

Boigu Island Master Plan

Prepared for

Department of Seniors, Disability Services and
Aboriginal and Torres Strait Islander Partnerships
and Torres Strait Island Regional Council



Boigu Island Master Plan

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1 Introduction

1.1 Purpose

Torres Strait Island Regional Council (TSIRC), with the support of the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP), has developed the Boigu Island Master Plan. The Boigu Island Master Plan is intended to be used by TSIRC, Prescribed Body Corporates (PBCs), State agencies, service providers and the broader community to inform planning decisions in relation to future development.

The Boigu Island Master Plan seeks to guide the future use of land on Boigu Island in a manner that is cognisant of community needs, demands and aspirations. The Boigu Island Master Plan identifies a range of future residential; industrial; commercial / tourism; community facilities; and recreation and open space development projects. The Master Plan has been prepared to ensure the orderly, efficient and effective use of land in a way that is reflective of relevant opportunities and constraints. The Master Plan seeks to coordinate the actions of a range of different stakeholders to maximise the benefits of new development projects to the community.

The Boigu Island Master Plan is a living document endorsed by TSIRC, intended to be progressively updated as new development occurs to reflect the changing needs and aspirations of the community.

1.2 Structure

The Boigu Island Master Plan includes the following elements:

- > A **Master Plan Map**, provided as **Appendix A**;
- > A **Vision**, provided in Chapter 2;
- > **Community Aspirations**, provided in Chapter 3;
- > **Master Plan Projects**, the details of which are articulated in Chapter 4; and
- > An **Action Plan**, provided in Chapter 6.

The Master Plan is also supported by a separate Technical Report.

The relationship between these elements is shown in **Figure 1-1**.

1.3 Relationship to the Zenadth Kes Planning Scheme

The Boigu Island Master Plan is intended to identify a high level strategic direction for the future development of Boigu Island having regard to all relevant planning considerations, including the *Zenadth Kes Planning Scheme* ('the Planning Scheme').

The Master Plan does not replace or alter the Planning Scheme as it relates to Boigu Island and does not change current development approval requirements. Projects or works identified by the Master Plan may require development approvals and/or changes to the Planning Scheme and these are identified in the Master Plan itself as appropriate.

The Planning Scheme forms part of the statutory town planning framework established under the *Planning Act 2016*, which provides for the regulation of development activity. The Master Plan is a non-statutory strategic planning document intended to guide decision making with regard to the long term development of Boigu Island. It may be appropriate in certain circumstances for TSIRC to amend the Planning Scheme to reflect findings of the Master Plan. Recommendations in this regard are made in the Master Plan.

1.4 Acknowledgement

Gogobithiay (land, sea and sky) is fundamental to the Torres Strait Islander way of life. Gogobithiay cannot be separated into land, sea and sky and it cannot exist without the Torres Strait people.

The Boigu Island Master Plan acknowledges the native title holders, the Boigu people, as the traditional custodians of Boigu Island. The Master Plan also acknowledges all community members.

Any person proposing to undertake development on Boigu Island should pay respect to the Boigu people's custodianship of the island by seeking permission to use its resources and ensuring that development acknowledges the special and ongoing cultural relationship of the Boigu Island community with Gogobithiay.



Figure 1-1 Master Plan Elements

2 Vision

***Boigu Island** will develop as a strategically important gateway island to Torres Strait that is focused on addressing current and future impacts of climate change and promotes development that improves the living environment and quality of life of the community.*

Development of the island will implement response strategies to climate change and sea level rise through coastal hazard mitigation works. This is critical to the ongoing development of areas that are identified for residential, commercial and industrial land uses.

The community will have an improved and upgraded central business district with links through the island to the jetty improved. The core area will provide key day to day commercial, community and recreational uses and facilities in locations that are easily accessible. The town is to be developed in a manner that improves community connection and sense of ownership. Emphasis is placed on the protection of culture, history and the environment.

A new residential area that is protected from coastal inundation will be developed on the island to support future housing demand, along with longer term relocation of existing residents to areas protected from coastal hazards.

Opportunities are to be explored to support local economic activity on Boigu Island, which may include aquaculture, marine industries and administrative functions associated with border security and biosecurity. Land in appropriate locations that is suited to the exploration of economic development opportunities is to be identified, protected and developed for the benefit of the community.

Accessibility to and around the township and island will be improved. Regional air and water-based transport connections should be consolidated to support improved access for the community and increase economic development opportunities. Local movement networks should be identified and improved, with a particular focus on the promotion of walking and cycling.

New development should seek to improve the quality of urban services provided to the community, including water and sewerage infrastructure, roads, lighting and telecommunications access.

3 Community Aspirations

- > The Boigu Island community will be provided with housing that meets its needs.
- > The Boigu Island community will be provided with access to key community services that support the day to day needs of its residents, including shopping/business, child care and health care.
- > The Boigu Island community will expand local business and enterprise opportunities, to support economic activity and local employment, particularly in the sectors of aquaculture, marine industries and administrative functions associated with border security and biosecurity.
- > The Boigu Island community will celebrate its culture, history and character and this will be reflected through the protection of existing facilities and features and new development such as arts and cultural centres.
- > The Boigu Island community will be easily accessed from the surrounding region by air and sea.
- > The Boigu Island community will increase physical activity, for both movement and recreation, through the use of dedicated facilities and networks.
- > The Boigu Island community will have access to quality urban infrastructure services.
- > The Boigu Island community will be responsive to the changing environment including sea level rise, tidal inundation and climate change.

4 Projects

4.1 Land Use Categories

The consideration of land uses as part of the Boigu Island Master Plan has been undertaken using a number of land use categories. An explanation of each land use category is provided below.

Residential	Commercial / Tourism	Recreation and Open Space
Residential land uses primarily relate to the provision of housing. Residential land may support a range of dwelling types of varying scale (for example, single low-rise homes, duplexes, and unit complexes). Open space is often integrated within residential areas to soften the built environment and provide land for passive and active recreation.	Commercial land uses typically involve business activities which may include the sale of goods (such as shops and cafes) or services (such as offices and medical centres). Tourism land uses also involve business activities, however these are focussed on providing goods, services, facilities and entertainment for tourists. Examples of tourism land uses include tourist parks, accommodation and businesses operating tours.	Recreation land uses support the provision of land for recreational activities, which may be organised or informal. This includes sporting facilities such as fields, courts, stadiums and arenas, rodeo grounds, walking / cycling paths and outdoor exercise equipment. Open space areas provide dedicated natural spaces throughout an urban area enhance the beauty and environmental quality of neighbourhoods. They may include formalised landscaping also comprise recreational opportunities. Recreation and open space areas are commonly collocated.
Industrial	Community Facilities	Other
Industrial land uses generally involve the manufacturing, processing, treatment or repair of goods. Industrial land uses involve varying degrees of intensity and severity, generally linked to their potential level of impact on nearby land uses associated with their emissions (such as air, noise and odour). Examples of industrial land uses include manufacturing plants, processing plants, mechanical workshops, transport depots, storage sheds and warehouses.	Community facilities land uses support the delivery of community services or provide community benefit. Community facilities include uses for health services, education (schools and colleges), arts and culture, religion, community support, civic infrastructure (water, sewer, waste, transport and other similar facilities), employment and training.	The “Other” land use category has been used to describe other uses and projects which commonly support the primary land uses. This may include infrastructure projects such as new roads or urban services and civic improvements such as beautification and landscaping.

4.2 Project Listing

Table 4-1 provides a listing of projects identified by the Master Plan. Further detail is provided in relation to each project as follows:

- > The land to which each project relates is identified by the Boigu Island Master Plan Map, a copy of which is provided as **Appendix A**.
- > Key details relating to each project are outlined in Section 4.3 of this report.
- > A summary of the Master Plan projects is provided in the project index included as **Appendix B**.
- > Detailed breakdowns of the infrastructure costings for each project are provided in **Appendix D**.

