts arising from coastal hazards, including the projected effects of climate change;
- to protect, conserve and rehabilitate coastal resources and biological diversity; and
- allocate land on the coast for coastal-dependent development.

To protect the coast from the impacts of development, development on Palm Island, other than for activities that are coastal dependent (for example development related to jetty or aquaculture activities), is to be set back from the coast.

The Palm Island group is located in a Coastal Management District which means that DERM is a concurrence agency for all development applications in the Shire,

including building work, reconfiguring of a lot, a material change of use, if the change of use will involve operational or building work with gross floor area (GFA) of 1000m² and operational works not associated with reconfiguring of a lot.

6.4.2 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State's new policy direction.

Policy Position	State Requirements	Change from April 2010
<p>Development does not occur on untouched parts of the island.</p> <p>Development does not cause fragmentation, degradation, or loss of habitat and/or biodiversity.</p>	<ul style="list-style-type: none"> Vegetation Management Act 	No Change
<p>Development is setback from the Coast</p>	<ul style="list-style-type: none"> Queensland Coastal Plan 	No change
<p>Development does not occur on wetlands and their buffer areas.</p> <p>Development in or adjacent to wetlands of high ecological significance is planned, designed, constructed and operated to minimise or prevent the loss or degradation of the wetlands and their vales.</p>	<ul style="list-style-type: none"> Temporary State Planning Policy 1/11: Protecting Wetlands of High Ecological Significance in Great Barrier Reef Catchments 	Updated to reflect new May 2011 temporary SPP 1/11
<p>Development does not significantly alter the existing land form and geology.</p> <p>Development does not locate on significant landforms.</p>	<ul style="list-style-type: none"> Vegetation Management Act State Planning Policy for Coastal Protection Coastal Management Plan 	No change

Policy Position	State Requirements	Change from April 2010
<p>Development is setback from watercourses</p>		<p>No change</p>
<p>Development is designed to minimise adverse impacts that may result from flooding and storms.</p> <p>Development is not sited in areas identified as high hazard.</p> <p>In areas of low hazard development is designed to minimise the effect of the natural hazard and does not contribute to increasing the extent or severity of natural hazards</p> <p>Development of community infrastructure is designed and constructed to withstand impacts of natural hazards.</p> <p>Community infrastructure is to be located and designed to be able to operate during and immediately after a natural hazard where practicable.</p> <p>Development is planned and managed to avoid potential adverse effects of acid sulphate soils on the natural and built environment and human health.</p>	<ul style="list-style-type: none"> • SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide • SPP 2/02 Planning and Managing Development Involving Acid Sulfate Soils • Queensland Coastal Plan 	<p>Updated to reflect April 2011 Queensland Coastal Plan. Development is not sited in high hazard areas, but is tolerated in low hazard areas, provided the development incorporates measures to mitigate the impacts of likely hazards.</p>
<p>Development does not have negative impacts on the coast, including its:</p> <ul style="list-style-type: none"> • marine life; • coastal processes. 	<ul style="list-style-type: none"> • Coastal Management Plan • Coastal Protection SPP 	<p>Updated to reflect April 2011 Queensland Coastal Management Plan</p>

Policy Position	State Requirements	Change from April 2010
Development is set back from the foreshore.		

6.4.3 Questions for discussion

- 1.) What is the acceptable level of risk for people and property in areas vulnerable to natural hazards? Are the low and high risk areas that are proposed appropriate? It is appropriate that development is allowed subject to further study and design to mitigate the impacts of the risk?
- 2.) Are acid sulfate soils an issue on Palm Island? Are there any areas known to contain acid sulfate soils?
- 3.) How far should development be set back from watercourses and overland flow paths?
- 4.) Do the wetlands identified as having high ecological significance by Temporary SPP 1/11 have high ecological significance? Are there any wetlands that should be protected?
- 5.) Are there any habitats or vegetation that should be protected from development?

6.5 Natural resources and landscape

Palm Island's natural resources, including its natural beauty, are an important cultural, lifestyle and economic asset to its community. For this reason, the natural resources and landscape of Palm Island are protected for ongoing use. These include:

- agricultural land, areas of extractive materials and marine resources;
- landscape including hilltops, foreshores, coastlines and creeks; and
- views.

Agricultural land, extractive materials and marine resources

Historically agricultural production and sand extraction have been important to the Palm Island economy. Palm Island's areas of natural resources, including areas of extractive minerals, agricultural lands, and marine resources, should be protected for ongoing, long-term use.