Table 4-1 Project Listing

RS1	Residential Expansion Area
RS2	Infill Housing
ID1	Industrial Investigation Area
ID2	Fishing Industry
CT1	Supermarket Expansion
CT2	Environmental Tourism

CF1	New Immigration Office
CF2	Sacred Site Protection
CF3	Market Garden / Food Security Area
CF4	Place of Worship Protection
CF5	Swimming Pool
CF6	Child Care Centre
CF7	Cemetery Protection Area
CF8	Landfill Protection and Expansion Area
OS1	Significant Trees
OS2	Sporting Precinct
OS3	Path Network
OS4	Community Park

OT1	Jetty and Boat Ramp Upgrades and Foreshore Park
OT2	CBD Precinct Plan
OT3	Industrial Barge Ramp
OT4	Connecting Road
OT5	Airport Upgrades
OT6	Water Supply Upgrades
OT7	Sewerage Upgrades
OT8	"Back of Island" Access
OT9	Telecommunications Upgrades
OT10	Carbon and Renewable Energy Opportunities

Note: Projects CT2, OT8, OT9 and OT10 are not shown on the Master Plan Map provided as **Appendix A**.

4.3 Project Detail

Residential Projects

The Master Plan has identified a range of residential projects in order to accommodate an anticipated demand for eight additional dwellings. The Master Plan also includes projects that seek to diversify the housing products provided on Boigu Island. These key directions were identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

RS1 Residential Expansion Area			
Summary A large land area to the south east of the existing township, accessed from the east of Dau Street and south of Toby Street, is identified for residential development to support both the short and longer term demand of the community for residential accommodation. Initial development of the area is indicatively shown on the Master Plan map, to support short term demand. A variety of housing should be provided that maximises the location of the land proximate to the CBD (OT2). The development of the area should also accommodate the Path Network (OS3). Further investigation of the land is required to identify the extent to which it could be developed. The development of the area will rely on the existing bund wall.	New Lots	37 Lots (estimate)	
	Lot Size	850m ² (average)	
	Priority	Short/Medium Term	
	Infrastructure Cost	\$23,662,648	
	Associated Projects	OS3	OT2
	Key Actions	1	8
	Recommendations Explore whether the land requires filling or other coastal management works to address coastal hazard impacts to facilitate future development.		

RS2 Infill Housing			
Summary An area of vacant land within the existing township has been identified as a potentially suitable location for the provision of additional housing. It is anticipated that these houses will be delivered progressively as demand necessitates.	New Lots	4	
	Lot Size	630m ² (average)	
	Priority	Short-Term	
	Infrastructure Cost	\$2,146,409	
	Associated Projects	-	
	Key Actions		

Industrial Projects

The Master Plan provides opportunities for industry, enterprise and other business development. This key direction was identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

ID1 Industrial Investigation Area				
Summary A strategically located area of land to the west of the township between the airport and the foreshore esplanade is identified for potential industry development. This land is proximate to an existing barge ramp which is proposed to be expanded (OT3) and includes existing utilities infrastructure (OT7). It is generally separated from sensitive residential land uses to the east. This area will support the development of new industries and community enterprise opportunities, particularly those associated with fishing, aquaculture and boat industries and provide opportunities for new local industry opportunities such as a community freezer.	New Lots	8 Lots (existing)		
	Lot Size	924m ² -7,195m ²		
	Priority	Medium Term		
	Infrastructure Cost	\$4,716,184		
	Associated Projects	OS3	OT3	OT7
	Key Actions	4	8	
ID2 Fishing Industry				
Summary In order to support the local fishing industry, the community is seeking to provide a range of infrastructure proximate to the boat ramp and jetty, including a commercial freezer. It is likely that this project will be delivered in coordination with the Torres Strait Regional Authority (TSRA).	New Lots	N/A		
	Lot Size	N/A		
	Priority	Short Term		
	Infrastructure Cost	\$355,814		
	Associated Projects	OS3	OS4	OT1 OT2
	Key Actions	4	6	

Commercial / Tourism Projects

The Master Plan seeks to ensure that the community is provided with sufficient access to commercial land uses. The Master Plan also seeks to promote the development of uses and infrastructure associated with tourism, in appropriate locations. These key directions were identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

CT1 Supermarket Expansion			
Summary The community has identified a desire to expand the existing supermarket, likely through an extension of the existing building to the west. The expanded supermarket will allow for a greater range and supply of goods to be stocked and will likely also facilitate the modernisation of the existing facility.	New Lots	N/A	
	Lot Size	N/A	
	Priority	Short Term	
	Infrastructure Cost	To Be Costed (Design Dependent)	
	Associated Projects	OT2	
	Key Actions	4	
CT2 Environmental Tourism			
Summary Opportunity exists in various locations throughout the island for the environmental values of the area to be protected and enhanced for the benefit of tourist activities aimed at the appreciation of any unique environmental features or areas. Any tourism operations should occur in a manner that is sensitive to the fragility of the natural environment, to ensure it can be sustained over the long term.	New Lots	N/A	
	Lot Size	N/A	
	Priority	Medium Term	
	Infrastructure Cost	N/A	
	Associated Projects	-	
	Key Actions	4	6

Community Facilities Projects

The Master Plan seeks to promote the protection and expansion of key community facilities. The Master Plan also provides opportunities for the establishment of new community facilities where demand exists. These key directions were identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

CF1 New Immigration Office			
Summary Boigu Island is a strategically significant place for national border security, defence and biosecurity. The Planning Scheme has already identified the potential for a new immigration office at the corner of Chambers Street and the Esplanade, opposite the boat ramp (OT1). Recommendations It is recommended that consultation with relevant government agencies be completed in delivering this project. The immigration office should be reflected in any planning of the CBD area identified as project OT2 .	New Lots	1 Lot (existing)	
	Lot Size	973m ²	
	Priority	Short Term	
	Infrastructure Cost	\$161,677	
	Associated Projects	OT1	OT2
	Key Actions	3	6

CF2 Sacred Site Protection				
Summary The Master Plan has identified the location of sacred sites that should be protected for the benefit of all members of the community. As part of the protection of the area, the community value of the site should be documented. Where access to the site is in keeping with the community and cultural value, this should be sensitively facilitated. Opportunity may exist to provide tourism access, again where in keeping with the value of the site.	New Lots	N/A		
	Lot Size	N/A		
	Priority	Ongoing		
	Infrastructure Cost	N/A		
	Associated Projects	-		
	Key Actions	3	4	6
				9

CF3 Market Garden / Food Security Area

Summary

An area of land to the south-east of the township has been identified as being suitable for the development of market gardens or other cropping activities that can supply the community with fresh produce. Further investigation of this land should be undertaken to identify suitable areas for the establishment of these uses. The establishment of local agricultural uses will improve the food security of the community, improve community health and provide a potential source of economic activity through the trading of surplus food with neighbouring communities. Any development of this area should integrate with the Path Network (**OS3**).

Recommendation

The viability of the market garden will be largely dependent on a reliable supply of freshwater. Future investigations of this project would be required to determine whether such supply exists or is capable of being reasonably provided.

New Lots

N/A

Lot Size

N/A

Priority

Medium Term

Infrastructure Cost

N/A

Associated Projects

OS3

Key Actions

1

6

CF4 Place of Worship Protection

Summary

The Master Plan has identified that the existing places of worship should be protected and maintained as an important asset to the local community. Further embellishment of the existing buildings and grounds may be appropriate where it is in keeping with the character and nature of the site.

New Lots

N/A

Lot Size

N/A

Priority

Ongoing

Infrastructure Cost

N/A

Associated Projects

-

Key Actions

3

9

CF5 Swimming Pool

Summary

The Master Plan seeks to facilitate the community aspiration for new sport and recreation opportunities on the island through the provision of a public swimming pool. There is an opportunity to explore the location of this within an existing vacant area on school land at the southern end of the township, which will allow combined public and school use of the facility.

Recommendations

Consultation with Tagai College will be required to determine how the swimming pool should be delivered.

New Lots

N/A

Lot Size

N/A

Priority

Long Term

Infrastructure Cost

To Be Costed

Associated Projects

-

Key Actions

2

6

CF6 Child Care Centre

Summary

The community has identified a need for child care facilities. The Master Plan has identified that future child care facilities are most appropriately collocated with the school, to maximise efficient use of infrastructure and improve access to this service.