The planning scheme can protect the productivity of agricultural land and quarries by including them in the rural zone, and discouraging the use of the land for uses other than agriculture and sand extraction respectively.

Marine resources are regulated by a range of Federal and State policy and should be used wisely to ensure a sustainable and ongoing supply. Development should not have any impacts on marine resources. The policy discussion about marine resources is in section 6.2, economic development.

Landscape

The beaches and foreshores of Palm Island are an important part of the community's lifestyle, culture and identity. Development should be set back from the beach, planned and designed to minimise impacts on the beach and coastal process and maintain public access. The policy discussion about protecting the coastal area is in section 6.5, natural environment.

The creeks, hills and bush are also important features to the community. To protect these features, development should not:

- occur on untouched parts of the Islands;
- significantly alter the existing land form and geology; or
- be sited on peaks and ridgelines.

Views

The Palm Island community values the views to and from Great Palm Island. Of particular importance are views to Greater Palm Island and Mount Bentley from the sea, and views from the town to the Curacoa Island, Fantome Island, Esk Island, and Brisk Island. Development should not obstruct these views from

public places. Protecting views of the vegetated hill slopes of the coast and its islands is also a policy of the Queensland Coastal Plan.

6.5.1 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State's new policy direction.

Policy Position	State Requirements	Change from April 2010
Development does not affect the productivity of agricultural land or areas of extractive resources.	<ul style="list-style-type: none"> • SPP 1/92 Conservation of GQAL (not applicable) • SPP 2/07: Protection of extractive resources (not applicable) • DEEDI Aquaculture Policy 	No change
Development does not compromise the natural beauty of the shire, and in particular its: <ul style="list-style-type: none"> • views; • creeks, watercourses, and swamps; • beaches, headlands, bushlands, and foreshores; • peaks and hilltops. 		No change

6.5.2 Questions for discussion

- 1.) Are there any additional or specific important landscape elements that should be identified and protected?
- 2.) Are there any landforms that are important to identify and protect?
- 3.) Are there any particular views that are important?

6.6 Infrastructure

6.6.1 Discussion

Infrastructure on Palm Island includes utility services and transport and is focussed in Bwgcolman. Outside to the town, there are no utility services and very few roads.

Utility services

Bwgcolman is serviced by Council owned and maintained water supply, sewerage treatment, stormwater drainage and waste management systems. It is also serviced with power from Ergon and telecommunications from Telstra.

Utility services have been designed for a population of 5,000, however it is questionable whether the utilities can effectively and sufficiently meeting the demand. While there is a sufficient supply of water, water quality from Francis Dam is an issue.

Development in the town is to:

- provide connections to these existing services and
- be a logical extension to the existing networks.

Development outside the town is to provide infrastructure and utility services that are sustainable and appropriate to the proposed use, at no cost to Council. Most of this development will not be able to connect to Council's water, sewerage and stormwater drainage networks and will be required to provide these services on site.

Water quality

Urban stormwater run-off contributes to poor water quality in waterways and the sea. Given the high quality marine environment, it is important that stormwater run-off from development does not impact the natural environment or the water supply used by the local people.

Transport

The transport infrastructure on Palm Island, shown on Figure 10, includes the:

- airport
- jetty
- road network
- trail network

The airport and the jetty are important links between Palm Island and Townsville and are important regional transport infrastructure. Any development should protect their ability to function and all weather access to the airport and the jetty from the town centre should be provided. Development should also reflect the role of the airport and jetty as the main entry points to the Great Palm Island.

The road network is maintained by Council. Main roads include:

- Beach Road;
- Clump Road; and
- Wallaby Point Road.

These roads provide the main connections between the airport, jetty, the town centre, housing and employment areas. The main roads need to maintain all weather access and enable safe travel by pedestrians and cyclists. Other roads are important for accessing individual properties and should provide safe access for cars, pedestrians and cyclists. All roads must be designed and maintained to ensure that every property can be accessed by emergency vehicles, including the rural fire service.

Planning ensures that development on Palm Island is always accessible, and does not hinder access to existing land uses, particularly public areas and open spaces. The road and trail network provides safe connectivity and access to all developed areas of the island, and accessibility by emergency services. The trail network provides safe, alternative access to developed parts of the island.

6.6.2 Policy direction for the planning scheme

The following table provides the policy direction for the planning scheme. It reflects the policy direction of the April 2010 planning scheme, the known state planning requirements. It also identifies changes that have been suggested to reflect the State’s new policy direction.