Child care has been acknowledged as a regional issue which comprises significant complexity with regard to legal compliance. On this basis it is anticipated that future child care services will be delivered as a coordinated service covering multiple islands or the entire region.

Recommendations

The delivery model for child care is to be explored further with consultation required to ensure that specific needs are identified and aspirations are appropriately met.

New Lots

N/A

Lot Size

N/A

Priority

Short Term

Infrastructure Cost

N/A

Associated Projects

-

Key Actions

3

6

CF7 Cemetery Protection Area

Summary

The cemetery, located to the west of the township, should be subject to ongoing protection to ensure that the cultural and spiritual connection of the community with this land is maintained. Where appropriate, improvements such as access works and fencing may be provided, however any such works should be undertaken sensitively. As part of the protection of the area, the community value of the site should be documented.

New Lots	N/A			
Lot Size	N/A			
Priority	Ongoing			
Infrastructure Cost	N/A			
Associated Projects	OS3			
Key Actions	3	6	9	

CF8 Landfill Protection and Expansion Area

Summary

The landfill located to the west of the airstrip is an important piece of infrastructure that should be protected from encroachment by incompatible development. Consistent with the Queensland Indigenous Waste Strategy, it is anticipated that the existing landfill site will be converted to a transfer station, as part of a regional waste solution. The site will need to be expanded as required to cater for this changed approach to waste management.

New Lots	N/A			
Lot Size	N/A			
Priority	Short Term			
Infrastructure Cost	N/A			
Associated Projects	OS3			
Key Actions	3			

Recreation and Open Space Projects

The Master Plan seeks to provide improved opportunities for recreation, through the provision of an integrated network of active transport infrastructure and the identification of land for dedicated sporting facilities. These key directions were identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

OS1 Significant Trees

Summary

The Master Plan identifies significant trees at the northern tip of the township, east of the jetty/boat ramp as having cultural significance. The trees should be protected for the ongoing benefit of the entire community. Retention of the existing trees should be integrated into any planning associated with the place of worship (**CF4**) or boat ramp / jetty (**OT1**).

New Lots

N/A

Lot Size

N/A

Priority

Ongoing

Infrastructure Cost

N/A

Associated Projects

CF4

OT1

Key Actions

9

OS2 Sporting Precinct

Summary

The Master Plan identifies an opportunity outside of the township and south of the airport as an area to be investigated for a multipurpose sports facility or sports field to facilitate the community's aspirations for more sporting facilities on the island along with supporting infrastructure. Any development of the sporting precinct should be completed in a coordinated manner, with a focus on the shared use of supporting infrastructure.

Recommendations

It is recommended that all future active transport and recreational facilities be coordinated in their delivery.

The Planning Scheme may require an amendment to include land south of the airport within the Township Zone to facilitate community facility and sport and recreation development.

New Lots

N/A

Lot Size

N/A

Priority

Short Term

Infrastructure Cost

\$9,792,776

Associated Projects

OS3

OT4

Key Actions

2

6

7

OS3 Path Network

Summary

A pathway network has been identified across Boigu Island, connecting the western and eastern parts of the township, whilst also providing a loop around the south of the airport.

The pathway network will serve to improve connectivity whilst also supporting recreational opportunities and enhanced access to sacred sites (where appropriate). Development of the pathway should be combined with supporting infrastructure such as seats, lighting and landscaping to improve its contribution to the community.

Recommendations

It is recommended that all future active transport and recreational facilities be coordinated in their delivery.

New Lots	N/A		
Lot Size	N/A		
Priority	Medium Term		
Infrastructure Cost	\$781 per metre (concrete) \$500 per metre (gravel) \$250 per metre (earth)		
Associated Projects	RS1	CF3	OS2
Key Actions	2		

OS4 Community Park

Summary

The community has identified a desire to fill these existing lake north of the airstrip and improve this land as a community park. It is understood the existing water can become a safety concern for the community. The feasibility of this project will need to be further reviewed to understand the exact nature of works involved.

Recommendations

It is recommended that future investigations be undertaken in relation to this land.

It is understood that the area holds a level of cultural sensitivity for the community and therefore any future works should be carried out in close consultation with key stakeholders.

New Lots	N/A		
Lot Size	N/A		
Priority	Long Term		
Infrastructure Cost	To Be Costed		
Associated Projects	ID1	OT5	
Key Actions	1	2	6

Other Projects

The Master Plan identifies a range of other projects intended to ensure the community is serviced with appropriately located facilities and infrastructure. These projects have been identified in response to direct community needs and include precinct plans, further investigations and new/upgraded infrastructure. These key directions were identified as part of the technical analysis which is documented in the Boigu Island Master Plan Technical Report. Further detail is also provided in **Appendix F**.

OT1 Jetty and Boat Ramp Upgrades and Foreshore Park				
Summary <p>The jetty and boat ramp located at the northern end of the township is a key arrival and departure location for people and goods and sits within an area of current open space. Further improvements in this location will support the efficient and safe use of this facility, whilst also expanding the ability for it to be used in a manner that supports economic activity and recreation. Upgrades may include in water works such as channel works and dredging, markers and a rockwall while on land works may include a freezer, parking, storage and setdown areas and park embellishment.</p> <p>Jetty and boat ramp upgrades are a common project across all communities within the region. It is anticipated that required upgrades may be delivered as a regional work package which is progressively rolled out across each community.</p> <p>The location has also been identified as being suitable for the provision of a foreshore park, which may support community and tourist usage. The proposed Kiosk (CT1) should also be integrated into the precinct. The protection of significant trees (OS1) can be coordinated into the foreshore parkland concept and development.</p>	New Lots		N/A	
	Lot Size		N/A	
	Priority		Short Term	
	Infrastructure Cost		To Be Costed	
	Associated Projects	ID2	CT1	OS1 OT2
	Key Actions	4	6	8

OT2 CBD Precinct Plan

Summary

The Master Plan has identified a CBD Precinct for the focus of business and administrative facilities. This land is strategically located along the north-south spine of Chambers Street linking to the jetty and boat ramp in the north of the township. A range of key services can be progressively developed in the precinct in a manner that will positively contribute to the amenity and character of Boigu Island to the benefit of the community. This location has the potential to accommodate a range of new business and administrative uses which includes child care facilities, government offices, retail services, health care and emergency services. Further planning of the land should also consider its interface with existing surrounding residential land uses.

The Precinct Plan should coordinate with a range of other specific projects to be included in this areas including the fishing industry node (**ID1**), the supermarket expansion (**CT1**), any future immigration administrative office (**CF1**) and the path network (**OS3**). The interface with the jetty and boat ramp (**OT1**) should also be coordinated as part of the Precinct Plan.

A copy of a preliminary Precinct Plan is provided as **Appendix E**.

New Lots	N/A			
Lot Size	N/A			
Priority	Medium Term			
Infrastructure Cost	N/A			
Associated Projects	ID1	CT1	CF1	OS3
Key Actions	4	6		

OT3 Industrial Barge Ramp

Summary

The barge ramp located at the western side of the township is a key arrival and departure location for goods. Further improvements in this location will support the efficient and safe use of this facility, whilst also expanding the ability for it to be used in a manner that supports economic activity, particularly industry opportunities identified for precinct **ID1**. Upgrades may include works and dredging, markers and a rock wall while on land works may include a freezer, parking, storage and set down areas.

Recommendations

It is recommended that all improvement works are identified in consultation with key stakeholders using the jetty and boat ramp.

New Lots

N/A

Lot Size

N/A

Priority

Medium Term

Infrastructure Cost

To Be Costed

Associated Projects

ID1

Key Actions

4

6

8

OT4 Connecting Road

Summary

The Master Plan supports investigation of land use south of the airport and “Back of Island” access (**OT8**) through the identification of a connecting road corridor. The project would support the proposed sporting precinct (**OS2**).

New Lots

N/A

Lot Size

N/A

Priority

Long Term

Infrastructure Cost

\$4,539,478

Associated Projects

OS2

OS3

OT8

Key Actions

5

6

OT5 Airport Upgrades

Summary

In order to improve access to Boigu Island and the utility of airport infrastructure, further upgrades to the airstrip should be investigated. These upgrades may include night time lighting for night landing; terminal and waiting area facilities; storage and maintenance facilities; car parking and ancillary facilities; improving the arrival experience and improving the interface with surrounding land.