Policy Position	State Requirements	Change from April 2010
Development of infrastructure is sustainable and does not adversely affect the health and safety of residents, or the environmental health and amenity of the area.		No change

Policy Position	State Requirements	Change from April 2010
<p>Development is located in areas where infrastructure and utility services exist, or provides the infrastructure and utility services appropriate to the use on site and at no cost to Council</p>		<p>No change</p>
<p>In the town, development provides a logical extension of utility services and infrastructure</p>		<p>No change</p>
<p>Development does not have any significant adverse effects in identified water supply catchments, and does not adversely affect the quality and quantity of water available for consumptive uses in the Shire.</p> <p>Development in the town is planned, designed, constructed and operated to manage stormwater, wastewater in ways that help protect the environment values.</p>	<ul style="list-style-type: none"> • Queensland Water Quality Guidelines 2009. • SPP 4/10 Healthy Waters • Environmental Protection (Water) Policy 2009 	<p>No change</p>
<p>Development is provides safe access to the road and trail network.</p> <p>Development makes provision for a safe trail network.</p>		<p>No change</p>
<p>Infrastructure is developed to an appropriate standard that meets the needs of the indented use of the site.</p>		<p>No change</p>

Policy Direction Required:

- 1.) What is the capacity of the water supply system?
- 2.) What is the capacity of the sewerage treatment?
- 3.) What are Ergon's plans for provision of infrastructure? If they are to bring electricity from the mainland what is the future of the site that currently holds the generation?
- 4.) Are there any community aspirations for alternative energy generation?
- 5.) What is the future of the landfill site? Will it continue to be used or will waste be transferred to the mainland? If so where is the waste transfer station? Is there potential for the landfill site to be rehabilitated?
- 6.) Does Council want to use the development standards used by Townsville City Council for the provision of infrastructure? If not what would they like to use?
- 7.) Does council want to promote alternatives for sewerage treatment (e.g. composting toilets) on sites that are not able to be connected to Council's network?
- 8.) Does the road network reflect the road network identified by the ILUA?
- 9.) Does Council want to set out a road hierarchy in the planning scheme, if so what is it?
- 10.) Are there any new roads that should be identified?
- 11.) Does Council want formal footpaths or bikeways to be constructed on any particular roads?
- 12.) Is the proposed trail network correct? What links should be removed or added?
- 13.) Does Council want to use Townsville City Council development standards for infrastructure?

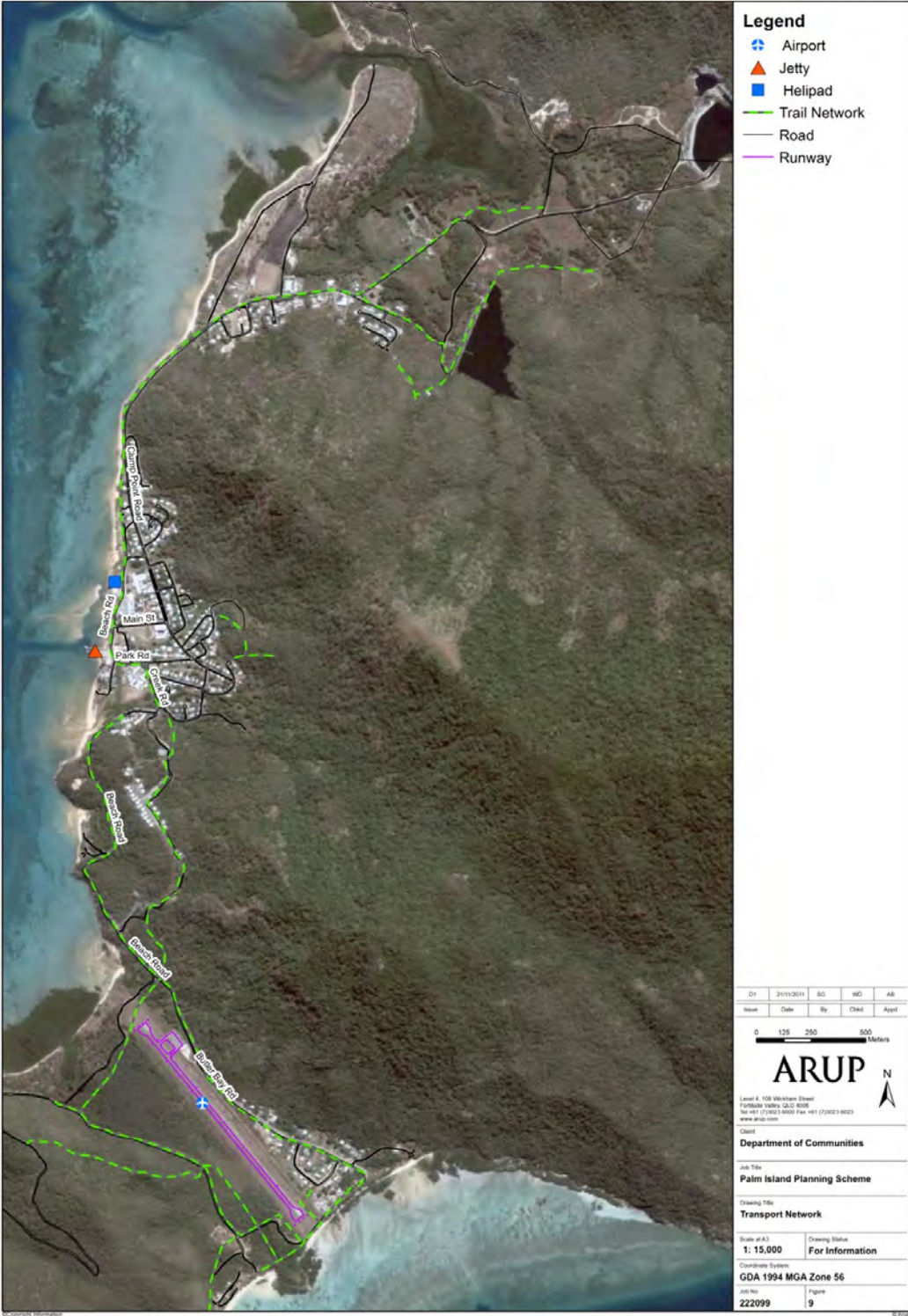


Figure 10: Transport Network

Appendix A

Potential Sites

A1 Potential sites

Site Ref	Description	Total Area	Developable Land	Achievable Lots	Wetlands and Buffers	Waterways	Vegetation	ASS	Slope	Storm Tide / Flood	Accessibility	Other	Distance to Jetty	Suitability	Actions
A	Chook City East	0.579 ha	0.49 ha	8		Adjacent to waterway	Contains Remnant Vegetation - Not of Concern	ASS			3		2.7k	Planning Scheme	<ul style="list-style-type: none"> Soil testing and, if necessary, removal of ASS required.
B	Chook City East	0.238 ha	0.2 ha	3	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	ASS	Up to 25% slope		3		2.7k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding separation distance from wetland; Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
C	Outstation	3.425 ha	2.9 ha	41	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	ASS	Up to 25% slope		3		3.2k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
D	Outstation	2.23	1.8 ha	31	Within 200m buffer	Waterway	Contains Remnant Vegetation - Not of Concern	ASS	Up to 25m slope		3		3.2k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; Soil testing and, if necessary, removal of ASS required; Development will need to be supported by a geotechnical report.
E	Outstation	7.14	6 ha	101	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	ASS	Up to 25m slope		3		3.2k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
F	Francis Dam	2.209 ha	1.87 ha	31	Within 200m buffer	Adjacent to waterway	-	ASS			2 - Access may be affected during storm surge.		3.7k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; Soil testing and, if necessary, removal of ASS required.
G	Francis Dam	3.928 ha	3.3 ha	55	Within 200m buffer		Contains Remnant Vegetation - of Concern	ASS	Up to 25% slope.	Low storm tide hazard	2 - Access may be affected during storm surge.		4.3k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required; Discussion with DERM regarding separation distance from wetland.
H	Francis Dam	4.24 ha	3.6 ha	60			Contains Remnant Vegetation - Not of Concern	ASS	Up to 25m slope.		2 - Access may be affected during storm surge.	Adjacent to landfill	4.3k	Strategic Plan	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
I	Francis Dam	2.279 ha	1.937	32	Within 200m buffer		-	ASS	Up to 25% slope		2 - Access may be affected during storm surge.	Adjacent to dam wall.	4.3k	Not Appropriate	<ul style="list-style-type: none"> Discussion with DERM regarding separation distance from wetland; Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
J	Central Town Area North	1.347 ha	1.14 ha	19			-	ASS	Up to 25% slope		1		0.7k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.