New Lots	N/A
Lot Size	N/A
Priority	Medium Term
Infrastructure Cost	To Be Costed
Associated Projects	OS4
Key Actions	6

OT6 Water Supply Upgrades

Summary

The water supply network should be upgraded to meet current and future demand and treatment standards. Details of specific works and upgrades required upgrades are provided in Chapter 5 of the Master Plan.

New Lots	N/A
Lot Size	N/A
Priority	Short Term
Infrastructure Cost	To Be Costed
Associated Projects	-
Key Actions	3

OT7 Sewerage Upgrades

Summary

The sewerage network should be upgraded to meet current and future demand and treatment standards. Details of specific works and upgrades required upgrades are provided in Chapter 5 of the Master Plan.

New Lots	N/A	
Lot Size	N/A	
Priority	Short Term	
Infrastructure Cost	To Be Costed	
Associated Projects	-	
Key Actions	3	

OT8 “Back of Island” Access

Summary

A range of opportunities are available for recreational and community activities to occur in areas of the island outside the established township. These opportunities should be further investigated in consultation with the community. Access is a primary constraint and any planned areas should be coordinated with road upgrades.

New Lots	N/A	
Lot Size	N/A	
Priority	Long Term	
Infrastructure Cost	To Be Costed	
Associated Projects	OS3	OT4
Key Actions	5	6

OT9 Telecommunications Upgrades

Summary

The community's access to telecommunications should be improved to ensure that coverage is available throughout the township, its immediate surrounds where activity occurs and within the surrounding ocean to allow ease of communication with vessels, particularly in an emergency. Various upgrades should be identified in consultation with service providers.

New Lots	N/A
Lot Size	N/A
Priority	Short Term
Infrastructure Cost	To Be Costed
Associated Projects	-
Key Actions	6

OT10 Carbon and Renewable Energy Opportunities

Summary

As explained in the Boigu Island Master Plan Technical Report, the Queensland Government has identified a target to be carbon neutral by 2050. A variety of opportunities exist across Boigu Island to implement carbon initiatives that can assist in achieving this target. Key opportunities including renewable energy installations (wind and solar), reductions in fossil fuel use, carbon burning and blue carbon. Further investigations should be undertaken to identify suitable initiatives and potential sites. These opportunities also provide the potential to generate employment for the local community.

New Lots	N/A
Lot Size	N/A
Priority	Medium Term
Infrastructure Cost	To Be Costed
Associated Projects	-
Key Actions	6

5 Infrastructure

In order to support future residential, industrial, commercial, tourism, community facilities, recreation and open space development on Boigu Island in accordance with the Master Plan, upgrades to existing infrastructure networks and new infrastructure will be required as detailed below. High level costings of supporting infrastructure are included in **Appendix D**.

5.1 Topography/Climate Change

Boigu Island is a mud island formed from fine grained marine sediments. The community is located on the highest point on the island with parts of the habitable area of the community located 0.1 metres below Highest Astronomical Tide (HAT) level. All new development should be constructed above HAT level to protect residents and the community from inundation. The community is protected by an existing rock and concrete seawall and levee banks, which are planned to be upgraded in height and extent to encircle the community to provide protection from erosion, storm surges and climate change sea level rises.

Costings of infrastructure upgrades required for new development under the Master Plan (**Appendix D**) do not include the cost of the planned seawall and levee bank upgrades.

5.2 Roads

Existing roads within the community are concrete with some sand tracks. For durability, new roads should be constructed six (6) metres wide in 150 mm thick fibre reinforced concrete. Roads are to be provided with either a 300 mm wide concrete edge strip or mountable kerb and channel either side as appropriate.

5.3 Stormwater

The Queensland Urban Drainage Manual (QUDM) provides current criteria for the design of stormwater drainage in urban residential developments. QUDM generally requires systems for primary drainage in streets to carry 39% Annual Exceedance Probability (AEP) (1 in 2 yr. ARI) runoff, and 1% AEP (1:100 yr. ARI) runoff for major drainage paths and cross road culverts, to limit flooding of public and private property to acceptable levels.

Due to ground levels within the community it is not considered feasible to install underground drainage systems due to the outfall penetrations required through the seawall. Care needs to be exercised to ensure that the stormwater drainage system performs in accordance with the requirements of QUDM.

Stormwater runoff captured from newly developed areas is required to be treated to remove nutrients from the runoff prior to discharge to waterways. Runoff collected from new developments should be discharged over the seawall using dewatering pumps rather than outfall pipes penetrating the seawall.

5.4 Water Supply

Raw water is sourced from direct rainfall capture stored in a raw water lagoon and is augmented by a permanent desalination plant. Seawater entering the desalination plant is often turbid due to wave action. The seawater intake is in shallow water preventing the plant from operating 24 hours a day. The supply of raw water for treatment is insufficient to meet current demand without further augmentation.

The pH of the raw water of 5.5 to 6.5 is less than the guideline recommended range of 6.5 to 8.5. Turbidity of the raw water supply of <1.5 NTU to < 7.0 NTU exceeds the recommended maximum turbidity value of 1.0 NTU. Levels of iron, manganese and aluminium are within guideline values.

The existing water treatment plant capacity is required to be increased from 79 kL per day to 150 kL per day to meet current and future demand. The current storage capacity for treated water is 100 kL, which is required to be replaced by a new 335 kL tank to meet current and future demand.

The treatment plant is provided with SCADA to enable remote monitoring of plant operation.

Emergency standby power generation equipment should be installed to all critical infrastructure in the water supply system to maintain supply during loss of electricity supply.

Reticulation mains of adequate size are to be extended to all new development and be provided with fire hydrants and metered service connections.

Current per capita consumption of 368 litres per day exceeds the TSIRC's target consumption of 350 litres per person per day which may be achieved through demand and leak detection management.

The following upgrades to the existing water supply network will be required to support planned future development:

- > Either provide seawater storage or extend the seawater intake into deeper clean water to permit the desalination plant to run 24 hours a day;
- > Increase treatment plant capacity from 79 kL per day to 150 kL per day;
- > Provide an a new 335 kL of clear water storage;
- > Install coagulation/flocculation equipment to deduce turbidity to guideline levels;
- > Undertake leakage detection in the reticulation system to reduce wastage;
- > Install emergency power supply generators at all critical infrastructure; and
- > Provide adequate training for operators.

5.5 Sewerage

The sewerage system comprises of gravity sewers, manholes, an effluent pump station, rising main and an "Environflow" treatment plant, which is used for treatment prior to discharge of effluent to the ocean. The treatment plant capacity is oversized for the current and future populations. Effluent discharged from the treatment plant to the ocean currently does not meet licence discharge standards. The treatment plant is considered to be in poor condition. The treatment plant has been recently upgraded with the capacity remaining the same to ensure satisfactory performance.

The treatment plant is provided with SCADA to enable remote monitoring of plant operation.

All new development is to be connected to the existing sewerage network. The new residential area will require the installation of an additional pump station and rising main.

The following upgrades to the existing sewerage network will be required to support planned future development:

- > Upgrade/replace the existing treatment plant;
- > Replace corroded fixings to treatment plant stairways and walkways;
- > Replace failed blowers, aerators and pumps in the treatment plant;
- > Replace flow meters, switchboards, deteriorated pipework and pumping equipment where required;
- > Undertake treatment plant management to ensure effluent discharged meets licence requirements;
- > Install emergency power supply generators at all critical infrastructure; and
- > Provide adequate training for operators.

5.6 Electricity Supply and Street Lighting

Reticulated electricity to the community is provided from an unmanned isolated fully automated multi-unit diesel generators installed in a power station owned and operated by Ergon.

New development to be delivered under the Master Plan will need to be provided with underground electricity reticulation supplied from new transformers where required, installed to Ergon standards.

New street lighting shall comply with Ergon standards for urban residential developments.

5.7 Telecommunications

New development is to be provided with connections for landline and internet services supplied from underground cabling in the street, and mobile services where available, all installed by Telstra.