Site Ref	Description	Total Area	Developable Land	Achievable Lots	Wetlands and Buffers	Waterways	Vegetation	ASS	Slope	Storm Tide / Flood	Accessibility	Other	Distance to Jetty	Suitability	Actions
K	Upper Luma Luma	2,389 ha	2 ha	29		62m from waterway	Contains Remnant Vegetation - Not of Concern		Up to 25% slope		2 - steep access		0.6k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report;
L	Palm Valley	9,063 ha	7.7 ha	128			Contains Remnant Vegetation - Not of Concern	ASS	Up to 25% slope		3	Tenure issues.	6.2k	Strategic Plan	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required; Tenure issues need to be resolved
M	Central Town Area South	1,056 ha	0.89 ha	14		Adjacent to waterway	Contains Remnant Vegetation - Not of Concern	ASS	Up to 25% slope.	Low storm tide hazard	3 - Access may be affected by flooding		0.6k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report; Soil testing and, if necessary, removal of ASS required.
N	Reservoir Ridge	1,258 ha	1.06 ha	17			Contains Remnant Vegetation - Not of Concern		Up to 25% slope		3		0.8	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report;
O	Reservoir Ridge	1,927 ha	1.63 ha	27			Contains Remnant Vegetation - Not of Concern		Up to 25m slope		3		1k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report;
P	Reservoir Ridge	1,405 ha	1.19 ha	19		60 m from waterway	Contains Remnant Vegetation - Not of Concern		Up to 25% slope		3		1k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report;
Q	Reservoir Ridge	1,060 ha	0.9 ha	18			Contains Remnant Vegetation - Not of Concern		Up to 25m slope		3		1k	Planning Scheme	<ul style="list-style-type: none"> Development will need to be supported by a geotechnical report;
R	Butler Bay (adjacent to runway)	1,876 ha	1.59 ha	26		Adjacent to waterway			Up to 15% slope		1 - Access affected by flooding		3.2k	Not Appropriate	<ul style="list-style-type: none"> N/A
S	Butler Bay	2,117 ha	1,799 ha	29		50m from waterway	Contains Remnant Vegetation - Of Concern and Not of Concern		Up to 25% slope		1 - Access affected by flooding		3.2k	Not Appropriate	<ul style="list-style-type: none"> N/A
T	Butler Bay	1,880 ha	1,598 ha	26		30m from waterway	Contains Remnant Vegetation - Of Concern and Not of Concern		Up to 25% Slope		1 - Access affected by flooding	Near runway	3.7k	Not Appropriate	<ul style="list-style-type: none"> N/A
U	Francis Dam East	0,728 ha	0.62 ha	10			Contains Remnant Vegetation - of Concern		Up to 25% slope		2	Outside of serviceable area	5.5k	Not Appropriate	<ul style="list-style-type: none"> N/A
V	Francis Dam East	0,264 ha	0.224 ha	3			Contains Remnant Vegetation - of Concern		Up to 25% slope		2	Outside of serviceable area	5.5k	Not Appropriate	<ul style="list-style-type: none"> N/A
W	Francis Dam East	1,033 ha	0.88 ha	14			Contains Remnant Vegetation - Not of Concern		Up to 25% slope		1	Outside of serviceable area	6.4k	Not Appropriate	<ul style="list-style-type: none"> N/A
		53.67 ha	42.3	741											