6 Action Plan

The Action Plan is summarised in **Table 6-1** and identifies future actions arising from the Master Plan. Actions listed in the Action Plan are identified as Key Actions for each project.

Table 6-1 Action Plan

1	Undertake further investigations in relation to specific land parcels The Master Plan has identified a number of locations that may be suitable for further development, subject to specific on-site investigations, which will likely identify developable and constrained land.	6	Consultation with Key Stakeholders The Master Plan identifies a number of conceptual opportunities which require consultation with stakeholders relevant to these projects, in order to determine more detailed design requirements to support the delivery of these projects.
2	Develop a Recreation Strategy A strategy should be developed to guide the provision of active travel and recreational infrastructure so that it may form part of a coordinated and integrated network. This is of particular importance for walking and cycling paths.	7	Planning Scheme Amendments In a number of instances it may be necessary for the Planning Scheme to be amended to reflect the Master Plan projects identified and ultimately support the delivery of these projects.
3	Protection of Community Facilities and Infrastructure The Master Plan identifies a number of community facilities and infrastructure that are to be protected and maintained for the benefit of the community. The ongoing maintenance of these facilities should be prioritised, with further expansion or embellishment considered when necessary.	8	Coastal Inundations Investigations and Works Undertake specific investigations into coastal inundation required to identify land that may be suitable for future projects identified by the Master Plan, subject to specific mitigation and protection works.
4	Encourage Economic Activity The Master Plan identifies a number of locations which will support economic activity, however there is a need to encourage businesses to take up the opportunities provided by this land, particularly relating to industry and tourism.	9	Documentation of Cultural Values The cultural and spiritual values of significant sites such as churches and cemeteries should be documented for the community.
5	Investigate Cultural, Economic and Recreational Areas Further investigation of potential cultural, economic and recreational areas beyond the township should be undertaken.		

APPENDIX

A

MASTER PLAN MAP



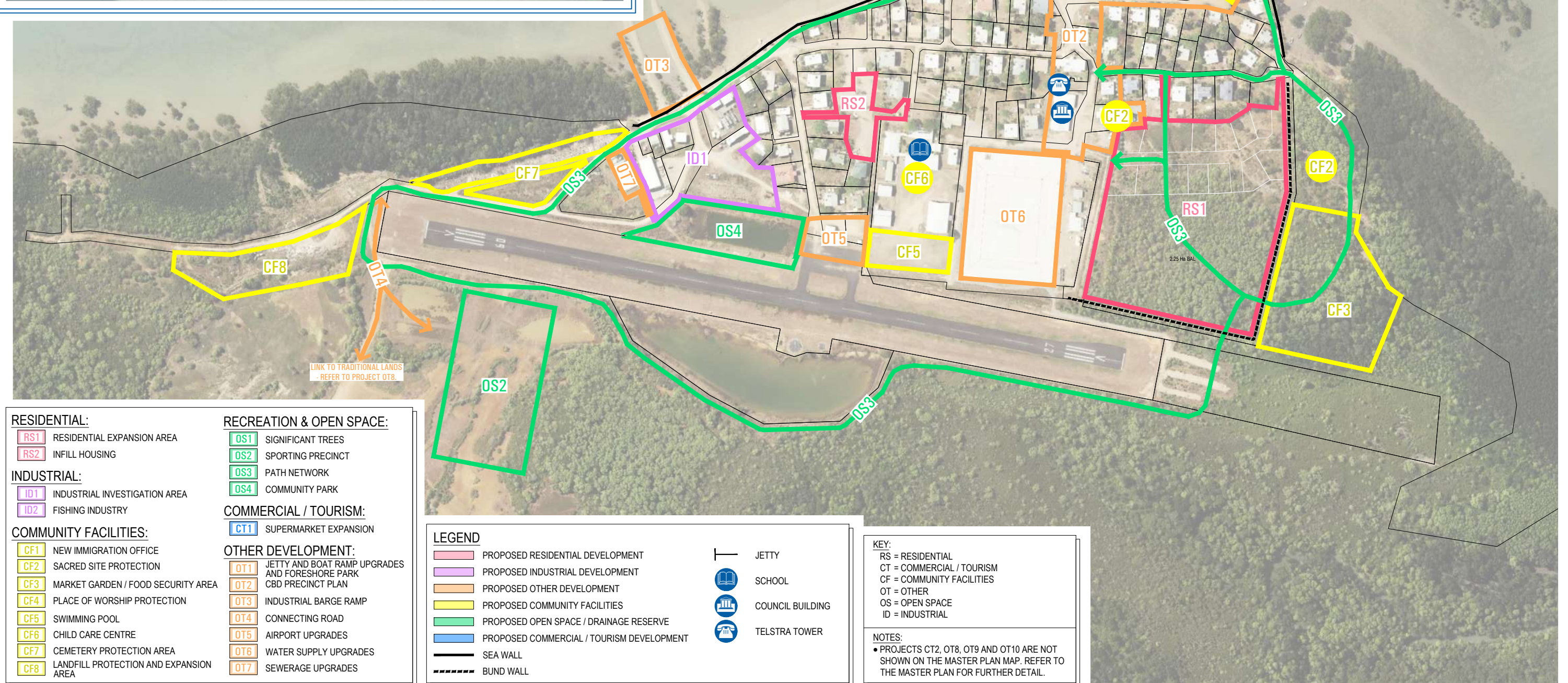
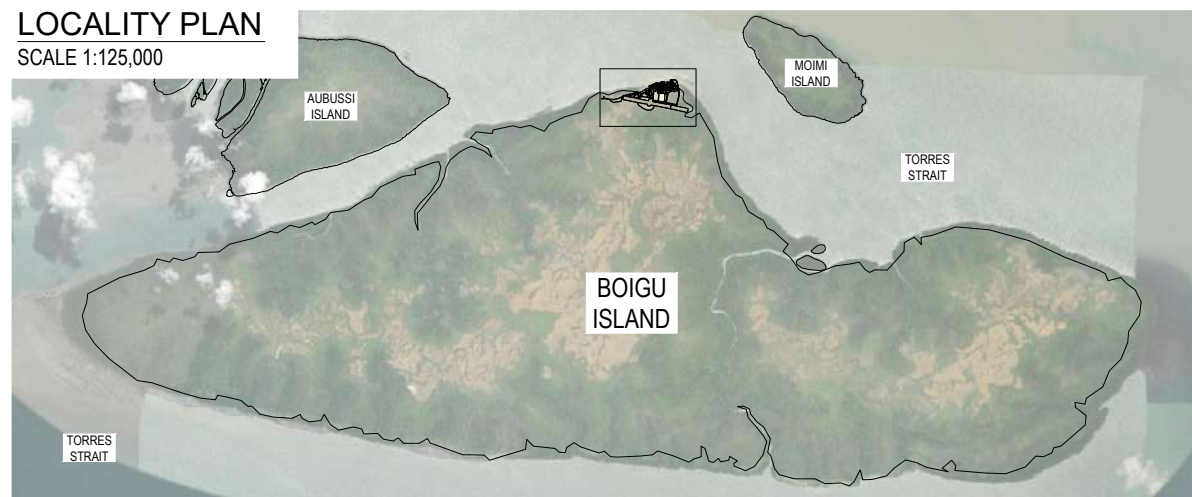


BOIGU ISLAND MASTER PLAN

VERSION 003
12 October 2021

LOCALITY PLAN

SCALE 1:125,000



RESIDENTIAL:

- RS1 RESIDENTIAL EXPANSION AREA
- RS2 INFILL HOUSING

INDUSTRIAL:

- ID1 INDUSTRIAL INVESTIGATION AREA
- ID2 FISHING INDUSTRY

COMMUNITY FACILITIES:

- CF1 NEW IMMIGRATION OFFICE
- CF2 SACRED SITE PROTECTION
- CF3 MARKET GARDEN / FOOD SECURITY AREA
- CF4 PLACE OF WORSHIP PROTECTION
- CF5 SWIMMING POOL
- CF6 CHILD CARE CENTRE
- CF7 CEMETERY PROTECTION AREA
- CF8 LANDFILL PROTECTION AND EXPANSION AREA

RECREATION & OPEN SPACE:

- OS1 SIGNIFICANT TREES
- OS2 SPORTING PRECINCT
- OS3 PATH NETWORK
- OS4 COMMUNITY PARK

COMMERCIAL / TOURISM:

- CT1 SUPERMARKET EXPANSION

OTHER DEVELOPMENT:

- OT1 JETTY AND BOAT RAMP UPGRADES AND FORESHORE PARK CBD PRECINCT PLAN
- OT2 INDUSTRIAL BARGE RAMP
- OT3 CONNECTING ROAD
- OT4 AIRPORT UPGRADES
- OT5 WATER SUPPLY UPGRADES
- OT6 SEWERAGE UPGRADES

LEGEND

- PROPOSED RESIDENTIAL DEVELOPMENT
- PROPOSED INDUSTRIAL DEVELOPMENT
- PROPOSED OTHER DEVELOPMENT
- PROPOSED COMMUNITY FACILITIES
- PROPOSED OPEN SPACE / DRAINAGE RESERVE
- PROPOSED COMMERCIAL / TOURISM DEVELOPMENT
- SEA WALL
- BUND WALL

- JETTY
- SCHOOL
- COUNCIL BUILDING
- TELSTRA TOWER

KEY:

- RS = RESIDENTIAL
- CT = COMMERCIAL / TOURISM
- CF = COMMUNITY FACILITIES
- OT = OTHER
- OS = OPEN SPACE
- ID = INDUSTRIAL

NOTES:

- PROJECTS CT2, OT8, OT9 AND OT10 ARE NOT SHOWN ON THE MASTER PLAN MAP. REFER TO THE MASTER PLAN FOR FURTHER DETAIL.

APPENDIX

B

MASTER PLAN PROJECT INDEX



BOIGU ISLAND MASTER PLAN

PROJECT INDEX

The below table provides a summary of the projects identified in the Master Plan.

ID	Project Name	New Lots	Lot Sizes	Priority	Infrastructure Cost	Associated Projects	Key Actions
RS1	Residential Expansion Area	37 Lots (estimate)	850m ² (average)	Short / Medium Term	\$23,662,648	OS3, OT2	1, 8
RS2	Infill Housing	4	630m ² (average)	Short Term	\$2,146,409	-	-
ID1	Industrial Investigation Area	8 Lots (existing)	924m ² -7,195m ²	Medium Term	\$4,716,184	OS3, OT3, OT7	4, 8
ID2	Fishing Industry	N/A	N/A	Short Term	\$355,814	OS3, OS4, OT1, OT2	4, 6
CT1	Supermarket Expansion	N/A	N/A	Short Term	To Be Costed	OT2	4
CT2	Environmental Tourism	N/A	N/A	Medium Term	N/A	-	4, 6
CF1	New Immigration Office	1 Lot (existing)	973m ²	Short Term	\$161,677	OT1, OT2	3, 6
CF2	Sacred Site Protection	N/A	N/A	Ongoing	N/A	-	3, 4, 6, 9
CF3	Market Garden / Food Security Area	N/A	N/A	Medium Term	N/A	OS3	1, 6
CF4	Place of Worship Protection	N/A	N/A	Ongoing	N/A	-	3, 9
CF5	Swimming Pool	N/A	N/A	Long Term	To Be Costed	-	2, 6
CF6	Child Care Centre	N/A	N/A	Short Term	N/A	-	3, 6
CF7	Cemetery Protection Area	N/A	N/A	Ongoing	N/A	OS3	3, 6, 9
CF8	Landfill Protection and Expansion Area	N/A	N/A	Short Term	N/A	OS3	3

ID	Project Name	New Lots	Lot Sizes	Priority	Infrastructure Cost	Associated Projects	Key Actions
OS1	Significant Trees	N/A	N/A	Ongoing	N/A	CF4, OT1	9
OS2	Sporting Precinct	N/A	N/A	Short Term	\$9,792,776	OS3, OT4	2, 6, 7
OS3	Path Network	N/A	N/A	Medium Term	\$781 per metre (concrete) \$500 per metre (gravel) \$250 per metre (earth)	RS1, CF3, OS2	2
OS4	Community Park	N/A	N/A	Long Term	To Be Costed	ID1, OT5	1, 2, 6
OT1	Jetty and Boat Ramp Upgrades and Foreshore Park	N/A	N/A	Short Term	To Be Costed	ID2, CT1, OS1, OT2	4, 6, 8
OT2	CBD Precinct Plan	N/A	N/A	Medium Term	N/A	ID1, CT1, CF1, OS3	4, 6
OT3	Industrial Barge Ramp	N/A	N/A	Medium Term	To Be Costed	ID1	4, 6, 8
OT4	Connecting Road	N/A	N/A	Long Term	\$4,539,478	OS2, OS3, OT8	5, 6
OT5	Airport Upgrades	N/A	N/A	Medium Term	To Be Costed	OS4	6
OT6	Water Supply Upgrades	N/A	N/A	Short Term	To Be Costed	-	3
OT7	Sewerage Upgrades	N/A	N/A	Short Term	To Be Costed	-	3
OT8	“Back of Island” Access	N/A	N/A	Long Term	To Be Costed	OS3, OT4	5, 6
OT9	Telecommunications Upgrades	N/A	N/A	Short Term	To Be Costed	-	6
OT10	Carbon and Renewable Energy Opportunities	N/A	N/A	Medium Term	To Be Costed	-	6

APPENDIX

C

ACTION PLAN SUMMARY



BOIGU ISLAND MASTER PLAN

ACTION PLAN SUMMARY

The below table provides a summary of the relationship between the Action Plan and the projects identified in the Master Plan.

ID	Action	RS1	RS2	ID1	ID2	CT1	CT2	CF1	CF2	CF3	CF4	CF5	CF6	CF7	CF8
1	Undertake further investigations in relation to specific land parcels	RS1								CF3					
2	Develop a Recreation Strategy											CF5			
3	Protection of Community Facilities and Infrastructure							CF1	CF2		CF4		CF6	CF7	CF8
4	Encourage Economic Activity			ID1	ID2	CT1	CT2		CF2						
5	Investigate Cultural, Economic and Recreational Areas														
6	Consultation with Key Stakeholders				ID2		CT2	CF1	CF2	CF3		CF5	CF6	CF7	
7	Planning Scheme Amendments														
8	Coastal Inundations Investigations and Works	RS1		ID1											
9	Documentation of Cultural Values								CF2		CF4			CF7	

ID	Action	OS1	OS2	OS3	OS4	OT1	OT2	OT3	OT4	OT5	OT6	OT7	OT8	OT9	OT10
1	Undertake further investigations in relation to specific land parcels				OS4										
2	Develop a Recreation Strategy		OS2	OS3	OS4										
3	Protection of Community Facilities and Infrastructure										OT6	OT7			
4	Encourage Economic Activity					OT1	OT2	OT3							
5	Investigate Cultural, Economic and Recreational Areas								OT4				OT8		
6	Consultation with Key Stakeholders		OS2		OS4	OT1	OT2	OT3	OT4	OT5			OT8	OT9	OT10
7	Planning Scheme Amendments		OS2												
8	Coastal Inundations Investigations and Works					OT1		OT3							
9	Documentation of Cultural Values	OS1													

APPENDIX

D

INFRASTRUCTURE COSTINGS



TORRES STRAIT MASTER PLANNING INFRASTRUCTURE COST ESTIMATES

Prepared for the Department of Aboriginal and Torres Strait Islander Partnerships



02BG BOIGU ISLAND

Last Update:

12-Nov-21

Project			RS1		RS2		ID1		ID2		CF1		OS2	
Yield (Number of Lots)			37		4		8		1		1		N/A	
Item	Unit	Rate	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount
HEADWORKS INFRASTRUCTURE UPGRADES														
Sewage Treatment Plant Upgrade	Item													
Water Treatment Plant Upgrade	Item													
Reservoirs Upgrade	Item													
DEVELOPMENT														
Earthworks														
Site clearing and disposal of material	Ha	\$ 17,500	2.25	\$ 39,375	0.33	\$ 5,775	1.15	\$ 20,125	0.1	\$ 1,750	0.1	\$ 1,750	1.4	\$ 24,500
Erosion and sediment control	m	\$ 50	400	\$ 20,000	250	\$ 12,500	200	\$ 10,000	50	\$ 2,500	50	\$ 2,500	250	\$ 12,500
Strip topsoil and respread	m ³	\$ 38	2,250	\$ 84,375	335	\$ 12,563	0	\$ -	100	\$ 3,750	50	\$ 1,875	1500	\$ 56,250
Cut to fill on lots	m ³	\$ 50	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Import filling to lots (Ex Cairns)	m ³	\$ 375	19,000	\$ 7,125,000	1,000	\$ 375,000	3,500	\$ 1,312,500	300	\$ 112,500	125	\$ 46,875	14400	\$ 5,400,000
Cut in open drains to fill on lots	m ³	\$ 50	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Cut in roads and table drains to fill on lots	m ³	\$ 50	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Roadworks														
Concrete Road (7.0 m)	m	\$ 3,750	470	\$ 1,762,500	125	\$ 468,750	120	\$ 450,000	0	\$ -	0	\$ -	0	\$ -
Stormwater Drainage														
Concrete edge strips/K & C to road pavement	m	\$ 500	940	\$ 470,000	250	\$ 125,000	240	\$ 120,000	0	\$ -	0	\$ -	0	\$ -
Concrete invert to table drain	m	\$ 1,875	250	\$ 468,750	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
1200 x 450 RCBC incl conc base/invert crossing	m	\$ 3,750	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Headwalls, Wingwalls and Aprons	m ³	\$ 4,500	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Bio-Basins	m ²	\$ 1,125	280	\$ 315,000	0	\$ -	290	\$ 326,250	0	\$ -	0	\$ -	0	\$ -
Bio basin concrete spillway	m ²	\$ 875	75	\$ 65,625	0	\$ -	75	\$ 65,625	0	\$ -	0	\$ -	0	\$ -
Dewatering pumps	Item			\$ 100,000	0	\$ -								
Water Reticulation														
100 dia. PVC pipe	m	\$ 500	500	\$ 250,000	125	\$ 62,500	120	\$ 60,000	25	\$ 12,500	0	\$ -	400	\$ 200,000
150 dia. PVC pipe	m	\$ 625	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
200 dia PVC pipe	m	\$ 813	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
SV's	No	\$ 3,750	6	\$ 22,500	2	\$ 7,500	2	\$ 7,500	1	\$ 3,750	0	\$ -	1	\$ 3,750
Hydrants	No	\$ 5,688	8	\$ 45,500	1	\$ 5,688	3	\$ 17,063	1	\$ 5,688	1	\$ 5,688	1	\$ 5,688
Single house connections	No	\$ 2,500	37	\$ 92,500	4	\$ 10,000	8	\$ 20,000	1	\$ 2,500	1	\$ 2,500	1	\$ 2,500
Connect to existing main	No	\$ 7,500	1	\$ 7,500	2	\$ 15,000	2	\$ 15,000	0	\$ -	0	\$ -	0	\$ -
VSD Pump Building	Item	\$ 375,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -

TORRES STRAIT MASTER PLANNING INFRASTRUCTURE COST ESTIMATES

Prepared for the Department of Aboriginal and Torres Strait Islander Partnerships



02BG BOIGU ISLAND

Last Update:

12-Nov-21

Project			RS1		RS2		ID1		ID2		CF1		OS2	
Yield (Number of Lots)			37		4		8		1		1		N/A	
Item	Unit	Rate	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount
Variable speed drive pump set	Item	\$ 250,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Standby generator	Item	\$ 125,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Sewerage Reticulation														
150 dia. PVC	m	\$ 500	620	\$ 310,000	60	\$ 30,000	80	\$ 40,000	40	\$ 20,000	0	\$ -	0	\$ -
Manholes	No	\$ 12,500	18	\$ 225,000	1	\$ 12,500	2	\$ 25,000	1	\$ 12,500	0	\$ -	0	\$ -
Lot connections	No	\$ 1,875	37	\$ 69,375	4	\$ 7,500	8	\$ 15,000	1	\$ 1,875	1	\$ 1,875	0	\$ -
FRP Pump Station	Item	\$ 1,187,500	1	\$ 1,187,500	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Standby Generator	Item	\$ 125,000	1	\$ 125,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
90 OD polyethylene pressure main	m	\$ 500	20	\$ 10,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
110 OD polyethylene pressure main	m	\$ 750	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
140 OD polyethylene pressure main	m	\$ 875	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Electricity Supply														
Conduits, pits and pole bases	Lots	\$ 15,000	37	\$ 555,000	4	\$ 60,000	8	\$ 120,000	1	\$ 15,000	1	\$ 15,000	1	\$ 15,000
Cabling and street lights	Lots	\$ 18,750	37	\$ 693,750	4	\$ 75,000	8	\$ 150,000	1	\$ 18,750	1	\$ 18,750	1	\$ 18,750
Transformer	No	\$ 250,000	0.5	\$ 125,000	0	\$ -	0.2	\$ 50,000	0	\$ -	0	\$ -	0.5	\$ 125,000
Sub Totals				\$ 14,169,250		\$ 1,285,275		\$ 2,824,063		\$ 213,063		\$ 96,813		\$ 5,863,938
Contingencies	Item	30%		\$ 4,250,775		\$ 385,583		\$ 847,219		\$ 63,919		\$ 29,044		\$ 1,759,181
Preliminaries														
Establishment, insurance, As-constructed	Item	22%		\$ 3,117,235		\$ 282,761		\$ 621,294		\$ 46,874		\$ 21,299		\$ 1,290,066
Project Management														
Survey, design, and construction administrator	Item	15%		\$ 2,125,388		\$ 192,791		\$ 423,609		\$ 31,959		\$ 14,522		\$ 879,591
TOTALS				\$ 23,662,648		\$ 2,146,409		\$ 4,716,184		\$ 355,814		\$ 161,677		\$ 9,792,776

TORRES STRAIT MASTER PLANNING

INFRASTRUCTURE COST ESTIMATES

Prepared for the Department of Aboriginal and Torres Strait Islander Partnerships

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Project			OT4	
Yield (Number of Lots)			N/A	
Item	Unit	Rate	Qty	Amount

HEADWORKS INFRASTRUCTURE UPGRADES				
Sewage Treatment Plant Upgrade	Item			
Water Treatment Plant Upgrade	Item			
Reservoirs Upgrade	Item			
DEVELOPMENT				
Earthworks				
Site clearing and disposal of material	Ha	\$ 17,500	0.8	\$ 14,000
Erosion and sediment control	m	\$ 50	400	\$ 20,000
Strip topsoil and respread	m ³	\$ 38	800	\$ 30,000
Cut to fill on lots	m ³	\$ 50	0	\$ -
Import filling to lots (Ex Cairns)	m ³	\$ 375	2750	\$ 1,031,250
Cut in open drains to fill on lots	m ³	\$ 50	0	\$ -
Cut in roads and table drains to fill on lots	m ³	\$ 50	0	\$ -
Roadworks				
Concrete Road (7.0 m)	m	\$ 3,750	400	\$ 1,500,000
Stormwater Drainage				
Concrete edge strips/K & C to road pavement	m	\$ 500	0	\$ -
Concrete invert to table drain	m	\$ 1,875	0	\$ -
1200 x 450 RCBC incl conc base/invert crossing	m	\$ 3,750	22	\$ 82,500
Headwalls, Wingwalls and Aprons	m ³	\$ 4,500	9	\$ 40,500
Bio-Basins	m ²	\$ 1,125	0	\$ -
Bio basin concrete spillway	m ²	\$ 875	0	\$ -
Dewatering pumps	Item			
Water Reticulation				
100 dia, PVC pipe	m	\$ 500	0	\$ -
150 dia. PVC pipe	m	\$ 625	0	\$ -
200 dia PVC pipe	m	\$ 813	0	\$ -
SV's	No	\$ 3,750	0	\$ -
Hydrants	No	\$ 5,688	0	\$ -
Single house connections	No	\$ 2,500	0	\$ -
Connect to existing main	No	\$ 7,500	0	\$ -
VSD Pump Building	Item	\$ 375,000	0	\$ -