Appendix B

Developable Sites

B1 Developable sites

Site Ref	Description	Total Area	Developable Land	Achievable Lots	Wetlands and Buffers	Waterways	Vegetation	ASS	Slope	Storm Tide / Flood	Bushfire Hazard	Other	Distance to Jetty	Suitability	Actions
A	Chook City East	0.58 ha	0.49 ha	8		Adjacent to waterway	Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension of existing settlement 	2.7k	Planning Scheme	<ul style="list-style-type: none"> If development involves disturbance of soil below 5mAHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
B	Chook City East	0.24 ha	0.2 ha	3	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension of existing settlement 	2.7k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding separation distance from wetland; If development involves disturbance of soil below 5mAHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
C	Kitchener Bligh subdivision	3.43 ha	2.9 ha	41	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension of existing settlement 	3.2k	Planning Scheme	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; If development involves disturbance of soil below 5mAHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
D	Outstation	2.23 ha	1.8 ha	31	Within 200m buffer	Waterway	Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard		3.2k	Strategic Plan	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; Development on slopes greater than 15% will need to be supported by a geotechnical report. If development involves disturbance of soil below 5mAHD testing for ASS may be required.
E	Outstation	7.14 ha	6 ha	101	Within 200m buffer		Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard		3.2k	Strategic Plan	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; If development involves disturbance of soil below 5mAHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
F	Francis Dam	2.21 ha	1.87 ha	31	Within 200m buffer	Adjacent to waterway	-	Below 20m AHD	Up to 15% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Access may be affected during storm surge. 	3.7k	Strategic Plan	<ul style="list-style-type: none"> Discussion with DERM regarding appropriate separation distance from wetland; If development involves disturbance of soil below 5mAHD testing for ASS may be required.
G	Francis Dam	3.93 ha	3.3 ha	55	Within 200m buffer		Contains Remnant Vegetation - of Concern	Below 20m AHD	Up to 25% slope,	Low storm tide hazard	Low – medium bushfire hazard	<ul style="list-style-type: none"> Access may be affected during storm surge. 	4.3k	Strategic Plan	<ul style="list-style-type: none"> Discussion with DERM regarding separation distance from wetland. If development involves disturbance of soil below 5mAHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
H	Francis Dam	4.24 ha	3.6 ha	60			Contains Remnant	Below	Up to		Low –	<ul style="list-style-type: none"> Adjacent to landfill; 	4.3k	Strategic Plan	<ul style="list-style-type: none"> If development involves disturbance of soil below 5mAHD testing for ASS

Site Ref	Description	Total Area	Developable Land	Achievable Lots	Wetlands and Buffers	Waterways	Vegetation	ASS	Slope	Storm Tide / Flood	Bushfire Hazard	Other	Distance to Jetty	Suitability	Actions
							Vegetation - Not of Concern	20m AHD	25% slope,		medium bushfire hazard	<ul style="list-style-type: none"> Access may be affected during storm surge. 			<ul style="list-style-type: none"> may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
J	Central Town Area North	1.35 ha	1.14 ha	19			-	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension of existing settlement 	0.7k	Planning Scheme	<ul style="list-style-type: none"> If development involves disturbance of soil below 5m AHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
K	Upper LamaLuma	2.39 ha	2 ha	29		62m from waterway	Contains Remnant Vegetation - Not of Concern		Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension to existing settlement; Steep access 	0.6k	Planning Scheme	<ul style="list-style-type: none"> Development on slopes greater than 15% will need to be supported by a geotechnical report.
L	Palm Valley	9.06 ha	7.7 ha	128			Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Tenure issues. 	6.2k	Strategic Plan	<ul style="list-style-type: none"> If development involves disturbance of soil below 5m AHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report. Tenure issues need to be resolved.
M	Central Town Area South	1.06 ha	0.89 ha	14		Adjacent to waterway	Contains Remnant Vegetation - Not of Concern	Below 20m AHD	Up to 25% slope,	Low storm tide hazard	Low – medium bushfire hazard	<ul style="list-style-type: none"> Access may be affected by flooding; Logical extension to existing settlement 	0.6k	Planning Scheme	<ul style="list-style-type: none"> If development involves disturbance of soil below 5m AHD testing for ASS may be required. Development on slopes greater than 15% will need to be supported by a geotechnical report.
N	Reservoir Ridge	1.26 ha	1.06 ha	17			Contains Remnant Vegetation - Not of Concern		Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> Logical extension to existing settlement 	0.8	Planning Scheme	<ul style="list-style-type: none"> Development on slopes greater than 15% will need to be supported by a geotechnical report.
O	Reservoir Ridge	1.93 ha	1.63 ha	27			Contains Remnant Vegetation - Not of Concern		Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> 	1k	Planning Scheme	<ul style="list-style-type: none"> Development on slopes greater than 15% will need to be supported by a geotechnical report.
P	Reservoir Ridge	1.41 ha	1.19 ha	19		60 m from waterway	Contains Remnant Vegetation - Not of Concern		Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> 	1k	Planning Scheme	<ul style="list-style-type: none"> Development on slopes greater than 15% will need to be supported by a geotechnical report.
Q	Reservoir Ridge	1.06 ha	0.9 ha	18			Contains Remnant Vegetation - Not of Concern		Up to 25% slope		Low – medium bushfire hazard	<ul style="list-style-type: none"> 	1k	Planning Scheme	<ul style="list-style-type: none"> Development on slopes greater than 15% will need to be supported by a geotechnical report.
		43.5 ha	36.97 ha	601 lots											