TORRES STRAIT MASTER PLANNING
INFRASTRUCTURE COST ESTIMATES

Prepared for the Department of Aboriginal and Torres Strait Islander
Partnerships

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Project			OT4	
Yield (Number of Lots)			N/A	
Item	Unit	Rate	Qty	Amount
Variable speed drive pump set	Item	\$ 250,000	0	\$ -
Standby generator	Item	\$ 125,000	0	\$ -
Sewerage Reticulation				
150 dia. PVC	m	\$ 500	0	\$ -
Manholes	No	\$ 12,500	0	\$ -
Lot connections	No	\$ 1,875	0	\$ -
FRP Pump Station	Item	\$ 1,187,500	0	\$ -
Standby Generator	Item	\$ 125,000	0	\$ -
90 OD polyethylene pressure main	m	\$ 500	0	\$ -
110 OD polyethylene pressure main	m	\$ 750	0	\$ -
140 OD polyethylene pressure main	m	\$ 875	0	\$ -
Electricity Supply				
Conduits, pits and pole bases	Lots	\$ 15,000	0	\$ -
Cabling and street lights	Lots	\$ 18,750	0	\$ -
Transformer	No	\$ 250,000	0	\$ -
Sub Totals				\$ 2,718,250
Contingencies	Item	30%		\$ 815,475
Preliminaries				
Establishment, insurance, As-constructed	Item	22%		\$ 598,015
Project Management				
Survey, design, and construction administration	Item	15%		\$ 407,738
TOTALS				\$ 4,539,478

APPENDIX

E

PRECINCT PLANS





BOIGU ISLAND MASTER PLAN

CBD PRECINCT PLAN

VERSION 002
12 October 2021

LEGEND

- 1 COMMUNITY PARK
- 2 TELSTRA TOWER
- 3 EXISTING BUILDINGS
- 4 MAIN ROAD
- 5 EXISTING BUILDINGS
- 6 CAR PARKING
- 7 PEDESTRIAN PATHWAY
- 8 FORESHORE PARKLAND



1 COMMUNITY PARK



4 MAIN ROAD

APPENDIX

F

ANALYTICAL TRANSLATION



BOIGU ISLAND MASTER PLAN

ANALYTICAL TRANSLATION

#	Direction	Technical Report	Master Plan Projects	Notes
1.	The Master Plan will need to cater for an increase in housing (eight new dwellings) to reduce overcrowding and cater for population growth and changes to community needs.	4 Demographic Analysis 8.1 Aboriginal and Torres Strait Islander Housing Action Plan 2019-2023 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	RS1, RS2	
2.	The Master Plan should seek to diversify the available housing products, particularly the provision of smaller housing types. Dwelling types can be supported as infill housing, which will allow them to be well located proximate to key services and facilities.	4 Demographic Analysis 8.1 Aboriginal and Torres Strait Islander Housing Action Plan 2019-2023 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	RS1, RS2	
3.	The Master Plan should support the provision of facilities for ageing in place and accessible living including accommodation for independent living (for persons of any age who may need care).	4 Demographic Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	RS1, OT2	
4.	The Master Plan should explore options for the development of the town expansion area identified by the planning scheme, subject to protection of this land from storm tides and sea level rise.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029	RS1	

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5.	The Master Plan should consider areas for potential housing.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029	RS1, RS2	
6.	The Master Plan should seek to facilitate the provision of active transport infrastructure (walking / cycling paths) to connect important parts of the community and promote healthy living through physical activity.	2.5 Services and Facilities 8.5 Healthy by Design / Walkability 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT2, OT4, OS3	
7.	The Master Plan should seek to support the protection and embellishment (where appropriate) of key sacred and cultural sites identified by the community. This may include improving community access.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CF2	
8.	The Master Plan should seek to support the establishment of a new immigration office near the waterfront at the corner of Esplanade and Chamber Street as identified by the planning scheme.	5 Planning Analysis	CF1	
9.	The Master Plan should support expansion and/or renewal in the town centre with a focus on improving accessibility for the community.	8.12 TSIRC Corporate Plan 2020-2025	OT2	
10.	The Master Plan should support the protection and expansion (if required) of the existing landfill site.	2.5 Services and Facilities 6 Infrastructure Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CF8	

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11.	The Master Plan should seek to protect places of worship and cemeteries and facilitate the identification of additional land to support future community needs.	2.5 Services and Facilities 8.12 TSIRC Corporate Plan 2020-2025	CF4, CF7	
12.	The Master Plan should locate development in a manner that is reflective of the potential effects of coastal processes.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.11 Torres Strait Regional Adaptation and Resilience Plan 2016-2021 8.12 TSIRC Corporate Plan 2020-2025	All projects	
13.	The Master Plan should investigate the provision of land for potential food production, which may include community or market gardens and aquaculture opportunities.	5 Planning Analysis 8.9 Food Security 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CF3, ID1	
14.	The Master Plan should support the efficient use and embellishment of the jetty and boat ramp. This will likely include supporting improvements to vessel access through new or improved marine infrastructure and the provision of new land based infrastructure, such as facilities that support commercial fishing.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025 8.13 Warpil – Fishing for Our Future	OT1, ID2	
15.	The Master Plan should support improved access to the island by air, through investigations into airport upgrades.	6 Infrastructure Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT5	

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16.	The Master Plan should support the development of new recreational facilities, particularly sporting fields, playgrounds and a swimming pool. Any new facilities should be appropriately located on accessible land near compatible land uses.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OS2, OS4, CF5	
17.	The Master Plan should support the development of tourism opportunities that are compatible with the aspirations of the community.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CT1, CT2, OT1, OT2, OT5	
18.	The Master Plan should ensure that new commercial and community facilities are located in a manner that maximises ease of access for the community including community aspirations for new kiosk, food and drink outlets and restaurant.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CT1, OT2	
19.	The Master Plan should ensure that any improvement or expansion of health care facilities can occur.	5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029	OT2	
20.	The Master Plan should reinforce a centralised business core area for new commercial development and the consolidation of government administrative offices, health care and shops extending north from the water treatment plant to the coastline, framed by Airport Road to the west and running along Chamber Street at the eastern end.	2.5 Services and Facilities 5 Planning Analysis 7.2 Community Consultation 8.12 TSIRC Corporate Plan 2020-2025	OT2	

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21.	The Master Plan should advance the creation of an industry core precinct and facilitate its protection and expansion, as identified by the planning scheme. Community aspirations for seafood industries and boat repair industries should be advanced in this precinct.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025 8.13 Warpil – Fishing for Our Future	ID1, ID2, OT3	
22.	The Master Plan should support the provision of additional child care facilities.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CF6	
23.	The Master Plan should support the development of cultural centres and arts centres.	2.5 Services and Facilities 5 Planning Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	CT1, OT2	
24.	The Master Plan should investigate opportunities to improve community access to other areas of the island (beyond the township), particularly for recreation, economic and cultural purposes.	8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT8	
25.	The Master Plan should investigate opportunities for carbon offsetting, both in land and sea areas.	8.2 Queensland Climate Transition Strategy 8.4 Carbon 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT10	

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26.	The Master Plan should identify potential opportunities for alternative energy projects.	8.2 Queensland Climate Transition Strategy 8.4 Carbon 8.8 Renewable Energy 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT10	
27.	The Master Plan should investigate opportunities to improve communications infrastructure (telephone and internet).	8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT9	
28.	The Master Plan should support the provision of appropriate lighting in key locations in the town.	8.12 TSIRC Corporate Plan 2020-2025	OS2, OS3, OT2	
29.	The Master Plan should facilitate upgrades to the water supply network, specifically upgrades to collection, treatment and storage infrastructure.	6 Infrastructure Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT6	
30.	The Master Plan should facilitate upgrades to the sewerage treatment plant to rectify current deficiencies.	6 Infrastructure Analysis 8.10 Torres Strait and Northern Peninsula Regional Plan 2009-2029 8.12 TSIRC Corporate Plan 2020-2025	OT7	
31.	The Master Plan should be updated to reflect the outcomes of community consultation activities undertaken.	7 Consultation	RS1, RS2, CT1, CT2, ID2, CF1, CF3, OS3, OS4, OT2	